



NOT FOR GENERAL CIRCULATION
IN THE UNITED STATES

Rolls-Royce plc

(incorporated with limited liability in England and Wales with registered number 01003142)

US\$1,000,000,000 5.750% Notes due 2027

Guaranteed by

Rolls-Royce Holdings plc

(incorporated with limited liability in England and Wales with registered number 07524813)

Rolls-Royce plc (the “**Issuer**”) is offering (the “**Offering**”) US\$1,000 million of its 5.750% Notes due 2027 (the “**Notes**”) with such Notes to be guaranteed (the “**Guarantee**”) by Rolls-Royce Holdings plc (the “**Company**”, “**Guarantor**” or “**Rolls-Royce**” and, together with the Company’s subsidiaries, “**Rolls-Royce Group**” or the “**Group**”). Interest will be paid on the Notes semi-annually on 15 April and 15 October of each year, commencing on 15 April 2021. The Notes will mature on 15 October 2027.

The Notes will constitute direct, unsubordinated and unsecured senior obligations of the Issuer and rank *pari passu* and ratably without any preference or priority among themselves and equally with all other existing and future unsecured and unsubordinated obligations of the Issuer from time to time outstanding (subject to certain obligations required to be preferred by law). The Guarantee will constitute a direct, unsubordinated and unsecured senior obligation of the Guarantor and rank equally with all other existing and future unsecured and unsubordinated obligations of the Guarantor from time to time outstanding (subject to certain obligations required to be preferred by law).

The Issuer has the option to redeem all or a portion of the Notes at any time at the redemption prices set forth in this offering memorandum, including in some circumstances at par value (the “**Offering Memorandum**”).

On 1 October 2020, the Company announced its intention to conduct a Rights Issue (as defined herein) seeking to raise approximately £2bn in gross proceeds through the sale of new ordinary shares of the Company. Pending the consummation of the Rights Issue, the Issuer will, concurrently with the issuance of the Notes on the Issue Date (as defined herein), deposit or cause to be deposited an amount equal to the gross proceeds of the Offering into an escrow account. The escrow account will be controlled by Citibank, N.A., London Branch (the “**Escrow Agent**”).

The release of the escrowed proceeds will be subject to the satisfaction of certain conditions, including the consummation of the Rights Issue. If the conditions to the release of the escrowed proceeds have not been satisfied or waived on or prior to the date that is 60 calendar days after the Issue Date, the Notes will be subject to a special mandatory redemption. The special mandatory redemption price will be equal to 100% of the aggregate initial issue price of the Notes plus accrued and unpaid interest from, but excluding, the Issue Date to, and including, such special mandatory redemption date and additional amounts, if any. See “*Description of the Notes and the Guarantee—Escrow of Proceeds; Special Mandatory Redemption*”.

Offering Price for the Notes: 100.000% plus accrued interest, if any, from 21 October 2020

This Offering Memorandum has been approved as a prospectus by the U.K. Financial Conduct Authority (the “**FCA**”), as competent authority under Regulation (EU) 2017/1129 (the “**Prospectus Regulation**”). The FCA only approves this Offering Memorandum as meeting the standards of completeness, comprehensibility and consistency imposed by the Prospectus Regulation. Approval by the FCA should not be considered as an endorsement of the Issuer or the Guarantor that are the subject of this Offering Memorandum or of the quality of the Notes that are the subject of this Offering Memorandum. Investors should make their own assessment as to the suitability of investing in the Notes that are the subject of this Offering Memorandum.

Application has been made to the FCA for the Notes described in this Offering Memorandum to be admitted to the official list of the FCA (the “**Official List**”) and to the London Stock Exchange plc (the “**London Stock Exchange**”) for the Notes to be admitted to trading on the London Stock Exchange’s Regulated Market (“**Admission**”). The London Stock Exchange’s Regulated Market is a regulated market for the purposes of Directive 2014/65/EU (as amended, “**MiFID II**”).

Neither the Notes nor the Guarantee have been recommended by the United States Securities and Exchange Commission (the “**SEC**”) or any other U.S. federal or state securities commission or regulatory authority nor have such authorities confirmed the accuracy or adequacy of this Offering Memorandum. Any representation to the contrary is a criminal offense in the United States. The Notes and the Guarantee have not been, and will not be, registered under the U.S. Securities Act of 1933, as amended (the “**Securities Act**”), or any securities laws of any other jurisdiction. Accordingly, the Notes are being offered and sold in the United States only to qualified institutional buyers (“**QIBs**”) in accordance with Rule 144A under the Securities Act (“**Rule 144A**”) and outside the United States to certain non-U.S. persons in accordance with Regulation S under the Securities Act (“**Regulation S**”). **Prospective purchasers that are QIBs are hereby notified that the seller of the Notes and the related Guarantee may be relying on the exemption from the provisions of Section 5 of the Securities Act provided by Rule 144A.** For further details about eligible offerees and transfer restrictions, see “*Plan of Distribution*” and “*Transfer Restrictions*”.

The Notes will initially be represented by global notes in registered form (the “**Global Notes**”), one or more of which will be issued in respect of any Notes (“**Rule 144A Notes**”) offered and sold to persons who are QIBs (the “**Rule 144A Global Notes**”) and one or more of which will be issued in respect of any Notes (“**Regulation S Notes**”) offered and sold to persons who are non-U.S. persons in reliance on Regulation S (the “**Regulation S Global Notes**”). The Notes will be issued only in denominations of US\$200,000 and integral multiples of US\$1,000 in excess thereof.

For a more detailed description of the Notes, see “*Description of the Notes and the Guarantee*” beginning on page 233.

An investment in the Notes involves risks. For a discussion of these risks, see “*Risk Factors*” beginning on page 45.

The Issuer has credit ratings of BB+ (outlook negative) by Fitch Ratings Ltd (“**Fitch**”), Ba3 (outlook negative) by Moody’s Investors Service Ltd. (“**Moody’s**”) and BB- (outlook CreditWatch negative) by S&P Global Ratings Europe Limited (“**S&P**”). In general, European regulated investors are restricted from using a rating for regulatory purposes if such rating is not issued by a credit rating agency established in the European Union or the United Kingdom and registered under Regulation (EC) No. 1060/2009 (the “**CRA Regulation**”), unless the rating is provided by a credit rating agency operating in the European Union before 7 June 2010 which has submitted an application for registration in accordance with the CRA Regulation and such registration is not refused. Fitch, Moody’s and S&P have each been registered under the CRA Regulation by the European Securities and Markets Authority since 31 October 2011.

Citigroup Global Markets Inc., BNP Paribas Securities Corp., Goldman Sachs & Co. LLC, Barclays Capital Inc., Bayerische Landesbank, BofA Securities Inc., Credit Agricole Securities (USA) Inc., HSBC Bank plc, Lloyds Securities Inc., Mizuho Securities USA LLC, MUFG Securities EMEA plc, NatWest Markets Securities Inc., Santander Investment Securities Inc., Skandinaviska Enskilda Banken AB (publ), SMBC Nikko Securities America, Inc., Société Générale, Standard Chartered Bank, Commerz Markets LLC, TD Securities (USA) LLC and UniCredit Capital Markets LLC (collectively, the “**Initial Purchasers**”), expect to deliver the Notes to purchasers on or about 21 October 2020 through the facilities of The Depository Trust Company (“**DTC**”), including through its participants Euroclear Bank SA/NV (“**Euroclear**”) and Clearstream Banking S.A. (“**Clearstream**”).

Global Coordinators and Joint Bookrunners

Citigroup

BNP PARIBAS

Goldman Sachs & Co. LLC

Joint Bookrunners

Barclays

Bayerische Landesbank

BofA Securities

Credit Agricole CIB

HSBC

Lloyds Securities

Mizuho Securities

MUFG

NatWest Markets

Santander

SEB

SMBC Nikko

Société Générale

Standard Chartered Bank

Corporate & Investment Banking

Co-Managers

Commerzbank

TD Securities

UniCredit Capital Markets

The date of this Offering Memorandum is 16 October 2020

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IMPORTANT INFORMATION

This Offering Memorandum comprises a prospectus for the purpose of Article 6(3) of the Prospectus Regulation and for the purpose of giving information with regard to the Company, the Issuer and their subsidiaries, taken as a whole, and the Notes which, according to the particular nature of the Issuer and the Notes, is necessary to enable investors to make an informed assessment of the assets and liabilities, financial position, profits and losses and prospects of the Company and the Issuer.

The Company and the Issuer accept responsibility for the information contained in this Offering Memorandum. To the best of the Company's and the Issuer's knowledge as at the date of this Offering Memorandum the information contained in this Offering Memorandum is in accordance with the facts and the Offering Memorandum makes no omission likely to affect its import. Other than in relation to the information incorporated by reference, the information on the websites to which this Offering Memorandum refers does not form part of this Offering Memorandum and has not been scrutinized or approved by the FCA.

This Offering Memorandum has been prepared by the Company and the Issuer solely for use in connection with the Offering of the Notes described in this Offering Memorandum, and you are authorized to use this Offering Memorandum solely for the purpose of considering an investment in the Notes and the Guarantee. You should review carefully the information contained in this Offering Memorandum. The Company and the Issuer have not authorized anyone to provide you with different information. You should not assume that the information contained in this Offering Memorandum is accurate as at any date other than the date on the front of this Offering Memorandum. This Offering Memorandum is personal to each offeree and does not constitute an offer to any other person or to the public generally to subscribe for or otherwise acquire the Notes. Distribution of this Offering Memorandum to any other person other than the prospective investor and any person retained to advise such prospective investor with respect to its purchase is unauthorized, and any disclosure of any of its contents, without the Company's and the Issuer's prior written consent, is prohibited. Each prospective investor, by accepting delivery of this Offering Memorandum, agrees to the foregoing and to make no copies of this Offering Memorandum or any documents referred to in this Offering Memorandum.

Save for the Issuer and the Guarantor, no other party (including the Initial Purchasers and their respective affiliates) makes any representation or warranty, express or implied, as to the accuracy, completeness, adequacy or verification of the information contained in this Offering Memorandum. Nothing contained in this Offering Memorandum is, or shall be relied upon as, a promise or representation by the Initial Purchasers in this respect, whether as to the past or future. The Company and the Issuer have furnished the information contained in this Offering Memorandum. The Initial Purchasers assume no responsibility for the accuracy, completeness, adequacy or verification of any such information and accordingly, disclaim to the fullest extent permitted by applicable law, any and all liability whether arising in tort, contract or otherwise which they might otherwise be found to have in respect of this Offering Memorandum or any such information.

In making an investment decision, prospective investors must rely on their own examination of the Company, the Issuer and their subsidiaries and the terms of the offering described in this Offering Memorandum, including the merits and risks involved. Prospective investors should not construe anything in this Offering Memorandum as legal, business, tax, regulatory or other advice. Each prospective investor should consult its own advisors as needed to make its investment decision and to determine whether it is legally permitted to purchase the Notes under applicable legal investment or similar laws or regulations. The laws of certain jurisdictions may restrict the distribution of this Offering Memorandum and the offer and sale of the Notes. Persons into whose possession this Offering Memorandum or any of the Notes come must inform themselves about, and observe, any such restrictions. This Offering Memorandum does not constitute an offer or an invitation to purchase any of the Notes in any jurisdiction in which such offer or sale would be unlawful. None of the Company, the Issuer, the Initial Purchasers or their respective affiliates or representatives are making any representation to any offeree or any purchaser of the Notes regarding the legality of any investment in the Notes by such offeree or purchaser under applicable legal investment or similar laws or regulations. Investors also acknowledge that they have not relied, and will not rely, on the Initial Purchasers or any of their respective affiliates in connection with their investigation of the accuracy, adequacy and completeness of any information or their decision whether to invest in the Notes.

The Initial Purchasers reserve the right to withdraw this Offering of Notes at any time and to reject any commitment to subscribe for the Notes, in whole or in part. The Initial Purchasers also reserve the right to allot less than the full amount of the Notes sought by a prospective investor. The Initial Purchasers and certain related entities may acquire a portion of the Notes for their own account.

The Notes are subject to restrictions on transferability and resale and may not be transferred or resold except as permitted under the Securities Act and applicable state securities laws pursuant to registration or exemption therefrom. As a prospective purchaser, you should be aware that you may be required to bear the financial risks of this investment for an indefinite period of time. Please refer to the sections in this Offering Memorandum entitled “*Plan of Distribution*” and “*Transfer Restrictions*”.

This Offering Memorandum contains summaries of certain documents. Investors should make reference to the actual documents for complete information. Copies of certain documents referred to herein will be made available to prospective investors upon request to the Company, the Initial Purchasers or the Trustee.

STABILIZATION

In connection with the issue of the Notes, Citigroup Global Markets Limited (the “**Stabilization Manager**”) or persons acting on its behalf may over-allot Notes or effect transactions with a view to supporting the market price of the Notes at a level higher than that which might otherwise prevail. However, stabilization may not necessarily occur. Any stabilization action may begin on or after the date on which adequate public disclosure of the terms of the offer of the Notes is made and, if begun, may cease at any time, but it must end no later than the earlier of 30 calendar days after the issue date of the Notes and 60 calendar days after the date of the allotment of the relevant Notes. Any stabilization action or over-allotment must be conducted by the relevant Stabilization Manager(s) (or person(s) acting on behalf of any Stabilization Manager(s)) in accordance with all applicable laws and rules.

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED STATES

This Offering is being made in reliance upon an exemption from registration under the Securities Act for offers and sales of securities that do not involve a public offering. By purchasing the Notes, investors are deemed to have made the acknowledgements, representations, warranties and agreements set forth under “*Plan of Distribution—Selling Restrictions*”.

The Notes and the Guarantee have not been, and will not be, registered with, or recommended or approved by, the SEC or any other U.S. federal or state or foreign securities commission or regulatory authority, nor has any such commission or regulatory authority reviewed or passed upon the accuracy or adequacy of this Offering Memorandum. Any representation to the contrary is a criminal offense in the United States.

The Notes are subject to restrictions on transferability and resale and may not be transferred or resold except as permitted under the Securities Act and the applicable state securities laws pursuant to registration or exemption therefrom. As a prospective purchaser, you should be aware that you may be required to bear the financial risks of this investment for an indefinite period of time. See “*Plan of Distribution*” and “*Transfer Restrictions*”.

PROHIBITION OF SALES TO EUROPEAN ECONOMIC AREA AND UNITED KINGDOM RETAIL INVESTORS

The Notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area (“**EEA**”) or in the United Kingdom. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of MiFID II; or (ii) a customer within the meaning of Directive 2016/97/EU, as amended (the “**Insurance Distribution Directive**”), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II. Consequently, no key information document required by Regulation (EU) No 1286/2014, as amended (the “**PRIIPs Regulation**”) for offering or selling the Notes or otherwise making them available to retail investors in the EEA or in the United Kingdom has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA or in the United Kingdom may be unlawful under the PRIIPs Regulation.

MiFID II product governance/Professional investors and ECPs only target market – Solely for the purposes of each manufacturer’s product approval process, the target market assessment in respect of the Notes has led to the conclusion that: (i) the target market for the Notes is eligible counterparties and professional clients

only, each as defined in MiFID II; and (ii) all channels for distribution of the Notes to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the Notes (a “**distributor**”) should take into consideration the manufacturers’ target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the Notes (by either adopting or refining the manufacturers’ target market assessment) and determining appropriate distribution channels.

SERVICE OF PROCESS AND ENFORCEABILITY OF CERTAIN CIVIL LIABILITIES

Each of the Company and the Issuer is a public limited company registered in England and Wales. A majority of the directors of the Company and the Issuer and certain of the experts named in this Offering Memorandum are not residents of the United States and a substantial portion of the assets of the Group and its directors and officers are located outside the United States. As a result, it may not be possible for investors to effect service of process within the United States upon such persons with respect to matters arising under the Securities Act or to enforce against them judgments of courts of the United States predicated upon civil liability under the Securities Act.

The Notes and the Guarantee thereof are governed by the laws of the State of New York. Each of the Company and the Issuer has expressly submitted to the non-exclusive jurisdiction of the courts of the State of New York and U.S. federal courts sitting in New York City for the purpose of any suit, action or proceeding arising out of the Notes and has appointed Corporation Service Company at 1180 Avenue of the Americas, Suite 210, New York, New York, United States, as its agent to accept service of process in any such action.

AVAILABLE INFORMATION

Neither the Company nor the Issuer is currently subject to the periodic reporting and other information requirements of the U.S. Securities Exchange Act of 1934, as amended (the “**Exchange Act**”). While any Notes remain outstanding, the Company will make available, upon request, to any Holder (as defined below) and any prospective purchaser of Notes, the information required pursuant to Rule 144A(d)(4) under the Securities Act in order to permit resales under Rule 144A, if, at the time of such request, the Company is neither a reporting company pursuant to the Exchange Act nor exempt from reporting under the Exchange Act pursuant to Rule 12g3-2(b) thereunder. As of the date of this Offering Memorandum, the Company is exempt from reporting pursuant to Rule 12g3-2(b) under the Exchange Act. Any such request may be made at Kings Place, 90 York Way, London, N1 9FX, United Kingdom.

INFORMATION INCORPORATED BY REFERENCE

The following information shall be deemed to be incorporated in, and to form part of, this Offering Memorandum:

1. The audited consolidated financial statements of Rolls-Royce Holdings plc (including the auditor’s report thereon and notes thereto) of the year ended 31 December 2019 which can be viewed online at <https://www.Rolls-Royce.com/~media/Files/R/Rolls-Royce/documents/annual-report/2019/2019-full-annual-report.pdf> (such financial statements include unaudited comparative financial information as of and for the year ended 31 December 2018);
2. The audited consolidated financial statements of Rolls-Royce Holdings plc (including the auditor’s report thereon and notes thereto) in respect of the year ended 31 December 2018 which can be viewed online at <https://www.Rolls-Royce.com/~media/Files/R/Rolls-Royce/documents/annual-report/2018/2018-full-annual-report.pdf>;
3. The condensed consolidated interim financial statements of Rolls-Royce Holdings plc (including the auditor’s report thereon and notes thereto) in respect of the six months ended 30 June 2020 which can be viewed online at <https://www.rolls-royce.com/~media/Files/R/Rolls-Royce/documents/investors/2020-hy-press-release.pdf>;

4. The audited consolidated financial statements of Rolls-Royce plc (including the auditor's report thereon and notes thereto) in respect of the year ended 31 December 2019 which can be viewed online at <https://www.Rolls-Royce.com/~media/Files/R/Rolls-Royce/documents/annual-report/rr-plc-ar-2019-web.pdf> (such financial statements include unaudited comparative financial information as of and for the year ended 31 December 2018); and
5. The audited consolidated financial statements of Rolls-Royce plc (including the auditor's report thereon and notes thereto) in respect of the year ended 31 December 2018 which can be viewed online at <https://www.Rolls-Royce.com/~media/Files/R/Rolls-Royce/documents/annual-report/rr-plc-ar-2018.pdf>.

No other parts of the annual reports of Rolls-Royce Holdings plc, nor any documents referred to in any of the incorporated documents, are incorporated by reference herein or are part of this document.

No Incorporation of Website

Prospective investors should only rely on the information that is provided in this Offering Memorandum or incorporated by reference into this Offering Memorandum. Unless specifically incorporated by reference into this Offering Memorandum, no other documents or information, including the contents of the Issuer's website, including any websites accessible from hyperlinks on such website, form part of, or are incorporated by reference into, this Offering Memorandum.

FORWARD-LOOKING STATEMENTS

This Offering Memorandum includes “forward-looking statements” within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. All statements other than statements of historical or current fact are, or may be deemed to be, forward-looking statements, including without limitation those concerning our restructuring, cost saving and optimization programmes, growth prospects and outlook of our operations, individually or in the aggregate; economic outlook; expectations regarding exchange rates, commodity prices, engine flying hours, orders, and other operating results; the amount of projected capital expenditure for research and developments and the likelihood of retaining, renewing or obtaining licenses, permits, leases and other approvals or concluding joint ventures or other agreements; the evolving regulatory framework to which we are subject and the risk of unfavorable changes to, interpretations of and/or application or enforcement of the tax laws and regulations in the countries in which we operate; the completion of acquisitions and dispositions; our liquidity and capital resources and expenditure; the outcome and consequences of any pending litigation, regulatory or similar proceedings; and our ability to maintain or improve our competitive position. These forward-looking statements are not based on historical facts, but rather reflect our current expectations concerning future results and events and generally may be identified by the use of forward-looking words or phrases such as “believe”, “aim”, “expect”, “anticipate”, “intend”, “foresee”, “forecast”, “likely”, “should”, “planned”, “may”, “estimated”, “potential”, “projected”, “will”, “continue” or other similar words and phrases. Similarly, statements that describe our objectives, plans or goals are or may be forward-looking statements.

These forward-looking statements involve known and unknown risks, uncertainties, assumptions and other factors that may cause our actual results, performance or achievements to differ materially from the anticipated results, performance or achievements expressed or implied by these forward-looking statements. Although we believe that the expectations reflected in these forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct.

The risk factors described in this Offering Memorandum under “*Risk Factors*” could affect our future results, causing these results to differ materially from those expressed in any forward-looking statements. These factors are not necessarily all the important factors that could cause our actual results to differ materially from those expressed in any forward-looking statements. Other unknown or unpredictable factors could also have material adverse effects on future results.

You should review carefully all information, including the financial statements and the notes to the financial statements, which are included or incorporated by reference in this Offering Memorandum. All forward-looking statements are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. You should not place undue reliance on forward-looking statements. The forward-looking statements included in this Offering Memorandum speak only as of the last practicable date prior to the date hereof and are based on the knowledge, information available and views taken on the date on which they are made; such knowledge, information and views may change at any time. Neither we nor the Initial Purchasers undertake any obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this Offering Memorandum or to reflect the occurrence of unanticipated events. All subsequent written and oral forward-looking statements attributable to us or any person acting on our behalf are qualified by the cautionary statements in this section.

PRESENTATION OF FINANCIAL, MARKET AND OTHER INFORMATION

In this Offering Memorandum, references to “Rolls-Royce Group”, “Group”, “we”, “us” and “our” each refer to Rolls-Royce Holdings plc and its subsidiaries. References to the “Company”, the “Guarantor” and “Rolls-Royce” each refer to Rolls-Royce Holdings plc. References to the “Issuer” are to Rolls-Royce plc and references to the “Issuer Group” are to Rolls-Royce plc and its subsidiaries.

Presentation of financial information

General

The consolidated financial statements of the Company, including the related notes thereto, were prepared in accordance with International Financial Reporting Standards issued by the International Accounting Standards Board (“IASB”) as adopted in the European Union (“IFRS”) as at and for the year ended 31 December 2019 (which include unaudited comparative financial information as at and for the year ended 31 December 2018) (the “**Group 2019 Consolidated Financial Statements**”) and have been audited by PricewaterhouseCoopers LLP (“PwC” or the “Auditors”) and are incorporated by reference into this document together with the related independent auditor’s report. The consolidated financial statements of the Issuer, including the related notes thereto, were prepared in accordance with IFRS as at and for the year ended 31 December 2019 (which include unaudited comparative financial information as at and for the year ended 31 December 2018) (the “**Issuer 2019 Consolidated Financial Statements**”) and have been audited by PwC and are incorporated by reference into this document together with the related independent auditor’s report.

The consolidated financial statements of the Company, including the related notes thereto, were prepared in accordance with IFRS as at and for the year ended 31 December 2018 (which include unaudited comparative financial information as at and for the year ended 31 December 2017) (the “**Group 2018 Consolidated Financial Statements**”) and have been audited by PwC and are incorporated by reference into this document together with the related independent auditor’s report. The consolidated financial statements of the Issuer, including the related notes thereto, were prepared in accordance with IFRS as at and for the year ended 31 December 2018 (which include unaudited comparative financial information as at and for the year ended 31 December 2017) (the “**Issuer 2018 Consolidated Financial Statements**”) and have been audited by PwC and are incorporated by reference into this document together with the related independent auditor’s report.

The Group 2018 Consolidated Financial Statements as at and for the year ended 31 December 2018 include unaudited comparative information as at and for the year ended 31 December 2017, prepared in accordance with IFRS including the initial adoption of IFRS 15 and IFRS 9 (each as defined below). The financial information presented in this document as at and for the year ended 31 December 2017 is derived from the unaudited comparative information included in the Group 2018 Consolidated Financial Statements incorporated by reference into this document. As disclosed in Note 27 to the Group 2018 Consolidated Financial Statements, the adoption of IFRS 15 and IFRS 9 had a material impact on equity and profit as at and for the year ended 31 December 2017.

The Issuer 2018 Consolidated Financial Statements as at and for the year ended 31 December 2018 include unaudited comparative information as at and for the year ended 31 December 2017, prepared in accordance with IFRS including the initial adoption of IFRS 15 and IFRS 9. The financial information presented in this document as at and for the year ended 31 December 2017 is derived from the unaudited comparative information included in the Issuer 2018 Consolidated Financial Statements incorporated by reference into this document. As disclosed in Note 26 to the Issuer 2018 Consolidated Financial Statements, the adoption of IFRS 15 and IFRS 9 had a material impact on equity and profit as at and for the year ended 31 December 2017.

The Group 2019 Consolidated Financial Statements together with the Group 2018 Consolidated Financial Statements are collectively referred to as the “**Group Consolidated Financial Statements**”, and the Issuer 2019 Consolidated Financial Statements together with the Issuer 2018 Consolidated Financial Statements are collectively referred to as the “**Issuer Consolidated Financial Statements**”.

The consolidated condensed financial statements of the Group, and the related notes thereto, were prepared in accordance with International Accounting Standard 34, Interim Financial Reporting, as at and for the six months ended 30 June 2020 (which include comparative financial information for the six months ended 30 June 2019) (the “**Group Consolidated Interim Financial Statements**”) incorporated by reference into this document are unaudited.

In assessing the adoption of the going concern basis in the Group Consolidated Interim Financial Statements, the Directors considered the forecast cash flows of the Group and the liquidity available over an eighteen-month period to 28 February 2022. They paid particular attention to the impact of the COVID-19 outbreak on the Group's Civil Aerospace and ITP Aero businesses and assessed both a base case scenario (which reflected the Directors' expectations of future trading at the time the Group Consolidated Interim Financial Statements were published on 27 August 2020) and a severe but plausible downside scenario (which envisaged a "stress" or "downside" situation and is further explained in Note 1 to the Group Consolidated Interim Financial Statements) when evaluating the potential impact of these scenarios on the Group's future financial performance and cash flows. The Group expected the Civil Aerospace business to be most significantly impacted by the COVID-19 pandemic. The key judgment was the severity, extent and duration of the disruption caused by the COVID-19 pandemic and therefore the timing of recovery of commercial aviation to pre-crisis levels, including whether a widespread "second wave" of restrictions will occur. The Directors expected the impact on the Power Systems business (22% of 2019 Group underlying revenue) to be significantly less and shorter in duration than for commercial aviation, and there to be no significant impact on the Defence business (20% of 2019 Group underlying revenue). In contrast to the Working Capital Statement, which is based on an updated base case scenario and an updated resulting severe but plausible downside scenario (or "reasonable worst case" scenario), the Directors' assessment in the Group Consolidated Interim Financial Statements did not take into account the expected net proceeds of the Rights Issue (and neither the Directors' assessment in the Group Consolidated Interim Financial Statements nor the Working Capital Statement take into account the expected net proceeds of this Offering or the offering of the Eurobonds (as defined below) or any potential new Bridge Facility or increase in the size of the Term Loan Facility).

Unless otherwise indicated, the consolidated financial information in this document relating to the Group, and the consolidated financial information relating to the Issuer Group, has been prepared in accordance with IFRS effective for the relevant periods. As used in this document in connection with the consolidated financial information of the Group, "**reported**" means reported in accordance with IFRS. The consolidation perimeter of the Company comprises the Company and its subsidiary undertakings together with the Group's share of the results in joint arrangements and associates.

The preparation of the Group's financial statements in conformity with IFRS requires management to make certain critical accounting estimates (see "*Operating and Financial Review—Key areas of judgement and sources of estimation uncertainty—Significant accounting policies*"). The key judgements and key sources of estimation uncertainty at the balance sheet date that have a significant risk of causing material adjustment to the carrying amounts of assets and liabilities within the next 12 months are summarised in Note 1 to the Group 2019 Consolidated Financial Statements and Note 1 to the Group Consolidated Interim Financial Statements.

Currency and rounding

The Group Consolidated Financial Statements and the Group Consolidated Interim Financial Statements incorporated by reference in this document are presented in pounds sterling which is the Company's functional and reporting currency. Some financial and other information in this document has been rounded and, as a result, the figures shown as totals in this document may vary slightly from the exact arithmetic aggregation of the figures that precede them.

Segments

In accordance with IFRS 8 *Operating Segments* ("**IFRS 8**"), the Group has identified four reportable business segments. The analysis by business segment is presented in accordance with IFRS 8 on the basis of those segments whose operating results are regularly reviewed by the Board (which acts as the Chief Operating Decision Maker as defined by IFRS 8).

The Group's four business segments and their primary business operations are set out below. In the Group 2019 Consolidated Financial Statements and the Group 2018 Consolidated Financial Statements these segments (together with Corporate, e.g. headquarters and innovation hub costs), are collectively referred to as the "**core businesses**":

- *Civil Aerospace* – development, manufacture, marketing and sales of commercial aero engines and aftermarket services;
- *Power Systems* – development, manufacture, marketing and sales of reciprocating engines, power systems and nuclear systems for civil power generation;

- *Defence* – development, manufacture, marketing and sales of military aero engines, naval engines, submarine nuclear power plants and aftermarket services; and
- *ITP Aero* – design, R&D, manufacture and casting, assembly and testing of aeronautical engines and gas turbines, and MRO services.

In the periods under review, “**non-core businesses**” mean businesses not part of one of the Group segments and comprised:

- *In H1 2020*: Bergen Engines AS, the North America Civil Nuclear business until the date of disposal on 31 January 2020, the Knowledge Management System business until the date of disposal on 3 February 2020, the Commercial Marine business until the date of disposal on 1 April 2019, Rolls-Royce Power Development Limited (“**RRPD**”) until the date of disposal on 15 April 2019 and other smaller businesses including former Energy businesses not included in the disposal to Siemens in 2014 (“**Retained Energy**”).
- *In 2019*: the North America Civil Nuclear and the Knowledge Management System businesses have been treated as a disposal group held for sale since 31 December 2019; the Commercial Marine business until the date of disposal on 1 April 2019; RRPD until the date of disposal on 15 April 2019; and other smaller businesses, including Retained Energy.
- *In 2018*: L’Orange, until the date of its disposal on 1 June 2018, the Commercial Marine business (held for sale from 30 June 2018) and other smaller businesses including Retained Energy.

The segmental information presented for H1 2019 has been updated in the Group Consolidated Interim Financial Statements to reflect the H1 2020 definition of non-core businesses, and the segmental information presented for 2018 and 2017 has been restated in the Group 2019 Consolidated Financial Statements and the Group 2018 Consolidated Financial Statements, respectively, to reflect the 2019 and 2018 definition of non-core businesses, respectively (such restatements of comparative information are unaudited). To enable comparability, unless otherwise stated, when discussing the H1 2020, 2019 and 2018 Group and segment results, this document compares such results to the H1 2019, 2018 and 2017 Group and segment results, respectively, as so restated.

In 2017, the Group reported five operating segments: Civil Aerospace, Defence, Power Systems, Marine and Nuclear. Following the decision to simplify the Group, which was announced on 17 January 2018, the Group adopted its current segments. In this document, the 2017 segmental information has been extracted from the unaudited comparative financial information in the Group 2018 Consolidated Financial Statements and accordingly is presented on the same basis as the 2018, 2019, H1 2019 and H1 2020 segmental information.

Impact of changes in accounting standards

IFRS 16

The Group adopted the new lease accounting standard IFRS 16 *Leases* (“**IFRS 16**”) on 1 January 2019 and accordingly, the Group’s results for 2019 were prepared reflecting this standard. The Group has adopted IFRS 16 applying the modified retrospective transition method and, as a result, comparative financial information for 2018 or prior periods was not restated. The net impact to equity as at 1 January 2019 was a decrease of £40m.

IFRS 16 introduced significant changes to lessee accounting by removing the distinction between operating and finance leases and requiring the recognition of a right-of-use asset and a lease liability at commencement for all leases, except for short-term leases and leases of low value assets for which such recognition exemptions are adopted. In contrast to lessee accounting, the requirements for lessor accounting have remained largely unchanged.

Until 31 December 2018, leases of aircraft and engines, plant and equipment and land and buildings were classified as either finance or operating leases. Payments made under operating leases were charged to profit or loss on a straight-line basis over the period of the lease. IFRS 16 requires all leases to be recognised on the balance sheet with a right-of-use asset capitalised and depreciated over the estimated lease term together with a corresponding liability that will reduce over the same period with an appropriate interest charge recognised. Therefore, from 1 January 2019, leases were recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between

reducing the liability and a finance cost. The finance cost is charged to the income statement over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

The adoption of IFRS 16 had the following impact on the Group:

- On 1 January 2019, an additional lease liability of £2,289m was recorded on the Group's consolidated balance sheet. These liabilities were measured at the present value of the remaining lease payments, discounted using the Group's incremental borrowing rate as at 1 January 2019. The weighted average incremental borrowing rate applied by the Group to the lease liabilities on 1 January 2019 was 3.7%.
- On 1 January 2019, right-of-use assets of £2,254m were recorded on the Group's consolidated balance sheet. Right-of-use assets for certain high-value property leases are measured on a retrospective basis as if the new rules had always been applied. As mentioned above, the Group's incremental borrowing rate has been used. Other right-of-use assets are measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognised in the balance sheet as at 1 January 2019.
- In the Group's consolidated income statement, rental payments (previously included within operating costs) were replaced with a depreciation charge on the leased assets. Financing costs on lease liabilities increased by £88m in 2019 due to the new liability.
- There was no impact on free cash flow.

See Notes 1 and 29 to the Group 2019 Consolidated Financial Statements and Note 1 to the Group 2018 Consolidated Financial Statements for further information on IFRS 16 and the impact of its adoption. Note 29 to the Group 2019 Consolidated Financial Statements includes a table showing the reconciliation of the operating lease obligations under the previous accounting standard (IAS 17 *Leases*) to the lease liability recorded under IFRS 16 on transition, as well as a table showing the impact of IFRS 16 on the Group's consolidated balance sheet.

The Group adopted IFRS 16 without applying it retrospectively and accordingly the financial information for 2018 in the Group 2019 Consolidated Financial Statements and in this document do not reflect IFRS 16 and instead reflect the prior IFRS leasing standard.

IFRS 15

The Group adopted IFRS 15 *Revenue from Contracts with Customers* ("**IFRS 15**") on 1 January 2018 using the full retrospective approach. The impact on the Group of adopting IFRS 15 was significant, with a cumulative adjustment to equity as at 1 January 2017 of £4.5bn. The consolidated income statement for 2017 and the consolidated balance sheets as at 1 January and 31 December 2017, as presented in the Group 2018 Consolidated Financial Statements, were restated to reflect the adoption of IFRS 15. See Note 27 to the Group 2018 Consolidated Financial Statements for tables showing the impact of IFRS 15 on the Group's consolidated income statement, consolidated statement of comprehensive income and consolidated balance sheet. Unless otherwise indicated, all financial information for 2017 presented in this document reflects the application of IFRS 15 and has been extracted without material modification from the restated unaudited comparative financial information presented in the Group 2018 Consolidated Financial Statements.

IFRS 15 requires the disclosure of unrecognised performance obligations, the amount of revenue from the Group's customer contracts that has not yet been traded. This new disclosure replaces the valuation of the order backlog that the Group has previously published and which was prepared on a different basis.

IFRS 15 provides a single, principles-based five-step model to be applied to all sales contracts with customers. IFRS 15 superseded previous revenue recognition guidance including IAS 18 *Revenue*, IAS 11 *Construction Contracts* and the related Interpretations when it became effective for accounting periods beginning on or after 1 January 2018. The core principle of IFRS 15 is that an entity should recognise revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Under IFRS 15, the Group recognises

revenue when (or as) a performance obligation is satisfied, i.e. when “control” of the goods or services underlying the particular performance obligation is transferred to the customer. In summary:

- revenue on original equipment contracts and T&M Contracts is generally recognised at the point of delivery;
- revenue on long-term aftermarket contracts and some original equipment contracts (generally for products without an alternative use to the specific contract) is recognised on an activity basis using the costs incurred as the measure of the activity;
- costs to fulfil contracts are recognised as they are incurred; and
- costs to obtain a contract are amortised over the period of the contract against revenue.

See Note 1 to the Group 2019 Consolidated Financial Statements and Notes 1 and 27 to the Group 2018 Consolidated Financial Statements for further information.

IFRS 9

The Group adopted IFRS 9 *Financial Instruments* (“**IFRS 9**”) on 1 January 2018. IFRS 9 introduced new requirements for the accounting of financial instruments and covers: (i) classification and measurement – certain trade receivables are now classified as ‘fair value through other comprehensive income’; (ii) impairment – introducing additional requirements for the measurement of expected credit losses on financial assets; and (iii) hedge accounting – introducing amendments to existing requirements.

Except for hedge accounting, retrospective application was not required, with any adjustments being made to reserves on 1 January 2018. In accordance with the transitional provisions in IFRS 9, the Group did not restate its 2017 comparative information in the Group 2018 Consolidated Financial Statements. For hedge accounting, the Group considered the new requirements and determined that no changes to the existing hedge relationships were necessary and applied IFRS 9 prospectively.

The net impact of IFRS 9 on the Group’s equity as at 1 January 2018 was a decrease of £15m. For the cumulative impact of IFRS 9 on the Group’s consolidated balance sheet as at 1 January 2018, and with respect to the classification of financial instruments, see Note 27 to the Group 2018 Consolidated Financial Statements.

Results restatements and effects of acquisitions and disposals on financial reporting

IFRS 15

As described above, the 2017 financial information in this document has been derived from the unaudited comparative information included in the Group 2018 Consolidated Financial Statements and has been restated to reflect the application of IFRS 15 in order to be comparable to the financial information for 2018. See “—*Impact of changes in accounting standards—IFRS 15*”.

Non-core business

The underlying results for the Group’s Power Systems segment for 31 December 2018 have been restated in the Group 2019 Consolidated Financial Statements to reclassify the North America Civil Nuclear business as non-core, as presented for 2019.

ITP Aero

On 19 December 2017 the Group acquired an additional stake in ITP Aero. The Group held a 46.9% stake in this business prior to this acquisition and its interest was accounted for using the equity method and a share of its profit or loss recognised in the Group’s income statement. Certain financial information for 2017 presented in this document and the discussions relating thereto present the 2017 results of the ITP Aero business on a 100% basis for comparison purposes only, as if the Group had owned 100% of ITP Aero for the whole of 2017; such financial information is unaudited.

Non-IFRS measures

In this document, the Group presents certain financial measures that are not measures defined under IFRS or any other generally accepted accounting principles. In some cases, these measures may not be permitted to be

included in a filing with the SEC. The non-IFRS measures included in this document are listed below and exclude items that the Group's management has determined do not reflect the operations of the Group's business. The Group believes that these non-IFRS measures provide valuable insights into the Group's financial and operational performance because they enable the reader to identify a consistent basis for comparing the Group's businesses' performance between financial periods. In addition, the Group believes that they provide more detail concerning the elements of performance which management is most directly able to influence or which are relevant for an assessment of the Group's performance. Non-IFRS measures provide additional information to investors and should not be used in isolation. You should not consider these non-IFRS measures as alternatives for IFRS measures and you should be aware that the Group's calculation of non-IFRS measures may be different from the calculation used by other companies and therefore may not be comparable across companies. As non-IFRS measures are derived from IFRS measures, the non-IFRS measures presented for certain periods may not be comparable to other periods as a result of the adoption of IFRS 9, IFRS 15 and IFRS 16 (see "*Impact of changes in accounting standards*") or other changes in accounting standards.

Underlying financial information

The Group presents certain financial performance measures on an underlying basis, in contrast to its results reported in accordance with IFRS (which the Group refers to as being on a "reported" basis). The Group believes that this provides an insight into its in-year performance as underlying results reflect the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which economically hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges, exceptional items and other one-off charges. It is also consistent with the way that financial performance is measured by management and reported to the Board in accordance with IFRS 8. See "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*" for a reconciliation between each underlying measure and the nearest IFRS measure.

See Note 2 to the Group 2019 Consolidated Financial Statements and Note 2 to the Group 2018 Consolidated Financial Statements for further information.

- **Underlying revenue.** The Group has significant cash flows relating to both revenue and costs denominated in currencies other than the functional currency of the relevant trading entity (most significantly US dollars, followed by euros). To manage its exposures to changes in the values of future foreign currency net cash flows, so as to maintain relatively stable long-term foreign exchange rates on settled transactions, the Group enters into derivative forward foreign currency transactions. In the Group's results reported in accordance with IFRS, these derivative contracts are not designated as hedging instruments. Underlying revenue is a measure used by management to reflect the Group's revenue at the achieved exchange rates during the relevant period. Where revenue is denominated in a currency other than the functional currency of the relevant trading entity (most significantly US dollars, followed by euros), to the extent such revenue is covered by these forward contracts, underlying revenue reflects the achieved exchange rates arising on settled derivative contracts rather than the exchange rates IFRS requires to be used and therefore reflects the effects of the Group's foreign exchange hedging after achieving a degree of natural cash flow hedge on such items.
- **Underlying gross profit.** Underlying gross profit is calculated based on revenue and costs of sales on the basis of the exchange rates achieved taking into account forward contracts as described under underlying revenue above.
- **Underlying commercial and administrative costs.** Underlying commercial and administrative costs include costs relating to non-productive and head office functions including legal, marketing, finance and human resources functions, adjusted for (loss)/gains arising on acquisitions and disposals and foreign exchange effects.
- **Underlying R&D costs.** Underlying R&D costs include the costs of developing new and improved technologies and products, reduced by costs capitalised in the period, and including the amortisation of certain costs capitalised in previous periods, adjusted for (loss)/gains arising on acquisitions and disposals and foreign exchange effects.
- **Underlying share of results of joint ventures and associates.** Underlying share of results of joint ventures and associates include the Group's share of the post-tax results of such joint ventures and associates, adjusted for (loss)/gains arising on acquisitions and disposals and foreign exchange effects.

- **Underlying operating profit/(loss).** Underlying operating profit/(loss) reflects operating profit/(loss) determined based on revenue and costs denominated in US dollars and euros on the basis of the exchange rates achieved taking into account the effects of achieving a natural cash flow hedge as described under underlying revenue above, similar adjustments in respect of commodity derivatives, consequential adjustments to reflect the impact of exchange rates on trading assets and liabilities, and long-term contracts, on a consistent basis, and items of a one-off nature. Underlying operating profit/(loss) is calculated as operating profit/(loss) reported in accordance with IFRS, adjusted for:
 - *Currency effects on the date of cash flow of a transaction:* where transactions are denominated in a currency other than the functional currency of the relevant trading entity (most significantly US dollars, followed by euros), underlying profit/(loss) before financing and taxation reflects the transactions, to the extent such transactions are covered by the Group's forward foreign exchange contracts, at the achieved exchange rates arising on settled derivative contracts rather than the exchange rates IFRS requires to be used. Underlying operating profit/(loss) also adjusts the foreign exchange on contract accounting and the revaluation of trading assets and liabilities to a consistent basis. This includes the impact of settled derivative contracts on trading transactions and unrealised fair value changes on derivative contracts held for trading;

and other items, including:

- *Exceptional programme charges/credits:* which include exceptional items in 2018, 2019 and 2020 in respect of the abnormal wastage costs paid to customers on the Trent 1000 (including insurance receipts in respect of the Trent 1000 in-service issues) and the impact of the decision by Airbus to cease A380 deliveries in 2021.
- *Exceptional restructuring charges:* which include charges in 2018, 2019 and 2020 in respect of the Group-wide restructuring programmes announced on 20 May 2020 and 14 June 2018, and costs relating to ongoing multi-year significant restructuring programmes including restructuring at Power Systems and in respect of Defence, reflecting actions to remove cost and improve operational efficiency.
- *Impairments and asset write-offs:* which includes impairments and write-offs in H1 2020 mainly related to programme intangible assets, property, plant and equipment and right of use assets, driven by COVID-19 and an impairment in 2019 relating to Bergen Engines AS, and an impairment charge and asset write offs following the announcement to sell the North America Civil Nuclear business within the Power Systems business segment. The impairment charges in 2018 related to Commercial Marine.
- *Effect of acquisition accounting:* which includes the amortisation of intangible assets arising on previous acquisitions.
- *Other adjustments:* which comprise other exceptional operating items, including: (i) in H1 2020, pension restructuring costs, and penalties paid on agreements with investigating bodies; (ii) in 2019, financial risk and revenue sharing arrangement ("RRSA") adjustments; and (iii) in 2018, the cost of equalisation of pension benefits between men and women, pension financing and RRSA adjustments.
- **Underlying net financing.** Underlying net financing is calculated as net financing costs reported in accordance with IFRS, adjusted for:
 - *Impact of settled derivative contracts on trading transactions;*
 - *Impact of unrealised fair value changes to derivative contracts held for trading,* except for those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit before taxation;
 - *Impact of unrealised fair value changes to derivative contracts held for financing,* including adjustments for realised (gains)/losses on settled derivative contracts including adjustments to reflect the losses in the same period as the related trading cash flows;
 - *Impact of unrealised net losses on closing future over-hedged position;*

- *Exceptional programme charges*: which includes the unwinding of discounts on exceptional provisions;
- *Impact of discount rate changes*: which includes discount rate changes relating to Trent 900 and Trent 1000 for the impact from the change in discount rates on contract losses recorded in exceptional items in prior years as a result of the fall in US bonds, which drives the calculation of the risk-free rate;
- *(Loss)/gains arising on acquisitions and disposals*: which includes costs of issuing ordinary shares relating to the acquisition of ITP Aero (in 2017);
- **Underlying profit/(loss) before tax.** Underlying profit/(loss) before tax is calculated by subtracting underlying net financing from underlying profit/(loss) before financing and taxation, which is calculated as underlying operating profit/(loss) adjusted for (loss)/gains arising on acquisitions and disposals: including the gain on disposal of Commercial Marine (in 2019), the gain on disposal of L'Orange (in 2018), and the gain on acquisition of ITP Aero (in 2017).
- **Underlying taxation.** Underlying taxation is a measure used by management to reflect taxation on a consistent basis with underlying profit/(loss) before tax. Underlying taxation is calculated as taxation reported in accordance with IFRS, adjusted for the tax effects of the adjustments included in profit/(loss) before tax at the appropriate rates of tax.
- **Underlying profit/(loss) for the period.** Underlying profit/(loss) for the period is calculated by subtracting underlying taxation from underlying profit/(loss) before tax.

In addition, the Group presents revenue from original equipment and aftermarket sales, which it sometimes refers to as “underlying original equipment revenue” and “underlying aftermarket revenue”, respectively, as well as underlying revenue and underlying operating profit for each of its segments, in each case using the same definitions at the Group level as described above.

Organic changes

Where stated, certain percentage change or absolute change figures in this document with respect to underlying measures are presented on an ‘organic change’ basis. Any such references to ‘organic changes’ are presented on a constant translational currency (constant currency) basis by applying the prior year’s average exchange rates to the translation of overseas entities in both the financial information presented for the prior year and for the current year and exclude changes in perimeter due to acquisitions and disposals. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for a reconciliation to financial information reported in accordance with IFRS.

Other non-IFRS measures

In addition to the measures discussed under “—*Non-IFRS measures —Underlying financial information*”, the Group’s management also uses a number of non-IFRS financial measures that are presented in this document and which should be considered alongside the Group’s results reported in accordance with IFRS:

- **Free cash flow.** Free cash flow is the movement in net funds/(debt) during the period excluding lease liabilities during the year, before movements arising from payments to shareholders, acquisitions and disposals, and exchange rate effects. It excludes the cash cost of the restructuring plan and SFO payments. The Group uses free cash flow as a measure of performance to measure the extent to which profits are converted into cash generation. The Group believes that this is a useful measure because its business requires significant investments and cash generation enables future investment, debt repayments and shareholder returns. Free cash flow is defined as the change in cash and cash equivalents as presented in the Group’s cash flow statement as adjusted for:
 - *returns to shareholders*;
 - *net cash flow from changes in borrowings and lease liabilities in 2019, and net cash flows from changes in borrowings and finance leases in 2018 and 2017*;
 - *increases in short-term investments*;

- *changes in group structure*: including in 2019 the acquisition of Siemens' eAircraft business, the disposal of Commercial Marine and RRPD, in 2018 the disposal of L'Orange, in 2017 the acquisition of ITP Aero, and in each year other acquisitions and disposals;
- *payments of financial penalties from agreements with investigating bodies*;
- *exceptional restructuring expenditure*;
- *other*: including certain other items such as a one-off pension fund contribution (in 2019) to facilitate the buy-out of certain liabilities;
- *capital element of lease repayments*; and
- *foreign exchange movements on net funds*.

See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for a reconciliation to reported cash flow, and Note 28 to the Group 2019 Consolidated Financial Statements and Note 26 to the Group 2018 Consolidated Financial Statements for further information.

- **Net funds/(debt).** The Group uses net funds/(debt) as a measure of performance in order to monitor the indebtedness of the Group. The Group believes that this is a useful measure because the level of its indebtedness has a direct impact on its credit rating. Net funds/(debt) is defined as the sum of cash and cash equivalents plus short-term investments, less non-current borrowings and other current borrowings, finance leases (2018 and earlier) and lease liabilities (2019), and including the fair value of swaps hedging fixed rate borrowings at period end. Net funds/(debt) is a measure derived from financial information reported in accordance with IFRS. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for a reconciliation to cash and cash equivalents.

Non-IFRS financial measures have certain limitations as analytical tools and you should not consider them in isolation or as substitutes for analysis of the Group's results as reported under IFRS.

Order backlog

Order backlog, also known as unrecognised revenue, is the amount of revenue on current contracts that is expected to be recognised in future periods. It refers to contracted consideration that is expected to be recognised as revenue when performance obligations are satisfied in the future. The parties to these contracts have approved the contract and the Group's customers do not have a unilateral enforceable right to terminate the contract without compensation. The Group excludes Civil Aerospace original equipment orders (for deliveries beyond the next 7 to 12 months) that its customers have placed where they retain a right to cancel. The value of the Group's order backlog may not be reflective of the revenue the Group will actually earn in future periods. See “*Selected Financial Information—Other Financial Data—Order backlog*”.

OVERVIEW

This overview highlights certain information contained in this Offering Memorandum. This overview does not contain all the information you should consider before purchasing the Notes. You should read this entire Offering Memorandum carefully, including the sections entitled “Forward-Looking Statements”, “Risk Factors”, “Description of the Group and Its Business” and “Operating and Financial Review” and the financial information and the notes thereto incorporated by reference into this Offering Memorandum.

Overview of the Company and the Issuer

The Company

Rolls-Royce Holdings plc is a public limited company domiciled in the United Kingdom and incorporated under the laws of England and Wales. The principal offices of Rolls-Royce Holdings plc are located at Kings Place, 90 York Way, London, N1 9FX, United Kingdom.

The Issuer

Rolls-Royce plc is a public limited company incorporated under the laws of England and Wales and is the principal operating subsidiary of the Company and is wholly owned by the Company. The principal offices of Rolls-Royce plc are located at Kings Place, 90 York Way, London, N1 9FX, United Kingdom.

Overview of our Business

The Group is a leading global power technology company. The Group designs, develops, manufactures and services integrated power systems for use in the air, on land and at sea. It does so by developing world-leading technology, producing highly efficient products and providing through-life services in each of the Group's markets. As at 30 June 2020, the Group had an installed base of approximately 187,000 power systems in service worldwide, including 5,663 large engines, 7,398 business aviation aero engines, approximately 16,000 defence engines and approximately 157,000 reciprocating engines across a number of land and sea markets. The Group's products are sold in over 150 countries and it employs about 51,700 people worldwide.

The Group operates through the following four core businesses, which comprise its operating segments:

- *Civil Aerospace*: the Civil Aerospace business is a major manufacturer of aero engines for the LCA, regional jet and business aviation markets. The business uses engineering expertise, in-depth knowledge and capabilities to provide through-life support solutions for its customers.
- *Power Systems*: the Power Systems business is a leading provider of high-speed and medium-speed reciprocating engines, and complete propulsion and power generation systems and service offerings. It serves the marine, defence, power generation and industrial markets and includes civil nuclear operations that supply safety-critical systems.
- *Defence*: the Defence business is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and helicopter applications. It has significant scale in the naval market and is the technical authority for through-life support of the nuclear powerplant for the Royal Navy's submarine fleet.
- *ITP Aero*: the ITP Aero business is a global leader in aero-engine subsystem design. Alongside the development, manufacturing, assembly and testing of engine components, it provides MRO services for regional airlines, business aviation, industrial and defence applications.

In 2019, the Civil Aerospace, Power Systems, Defence and ITP Aero businesses contributed 51%, 22%, 20% and 6%, respectively, of the underlying revenue generated by the Group's businesses.

The impact of the COVID-19 pandemic and the Group's response is set forth in detail below under “—*The Impact of the COVID-19 Pandemic*”.

The Group's Strengths

The Group's mission is to provide reliable, efficient and sustainable power for the world's critical applications across a range of end markets. Through an intensive focus on technology, the Group has developed leading positions in its chosen end markets across air, land and sea. These leadership positions have been built, in part, through incorporating cutting-edge technologies into complete power solutions that are maintained by the Group through the life of each product.

The Group believes that the following strengths will play an important role as the Group emerges from the effects of the COVID-19 pandemic and implements the longer-term strategy set out below.

The Group's products incorporate cutting-edge technologies. The Group has a track record of developing commercially successful new technology

The Group's products incorporate significant intellectual property, capturing cutting-edge technologies that it has developed over decades to provide safe, reliable and competitive power solutions to its customers across a variety of different applications. The Group has an intensive focus on technology, utilising its substantial in-house research capabilities as well as a broader network of 29 University Technology Centres, seven AMRCs, and 500 supply chain partners through its digital ecosystem. Over the past 15 years, the Group has invested approximately £11bn in aggregate in self-funded R&D. Additionally, the Group has a proven track record of efficiently funding its R&D spend through funding from external partners, including governments. From 2017 to 2019 (inclusive), total R&D spend has averaged 1.3 times the Group's own self-funded investment, as a result of this external collaboration. This significant R&D spend led to 830 new patents approved for filing during 2019.

A focus on advanced technology, engineering and IP content, coupled with the fact that most of the markets in which the Group operates are highly regulated, means that the Group generally benefits from high barriers to entry. In the Civil Aerospace and ITP Aero businesses, commercial aero engines are extremely complex mechanical engineering products, requiring significant expertise in aerodynamic, thermodynamic and materials technologies. Similarly, in the Defence business, the Group is currently one of only a handful of companies capable of designing, integrating and manufacturing complete military jet engines, mainly for the UK and US governments. The Group's submarines business also has unique capabilities in small-scale nuclear reactors. Finally, the Power Systems business has focused on demanding, high-end applications for its reciprocating engines, in areas such as mission-critical back-up power for hospitals and data centres, where start-up time and reliability are critical. The Power Systems business provides naval applications, and is the sole provider of certain technological solutions to a range of government customers.

The Group also has a long-established track record of developing commercially successful technology and products, which have enabled it to grow its share in key markets. For example, in widebody engines, the Group's unique three shaft engine architecture allows a number of efficiency benefits and has enabled the Trent family of engines to develop a widebody market share of 34% in 2019, up from 13% 20 years ago and 31% five years ago. The Group has launched four new engines since 2010 with its overall widebody market share increasing from 26% in 2010 to 38% as at 31 December 2019 (based on widebody aircraft in service) and deliveries having increased 2.8 times from 2010 to 2019.

The Group focuses on developing integrated power system solutions

The Group integrates individual enabling technologies, integrating these into complete systems and power solutions. This allows the Group's customers to work with a single partner to provide their entire power needs for the chosen application. In the Civil Aerospace and Defence businesses, the Group's capabilities cover end-to-end design, assembly and through-life support of complete gas turbine power solutions. The Power Systems business is increasingly moving into the provision of complete power generation systems such as power 'gensets' and integrated propulsion systems for the rail and marine markets.

Through this end-to-end design capability the Group is able to operate primarily as a systems integrator, allowing a focus on its core competencies and the customer's needs, while also accessing a wide and flexible pool of talent and resources from its global supply chain. In-house manufacturing is focused on critical components, creating a number of tangible benefits including lower capital intensity and a reduced investment burden.

The Group's products provide an attractive aftermarket opportunity

Many of the Group's products have significant aftermarket and maintenance requirements during their operating lives, which typically run for decades. The Group provides complete through-life maintenance and support for its power solutions, including extensive use of "power-by-the-hour" LTSAs, as well as more traditional time and materials business. In 2019, 52% of the Group's underlying revenue was generated from aftermarket services. As a result of significant past investments and market share gains, the Group has built a large installed base which provides the opportunity for a large, captive, visible, and long-term revenue and cash flow stream. As at 30 June 2020, the Group's installed base included:

- over 5,000 large engines in service, with an average age of less than 9 years compared to the average lifespan of approximately 25 years for a commercial aero engine;
- approximately 9,000 small and business aviation engines in service with an average age of 19 years for small civil jets and 13 years (compared to a typical lifespan of up to 40 years) for business jets;
- more economic aircraft types, with 77% being twin-engined aircraft with engines in service post-1990;
- over 16,000 defence engines, where product lifespans can exceed 50 years; and
- approximately 157,000 reciprocating engines in the Power Systems business. The typical aftermarket sales versus original sale price ratio for a commercial marine engine is approximately three times while an engine for mining applications is approximately five times.

The Group expects to continue to derive significant aftermarket revenue and value from this installed base.

The Group enjoys strong customer relationships

The Group's focus on building complete power solutions provides the basis for strong customer relationships, with the Group acting as a single, trusted power provider for its customers. These relationships have allowed the Group to continue winning business during a period of increased macro-economic uncertainty associated with the COVID-19 pandemic, including reaching an agreement worth approximately US\$115m with the US Navy in June 2020 to provide engines and components for a number of its ships. In addition, the LTSA model for through-life support further deepens these relationships, aligning the Group's incentives with those of the customer regarding product reliability, durability and availability and thereby promoting a shared partnership ethos in the Group's interactions with its customers. Through this approach, the Group has built strong, direct relationships across all of its businesses and with its customer base that spans over 150 countries. This includes significant aircraft manufacturers, such as Airbus, Boeing, Gulfstream and Lockheed Martin, and with more than 400 airlines and leasing customers, 160 armed forces, 70 naval forces and more than 5,000 power and nuclear customers. The strength of these relationships can also be seen through the Group's collaboration with key customers, including working with Singapore Airlines to develop an open data and collaboration platform for the airline industry (Yocova) and forming strategic alliances with key customers in the Power Systems business, including the recent alliance signed with Chinese heavy machinery company XCMG.

The Group has a successful track record of partnerships globally

The Group has a long track record of working with a range of external partners such as corporations, governments and universities in order to leverage outside expertise, market access and capital. The Civil Aerospace business has formed three material joint ventures. Two of these, Hong Kong Aero Engine Services Limited and Singapore Aero Engine Services Pte Limited, provide MRO services. The third, Alpha Partners Leasing Limited, is an engine leasing joint venture with GATX Corporation, a global leasing company. The Civil Aerospace business also makes extensive use of risk and revenue sharing partners ("RRSPs") to outsource components or complete modules to trusted suppliers, forming closer relationships and aligning the incentives for suppliers with the overall ambitions of the Group's programmes. The Defence business has been a major partner on key European defence collaborations including EuroJet (to produce the EJ200 for the Eurofighter) and Europrop International (to produce the TP400 for the A400M) and is now a key member of Team Tempest, the UK-led effort to develop sixth-generation fighter capability in partnership with Sweden and Italy. The Power Systems business has also significantly accelerated partnering efforts in recent years, including launching joint

ventures for engine assembly in both India and China, as well as signing partnering agreements to expand the business's capabilities, such as a gas genset supply agreement with 2G Energy AG and a hydrogen pilot project with Mercedes-Benz.

The Group's Strategy

The Group is undertaking a number of transformative actions in light of the COVID-19 pandemic and its adverse impact on the Group, to strengthen the Group's balance sheet, restructure the Group and shift its investment strategy in order to achieve a significantly reduced cost base with lower capital requirements. This is intended to restore the Group's financial performance, allow the Group to drive disciplined, broader growth and maximise value from the Group's existing capabilities, and position the Group to benefit from new technologies with a focus on more sustainable power.

The Board believes that the key end markets for its businesses remain fundamentally attractive and the strengths described above place the Group in a strong position to capitalise on this by implementing its strategy. The Group believes this will ultimately drive a significant improvement in FCF levels and attractive shareholder returns.

The Group's strategy is to:

- restore financial performance in order to improve returns and build a more resilient and more appropriate balance sheet;
- drive broader growth and maximise value from the Group's existing capabilities; and
- position the Group to benefit from new technologies, with a focus on sustainable power.

The Group believes that the key end markets for its businesses remain fundamentally attractive. Its Civil Aerospace business benefits from a sizeable and young installed base generating a significant long-term aftermarket annuity stream. The civil aerospace industry is expected to deliver long-term growth, albeit from a lower base, as GDP recovers and an increasing proportion of the world's population travels. The industry has experienced a number of shocks in the past – including the events of 11 September 2001 – and the global financial crisis and it has undergone a process of recovery each time.

While spending on the products manufactured and services provided by its Defence business may come under some pressure in the near term given fiscal spending priorities, the Group believes that governments will continue to invest in maintaining and upgrading their defence capabilities.

Finally, the range of end markets served by the Group's Power Systems business is expected to experience cyclical recovery, including strong structural growth in mission critical power supply. The Group further believes that over the longer term, the end markets in which the Group operates will see growing demand for cleaner and, more sustainable power, electrification and digitalisation. The Group will be well-positioned to play a crucial role in the world's transition towards a net-zero carbon economy.

The Group believes that the strengths described above and the execution of its strategy will allow the Group to capitalise on this, ultimately driving a significant improvement in FCF and delivering attractive shareholder returns.

Restoring financial performance in order to build a more resilient and more appropriate balance sheet

Given the current significant uncertainty, on 1 October 2020, the Group announced the Rights Issue and the intention to conduct a bond offering in US dollars, euros, and/or pound sterling to raise at least £1bn alongside the potential additional terms loans and the disposals that the Group is targeting which, as announced as part of its 2020 Half Year Results Announcement on 27 August 2020, include the ITP Aero business. The Group believes these measures will build a more resilient and more appropriate balance sheet, and provide additional liquidity headroom to navigate through the COVID-19 recovery.

The Group has launched a restructuring programme that will re-size the cost base and capital requirements of the Civil Aerospace business, as well as to increase cost efficiencies. This programme is intended to deliver

larger, permanent savings to complement the temporary mitigating actions delivered by the Group in 2020. The Group is also implementing cost optimisation programmes in the Power Systems business and across Group functions. These collective actions will result in increased operating leverage and leave the Group with a smaller central function and a re-sized Civil Aerospace business that is capable of delivering materially improved cash returns, despite a smaller end market.

The Group expects the restructuring programme to result in a proposed headcount reduction of at least 9,000 roles (subject, where applicable, to consultation) from a global workforce of approximately 52,000, with around 8,000 of these proposed headcount reductions in the Civil Aerospace business (approximately one third of the Civil Aerospace business pre-COVID-19 total). Headcount reductions of approximately 4,800 having taken place by the end of August, with at least 5,000 expected by the year-end. The Group anticipates that these actions will deliver total annual pre-tax cash savings of at least £1.3bn by the end of 2022, with proposed headcount reductions delivering approximately £700m of these total savings and the remainder being achieved through lower property costs, capital expenditure, and other indirect costs. These savings are expected to be fully realised in 2022. The restructuring is expected to result in total cash restructuring costs of approximately £800m, including severance and plant closure costs, phased as approximately £400m in 2020, £300m in 2021 and £100m in 2022.

The scope of this restructuring has already been determined, with specific implementation plans formed and subject to consultation currently underway with trade unions.

The Group intends to retain a strong set of capabilities and technologies following completion of the restructuring programme, allowing it to benefit from the strong fundamentals of its business.

The restructuring programme consists of five core elements as summarised below, the first three of which relate to the Civil Aerospace business, with the restructuring in the Civil Aerospace business being the largest in the Group's history.

Re-sizing the manufacturing footprint of the Civil Aerospace business

In response to the lower-demand environment in the civil aerospace market over the medium term, the Group is taking decisive action to significantly reduce the scale and, therefore, the fixed costs of the manufacturing footprint of its Civil Aerospace business. The Group also believes this provides an opportunity to deliver a significant change in the Civil Aerospace business's make-versus-buy strategy, focusing on high value manufacturing and increasing the use of outsourcing for lower value components. This strategic shift is expected to reduce the Civil Aerospace business's footprint, reduce capital intensity and increase the flexibility of the Group's cost base by introducing a higher proportion of variable costs.

The Group expects to undertake a major manufacturing footprint consolidation. This includes proposals to:

- consolidate widebody engine assembly and test from three global sites to one in Derby, UK;
- consolidate advanced Trent fan blade production from two global sites to one in Singapore;
- focus our advanced disc and turbine blade machining in the UK, including the consolidation of advanced turbine blade machining from two global facilities to one in Derby; and
- consolidate blisk production from three sites to two facilities in Derby and Oberursel, Germany.

These actions are expected to result in a proposed reduction in the Civil Aerospace business's headcount by approximately one third (around 8,000 roles) (subject, where applicable, to consultation).

Optimisation of MRO capabilities

Prior to the onset of the COVID-19 pandemic, the level of maintenance required to service the Group's installed base was expected to grow as the Group's engine fleet matures. However, given the impact of the COVID-19 pandemic, the Group has now reduced its expectations for the level of growth in maintenance demand in the coming years as a result of lower engine utilisation in 2020 and the early retirement of some engines. Total maintenance demand is now expected to be up to 10-15% lower in 2022 than previously expected.

The Group has, therefore, reappraised its plans for the expansion of its MRO network. The Group believes value in the aftermarket lies predominantly in the sale of high-value components, rather than in labour and capital-intensive service activity. The number of in-house MRO sites is expected to be reduced, while preserving the Group's core capability to carry out MRO activities as well as surge capacity for the network. To meet MRO demand in the coming years, the Group plans to utilise third-party MRO suppliers from its existing external network, strengthen existing joint ventures, and pursue additional joint ventures as necessary. These changes are expected to significantly reduce the capital resources required to support the Group's large installed base. For example, for the year ended 31 December 2019 the Group's capital expenditure on purchases of property, plant and equipment constituted 5% of its total underlying revenue, whereas for its peers the figure was closer to 3-4% (based on four European or US peers). Improving the Group's capital intensity is expected to help move the Group to a range closer to that of its peers in this area.

Capital-light spare engine strategy

The Group typically spends approximately £100m - £150m per year on spare engines, and has either full ownership or an interest in over 600 large and small engines. These engines are either leased directly to customers or are used to support customers who pay for spare engine coverage under the Group's LTSAs. This approach is considered to be sub-optimal due to the high capital burden and the asymmetry between variable flying hour revenue and the fixed costs associated with providing spare engines. The Group therefore intends to pursue third party partnerships to reduce capital intensity and increase the variability of spare engine costs to match the variable nature of LTSA revenue.

Further improvement in the Power Systems business

Although the Power Systems business benefits from the diversity of its end market exposure, the COVID-19 pandemic is expected to lead to lower revenue in 2020, before the business's end markets return to pre-COVID-19 levels by the end of 2021. As a response to changes in global demand, the Power Systems business is working actively to improve its manufacturing fixed cost base, optimising efficiency and balancing its global footprint and moving capacity from Europe and the US to India and China. These initiatives are expected to deliver in excess of £50m of annual pre-tax cash savings by the end of 2022. Going forward, the Power Systems Business expects to pursue disciplined investment in order to capture growth opportunities in key end markets. In addition, a review of the business's make-versus-buy strategy is currently in progress and has already resulted in actions to consolidate the business's manufacturing footprint. This is expected to improve capital cost efficiency and allow the business to realise significant operating leverage, whilst benefitting from growth in its services offering.

Reducing central functions

Under its existing restructuring programme, launched in 2018, the Group has made good progress in reducing the cost base of central functions. The Group expects to accelerate these efforts in response to COVID-19. By the end of 2021, central functions headcount is proposed to be reduced by approximately 1,000 full-time equivalent employees (subject, where applicable, to consultation) (representing approximately 20% - 25% of central functions headcount). In addition, the Group intends to expand and accelerate its existing plans to increase the outsourcing of certain activities.

Proposed headcount reductions and expected savings from the Group's restructuring announced on 20 May 2020

	2020	2021	2022	Total
Total headcount reduction (subject, where applicable, to consultation)	~5,000	~3,000	~1,000	>9,000
Expected implementation costs	~£400m	~£300m	~£100m	~£800m

Driving growth and maximising value from the Group's existing capabilities

In light of the effects of the COVID-19 pandemic, the Group is implementing a shift in its medium-term strategy. Given the expected market dynamics in each of its businesses, the Group intends to build a more balanced company, pursuing stronger medium-term opportunities. In its Civil Aerospace business, the Group's

priority is to drive higher cash returns from its existing installed base, while seeking new approaches to reduce the investment requirements for the development of its next generation gas turbine. The Group is also placing a greater relative focus on investment opportunities in its Defence and Power Systems businesses.

Enhancing value in the Civil Aerospace business: the Group continues to believe there will be a return to long-term structural growth in commercial aerospace, driven by rising GDP and growing propensity to travel in emerging economies. Despite this return to growth, due to the severe impact of the COVID-19 pandemic the medium-term market for the Civil Aerospace business will be significantly smaller than previously anticipated, with air traffic not expected to recover to 2019 levels until at least 2024, according to IATA, and new annual widebody engine deliveries expected to stabilise at a lower level of approximately 250. As a result, the Group's focus is on driving greater value from its existing market positions, as well as deploying more efficient engineering approaches and exploring longer-term options to reduce the upfront investment and risk associated with new engine programmes.

The Group believes that there is significant value embedded in its existing installed base of approximately 5,000 widebody engines and 9,000 small and business aviation engines as at 30 June 2020. The investment required to develop the programmes within this installed base is largely complete and the Group now has an important opportunity to realise that value. Due to recent market share gains, the Group's fleets of installed engines are among the youngest in their respective markets, providing some protection from the risk of premature aircraft retirements and driving higher utilisation than for older fleets.

The table below shows the total-in service percentage of aircraft by aircraft type, as at 22 August 2020, with the first four aircraft together representing approximately 80% of the Group's widebody fleet.

% aircraft in service by aircraft type		
Aircraft type	% in service	% in storage
Airbus A350	80	20
Boeing 787	76	24
Boeing 777	65	35
Airbus A330	53	47
Boeing 767	45	55
Airbus A340	30	70
Boeing 747	17	83
Airbus A380	8	92

As well as realising the value in its widebody installed base, the Group is also seeking to capitalise on its leadership position in the business aviation sector, where it enjoys a 31% market share by value. This sector offers the benefits of low EFH volatility combined with longer engine lives when compared to the widebody market segment. The Group has launched two new flagship business jet engines over the last five years and expects to continue to improve its market penetration with the launch of further new products. The table below shows the Group's business aviation installed base from 2010 to 2019.

Business aviation engine installed base	
Year	Number of engines (‘000s)
2019	7.2
2018	7.1
2017	6.8
2016	6.6
2015	6.4
2014	6.0
2013	5.6
2012	5.2
2011	5.0
2010	4.7

As investment in new product introductions continues to reduce in the coming years, the Group expects to instead focus on driving value through a number of initiatives:

- *Improving time-on-wing:* the Group has a track record of improving time-on-wing for key programmes, including the Trent 700, which now has an average time-on-wing of approximately 5,000 cycles. The Group intends to accelerate the process for its newer engines to reach ‘mature’ profitability margins, with a particular focus on the Trent XWB.
- *Enhance services offering:* the Group plans to capture greater value in the aftermarket through expanding its service offering to cover adjacent, non-Rolls-Royce manufactured components, as well as offering additional pay-per-use and digital services through a single platform (e.g. availability and operational management). As outlined earlier, the Group is also exploring a new spare engine strategy to reduce capital intensity.
- *Drive engineering efficiency gains:* the Group is expecting to accelerate efforts to improve engineering efficiency through technology roll-outs. These efforts have already started to deliver improvements as part of the Group's previous transformation programme by significantly reducing the engineering hours required to complete component design and definition tasks.

Finally, the Group believes that long-term growth in the demand for air travel, combined with the lack of viable technology replacements for gas turbines in LCA for the foreseeable future, means that there is value in progressing its UltraFan programme for next generation gas turbine technology. However, as a result of the COVID-19 pandemic, investment in UltraFan, a scalable jet engine design suitable for widebody or narrowbody aircraft intended to be the successor to the Group's class-leading Trent large jet engine family, will be re-phased to adapt to probable delays in new product introductions by major aircraft manufacturers.

The Group is looking at new ways of working in order to deliver more compelling returns for shareholders. For example, the Group is actively exploring new forms of industrial partnership on the UltraFan programme to optimise investment returns and risk (which the Group considers important to its continued investment in the UltraFan programme), in addition to a re-phasing of its investment to adapt to the likely delay in entry into service of new UltraFan-powered aircraft. More broadly, the Group has explored new and different forms of partnerships and collaborations with industry participants in respect of its wider Civil Aerospace business. The Group intend to continue exploring these to deliver a new approach to investment.

Delivering growth in the Power Systems business: in recent years, the Power Systems business has been pursuing a number of growth opportunities through a focus on R&D as well as bolt-on acquisitions, including its acquisition of a majority stake in Qinous GmbH in January 2020, to enhance its microgrids offering, and of Kinolt Group SA in July 2020, to strengthen its market position in the key growth market of back-up power generation. Many of the Power Systems business's markets are expected to experience only a short-term negative impact from the effects of the COVID-19 pandemic, with some market segments also seeing growth opportunities. As a result, the Group is increasing investment in the Power Systems business and focusing on five key opportunities within the Group's existing core capabilities, as set out below, as well as growth in new technologies such as hybrid systems:

- *China:* the Group believes that China represents an important and under-exploited opportunity for the Group. The Power Systems business's strategy in China includes a distinct regional leadership structure, localising production and sales, and targeting partnerships with strategic customers. This strategy has already started to deliver results, with growth of 40% in the underlying revenue earned by the business in China in 2019 and further growth of 25% expected by the Group in 2020.
- *Power generation:* the Group's diesel technology is particularly relevant to the mission critical back-up power market. The Group believes this market may deliver significant growth in the medium to long term, driven by rising demand from data centres, hospitals, and critical infrastructure. The Group also intends to continue increasing both its market share and its value capture in this market, supported by the recent Kinolt acquisition.
- *Gas offering:* the Group has recently expanded its gas portfolio and expects growth in this market to be driven by a rising focus on reducing carbon emissions. The Group expects to benefit from markets where power density, start-up speed, and upfront cost are less critical.
- *Services:* the Group is investing to enhance the Power Systems business's aftermarket offering, which had historically been a more reactive, spare parts sales focused business, but which has the potential to provide a broader range of services and support. This investment is expected to include: (i) an expansion in the use of LTSAs; (ii) increasing the connectivity of the business's installed base; and (iii) extending the service offering to include certain competitor engines.
- *Renewable Solutions:* finally, the Group intends to develop its integrated power systems solutions, with its focus shifting towards important developing technologies, including hybrid, hydrogen and electric power solutions as well as renewable energy solutions.

Significant medium-term opportunities in the Defence business: defence budgets are expected to be relatively stable in the Defence business's key markets of the UK and US. The Group has invested significantly in recent years in pursuing growth opportunities in the defence market, including in two major opportunities in the US market, being the B-52 re-engine programme and the future vertical lift programme, which the Group believes have the potential for over 650 engines and over 4,000 engines respectively, with a combined estimated lifetime value of approximately £7bn in revenue. In May 2020, the United States Air Force issued a request for proposals in respect of the B-52 re-engine programme. The proposals received are currently being reviewed by the DoD. The Group has agreed to work as the exclusive partner of Bell Textron Inc. on a proposal for the future vertical lift programme to be submitted to the DoD in 2021 and expects that any involvement in the future vertical lift programme would be supported by the substantial completed investment at its Indianapolis site. The Group believes that it is well positioned in respect of these opportunities, which would be important to the Defence business's future growth.

The Group expects this revised approach to capital allocation to result in an overall reduction in R&D and capital expenditure from approximately £1.9bn in 2019 to approximately £1.5bn in 2022. In the medium term, this investment strategy is expected to result in approximately 20% of capital and engineering expenditure directed towards the Group's Power Systems business (compared to 14% in 2017 to 2019), with around 20% focused on its Defence business (compared to 9% in 2017 to 2019).

Positioning to benefit from new technologies, with a focus on sustainable power

The Group believes that the breadth of its engineering expertise and its established access to a range of end markets mean that it is well positioned to play a crucial role in the world's transition to a net-zero carbon

economy. Once the Group's financial returns and a more appropriate balance sheet have been restored, the Group intends to accelerate this aspect of its strategy to deliver substantial growth by 2025.

In line with its strategy, the Group has successfully developed modular low-carbon power solutions and is building the capability to produce world-class, modular and scalable electric power and propulsion systems. As technological capability improves, the Group expects to be able to apply these electrical systems to a growing portion of its end markets in ground-based and marine applications first, then in small, lightweight airborne applications and, finally, in larger airborne applications in the long term, with the aim of developing larger hybrid aircraft in the 2030s. The Group plans to execute a technology roadmap in order to bring revenue-generating products to market quickly, while also building expertise and a track record to support electrification of more challenging aerospace applications over time.

In terms of smaller-scale applications, the Group is developing sub-megawatt products, including both hybrid-electric and all-electric systems, for five priority markets which could create new, disruptive business opportunities for the Group: (i) general aviation; (ii) commuter aircraft (propeller driven with up to 19 seats); (iii) urban air mobility through EVTOL; (iv) auxiliary power units; and (v) directed energy defence products. The Group has conducted a successful ground test of a hybrid M250 engine for the EVTOL market and expects to have brought to market both EVTOL and electric commuter aircraft products by 2025. The Group has also developed an all-electric aircraft through the ACCEL programme, which is designed to break the world electric air speed record. In the defence market, the Group has also successfully tested a hybrid power and thermal management system for a 100kW directed energy system developed by its LibertyWorks team in conjunction with Lockheed Martin. The acquisition of Siemens' eAircraft business in September 2019 expanded the Group's electrical capabilities, including the acquisition of more than 305 applicable electrical patents and 180 engineers with electrical skill-sets. The acquisition also expanded the Group's electrical product offering, as well as its potential routes to market for such products.

Simultaneously, the Group is working to enhance its megawatt scale capability, with a short-term focus on land-and-sea applications where markets are already electrifying. The Power Systems business is already generating revenue in this area, with substantial growth expected by 2025. The current principal route to market in this area is through the Power Systems business. The Group was first-to-market with a hybrid system for the rail sector, which delivers up to a 30% reduction in CO₂ emissions and has developed a proven microgrid product offering with one such unit in operation which powers the Power System business's Friedrichshafen production facility. Longer term, the Group intends to leverage the expertise gained through these megawatt scale land and sea applications, and the domain expertise gained through certifying sub-megawatt scale airborne systems, in order to ready the technologies for the eventual electrification of larger regional aircraft in the 2030s.

In addition to these electric power solutions, the Group is using its expertise in aviation and lower environmental impact power to explore the market for sustainable fuel development.

The Group is also exploring commercial applications for the production of low carbon power through development of SMRs, which leverage the Group's nuclear skills and knowledge from submarine applications. The Group's SMR consortium, comprised of Assystem, Atkins, BAM Nuttall, Laing O'Rourke, National Nuclear Laboratory, Nuclear AMRC, Jacobs and TWI, seeks to use nuclear skills and knowledge from submarine applications as the basis for off-site construction of smaller, modular components using advanced manufacturing techniques. This is expected to reduce the cost of nuclear power while also adding certainty to the build-time and energy cost. In 2019, the project received initial match funding of £18m from the UK Government to progress this new type of compact smart nuclear power station and it has the potential to receive a further £200m of follow-on funding from the UK Government matched by £200m from private sector investment. The Group believes that its expertise provides a favourable positioning in the SMR market, which is set to reduce the cost of low carbon grid power and provide an energy source for sustainable fuels such as hydrogen and sustainable aviation fuel, the latter being compatible with the Group's existing gas turbine technology and facilitating lower net carbon long haul flights. Such fuel technology may ultimately result in zero carbon flights where the fuels are produced using green power. The Group expects its first SMR to be connected to the national grid and to generate electricity by 2029 and estimates that the SMR market could ultimately be worth over £100bn in 2030 to 2050.

In line with the market more generally, the Group is increasing its focus on hybrid, hydrogen and electric power solutions as well as renewable energy solutions. Approximately 4% of the Group's investment spending related to low net carbon capabilities in 2019. This is expected to increase to approximately 20% by 2023.

The Impact of the COVID-19 Pandemic

The COVID-19 pandemic has resulted in wide-ranging measures being implemented across the world in an attempt to contain the spread of the virus. This has had a significant effect on the Group. The commercial aerospace sector in which our Civil Aerospace and ITP Aero businesses operate has been particularly affected:

- much of the global airline fleet has been temporarily grounded, resulting in a fall in global airline demand (as measured by revenue passenger kilometres ("RPKs")) by 94%, 91%, 87% and 80% in April, May, June and July 2020, respectively, compared to the same period in 2019 (according to IATA); and
- airlines have delayed or cancelled planned deliveries and orders for new aircraft, with Airbus and Boeing responding with significant reductions in production rates of the widebody aircraft for which we supply engines.

Our Civil Aerospace business derives the majority of its cash flow from payments based on the number of hours that our engines are powering our customers' aircraft. In 2019, our large engine fleet generated approximately £4.0bn of gross cash inflow. In addition, approximately £2.7bn of gross cash inflow was derived from the delivery of widebody engines. As a result of the COVID-19 pandemic, large engine deliveries and flying hours were both down approximately 50% in the first half of 2020. We saw a 37% reduction year-on-year in underlying revenue in our Civil Aerospace business in the six-month period ended 30 June 2020, with an underlying operating loss of £1.8bn. However, business jets and regional aircraft flying hours proved to be more resilient.

Reflecting the changed market outlook, we expect lower US dollar receipts over the next seven years and, as a result, we took the decision to reduce the size of our hedge book by US\$10.3bn. This resulted in a £1.46bn underlying finance charge in the first half of 2020. Additionally, as net purchasers of US dollars in this period, we were unable to utilise our hedge book over the six-month period to 30 June 2020.

The commercial aerospace activities of our ITP Aero business, which accounted for approximately 77% of its underlying revenues in 2019, have experienced a similar deterioration in end market demand.

Our Defence business has remained resilient. It experienced no material operational or financial disruption. Underlying revenue in the six-month period ended 30 June 2020 increased by 4% year-on-year with operating profit increasing by 19% on an organic basis and an order intake to underlying revenue ratio of 0.8x in that period.

Our Power Systems business has experienced varying levels of COVID-19-related disruption and utilisation, with our customers in industrial markets most affected by lower activity levels. Naval and governmental end market demand has remained robust. As a result, we saw an 11% reduction in underlying revenue with an underlying operating profit down by 79% and a 27% reduction year-on-year in orders in the six-month period ended 30 June 2020.

We have implemented a number of cost reduction actions to mitigate the effect of the COVID-19 pandemic, which are described below. However, these have not been sufficient to offset the total negative cash impact across the Group. In the six-month period ended 30 June 2020, we therefore reported an underlying operating loss in the period of £1.7bn and negative FCF of £2.8bn.

Recent trends in EFHs for the Civil Aerospace business have shown some early signs of recovery from their April low points, led by an increase in flight activity in China, Asia Pacific and the Middle East. However, uncertainty remains regarding the overall shape and timing of any recovery.

In our initial response to the COVID-19 outbreak, we rapidly implemented a number of proactive safety measures, in line with local and national guidelines, designed to ensure the safety and wellbeing of our people. At the same time, we are proud to have supported the communities in which we operate in a variety of ways, including forming an alliance of leading companies seeking to use data analytics to provide insights to support government decision making in response to the COVID-19 pandemic.

In relation to our financial position, we implemented a set of measures to conserve cash from March 2020, including:

- a reduction of capital expenditure on non-critical programmes by around one third compared to our initial expectations for 2020 and cancellation of capacity expansion projects that are no longer required;
- a significant reduction in spend on consulting, professional fees and subcontractors, together with a material reduction in travel expenditure;
- a review of R&D and engineering expenditure, which led to expenditure reductions reflecting a re-phasing of certain programmes, such as UltraFan, over a longer period of time; and
- an approximately 10% reduction in our global salary costs, largely achieved through temporary pay cuts for senior management, use of government furlough schemes and pay deferrals for staff.

These mitigating actions generated total cash savings of approximately £350m in the first half of 2020 and are expected to generate approximately £1bn in pre-tax cash savings in the full year ending 31 December 2020. In addition to these cash savings, we also moved quickly to reduce direct purchase volumes, as well as cancelling our final 2019 shareholder payment to preserve an additional £137m of cash in 2020. As announced in our 2020 Half Year Results Announcement, no interim shareholder payment was proposed for 2020.

Alongside this, we took early actions to bolster our liquidity position, allowing us time to conduct a more detailed review of the Group's capital structure and funding options. These actions included:

- entering into an additional £1.9bn Liquidity Facility with a maturity date in October 2021 (which is currently undrawn and will be cancelled on completion of the Rights Issue);
- issuing £300m of commercial paper through the UK Government's CCFF with a maturity date of 17 March 2021; and
- entering into a £2bn five year Term Loan Facility, which is supported by an 80% guarantee from UK Export Finance.

On 20 May 2020, we also announced a major restructuring of the Group to adjust to the new level of anticipated demand from customers in certain of our end markets as a result of the impact of the COVID-19 pandemic and to seek to restore our financial performance. This is described above under “*The Group's Strategy—Restoring financial performance in order to build a more resilient and more appropriate balance sheet*”.

Further Actions to Enhance Our Financial Resilience and Deliver a More Appropriate Balance Sheet to Position Us for the Post-COVID-19 Environment

In response to the impact of the COVID-19 pandemic, the Board has conducted a detailed review of the Group's outlook, balance sheet and funding options. As a result of this, we are undertaking decisive and transformative action to fundamentally restructure the Group's operations, materially reduce our cost base by at least £1.3bn by the end of 2022 and improve our financial position. We have conducted a detailed review of the Group's capital structure and funding options, considering a number of different scenarios and assessing their potential impact on the Group's financial position. This included consideration of a “reasonable worst case” scenario, further details of which are set out in “*Operating and Financial Review—Liquidity and Capital Resources—Working Capital*”.

Taking into account, in particular, this “reasonable worst case” scenario, alongside continued global and macro-economic uncertainty, we have determined that it is in the best interests of Shareholders to take the following actions:

- to deliver a number of potential disposals (which include the ITP Aero business) to raise gross proceeds of more than £2bn, as announced in our 2020 Half Year Results Announcement;

- to seek to raise additional capital by way of this Offering and the concurrent offering of the Eurobonds of in aggregate at least £1bn and approximately £2bn through the Rights Issue; and
- to agree commitments of £1bn under the Bridge Facility Mandate Letter, which is subject to conditions including completion of the Rights Issue (and the resulting cancellation of the Liquidity Facility) and agreement and execution of the Bridge Facility Agreement. This new term loan would have a final maturity date falling two years from entry into the Bridge Facility Agreement.

In addition, UK Export Finance has indicated that it would, in principle, support an extension of its 80% guarantee of our existing £2bn five year Term Loan Facility to support an increase in the loan amount of up to £1bn. This is subject to completion of the Rights Issue, agreement of terms with lenders and approval of those terms by UK Export Finance and HM Treasury, and there is therefore no guarantee that this increase will take place. As the aggregate gross proceeds from this Offering and the concurrent offering of the Eurobonds exceed the Guarantor's initial minimum target size of £1bn, the Guarantor may decide not to seek to utilise all of the potential £1bn increase in the Term Loan Facility.

By raising additional capital now, we will improve our liquidity headroom, reduce our level of balance sheet leverage while supporting disciplined execution and investment to ensure we maximise value from our existing capabilities. It will also allow us to deliver disposals in a manner that ensures value for our shareholders as we position the Group for the long term to benefit from new technologies focused on sustainable power. We believe these steps will provide the Group with improved financial resilience and a more appropriate balance sheet structure across 2021 in order to weather the macro-economic risks before we return to strong cash generation, which is expected in 2022.

We are also focused on ensuring we maintain a suitable capital structure for the markets in which we operate and believe that an investment grade credit rating is appropriate for our business. We have an ambition to return to a net cash position in the base case over the next few years and to secure an investment grade credit rating in the medium term.

Further details of our strategy and how we intend to implement it are set out under “—*The Group's Strategy*” above. We believe execution of this strategy will ultimately provide a strong platform to drive a significant improvement in FCF and deliver attractive shareholder returns. If we do not successfully execute the Rights Issue or one or more of the targeted disposals in the required timescales or this Offering and the concurrent offering of the Eurobonds or if the impact of the COVID-19 pandemic is more severe than we expect, even in a “reasonable worst case” scenario, we will need to consider whether it is appropriate to pursue certain of the alternative actions outlined under “—*Importance of Vote*” below.

Balance Sheet Measures, including Rights Issue

The Group delivered strong progress in 2019 and started 2020 with real momentum. As a result, the Board anticipated continued robust revenue and FCF growth comfortably in line with our guided target of £1bn FCF. The sudden and material effect of the COVID-19 pandemic has had a significant impact on the commercial aviation industry, particularly for long-haul travel. This has resulted in a sharp deterioration in the financial performance of our Civil Aerospace business and, to a much lesser extent, in our Power Systems business. We have outlined and quantified the nature and scale of this impact in our Group Consolidated Interim Financial Statements and in this document.

In response we have undertaken, or are committed to undertake, a number of significant actions to mitigate the financial and operating impact of COVID-19 in order to strengthen our financial position and seek to ensure we can deliver improved future returns. These actions included raising £4.2bn of additional liquidity, together with significant operational and capacity restructuring of our Civil Aerospace business and central functions. The intent is to return the Group to positive cash flow during the second half of 2021. We aim to create a business with a substantially lower cost base and capital requirement to reflect the forecast market demand over the next few years. We expect Power Systems to recover relatively quickly when the impact of COVID-19 eases. Our Defence business has proven very resilient through this year and we expect it will continue to be so.

Based on our latest market forecast, we are targeting reaching at least £750 million FCF (excluding disposals) as early as 2022. We believe the longer-term prospects remain strong, with further growth in cash flow and returns thereafter. We will, therefore, accelerate the transition of our Civil Aerospace business from a period of heavy investment to a phase of higher returns.

As a company, we have invested heavily over the last decade in developing new engine programmes to build a significant market share and installed base in the civil aviation widebody and business jet sectors. We do not expect a similar level of investment as we move forward, given the majority of the development of our current programmes is complete, and our relatively young installed base of engines will provide strong, annuity-style cash flows over the long term, reflecting the long in-service lives of our products and our services-oriented business model. At the same time, we see good growth opportunities in both our Defence and Power Systems businesses. We expect significantly improved margins and returns on capital in the medium to long term. We believe that, over the longer-term, our capabilities leave us well positioned to capitalise on the transition to sustainable, low-carbon power.

The pathway to strong cash flow, however, remains dependent on the timing and shape of recovery from COVID-19, notably with regards to long-haul air travel. There is significant uncertainty about the precise pace of this recovery and the possibility of delays remains a risk and the Board therefore considers it prudent to prioritise resilience and flexibility.

As a consequence, on 1 October 2020, we announced our intention to raise gross proceeds of approximately £2bn from the Rights Issue. The Rights Issue requires the approval of the Company's shareholders and the Company has convened a general meeting (the "**General Meeting**") to approve the resolutions required to implement the Rights Issue for 27 October 2020.

If approved, the Company expects the Rights Issue will complete on or around 12 November 2020. The Rights Issue is underwritten by BNP Paribas, Citigroup Global Markets Limited, Goldman Sachs International, HSBC Bank plc, Jefferies International Limited, Morgan Stanley & Co. International plc, Crédit Agricole Corporate and Investment Bank, Banco Santander, S.A., SMBC Nikko Capital Markets Limited and Société Générale (the "**Rights Issue Underwriters**"), subject to customary conditions. If the General Meeting approves the Rights Issue and the rights are admitted to trading on the London Stock Exchange, such underwriting will become unconditional.

In addition to the Rights Issue and this Offering, concurrent with this Offering, we have priced an offering of senior unsecured notes denominated in euros and/or pound sterling (collectively, the "**Eurobonds**") pursuant to a separate offering memorandum. See "*Capitalization*". The offering of the Eurobonds is expected to settle on or around the settlement date for this Offering and is subject to customary closing conditions. This Offering of Notes is not contingent upon the completion of the concurrent offering of the Eurobonds and the offering of the Eurobonds is not contingent upon the completion of this Offering.

We intend to use the proceeds from the Rights Issue, together with those from this Offering and the concurrent offering of the Eurobonds, to enhance our financial resilience to deliver a more appropriate balance sheet in order to position us for the post-COVID-19 environment by:

- improving our liquidity headroom as we continue to navigate an uncertain outlook for the commercial aviation industry; proceeds will also address upcoming debt and RCF maturities, including the required cancellation of the Liquidity Facility (which is currently undrawn) on completion of the Rights Issue and through repayment of the Group's debt facilities with near term maturities, which the Company currently plans to do as they fall due (principally: (i) the US\$500m 2.375% notes due 14 October 2020; (ii) the €750m 2.125% notes due 18 June 2021; and (iii) the £300m Commercial Paper issued under the CCFF due 17 March 2021);
- delivering a step-change in the leverage profile of the Group post-COVID-19 and continued improvement with the targeted return of FCF of at least £750m (excluding disposals) as early as 2022; and

- supporting disciplined execution and investment, enabling the Group to maximise value from its existing capabilities and deliver disposals in a manner that ensures enhanced value for our Shareholders.

We believe these combined actions will provide us with improved capital resilience and liquidity headroom to navigate even through a “reasonable worst case” scenario. Together with the targeted disposal proceeds of at least £2bn that we announced in our 2020 Half Year Results Announcement, these steps should result in a more resilient and more appropriate balance sheet for the Group. We remain committed to returning to a net cash position in the base case over the next few years and an ambition to secure an investment grade credit rating in the medium term. We believe we have a clear responsibility to all our stakeholders to return the Group to strength with a sustainable and right-sized cost base, aimed at ensuring the Group’s future growth and success.

Importance of Vote

We consider it in the best interests of the Company to conduct the Rights Issue, which require shareholder approval. In the Rights Issue prospectus dated 1 October 2020 we have stated the following:

“The Rights Issue is conditional and dependent upon, amongst other things, the Ordinary Resolution being passed at the General Meeting.

As explained [elsewhere in this Offering Memorandum], we have been significantly impacted by the COVID-19 pandemic, in particular in our Civil Aerospace business. While we have taken significant measures to re-structure our Group, reduce our costs and bolster our liquidity, we believe that the Rights Issue is essential to ensure we have the financial flexibility we need to support us in an operating environment that continues to be uncertain and to implement our strategy.

We have conducted a detailed review of the Group’s capital structure and funding options. This involved considering both a “base case” scenario (which reflects our current expectations of future trading) and a “reasonable worst case” scenario (which envisages a “stress” or “downside” situation and is further explained in [the section “*Operating and Financial Review—Liquidity and Capital Resources—Working Capital*” of this Offering Memorandum]). We assessed the potential impact of these scenarios on the Group’s future financial position both on the basis of the Rights Issue taking place and if it does not proceed. We have not taken into account any proceeds from targeted disposals referred to in the 2020 Half Year Results Announcement [or this Offering and the concurrent offering of the Eurobonds] or any potential new Bridge Facility or increase in the size of the Term Loan Facility when modelling these scenarios.

These projections indicate that on a “reasonable worst case” scenario, if the Ordinary Resolution is not passed and the Rights Issue does not proceed, we would need to draw down the Liquidity Facility (in addition to the Term Loan Facility) and/or take one or more of the alternative actions set out below in order to maintain sufficient levels of liquidity to fund our operations and continue to implement our strategy.

If drawn down, the Liquidity Facility would become repayable in October 2021 (and any equity or debt capital markets issuances before that time would trigger a requirement to prepay and cancel the Liquidity Facility by the amount of such issuance). We believe that we would need to take various alternative actions in the period up to October 2021 to ensure that we have sufficient liquidity to fund our operations and repay maturing debt facilities following repayment of the Liquidity Facility on a “reasonable worst case” scenario. Even on a “base case” scenario, if the Rights Issue does not proceed, we may decide that it is desirable to take some of these alternative actions in order to maintain prudent amounts of liquidity headroom. Alternative actions could include:

- *Seeking additional debt funding or extending the Liquidity Facility.* The consequent leverage profile may result in a further downgrade of the Group’s credit rating, increased borrowing costs and more restrictive financial and non-financial covenants being included in any future debt funding arrangements. It may also impact our customers’ and suppliers’ perceptions as to our creditworthiness. It is also possible that the Group may not be able to source such additional debt financing, as highlighted by the fact that the commitments in relation to the Bridge Facility and the indications of support, in principle, from UK Export Finance in relation to an increase in the Term Loan Facility are both conditional upon completion of the Rights Issue.
- *Seeking alternative equity funding.* Equity funding on a smaller scale than is envisaged by the Rights Issue could be sought through a placing of Ordinary Shares, to support other actions taken by the

Company. This would not be undertaken on a fully pre-emptive basis so would result in the dilution of existing Shareholders' interests in the Company and may not, on its own, raise the amount we believe is needed to restore the financial strength of the Group.

- *Pursuing further disposals.* We may need to undertake further disposals in addition to those potential disposals currently contemplated in the 2020 Half Year Results Announcement. This could include full or partial disposals or partnerships in respect of strategically significant parts of our business.
- *Significant reduction in future investments.* Given we have already undertaken measures to reduce or re-phase such expenditure, additional measures would likely involve further scaling back of R&D and engineering programmes and significant additional restriction of capital expenditure. This would potentially limit our ability to progress key product developments, invest in new technologies and take advantage of key identified growth opportunities (in particular in our Power Systems and Defence businesses).
- *Further major restructuring of our workforce and footprint.* As a result of the above actions, there would be further reductions to our employee headcount and closure of additional sites, in addition to those currently underway as part of our ongoing restructuring.

We would, of course, look to take such alternative actions that are appropriate in the circumstances and in the best interests of the Group and we believe that, if required, it is likely that we could implement one or more of such alternative actions at the required scale and within the necessary timeframe to mitigate the effects of not proceeding with the Rights Issue. However, if such actions cannot be carried out in that timeframe, our "reasonable worst case" projections indicate that the Group would not have sufficient liquidity to continue to fund its operations following October 2021 if the Rights Issue does not proceed.

Importantly, taking these actions would also detrimentally impact our ability to implement the strategy for the Group that we have set out in this document and deliver the expected growth in shareholder returns. The Rights Issue is ultimately designed to support us in implementing our strategy of restoring financial performance, driving disciplined, broader growth and maximising value from our existing capabilities, and positioning the Group to benefit from new technologies (with a focus on sustainable power). We believe this will ultimately drive a significant improvement in FCF levels and attractive shareholder returns."

Current Trading

There has been no material change in our outlook for the Group since the 2020 Half Year Results Announcement published on 27 August 2020. As expected, revenue and underlying operating profit for the first eight months of the year were materially below the prior year, significantly affected by the COVID-19 pandemic and related one-off charges taken in the first half of 2020. Consistent with the trends in the first half, our Civil Aerospace and ITP Aero businesses continued to see the largest impact from COVID-19; performance in our Defence business remained resilient; and our Power Systems business experienced disruption in some end markets.

The Group continued to experience free cash outflows in July and August, albeit at a reduced level compared to the first half of 2020 and modestly better than our expectations. This reflected the ongoing management actions to control costs, large engine EFHs slightly ahead of our "base case" forecast and some cash flow timing benefits. We continue to expect a free cash outflow of approximately £4bn in the full year ending 31 December 2020, although uncertainties remain around the timing and shape of the recovery in large engine EFHs and the timing of large engine deliveries.

Financial Outlook

As outlined above, the COVID-19 pandemic has had, and continues to have, a significant effect on the Group's business. Despite rapid actions to conserve cash, the impact of COVID-19 on EFHs and other aftermarket activity in the Civil Aerospace business, the decision to cease invoice discounting (£1.1bn at FY19), and a large working capital outflow due to lower activity levels together means that it anticipates a free cash outflow during 2020 of approximately £4bn (with underlying revenue of approximately 25-30% lower than 2019). The majority of this impact occurred in the first half of 2020, with a free cash outflow of £2.8bn. A

reduced free cash outflow of approximately £1bn is expected in the second half of 2020, including as a result of a modest recovery in EFHs expected in the fourth quarter of 2020. In 2021 the Group expects a significantly reduced free cash outflow relative to 2020, as EFHs continue to recover and savings from its restructuring programme are realised, with positive cash flows targeted during the second half of 2021.

Over the long term the Board believes that the key markets for the Group's businesses remain fundamentally attractive. In the Civil Aerospace business, the Group expects aftermarket activity to gradually recover, with large engine EFHs reaching 2019 levels by 2024-2025, though remaining below the pre-COVID-19 pandemic trajectory. New widebody engine deliveries are expected to remain lower at around 250 per year in 2020 to 2022, but still to exceed retirements of 100 to 150 per year during the same period (excluding the one-off impact of retirements in 2020, particularly on older Trent 900 and Trent 500 fleets). In a "reasonable worst case" scenario we expect approximately 130 widebody engine deliveries in 2022. The widebody engine delivery outlook also drives a large portion of the ITP Aero business's expected demand, though the Group expects some growth in its non-widebody activities in narrowbody and business aviation. In the Power Systems business, the Group anticipates a recovery in most key end markets by 2021, with particularly strong growth in mission critical power generation and strong regional growth from China. The key markets for the Group's Defence business, the US and UK, are expected to remain resilient.

Supported by this recovery of the Group's end markets, as well as the decisive actions the Group has taken to significantly restructure its cost base, the Group is targeting a return to annual FCF of at least £750m (excluding disposals) as early as 2022. This expected improvement of approximately £4.75bn in FCF performance from 2020 to 2022 (excluding disposals) is expected to be driven by four main factors:

- *No repetition of one-off working capital outflows:* comprising the approximately £1.1bn of one-off cessation of invoice-factoring and approximately £1bn expected working capital movement driven by lower activity levels described above.
- *Recovery in our Civil Aerospace business:* the Group expects widebody EFHs to decline by approximately 55% in 2020, compared to 2019, recovering to approximately 70% of 2019 levels in 2021 and approximately 90% of 2019 levels by 2022, before returning to GDP-driven growth. This anticipated recovery to 90% of 2019 levels in 2022 is expected to drive more than £1.5bn of additional cash receipts (as compared to 2020), with further growth expected thereafter. Additionally, an FCF improvement of over £300m is expected to be driven predominantly by improved time and materials revenues and lower widebody OE losses. We also expect an ongoing reduction of Trent 1000 in-service costs of approximately £200m to £300m. In a "reasonable worst case" scenario, the Group expects widebody EFHs to recover to approximately 80% of 2019 levels by 2022.
- *Operating cost reduction:* the Group's restructuring is expected to deliver Group-wide pre-tax cash savings of at least £1.3bn per annum by the end of 2022 (including remaining savings of approximately £100m from the restructuring programme announced in 2018). This will replace and expand the expected £1bn of temporary cost saving measures implemented by the Group during 2020. The reorganisation is focused on reducing the fixed cost footprint in the Civil Aerospace business, with a significant reduction in headcount and facility footprint to match the new demand outlook. This lower fixed cost base supports a continued reduction in the average losses on widebody OE engines.
- *Power Systems business recovery and Defence business resilience:* improved performance in the Power Systems business and continued resilience in the Defence business, along with receipts from the ITP Aero business, is expected to drive approximately £200m of additional FCF compared to 2020. The Group expects this improvement in the Power Systems business to be driven by a cyclical recovery in key end markets as well as the Group's continued strategy to boost growth through a focus on power generation systems, aftermarket growth, and market-share gains in China.

The targeted return of FCF of at least £750m (excluding disposals) as early as 2022 includes the expected impact of temporary outflows in that year, including approximately £300m of foreign exchange cash costs relating to the Group's decision to reduce the size of its hedge book.

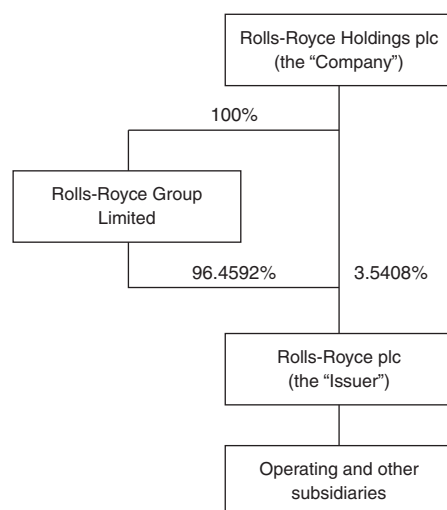
Having restored financial performance as early as 2022, the Group believes that, thereafter, it has an attractive medium-term outlook. The Group expects its target FCF of at least £750m (excluding disposals)

described above to continue to grow in the future, as the temporary negative outflows relating to the reduction in the Group's hedge book and ongoing Trent 1000 costs unwind over time. This expected FCF growth after 2022 is expected to lead to continued deleveraging. In addition, the Group's underlying businesses are expected to deliver growth. The Civil Aerospace business is expected to return to a growing installed base and the Group expects to deliver additional growth in FCF as it improves cash returns from its current installed base. The Group's Defence business is expected to continue delivering resilient performance, with important growth opportunities over time as major projects are awarded. The Power Systems business is expected to return to 2019 underlying revenue levels by 2022 and to deliver growth in excess of GDP given the tailwinds the business benefits from, including low carbon opportunities over time.

For further details about the Group's financial performance see "*Operating and Financial Review*". This document, including in particular those sections above, contains forward-looking statements. See "*Forward-Looking Statements*".

Group Structure

The diagram below presents the Company, the Issuer and the intermediate holding company Rolls-Royce Group Limited. Until 2003, Rolls-Royce plc was both the Group's main trading company and the entity listed on the London Stock Exchange. In June 2003, shareholders approved the creation of a new holding company, Rolls-Royce Group Limited (which became Rolls-Royce Group plc). In May 2011, shareholders of Rolls-Royce Group plc approved the creation of a further new holding company, Rolls-Royce Holdings plc. Rolls-Royce Holdings plc became the ultimate holding company of the Rolls-Royce Group with its shares being admitted to the Official List and admitted to trading on the London Stock Exchange's main market for listed securities.



Holders of the Notes (each a "**Holder**" and collectively, the "**Holders**") will have a direct claim based on the Notes and the Guarantee against the Issuer and the Company, respectively, but will not have a direct claim based on the Notes and the Guarantee against any Group operating subsidiaries.

Recent Developments

Substantially Concurrent Eurobond Offering

In addition to the Rights Issue and this Offering, concurrent with this Offering, we have priced an offering of senior unsecured notes denominated in euros and/or pound sterling pursuant to a separate offering memorandum. See "*Capitalization*". The offering of the Eurobonds is expected to settle on or around the settlement date for this Offering and is subject to customary closing conditions. This Offering of Notes is not contingent upon the completion of the concurrent offering of the Eurobonds and the offering of the Eurobonds is not contingent upon the completion of this Offering.

Term Loan Facility Agreement and Bridge Facility Mandate Letter

On 20 August 2020, Rolls-Royce plc entered into the Term Loan Facility Agreement between, among others, Rolls-Royce plc (as borrower), the Company (as guarantor), a syndicate of banks (as original lenders) and J.P. Morgan Europe Limited (as agent). This facility is currently undrawn. See “*Description of Certain Other Indebtedness—Financing arrangements—Term Loan Facility*” for further information.

In addition, UK Export Finance has indicated that it would, in principle, support an extension of its 80% guarantee of the Group’s existing £2bn five year Term Loan Facility to support an increase in the loan amount of up to £1bn. This is subject to completion of the Rights Issue, agreement of terms with lenders and approval of those terms by UK Export Finance and HM Treasury, and there is therefore no guarantee that this increase will take place. As the aggregate gross proceeds from this Offering and the concurrent offering of the Eurobonds exceed the Guarantor’s initial minimum target size of £1bn, the Guarantor may decide not to seek to utilise all of the potential £1bn increase in the Term Loan Facility.

On 29 September 2020, Rolls-Royce plc entered into the Bridge Facility Mandate Letter with BNP Paribas, London Branch, Citibank, N.A., London Branch and HSBC Bank plc. The Bridge Facility Mandate Letter provides that, subject to the execution of the Bridge Facility Agreement, completion of the Rights Issue and cancellation in full of the commitments under the £1.9bn Liquidity Facility, the Bridge Underwriters will make available to Rolls-Royce plc, as borrower, a pound sterling term loan facility of up to £1bn, with a maturity date 24 months from the date of the Bridge Facility Agreement. See “*Description of Certain Other Indebtedness—Financing arrangements—Bridge Facility Mandate Letter*” for further information.

Current Trading

See “—*Current Trading*” above for further information.

OVERVIEW OF THE NOTES

Certain of the terms and conditions described below are subject to important limitations and exceptions. The “Description of the Notes and the Guarantee” section of this Offering Memorandum contains a more detailed description of the terms and conditions of the Notes and the Guarantee. Capitalized terms used but not defined in this section have the meanings set forth in “Description of the Notes and the Guarantee”.

Issuer	Rolls-Royce plc (the “ Issuer ”).
Guarantor	Rolls-Royce Holdings plc (the “ Company ”).
Notes	US\$1,000 million aggregate principal amount of 5.750% Notes due 2027 (the “ Notes ”).
	The Notes will be issued under an indenture to be dated as of the Issue Date (as defined below) (the “ Indenture ”), among the Issuer, the Company, Citibank, N.A., London Branch, as trustee (the “ Trustee ”), registrar (the “ Registrar ”) transfer agent (the “ Transfer Agent ”) and London paying agent (the “ Paying Agent ”), and treated as a single series of debt securities thereunder.
Guarantee	The obligations of the Issuer under the Notes will be unconditionally and irrevocably guaranteed by the Company pursuant to the Indenture.
Offering	The Notes are being offered in the United States to QIBs in reliance on Rule 144A under the Securities Act and outside the United States to persons other than U.S. persons in reliance upon Regulation S under the Securities Act.
Issue Price	100%, plus accrued interest, if any, from 21 October 2020.
Issue Date	21 October 2020.
Maturity Date	15 October 2027.
Interest	The Notes will bear interest from the Issue Date at the rate of 5.750% per annum, payable semi-annually.
Interest Payment Dates	15 April and 15 October of each year, commencing 15 April 2021 until the Maturity Date.
Record Dates	1 April and 1 October of each year (whether or not a business day in New York City) immediately preceding each Interest Payment Date.
Status of the Notes and the Guarantee ..	<p>The Notes will constitute direct, unsubordinated and unsecured senior obligations of the Issuer and rank <i>pari passu</i> and ratably without any preference or priority among themselves and equally with all other existing and future unsecured and unsubordinated obligations of the Issuer from time to time outstanding (subject to certain obligations required to be preferred by law).</p> <p>The Guarantee will constitute a direct, unsubordinated and unsecured senior obligation of the Guarantor and rank equally with all other existing and future unsecured and unsubordinated obligations of the Guarantor from time to time outstanding (subject to certain obligations required to be preferred by law).</p>

Use of Proceeds	<p>The net proceeds of this Offering, together with those of the Rights Issue and the concurrent offering of the Eurobonds, will be used to enhance our financial resilience to deliver a more appropriate balance sheet in order to position us for the post-COVID-19 environment by:</p> <p>(A) improving our liquidity headroom as we continue to navigate an uncertain outlook for the commercial aviation industry; proceeds will also address upcoming debt and RCF maturities as they fall due, including the required cancellation of the Liquidity Facility (which is currently undrawn) on completion of the Rights Issue and through repayment of the Group's debt facilities with near term maturities, which the Company currently plans to do as they fall due (principally: (i) the US\$500m 2.375% notes due 14 October 2020; (ii) the €750m 2.125% notes due 18 June 2021; and (iii) the £300m Commercial Paper issued under the CCFF due 17 March 2021); (B) delivering a step-change in the net leverage profile of the Group post-COVID-19 and continued improvement with the targeted return of FCF of at least £750m (excluding disposals) as early as 2022; and (C) supporting disciplined execution and investment, enabling the Group to maximise value from its existing capabilities and deliver disposals in a manner that ensures enhanced value for our Shareholders.</p>
Covenants	<p>The Issuer and the Company have agreed to certain covenants, subject to certain exceptions, with respect to the Notes and the Guarantee, including limitations on:</p> <ul style="list-style-type: none"> • liens; and • mergers and consolidations.
Events of Default	<p>The occurrence or existence of certain conditions or events, including the acceleration of certain other indebtedness of the Issuer or the Company, may accelerate the Issuer's and the Company's obligations under the Notes and the related Guarantee.</p>
Optional Redemption	<p>The Issuer may redeem the Notes in whole or in part, at its option:</p> <p>(1) at any time prior to 15 July 2027 (three months prior to the Maturity Date), from time to time, at a redemption price equal to the greater of (i) 100% of the principal amount of the Notes to be redeemed, and (ii) as determined by the Independent Investment Banker, the sum of the present values of the applicable Remaining Scheduled Payments discounted to the date fixed for redemption (the "Redemption Date") on a semi-annual basis (assuming a 360 day year consisting of twelve 30 day months) at the Treasury Rate plus 50 basis points, together with any accrued and unpaid interest (including Additional Amounts, if any) on the principal amount of the Notes to be redeemed to (but excluding) the Redemption Date; and</p> <p>(2) at any time on or after 15 July 2027 (three months prior to the Maturity Date), at a redemption price equal to 100% of the principal amount of the Notes being redeemed plus accrued and unpaid interest (including Additional Amounts, if any) on the principal amount being redeemed to (but excluding) the date of redemption.</p>
Optional Tax Redemption	<p>The Notes are redeemable by the Issuer, in whole but not in part, at the Issuer's option at any time prior to their maturity at 100% of the principal amount of the Notes to be redeemed plus accrued and</p>

unpaid interest to the applicable Redemption Date and any Additional Amounts payable with respect thereto if due to a Change in Tax Law (i) the Issuer or, if applicable, the Guarantor, respectively, has, or would, become obligated to pay any Additional Amounts with respect to such Notes; (ii) in the case of the Guarantor, (A) the Guarantor would be unable, for reasons outside its control, to procure payment by the Issuer or (B) the procuring of such payment by the Issuer would be subject to withholding taxes imposed by a Relevant Jurisdiction; and (iii) the obligation to pay such Additional Amounts described in (i) cannot otherwise be avoided by the Issuer or, if applicable, the Guarantor taking reasonable measures available to it. In such case, the Issuer may redeem the Notes in whole, but not in part, upon not less than 10 nor more than 60 days' notice.

Change of Control Repurchase Event . . . If a Change of Control Repurchase Event occurs in respect of the Notes, the Issuer or the Company will be required to make an offer to each Holder of the Notes to repurchase all or any part of the Notes of such Holders at a repurchase price in cash equal to 101% of the aggregate principal amount of the Notes repurchased, plus any accrued and unpaid interest on the Notes repurchased to, but not including, the date of repurchase.

“Change of Control Repurchase Event” means the occurrence of both a Change of Control and a Rating Event (each as defined in *“Description of the Notes and the Guarantee—Change of Control Repurchase Event”*).

Denomination, Form and Registration of Notes The Notes will initially be represented by global notes in registered form (the **“Global Notes”**), one or more of which will be issued in respect of any Notes (**“Rule 144A Notes”**) offered and sold to persons who are QIBs (the **“Rule 144A Global Notes”**) or which will be issued in respect of any Notes (**“Regulation S Notes”**) offered and sold to persons who are non-U.S. persons in reliance on Regulation S (the **“Regulation S Global Notes”**). The Notes will be issued only in denominations of US\$200,000 and integral multiples of US\$1,000 in excess thereof. DTC will act as depositary for the Notes. Except in limited circumstances, Global Notes will not be exchangeable for certificated notes.

Escrow of Proceeds; Special Mandatory Redemption Pending the consummation of the Rights Issue, the Issuer will, concurrently with the issuance of the Notes on the Issue Date, deposit or cause to be deposited the gross proceeds of the Offering into an escrow account pursuant to the terms of an escrow agreement. The escrow account will be controlled by the Escrow Agent. If the Rights Issue is not consummated or any of the other limited conditions to the release of the escrowed proceeds have not been satisfied or waived on or prior to the date that is 60 calendar days after the Issue Date, the Notes will be subject to a special mandatory redemption. The special mandatory redemption price will be equal to 100% of the aggregate initial issue price of the Notes plus accrued and unpaid interest from, but excluding, the Issue Date to, and including, such special mandatory redemption date and additional amounts, if any. See *“Description of the Notes and the Guarantee—Escrow of Proceeds; Special Mandatory Redemption”*.

The concurrent offering of the Eurobonds described at “*Overview—Recent Developments—Substantially Concurrent Eurobond Offering*” will be subject to substantially the same escrow arrangement.

In the event that the special mandatory redemption price payable upon such special mandatory redemption exceeds the amount of the escrowed property, the Issuer will be required to fund the accrued and unpaid interest, and Additional Amounts, if any, owing to the holders of the Notes.

Further Issues	The Issuer may, from time to time, without notice to or the consent of the Holders of the Notes, issue additional series of debt securities under the Indenture as permitted therein. It may also from time to time, without notice to or the consent of the Holders of the Notes, “reopen” the Notes and issue additional notes having identical terms and conditions as the Notes, except for the issue date, issue price, payment of interest accruing prior to the issue date of such additional notes and/or except for the first payment of interest following the issue date of such additional notes, so that the additional notes may be consolidated and form a single series of notes with the Notes (a “ Further Issue ”); <i>provided</i> that any additional notes that are not fungible with the outstanding Notes for U.S. federal income tax purposes will not have the same CUSIP, ISIN or other identifying number as the outstanding Notes.
Trustee, Registrar , Transfer Agent and Paying Agent	Citibank, N.A., London Branch, as Trustee, Registrar, Transfer Agent and Paying Agent.
Settlement	The Issuer expects to deliver the Notes on or about 21 October 2020 (the “ Settlement Date ”).
Transfer Restrictions	Neither the Notes nor the Guarantee have been or will be registered under the Securities Act and each is subject to certain restrictions on resale and transfer. For more information, please see “ <i>Transfer Restrictions</i> ”.
Governing Law	The Indenture, the Notes and the Guarantee will be governed by and construed in accordance with the laws of the State of New York.
Ratings	<p>The Issuer has credit ratings of BB+ (outlook negative) by Fitch, Ba3 (outlook negative) by Moody’s and BB- (outlook CreditWatch negative) by S&P.</p> <p>It is expected that the Notes will be rated BB+ by Fitch, Ba3 by Moody’s, and BB- by S&P, subject to confirmation on the Settlement Date.</p> <p>A credit rating is not a recommendation to buy or hold securities and may be subject to revisions, suspension or withdrawal at any time by the assigning rating agency.</p>
Listing	Application is expected to be made for Admission of the Notes to listing on the Official List of the FCA and to trading on the London Stock Exchange’s Regulated Market, a regulated market for purposes of MIFID II.
Risk Factors	We urge you to consider carefully the risks described in “ <i>Risk Factors</i> ” beginning on page 45 of this Offering Memorandum before making an investment decision.

SUMMARY FINANCIAL INFORMATION

The following tables set forth summary historical consolidated financial data for the Group, as well as certain other financial and operating data. The summary historical consolidated financial data set forth below as of and for the years ended 31 December 2019, 2018 and 2017 has been derived from the audited Group Consolidated Financial Statements and the summary historical consolidated financial data set forth below as of and for the six months ended 30 June 2020 and 2019 has been derived from the unaudited Group Consolidated Interim Financial Statements. This summary financial information is not necessarily representative of our results of operations for any future period or our financial condition at any future date.

This summary historical financial information and other data should be read in conjunction with and are qualified in their entirety by reference to the financial statements, including the notes thereto, incorporated by reference into in this Offering Memorandum and the information set forth under “*Use of Proceeds*”, “*Capitalization*”, “*Selected Financial Information*”, “*Operating and Financial Review*”, “*Presentation of Financial, Market and Other Information*” and “*Description of the Group and Its Business*”, each of which is included elsewhere in this Offering Memorandum.

Reported Consolidated Financial Information

Group Consolidated Income Statement Data

Group Consolidated Income Statement Data	Six months ended 30 June		Year ended 31 December		
	2020 (unaudited)	2019 (unaudited)	2019 (audited) (£m)	2018 (audited)	2017 ⁽¹⁾ (restated) (unaudited)
Revenue	5,824	7,883	16,587	15,729	14,747
Cost of sales ⁽²⁾	(6,511)	(6,882)	(15,645)	(14,531)	(12,325)
Gross (loss)/profit	(687)	1,001	942	1,198	2,422
Commercial and administrative costs ⁽²⁾	(443)	(614)	(1,128)	(1,595)	(1,222)
Research and development costs ⁽²⁾	(712)	(349)	(770)	(768)	(843)
Share of results of joint ventures and associates ...	73	45	104	4	9
Operating (loss)/profit	(1,769)	83	(852)	(1,161)	366
Gain arising on acquisition and disposal of businesses ⁽³⁾	2	118	139	358	785
(Loss)/profit before financing and taxation	(1,767)	201	(713)	(803)	(1,151)
Financing income	24	73	252	271	2,911
Financing costs ⁽⁴⁾	(3,624)	(1,065)	(430)	(2,415)	(164)
Net financing costs	(3,600)	(992)	(178)	(2,144)	2,747
Loss before taxation⁽⁵⁾	(5,367)	(791)	(891)	(2,947)	3,898
Taxation	(11)	(116)	(420)	554	(515)
Loss for the period	(5,378)	(907)	(1,311)	(2,393)	3,383
Attributable to:					
Ordinary shareholders	(5,380)	(909)	(1,315)	(2,401)	3,382
Non-controlling interests	2	2	4	8	1
Loss for the period	(5,378)	(907)	(1,311)	(2,393)	3,383
Other comprehensive (expense)/income	683	(708)	(1,013)	182	290
Total comprehensive expense for the period ...	(4,695)	(1,615)	(2,324)	(2,211)	3,673

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.

- (2) In H1 2020, included within cost of sales, commercial and administrative costs and research and development costs are exceptional items relating to impairments and write-offs, as a result of the financial and operational impact of COVID-19. Impairments and provisions related to the Group-wide restructuring activity announced on 20 May 2020 to reshape and resize the Group have also been recorded. In H1 2019, exceptional charges related to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs were included within cost of sales and commercial and administrative costs. In 2019, included within cost of sales and commercial and administrative costs are exceptional charges relating to the Civil Aerospace business's programmes, impairment charges and restructuring costs. In 2018, included within revenue, cost of sales and commercial and administrative costs are exceptional charges relating to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs. See "*Operating and Financial Review—Key factors affecting the Group's results of operations—Macro-economic environment, COVID-19 pandemic and impact on the relevant industries, particularly aviation, and measures to bolster liquidity*" and "*Operating and Financial Review—Key factors affecting the Group's results of operations—Product in-service performance*" as well as Note 2 of the Group Consolidated Interim Financial Statements, Note 2 of the Group 2019 Consolidated Financial Statements and Note 2 of the Group 2018 Consolidated Financial Statements for further information.
- (3) Trigno Energy Srl was disposed of on 7 May 2020, the Knowledge Management business was disposed of on 3 February 2020, the North America Civil Nuclear business was disposed of on 31 January 2020 and Qinous GmbH was acquired on 15 January 2020. Commercial Marine was disposed of on 1 April 2019 and RRPD was disposed of on 15 April 2019. L'Orange was disposed of on 1 June 2018. ITP Aero was acquired on 19 December 2017. See "*Operating and Financial Review—Key factors affecting the Group's results of operations—Acquisitions and divestments*", Note 21 of the Group Consolidated Interim Financial Statements, Note 27 of the Group 2019 Consolidated Financial Statements and Note 25 of the Group 2018 Consolidated Financial Statements for further information. See also "*Presentation of Financial, Market and Other Information—Presentation of financial information—Results restatements and effects of acquisitions and disposals on financial reporting—ITP Aero*".
- (4) Included within financing costs in H1 2020 and H1 2019 are fair value changes on derivative contracts. For further details see Note 2 and Note 4 of the Group Consolidated Interim Financial Statements.
- (5) (Loss)/profit before taxation disclosed on a statutory and underlying basis. For further details see Note 2 of the Group Consolidated Interim Financial Statements.

Group Consolidated Balance Sheet

Group Consolidated Balance Sheet	As at 30 June		As at 31 December		
	2020 (unaudited)	2019 (unaudited)	2019 (audited) (£m)	2018 (audited)	2017 ⁽¹⁾ (restated) (unaudited)
ASSETS					
Intangible assets	5,329	5,437	5,442	5,295	5,565
Property, plant and equipment	4,612	4,768	4,803	4,929	4,658
Right-of-use assets ⁽²⁾	1,540	2,104	2,009	—	—
Investments – joint ventures and associates	421	405	402	412	375
Investments - other	25	16	14	22	26
Other financial assets	463	437	467	343	610
Deferred tax assets	2,062	2,149	1,887	2,092	1,451
Post-retirement scheme surpluses	1,736	1,143	1,170	1,944	2,125
Non-current assets	16,188	16,459	16,194	15,037	14,810
Inventories	4,818	4,711	4,320	4,287	3,803
Trade receivables and other assets	6,066	4,764	5,065	4,690	4,353
Contract assets	1,610	2,217	2,095	2,057	1,945
Taxation recoverable	38	27	39	34	17
Other financial assets	181	33	86	22	36
Short-term investments	—	—	6	6	3
Cash and cash equivalents	4,239	4,208	4,443	4,974	2,953
Current assets	16,952	15,960	16,054	16,070	13,110
Assets held for sale	—	—	18	750	7
TOTAL ASSETS	33,140	32,419	32,266	31,857	27,927
LIABILITIES					
Borrowings and lease liabilities	(1,776)	(464)	(775)	(858)	(82)
Other financial liabilities	(640)	(918)	(493)	(647)	(601)
Trade payables and other liabilities	(8,299)	(8,216)	(8,450)	(8,292)	(6,885)
Contract liabilities	(4,538)	(4,248)	(4,228)	(3,794)	(4,104)
Current tax liabilities	(265)	(178)	(172)	(138)	(209)
Provisions for liabilities and charges	(1,124)	(919)	(858)	(1,122)	(550)
Current liabilities	(16,642)	(14,943)	(14,976)	(14,851)	(12,431)
Borrowings and lease liabilities	(6,988)	(6,065)	(4,910)	(3,804)	(3,406)
Other financial liabilities	(5,465)	(3,636)	(3,094)	(3,542)	(2,461)
Trade payables and other liabilities	(1,793)	(1,964)	(2,071)	(1,940)	(2,238)
Contract liabilities	(6,566)	(5,515)	(6,612)	(5,336)	(3,607)
Deferred tax liabilities	(785)	(661)	(618)	(962)	(1,071)
Provisions for liabilities and charges	(1,529)	(756)	(1,946)	(795)	(393)
Post-retirement scheme deficits	(1,496)	(1,478)	(1,378)	(1,303)	(1,387)
Non-current liabilities	(24,622)	(20,075)	(20,629)	(17,682)	(14,563)
Liabilities associated with assets held for sale	—	—	(15)	(376)	—
TOTAL LIABILITIES	(41,264)	(35,018)	(35,620)	(32,909)	(26,994)
NET LIABILITIES	(8,124)	(2,599)	(3,354)	(1,052)	933
EQUITY					
Called-up share capital	386	383	386	379	368
Share premium account	319	269	319	268	195
Capital redemption reserve	161	160	159	161	162
Cash flow hedging reserve	(124)	(105)	(96)	(106)	(112)
Merger reserve	650	567	650	406	3
Translation reserve	846	731	397	809	657
Accumulated losses	(10,386)	(4,628)	(5,191)	(2,991)	(343)
Equity attributable to ordinary shareholders	(8,148)	(2,623)	(3,376)	(1,074)	930
Non-controlling interests	24	24	22	22	3
TOTAL EQUITY	(8,124)	(2,599)	(3,354)	(1,052)	933

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) IFRS 16 has been adopted from 1 January 2019 and under the transitional arrangements the Group has adopted IFRS 16 on a modified retrospective basis. There has been no restatement of 2018 comparatives. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 16*” and Notes 1 and 29 to the Group 2019 Consolidated Financial Statements.

Group Consolidated Cash Flow Data

	For the six months ended 30 June		For the year ended 31 December		
	2020 (unaudited)	2019 (unaudited)	2019 (audited) (£m)	2018 (audited)	2017 ⁽¹⁾ (restated) (unaudited)
Reconciliation of cash flows from operating activities					
Net cash (outflow)/inflow from operating activities ⁽²⁾⁽³⁾	(2,319)	243	2,297	2,226	1,512
Net cash outflow from investing activities	(428)	(166)	(918)	(975)	(1,154)
Net cash inflow/(outflow) from financing activities	2,387	(840)	(1,792)	702	(127)
Change in cash and cash equivalents	(360)	(763)	(413)	1,953	231
Cash and cash equivalents at beginning of period	4,435	4,952	4,952	2,933	2,771
Exchange gains/(losses) on cash and cash equivalents	156	(7)	(104)	66	(69)
Cash and cash equivalents at end of period⁽⁴⁾ ...	4,231	4,182	4,435	4,952	2,933

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. This does not affect cash flows, but has changed the reconciliation of operating profit to net cash inflow from operating activities. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) Includes an impairment of £58m in respect of Bergen Engines in 2019 and £160m in respect of Commercial Marine in 2018.
- (3) Includes Trent 1000 insurance receipts of £173m in 2019.
- (4) The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement.

Underlying Consolidated Financial Information

The Group's results are presented on a reported and underlying basis. The Group believes this provides an insight into its in-year performance as underlying results reflect the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which economically hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges and exceptional items. The adjustments between the underlying income statement and the reported income statement are set out in more detail in Note 2 to the Group 2019 Consolidated Financial Statements and Note 2 to the Group 2018 Consolidated Financial Statements incorporated by reference herein and in "Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Underlying financial information". See "Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information" for a reconciliation between each underlying measure and the nearest IFRS measure.

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
Underlying revenue	5,561	7,353	15,450	15,067	13,671
Underlying gross (loss)/profit	(967)	1,030	2,387	2,450	2,246
Underlying operating (loss)/profit	(1,669)	203	808	616	306
Underlying net financing	(1,575)	(110)	(225)	(150)	(107)
Underlying (loss)/profit before tax	(3,244)	93	583	466	199
Underlying taxation	(82)	(121)	(277)	(161)	(155)
Underlying (loss)/profit for the period	(3,326)	(28)	306	305	44

The table below sets out the financial performance of each business of the Group's as well as the Group's non-core business for the years ended 31 December 2019 and 2018 and the six months ended 30 June 2020 and 2019.

	Underlying Revenue ⁽¹⁾					Underlying Operating (Loss)/Profit ⁽¹⁾				
	Six months ended 30 June		Year ended 31 December			Six months ended 30 June		Year ended 31 December		
	2020	2019	2019	2018 ⁽²⁾	2017 ⁽³⁾	2020	2019	2019	2018 ⁽²⁾	2017 ⁽³⁾
	(unaudited)	(unaudited)	(audited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(audited)	(unaudited)	(unaudited)
Civil Aerospace	2,527	4,018	8,107	7,378	6,598	(1,826)	(21)	44	(162)	(343)
Power Systems	1,250	1,408	3,545	3,434	3,008	22	104	357	315	261
Defence	1,553	1,494	3,250	3,124	3,180	210	173	415	427	454
ITP Aero	346	457	936	779	—	10	32	111	67	—
Non-core business ⁽⁴⁾	91	285	189	781	—	(6)	(8)	(2)	(15)	(55)
Corporate and inter- segment	(206)	(309)	(577)	(429)	885	(79)	(77)	(117)	(16)	(11)
Total Group	5,561	7,353	15,450	15,067	13,671	(1,669)	203	808	616	306

(1) The measures in this table are non-IFRS measures. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures" for the definitions and "Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information" for reconciliations to the closest IFRS measures.

(2) The underlying results for Power Systems for 31 December 2018 have been restated to reclassify the North America Civil Nuclear business as non-core, as presented for 2019.

(3) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15" and Note 27 to the Group 2018 Consolidated Financial Statements.

- (4) In 2019, non-core business included the Commercial Marine business which was disposed of on 1 April 2019, RRPD which was disposed of on 15 April 2019, L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including former Energy businesses not included in the disposal to Siemens in 2014. In 2018, non-core business included the Commercial Marine business, RRPD and L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including Retained Energy. Non-core business shown here for 31 December 2018 have been restated to include the North America Civil Nuclear business. In 2017, non-core business included Commercial Marine (held for sale from 1 June 2018), L'Orange and other smaller non-core businesses.

Other Financial Data

	As at or for the six months ended 30 June		As at or for the year ended 31 December		
	2020 (unaudited)	2019 (unaudited)	2019 (audited)	2018 (audited)	2017 ⁽¹⁾ (restated) (unaudited)
(£m except as indicated)					
Net (debt)/funds ⁽²⁾	(4,069)	(1,937)	(993)	611	(305)
Free cash flow ⁽²⁾	(2,801)	(429)	873	568	259
Capital expenditure as a proportion of underlying revenue ⁽²⁾⁽³⁾	4.0%	4.7%	4.8%	6.0%	5.3%
Self-funded R&D as a proportion of underlying revenue ⁽²⁾⁽⁴⁾	8.2%	7.0%	7.2%	7.6%	7.6%

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) This measures in this table are non-IFRS measures. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures” for the definitions and “Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information” for reconciliations to the closest IFRS measures.
- (3) Defined as cash purchases of property, plant and equipment in the period relative to underlying revenue. This measure demonstrates the balance between essential investments in infrastructure and delivering short-term shareholder returns.
- (4) Defined as in-year self-funded cash expenditure on R&D before any capitalisation or amortisation relative to underlying revenue. This measure demonstrates the balance between long-term strategic investments and delivering short-term shareholder returns.

Order backlog

Order backlog, also known as unrecognised revenue, is the amount of revenue on current contracts that is expected to be recognised in future periods. It refers to contracted consideration that is expected to be recognised as revenue when performance obligations are satisfied in the future. The parties to these contracts have approved the contract and the Group's customers do not have a unilateral enforceable right to terminate the contract without compensation. The Group excludes Civil Aerospace OE orders (for deliveries beyond the next 7 to 12 months) that its customers have placed where they retain a right to cancel. The value of the Group's order backlog may not be reflective of the revenue the Group will actually earn in future periods.

The Group's order backlog as at 31 December 2019 and 2018 was £60.9bn and £63.1bn, respectively. The table below shows the Group's order backlog by segment for the periods indicated;

Order backlog (in £bn)	As at 31 December					
	2019			2018		
	Within five years	After five years	Total	Within five years	After five years	Total
Civil Aerospace	22.9	25.6	48.5	22.1	30.2	52.3
Power Systems	2.6	0.3	2.9	2.9	0.2	3.1
Defence	7.7	0.9	8.6	6.3	0.5	6.8
ITP Aero	0.7	0.2	0.9	0.8	0.1	0.9
Total	33.9	27.0	60.9	32.1	31.0	63.1

Within the 0 to 5 years category, contracted revenue in Defence will largely be recognised in the next three years, contracted revenue in Power Systems will be recognised over the next two years as it is a short-cycle business, and contracted revenue in ITP Aero (where internal Group revenue has been eliminated) will be evenly spread over the next five years. See “*Description of the Group and Its Business—Order backlog*”.

Although the position will have changed since year-end 2019, the Group only presents order backlog on an annual basis and does not collect the relevant data throughout the year.

RISK FACTORS

Prospective investors should read and carefully consider the following risk factors and other information in this Offering Memorandum before deciding to purchase the Notes, including “Operating and Financial Review” and “Description of the Group and Its Business.”

The summary factors below contain a description of material risks that may affect the Company’s or the Issuer’s ability to fulfil their obligations to investors and those that are material to the securities to be admitted to trading in order for the investor to assess the market risk associated with the Notes and/or that may affect the Company’s ability to achieve its business strategy, projections, targets and objectives. There may be additional risks that we currently consider immaterial or of which we are currently unaware, and any of these risks could have the effects set forth below.

The following risk factors address risks that the Directors have identified as material to investors in investing in the Notes, but we do not represent that the statements below regarding the risks of holding the Notes are exhaustive. This is not an exhaustive list or explanation of all risks which investors may face when investing in the Notes and should be used as guidance only. The order in which the following risk factors are presented does not necessarily reflect the likelihood of their occurrence or the relative magnitude of their potential material adverse effect on our business, results of operations, financial condition and/or prospects. This Offering Memorandum also contains forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors described below and elsewhere in this Offering Memorandum.

Unless otherwise specified by reference to the Issuer or the Company, the risks apply in the context of the Group and are also applicable to each of the Company or the Issuer.

Risks Relating to the Group’s Business

The Group may operate with a level of leverage that could adversely affect its business, financial condition and results of operations and its financial position or prospects may be materially adversely affected if the Ordinary Resolution is not passed and the Rights Issue does not proceed

The Group has been significantly impacted by the COVID-19 pandemic and government actions in response, in particular in its Civil Aerospace business. See “—*The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any “second wave” of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*” below. While the Group has implemented and is continuing to implement significant measures to restructure its business, reduce its costs and bolster its liquidity, the Group believes that the Rights Issue is essential to ensure that it has the financial flexibility required to support an operating environment that continues to be uncertain, as well as to implement its revised strategy. The Rights Issue is conditional and dependent upon, amongst other things, the Ordinary Resolution being passed at the General Meeting.

The Group has conducted a detailed review of its capital structure and funding options. This involved considering a number of different scenarios and assessing their potential impact on the Group’s financial position. These projections indicate that on a “reasonable worst case” scenario, if the Rights Issue does not proceed, the Group would likely need to draw down on the Liquidity Facility (in addition to the Term Loan Facility) in order to maintain sufficient levels of liquidity to fund its operations and continue to implement its strategy. In these circumstances, funds drawn under the Liquidity Facility would be repayable in October 2021 and the Group would need to take various alternative actions in the period up to such date to ensure that it has sufficient liquidity to continue to fund its operations and replace maturing debt facilities. Even on a “base case” scenario (which reflects current expectations of future trading), if the Rights Issue does not proceed, the Group may decide that it is desirable to take some of these alternative actions in order to maintain prudent liquidity headroom. Alternative actions are likely to include: (i) seeking to incur additional debt funding and/or extending the Liquidity Facility; (ii) seeking to secure alternative equity funding; (iii) undertaking further disposals to raise additional proceeds in excess of what is currently contemplated; and/or (iv) implementing significant further down-sizing and/or cost reduction measures across the Group. The Board would look to take all such alternative actions that it considers are appropriate in the circumstances and in the best interests of the Group and believes that, if required, it is likely that the Group could implement one or more of such alternative actions at the

required scale and within the necessary timeframe to mitigate the effects of not proceeding with the Rights Issue. However, if the Rights Issue does not proceed and sufficient such actions cannot be carried out within that timeframe, the Group's "reasonable worst case" projections indicate that the Group would not have sufficient liquidity to continue to fund its operations following October 2021.

Additional debt funding and/or extending the Liquidity Facility

In the event that the Group decides to seek additional debt funding and/or to extend the Liquidity Facility in order to continue to fund its operations and replace maturing debt, the Group's resulting leverage profile and the implications for its credit rating may have a negative effect on the terms that the Group is required to accept in order to incur such funding. In these circumstances, the Group may be unable to incur any further debt funding, including any extensions of the Liquidity Facility, either on favourable commercial terms or at all (as highlighted by the fact that the commitments in relation to the Bridge Facility and the indication from UK Export Finance that it would, in principle, support an increase in the Term Loan Facility are both conditional upon completion of the Rights Issue). In particular, any such debt funding could be subject to higher borrowing costs and/or more onerous terms imposed as a result of the risks associated with the Group's leverage profile. Higher borrowing costs may constitute a significant financial burden on the Group, while more onerous terms may unduly restrict the Group's ability to continue to operate its business or pursue its future long-term strategy as intended. See "*—The Group's ability to refinance its debt, raise additional debt financing and/or to continue to transact with its customers and suppliers could be constrained by the effects of an actual or potential credit rating downgrade, as well as prevailing market conditions*" below.

Alternative equity funding

In the event that the Rights Issue does not proceed, the Group may choose to seek alternative equity funding, which is likely to be on a smaller scale than that envisaged by the Rights Issue, such that no further Shareholder approval would be required. Any such additional equity funding is likely to take the form of a placing of Ordinary Shares that would not be made on a fully pre-emptive basis and so would result in the dilution of the shareholdings of existing Shareholders. There is no guarantee that the Group will be able to secure additional equity funding in the amount sought or at all and any failure to do so could result in the Group lacking sufficient capital to implement its strategy or fund its operations following October 2021.

Further disposals

If the Group chooses to pursue further disposals of, in whole or in part, one or more parts of its business and/or of significant assets, it may not be possible for the Group to implement such disposals in a timely manner or at a price that the Directors consider to be reflective of the full value of such parts of its business and/or assets. Even if acceptable terms were to be agreed, any disposal may fail to realise the expected proceeds in a timely manner or at all. Disposals of significant parts of the Group's business in such circumstances could also cause significant operational disruption, reduce the Group's customer base and/or reduce the benefits that it derives from economies of scale. Moreover, if successful, such disposals could restrict the Group's future growth opportunities and could have a material adverse effect on the Group's ability to maintain or improve its competitive positioning and/or implement its strategy. See "*—The Group may seek to divest parts of its business or to expand through acquisitions, entering strategic alliances or forming joint ventures with third parties, any of which may be unsuccessful, may impose additional financial obligations on the Group and/or may divert management's attention*" below.

Down-sizing and/or cost reductions

If the Group seeks to implement further significant down-sizing and/or cost reduction measures (such as further reduction in future investment or additional major restructuring), it may be unable to achieve the required cost savings from such measures either in a timely manner or at all. This risk may be exacerbated by the fact that any down-sizing and/or cost reduction actions would likely involve the expansion and/or acceleration of the significant reorganisation of the Group and re-phasing of investment that is already in progress, requiring the Group to make significant further savings in addition to those already identified. Any further down-sizing and/or cost reduction measures implemented in this context would involve additional implementation costs and could have a material adverse effect on the Group's business operations, while significant reductions in capital expenditure, including research and development ("R&D") expenditure, could also harm the Group's future prospects and its ability to maintain or improve its competitive positioning and/or implement its strategy. See

“—The Group may be unable to realise the expected benefits from announced or future reorganisations, including the reorganisation announced on 20 May 2020” below.

The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any “second wave” of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known

In December 2019, an outbreak of a new strain of coronavirus, COVID-19, was identified in Wuhan, China, and has since spread globally. On 11 March 2020, the World Health Organisation confirmed that its spread and severity had escalated to the level of a pandemic.

The COVID-19 pandemic has resulted in governments globally implementing numerous measures in an attempt to contain the spread of COVID-19, such as travel bans and restrictions, curfews, quarantines, lock downs and the mandatory closure of certain businesses. Such measures have affected markets from which the Group derives significant revenue, including, in particular, the US, the UK and China, which in 2019 accounted for 28%, 11% and 10%, respectively, of the Group’s revenue split by the location in which each ultimate operator of the Group’s products was based.

Impact on the demand for air travel

The COVID-19 pandemic and government restrictions implemented in response have resulted in a significant reduction in commercial aircraft flying hours. For example, the Group experienced a severe reduction in the total engine flying hours (“**EFHs**”) of the Civil Aerospace business’s large engines (which are used to power widebody commercial passenger aircraft) from approximately 1,400,000 in April 2019 to approximately 300,000 in April 2020. During the six months to 30 June 2020, total EFHs for the Group’s large engines fell by approximately 47% compared with the equivalent six months in 2019. A reduction in the flying hours of commercial aircraft results in a decrease in cash flow received by the Group from its long-term servicing agreements (“**LTSAs**”), which are priced on a US dollar-per-flying-hour basis, as well as a reduction of aircraft servicing and maintenance requirements that the Group manages for other customers outside of such agreements priced on a time and materials basis (“**T&M Contracts**”). The impact of the COVID-19 pandemic is expected to be prolonged. According to the International Air Transport Association (“**IATA**”), global air travel levels are not expected to return to pre-COVID-19 levels until at least 2024. In addition, longer-term structural changes in the air travel market may occur as a result of changes in consumer behaviour, preventing certain market segments from returning to pre-COVID-19 levels. Reductions in levels of air travel are expected to particularly impact the flying hours of widebody aircraft, which are predominantly used for long-haul commercial passenger flights (see “—The Group is exposed to customer, geographic and market-segment concentration risk with respect to certain of its businesses” below). In 2019, 71% of the Group’s Civil Aerospace business’s sales were attributable to large engines used to power widebody aircraft. A prolonged reduction in cash flow received under contracts priced on a US dollar-per-flying-hour basis or T&M Contracts is likely to have a material adverse effect on the financial performance of the Group, the full extent and duration of which cannot be accurately predicted.

In addition, the decline in demand for air travel as a result of the COVID-19 pandemic and government restrictions imposed in response has already resulted in and is likely to continue to result in a decline in orders for new widebody aircraft globally and in requests from customers to defer some orders already placed. Such deferrals could result in engines produced by the Group taking longer to enter service than expected, with a corresponding delay in aftermarket service revenue associated with those engines. The decline in demand for new aircraft is due to both lower anticipated demand for air travel in the short to medium term and the potential for a broader macro-economic downturn resulting from the COVID-19 pandemic. This has resulted in many owners and/or operators of commercial aircraft planning to restructure and/or rationalise their fleets, including by retiring certain aircraft earlier than previously planned and reducing their demand for new aircraft (by delaying delivery or cancelling orders outright), thereby increasing the risk of oversupply in the commercial aircraft market. The reduction in demand for new widebody aircraft has reduced the demand for aircraft engines and related systems, products and services supplied by the Group, which has reduced, and is likely to continue to reduce, the revenue received by the Group from the sale of new widebody aircraft engines, while also increasing the number of engines held by the Group as inventory. Deliveries for the Group’s widebody aircraft engines are expected to be approximately 50% lower in the financial year ending 31 December 2020, as compared to the financial year ended 31 December 2019. Aircraft manufacturers have significantly reduced and are likely to continue to significantly reduce production rates and delay future increases in production. If the Group cannot

balance its production and servicing capacity with the level of demand for its products and services from customers in the future, then its financial performance may be negatively affected. Any reduction or delay in production could have the effect of restraining growth in the global installed base of the Group's products which could, in turn, result in reduced future revenue from LTSAs as fewer of such contracts will be entered into in respect of new products sold. The early retirement of certain aircraft, such as the Airbus A380, could further reduce the Group's installed base and the associated revenue derived from LTSAs.

Impact on the Group's operations

Measures implemented in response to the COVID-19 pandemic have also affected a number of countries in which the Group has substantial operations, including the UK, the US and China where the Group employed approximately 23,000, 5,600 and 400 people, respectively, as at 30 June 2020, out of a total of approximately 51,700 people employed by the Group globally as at that date. These measures resulted in shutdowns of varying durations at some of the Group's facilities across the world, including in the UK, Mexico, Germany, India and Spain. Changes to working practices in response to the COVID-19 pandemic, including restrictions on the number of people that can be present at each site, the use of additional personal protective equipment (PPE), social distancing and increased remote working, have reduced productivity at a number of the Group's sites and are expected to continue to do so while such measures are required in each relevant jurisdiction. Reduced productivity at the Group's sites may adversely affect the Group's ability to fulfil its contractual commitments, which could result in damages being paid to customer in respect of delayed deliveries, and may also adversely affect its profitability. These consequences may, in turn, result in a material adverse effect on the Group's reputation and results of operations.

Impact on the Group's supply chains

Global supply chains, including those on which the Group relies in order to continue to operate its business and provide its products and services to customers, have been disrupted as a consequence of the COVID-19 pandemic and government restrictions in response. A number of the Group's suppliers have experienced shutdowns, changes to working practices and/or reductions in productivity as a result of measures adopted in response to the COVID-19 pandemic and, in some cases, the consequences could result in an inability to supply goods to the Group in time to meet required deadlines or at all. Significant reductions in demand, in particular for the Civil Aerospace business, experienced in the six months to 30 June 2020 mean that supplier financial distress has become more likely during that period. This, in turn, could impede the Group's ability to deliver its products and services on time and in line with its contractual commitments to customers, which could lead to contractual damages payments to customers, delays causing wider disruption to the Group's production operations and/or damage to the Group's reputation. In addition, the economic pressures associated with the COVID-19 pandemic are likely to result in the insolvency of certain suppliers and there can be no guarantee that the Group will be able to substitute those suppliers in a timely manner or at all. This could result in a material adverse effect on the Group's business, including considerable delays in providing certain products and services, an inability to provide those products and services, increased costs from alternative sources of supply and/or significantly increased costs from redesigning products or establishing in-house production of products previously supplied by third parties. In addition to the potential difficulties faced by the Group's suppliers, the Group may be unable to fulfil some or all of its minimum load commitments with maintenance, repair and overhaul ("MRO") service providers. Under contracts that the Group has entered into with certain MRO service providers, the Group commits to minimum levels of MRO services that it will require (based on both the type and volume of MRO services required) and is under an obligation to make payments to the MRO service providers where these minimum load commitments are not achieved. The COVID-19 pandemic may cause the Group to be unable to meet such minimum load commitments and/or increase the amount of any payments due in respect of such minimum load commitments.

Impact on the Group's customers

The economic downturn and associated decline in global trade flows precipitated by the COVID-19 pandemic and government restrictions in response could result in reduced capital investment, including investment in equipment that incorporates products offered by the Group. In addition, customers of the Power Systems business may be negatively impacted by reduced demand for their products due to rising unemployment and reduced consumer spending and propensity to travel as a result of the economic effects of the COVID-19 pandemic and government restrictions in response. Reduced investment in such products could occur across a wide variety of sectors, of which the most relevant to the Power Systems business are the commercial marine,

oil & gas, mining, power generation and industrial sectors. As a result, demand for the products offered by the Power Systems business may also decline significantly. The aftermarket revenue derived from the business's existing installed base could also be negatively affected where its products are retired earlier than planned or where customers reduce spending on servicing and maintenance. It is not possible to predict with any certainty the precise impact of the COVID-19 pandemic or any associated macro-economic downturn on the specific sectors in which the Power Systems business offers its products, but any downward trend in capital investment could have a material adverse impact on the sales of the Power Systems business and result in a material adverse effect on the Group's business and results of operations.

Financial pressures associated with the COVID-19 pandemic may: (i) cause the Group's customers across its various businesses to delay or withhold payments due in respect of products and/or services purchased from the Group; and/or (ii) result in the insolvency of certain of the Group's customers. This may require the Group to further increase its efforts to collect overdue payments, renegotiate payment terms with customers and/or accept the financial consequences of delayed payment or non-payment. This could result in reduced future revenue received from customers and/or increased costs of collecting outstanding payments from customers, as well as a reduced order backlog. Increased customer insolvencies, particularly among commercial airline customers, may also result in an increase in the total value of payments due from customers that the Group is unable to recover and so must ultimately write off. All of these consequences could have a material adverse effect on the Group's business and results of operations.

Any broader economic downturn resulting from the COVID-19 pandemic and government restrictions in response may also result in an overall reduction in government spending globally, including defence spending by the UK and US governments (which together accounted for approximately 75% of the revenue of the Group's Defence business in 2019). Such a reduction of government spending may result in a refocusing of government spending away from defence and towards other areas, such as repayment of government debt incurred in relation to COVID-19 or the funding of public health, financial support for businesses and other costs relating to management of the COVID-19 pandemic. While the impact of the COVID-19 pandemic on government spending on defence is likely to vary depending on the specific geopolitical and security concerns affecting different countries, any downward trend in government spending could result in a reduced demand for the products and services offered by the Group's Defence business, as well as attempts by governments to scale back existing long-term contracts. In addition, government spending limitations may delay the announcement of, or financial commitment to, future defence projects expected to be funded in whole or in part by government spending, which could reduce the revenue-generating potential of the Defence business in the medium to longer term.

"Second wave" of COVID-19 infections or the emergence of any subsequent pandemic

The consequences for the Group of the COVID-19 pandemic could be exacerbated by any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, in one or more of the jurisdictions in which the Group operates or globally, that has a similar or more disruptive impact, such as the re-introduction of stringent lockdown restrictions (including restrictions on travel between countries) across many parts of the world. Uncertainties remain around the timing and shape of the recovery from the impact of the COVID-19 pandemic, in particular given infection rates are rising again, especially in Europe. Any "second wave" of COVID-19 infections and related government restrictions imposed in response may undermine and/or delay efforts by individuals, businesses and governments to recover from the initial impact of the pandemic and could also damage confidence in measures implemented by governments to contain it. In particular, global air travel levels may take longer than expected to return to pre-COVID-19 levels and the resulting macro-economic downturn may deepen, with the associated consequences of rising unemployment and reductions in consumer spending. This could result in reduced demand for commercial air travel in the short to medium term, even after government restrictions in response to the COVID-19 pandemic are lifted. A "second wave" of COVID-19 infections could also coincide with seasonal increases in other, more common, illnesses, including seasonal flu, which could increase the severity of the impact, particularly where further government restrictions on travel and movement are implemented in order to help reduce pressure on healthcare services. Were this to occur, it is likely that the consequences of the COVID-19 pandemic for the Group as described in this section "*Risk Factors*" would be amplified in both their severity and duration. Any such "second wave" of COVID-19 infections or the emergence of any future pandemic may also cause governments globally to introduce further measures in response. Such measures may be more restrictive and/or far-reaching than those in place in response to the COVID-19 pandemic as of the date of publication of this document.

Interaction with other Risk Factors

The impact of the COVID-19 pandemic and government restrictions in response in amplifying or otherwise modifying other risks identified by the Group is referred to in the context of those specific risks and particularly in:

- *“—The Group’s ability to refinance its debt, raise additional debt financing and/or to continue to transact with its customers and suppliers could be constrained by the effects of an actual or potential credit rating downgrade, as well as prevailing market conditions”;*
- *“—A significant proportion of the Group’s revenue is derived from LTSAs and the revenue that it derives from LTSAs may be significantly reduced as a result of events beyond the Group’s control”;*
- *“—The Group is exposed to customer, geographic and market-segment concentration risk with respect to certain of its businesses”;*
- *“—Disruption to the Group’s external supply chains could have a material adverse effect on its operations”;*
- *“—The Group is exposed to operational risks related to the failure of internal processes, people and systems and disruption to internal supply chains, including an inability to deal with unexpected external events”;*
- *“—The accounting for many of the Group’s contracts and programmes requires management to make significant estimates and assumptions and to use judgement. The use of incorrect accounting estimates and assumptions and/or changes to those estimates and assumptions could adversely affect the Group’s financial results”;*
- *“—The Group may be unable to realise the expected benefits from announced or future reorganisations, including the reorganisation announced on 20 May 2020”;*
- *“—The timing and type of contract awards could materially affect the Group’s future results of operations and financial condition”;*
- *“—The Group is exposed to counterparty credit risk, particularly in relation to the financing support that it provides to its customers”;*
- *“—Risks Relating to the Group’s Industry—The performance of the Group’s business is directly linked to general economic conditions, which may adversely affect the Group’s business, financial condition, results of operations and prospects”;* and
- *“—Risks Relating to the Group’s Industry—The Group’s results are affected by fluctuations in foreign exchange rates”.*

The combined consequences of the COVID-19 pandemic have had and are continuing to have a material adverse effect on the Group’s business, financial condition, results of operations and prospects, the full extent of which will depend, in part, on the overall duration and severity of the pandemic itself and government restrictions in response, longer-term changes to customer and business behaviour, particularly in relation to international air travel, and the prospects of a wider economic downturn caused by the pandemic.

The Group’s ability to refinance its debt, raise additional debt financing and/or to continue to transact with its customers and suppliers could be constrained by the effects of an actual or potential credit rating downgrade, as well as prevailing market conditions

The Group’s indebtedness primarily consists of bonds issued in the capital markets, syndicated credit facilities and lease liabilities. In addition, in conjunction with the Rights Issue, the Group intends to raise additional liquidity via an offering or offerings by a member of the Group of notes guaranteed by the Company and denominated in US dollars, euros and/or pounds sterling, currently expected to be completed by the settlement of the Rights Issue and intended to raise gross proceeds of at least £1bn. The Group has also agreed commitments of £1bn under the Bridge Facility Mandate Letter (subject to conditions including completion of

the Rights Issue and agreement and execution of the Bridge Facility Agreement) and UK Export Finance has indicated that it would, in principle, support an extension of its 80% guarantee of the existing £2bn Term Loan Facility to support an increase in the loan amount of up to £1bn. The Group may be unable to: (i) agree and execute the Bridge Facility Agreement; and/or (ii) agree terms with potential lenders and/or obtain approval of those terms by UK Export Finance and HM Treasury in respect of the potential extension of the Term Loan Facility. The Group's ability to conduct this financing and refinance its debt or raise additional debt financing more generally will depend in part on its actual or perceived financial condition at the relevant time and prevailing market conditions. Any refinancing of the Group's debt could be at higher interest rates than its current debt and may require the Group to comply with more onerous terms and conditions, which could restrict the Group's operations and ability to carry out its business strategy.

The Group's credit rating was downgraded by Fitch from BBB- to BB+ with a negative outlook on 7 August 2020, by S&P from BBB- to BB on 28 May 2020 and from BB to BB- with a negative CreditWatch outlook on 11 September 2020 and by Moody's from Baa3 to Ba2 on 27 July 2020 and from Ba2 to Ba3 with a negative outlook on 25 September 2020. There can be no assurance that such ratings will not be revised downwards in the future. One or more credit rating downgrades could make it more difficult or more expensive for the Group to obtain financing in the future or to refinance its existing debt. In particular, a credit rating downgrade may increase borrowing costs for the Group as lenders identify the Group as posing an increased credit risk as signified by the downgrade. A credit rating downgrade may also cause the Group to be subject to terms and conditions that are more onerous and restrictive than those terms and conditions that govern its current debt financing arrangements. The fact that commitments in relation to the Bridge Facility and the indication of support, in principle, from UK Export Finance in relation to an increase in the Term Loan Facility are both conditional upon completion of the Rights Issue provides an indication of the potentially more onerous terms and conditions that the Group may be subject to when pursuing future debt financing.

In addition to increasing the cost of borrowing, any further deterioration in the Group's credit rating could reduce the willingness of the Group's customers, partners and/or suppliers (RRSPs, who share in the risks and rewards of the Group's programmes from the development stage) to do business with the Group. For example, this could result in the Group losing the cash benefits of customer deposits advanced in respect of orders placed and a reduced ability to rely on issuing credit notes to customers. In addition, the Group may be required, under a number of finance leases for Trent 700 engines, to prepay rent in order to remedy covenant breaches occurring as a result of the deterioration in the Group's credit rating. The Group has the option to pursue alternative cures for such covenant breaches (including providing letters of credit or providing additional aircraft engines as collateral), instead of making prepayments. However, if these alternative cures cease to be feasible or if the Group chooses to make prepayments as the most appropriate covenant breach cure, these prepayments would result in additional cash outflows as a result of the deterioration in the Group's credit rating. Particular difficulties may also be experienced where transactions with the Group involve customers advancing significant amounts to the Group on deposit in return for products and/or services to be provided at a future date. The Group's major customers may also pressure the Group to improve its balance sheet position and credit rating in order for those customers to continue doing business with the Group or may be unwilling to enter into longer-term agreements, such as LTSAs, or other partnerships with the Group. Suppliers may be less willing to provide goods and/or services to the Group on current terms and may demand payment terms that are less favourable for the Group or, in extreme cases, refuse to supply the Group altogether. A further deterioration in the Group's credit rating could also have a material adverse effect on the financing arrangements supporting the Group's supply chains as lenders may be less willing to accept repayment risk relating to the Group's perceived ability to pay trade creditors. In addition, any such further deterioration could cause the Group to be required to post collateral in respect of future foreign exchange hedges that it enters into.

The Group may face a heightened risk of further credit rating downgrades while it takes steps to address the impact of the COVID-19 pandemic and government restrictions in response and any steps taken by the Group in this regard may take time to implement and/or to achieve their intended results. In particular, while the impact of the COVID-19 pandemic continues, the Group's liquidity position may deteriorate as a result of reduced cash flow under its LTSAs and this could, in turn, have a negative impact on its perceived creditworthiness and associated credit ratings, as well as increasing the costs of hedging transactions that the Group enters into as part of its day-to-day business operations. See *“—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any “second wave” of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known”* above and *“—A significant proportion of the Group's revenue is*

derived from LTSAs and the revenue that it derives from LTSAs may be significantly reduced as a result of events beyond the Group's control" below.

If the Group is unable to obtain debt financing at a cost and/or on terms that are acceptable to it, the Group may be unable to refinance its existing debt, or to adopt the most appropriate capital structure for the size and nature of its business, which in turn could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

A significant proportion of the Group's revenue is derived from LTSAs and the revenue that it derives from LTSAs may be significantly reduced as a result of events beyond the Group's control

Under the Group's LTSAs, including its TotalCare agreements, which are the type of LTSA most commonly entered into with customers of the Civil Aerospace business, customers are typically charged on a US dollar-per-flying-hour basis and the Group is responsible for providing an integrated core set of services covering key aspects of engine management and maintenance, along with a range of optional services, at an agreed cost to the customer. In 2019, the Civil Aerospace business derived approximately 39% of its revenue from these LTSAs. In particular, TotalCare agreements covered approximately 90% of the Group's widebody fleet as at 31 December 2019. Revenue generated under LTSAs has been and is likely to continue to be significantly reduced compared to pre-COVID-19 pandemic levels as a result of the pandemic and government restrictions in response, which have caused a significant reduction in EFHs globally. The impact of the COVID-19 pandemic is described in "*Risks Relating to the Group's Business—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*" above.

The Group's LTSAs are intended to generate long-term aftermarket revenue streams for the Group, but also specify that the costs associated with engine maintenance, servicing and repair, including the risk of any increases in such costs, remain with the Group. As a result, to the extent that an engine requires more extensive maintenance, servicing and/or repair than originally expected when the contract was signed, the Group is responsible for any associated costs. This is true even where the potential for any cost increases actually incurred was not contemplated by the Group when pricing the LTSA in question. At the same time, any significant reductions in flying hours, such as those experienced as a result of the COVID-19 pandemic, may result in a significant decline in revenue received under LTSAs, while not resulting in any corresponding reduction in the maintenance, servicing and/or repair costs falling on the Group. If the Group were to misprice its LTSAs when entered into, for example if the cost to the Group of providing services under LTSAs, such as TotalCare, or of performing fixed-price contracts were to increase above the levels assumed or projected at the outset of those contracts, the Group's operating results could be adversely affected, particularly in circumstances where the Group is unable to pass on any increase in such costs to its customers. Permitted increases in amounts charged to customers may also be limited by the specific contractual arrangements in place between the Group and its customers. Any discrepancy between significantly reduced revenue received under LTSAs and stable or increasing costs incurred by the Group under those agreements could result in reduced profits in the Group or substantial losses under its LTSAs, which could, in turn, have a material adverse effect on the Group's business, financial condition, results of operations and prospects. In addition to the impact on the Group's results, cost overruns or the failure to perform on existing programmes may also adversely affect the Group's ability to retain existing programmes and win future contract awards.

In the long term, and depending on the speed and extent of the recovery in the demand for air travel following the COVID-19 pandemic and government restrictions introduced in response, the Group's focus on using its LTSAs to generate long-term aftermarket revenue streams may prove to be unsustainable, particularly if EFHs do not return to pre-COVID-19 levels. As a result, the Group may be forced to adjust its business model to adopt different contractual terms for the provision of aftermarket services and/or shift its focus towards the profitability of original equipment ("OE") sales. Such significant changes in business strategy may be difficult, time consuming and/or costly to implement, could require the renegotiation of existing contracts and/or the reappraisal of existing customer relationships and may ultimately prove unsuccessful. There can be no assurance that, if it proves necessary to do so, the Group will be able to adapt its business to become less reliant on LTSA revenue. Any failure to adapt its business accordingly may have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The significant decline in EFHs as a result of the COVID-19 pandemic, combined with an expected reduction in OE orders as airlines seek to rationalise and restructure their fleets, could further significantly reduce

the Group's revenue and result in a further deterioration in its overall liquidity position. The decline in EFHs as a result of the COVID-19 pandemic has resulted, and is likely to continue to result in, a reduction in the value of cash deposits paid in advance by customers in respect of estimated EFHs, as well as a need for the Group to refund, in whole or in part, some such deposits in order to maintain good relationships with key customers. In addition, more of the Group's customers are seeking to pay the Group based on actual, rather than estimated, EFHs and/or are seeking payment deferrals due to the continuing uncertainty in the global air travel market caused by the COVID-19 pandemic. The reduction in OE orders is also likely to have an adverse effect on cash inflows by reducing the number and value of customer deposits and/or advances that would normally be received by the Group in respect of such orders and the LTSAs associated with them. In addition, the Group could face increased costs under its LTSAs in connection with increased engine servicing and/or overhaul requirements as a result of the disruption caused by the COVID-19 pandemic. Where the combination of reduced revenue linked to EFHs, reduced OE orders and increased costs under LTSAs causes a deterioration in the Group's liquidity position this may, in turn, restrict the Group's future business activities, including its ability to finance R&D spending, commitments to future projects and/or other spending programmes. These consequences could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group is exposed to customer, geographic and market-segment concentration risk with respect to certain of its businesses

Civil Aerospace

The Group is exposed to concentration risk in certain of its businesses, deriving a significant portion of its revenue from a limited number of customers. In particular, in its Civil Aerospace business, the Group relies, directly or indirectly, on sales of new engines to commercial airlines, aircraft lessors, spare engine lessors and a limited number of aircraft manufacturers for a significant portion of its revenue. For example, in 2019, approximately three quarters of the large engines delivered by the Civil Aerospace business were delivered to Airbus. The Group's business is affected by fleet decisions, airline consolidations and financial challenges involving any of the Group's major commercial airline, aircraft lessor or spare engine lessor customers. All of these features of the airline industry are likely to become increasingly prevalent as a result of the COVID-19 pandemic and government restrictions in response. The impact of this could be prolonged and global air travel levels are not expected to return to pre-COVID-19 levels until at least 2024, according to IATA.

In addition, the products offered by the Group's Civil Aerospace business are used to power aircraft produced by a small number of aircraft manufacturers and, therefore, have limited routes to market. This is true across both the commercial passenger and business jet segments of the market. The Group's Civil Aerospace business is, therefore, significantly affected by programme and engine selection decisions, including decisions on engine exclusivity, production difficulties or delays, product issues or financial difficulties relating to manufacturers of aircraft which are equipped with the Group's engines (or may be in the future). To the extent that the Group has difficulty in bringing its products to market, it could also face lower revenue from LTSAs linked to such products in the future, as well as from T&M Contracts covering specific maintenance and servicing requirements. Issues affecting the aircraft of one or more aircraft manufacturers that are customers of the Civil Aerospace business could have a negative impact on the Group if such customers are restricted or prevented from supplying aircraft that incorporate the Group's products, even if the issues affecting the aircraft are unrelated to the Group's products. Consequently, production of future aircraft of the same model may also be delayed, modified or ultimately cancelled, which could reduce the size of the market for the Group's engines by restricting the number of available applications. Key decisions made by and/or issues affecting a small number of aircraft manufacturers could potentially have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Customers of the Group's Civil Aerospace business may choose or be compelled by financial circumstances to cancel existing purchase commitments, regardless of deposits provided to the Group in order to discourage such cancellations, or may choose or be unable to exercise purchase options or purchase additional products or services, particularly as a result of any prolonged uncertainty in the international air travel market, including uncertainty related to the COVID-19 pandemic. Where certain of the Group's key customers are at risk of insolvency, are undergoing restructuring or are experiencing, and may continue to experience, financial difficulties or default as a result of a less favourable macro-economic environment, this has caused and is likely to continue to cause such customers to adopt a more conservative approach to spending and/or fleet management, as well as to fail to comply with existing contractual obligations, including minimum usage clauses and/or compensation clauses included in LTSAs. Such customers may also fail to renew contracts or the Group may be

unable to renegotiate new arrangements with such customers on favourable terms. More conservative spending decisions, continuing and future failures by key customers to comply with and/or renew existing agreements and/or failures to renegotiate new arrangements with such customers could all have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group's Civil Aerospace business operates primarily in the widebody aircraft market segment. In 2019, 71% of the Civil Aerospace business's revenue was derived from large engines, all of which are fitted to widebody aircraft. As such, the Group is more exposed to reductions in demand for widebody aircraft than many of its competitors, which may have more diverse product portfolios that include other types of aircraft. This concentration on widebody aircraft engines may restrict the Group's ability to benefit from more favourable market conditions in other market segments if demand for widebody aircraft engines and related aftermarket services is significantly reduced. OE revenue for the Group from large engines was £2.6bn in 2019, with total sales of 510 engines. In the six months to 30 June 2020, OE revenue for the Group from large engines was £862m, with total sales of 137 engines. The negative impact of the COVID-19 pandemic and government restrictions implemented in response has already significantly reduced the volume of new orders for widebody aircraft globally, and the future impact may be more prolonged with respect to the widebody aircraft market segment, which is linked to large-scale, predominantly long-haul, international passenger travel, than other civil aerospace market segments. This could cause the recovery of the Civil Aerospace business from the effects of the COVID-19 pandemic and government restrictions in response to be slower than the recovery of some of its competitors, who can more easily shift their business activities to focus on other market segments. See *"—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known"* above.

The Group's Civil Aerospace business is increasingly focused on Asian markets and, in particular, has developed a strong market share in China, with the Group deriving approximately 20% of its invoiced EFHs from China in 2019. In the same year, Asian markets accounted for £4.0bn of the Group's revenue across its business segments (of which £1.7bn derived from China) and £1.2bn of the Group's revenue across its business segments was derived from Middle Eastern markets. Any outbreak of future pandemics, "second wave" of COVID-19 infections, macro-economic downturn or geopolitical tensions that reduce demand for the products or services offered by the Civil Aerospace business in Asian, as well as Middle Eastern, markets or restrict access to those markets could result in a more significant material adverse effect on the Group than competitors that are less reliant on such markets. See *"—Risks Relating to the Group's Industry—The performance of the Group's business is directly linked to general economic conditions, which may adversely affect the Group's business, financial condition, results of operations and prospects"* below.

Defence

The nature of the products and services offered by the Group's Defence business exposes it to certain customer concentration risks. The US Department of Defense ("**DoD**") and the UK Ministry of Defence ("**MoD**") accounted for approximately 50% and 25%, respectively, of the Defence business's revenue in 2019 (including purchases from third parties of equipment that incorporates the Group's products). Significant reductions in defence spending in one or both of these countries could have a material adverse impact on the Defence business. Specifically, any reductions in overall defence spending in these countries could reduce the number and scale of future defence projects. While there is also risk to ongoing business in this scenario, the impact on defence programs with funding already allocated may be more limited, unless government spending priorities were to change radically. See *"—Risks Relating to the Group's Industry—The performance of the Group's business is directly linked to general economic conditions, which may adversely affect the Group's business, financial condition, results of operations and prospects"* below for details of domestic and global political developments that may cause reductions in defence spending, as well as the potential consequences of such reductions. See also *"—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known"* above.

Due to the nature of the products and services offered by the Defence business and the regulatory controls to which they are subject (including, for example, export controls under which governments restrict the sale of certain defence-related products to foreign countries), it is also more difficult for the Defence business to diversify its customer base relative to other Group businesses. This means that the Defence business may

continue to be reliant on the DoD and the MoD as its key customers, even where one or both of those customers significantly reduce their defence spending.

Power Systems

The Group's Power Systems business is increasingly dependent on China for its operations as well as its expected future growth, with the Power Systems business manufacturing approximately 9% of its products in China as at 30 June 2020. Accordingly, any outbreak of future pandemics, "second wave" of COVID-19 infections, macro-economic downturn or geopolitical tensions that reduce demand for the products or services offered by the Power Systems business in China or disrupt the Group's business operations in that country could result in a more significant material adverse effect on the Group than on competitors that are less reliant on the Chinese market.

The Group may fail to effectively compete in the highly competitive industry in which it operates, including as a result of failures or inadequacies in its research and development programmes

The strength of the Group's technology product portfolio and its long-term operating results depends substantially on continuing investment in R&D, the Group's ability to bring technology to aerospace, power systems and defence applications and its success in regularly developing, introducing and marketing new and innovative products and services. Many of the Group's markets are characterised by high R&D costs, requiring significant investments with a high level of complexity and variable chances of success. The Group receives some of its R&D funding from national governments, and also receives tax benefits in respect of certain R&D spending including, in particular, tax credits in the UK. In 2019, the Group's gross R&D expenditure was £1.46bn. As part of the reorganisation announced on 20 May 2020, the Group is planning to reduce its R&D expenditure. See "*—The Group may be unable to realise the expected benefits from announced or future reorganisations, including the reorganisation announced on 20 May 2020*" below.

The Group's ability to compete for contracts depends on the strength of its intellectual property rights and technical know-how, together with the effectiveness and innovation of its R&D programmes, its ability to offer better programme performance than its competitors at a lower cost to its customers, and the readiness of its facilities, equipment and personnel to successfully and efficiently execute the programmes for which it competes. The Group cannot be certain that its competitors will not develop competing technologies which gain market acceptance to a greater degree than its products. The Group's competitors may develop new technologies or offerings that cause the Group's existing technologies and offerings to become obsolete, or which effectively reduce the price the Group is able to charge its customers for its products. If the Group fails in its new product development efforts, or if its products or services fail to achieve market acceptance as rapidly as its competitors, its ability to procure new contracts could be negatively impacted, while obsolescence of the Group's products as a result of the emergence of new technologies could result in substitution or reduction in the use of such products. Disruptive technologies or new entrants with alternative business models could reduce the Group's ability to regularly obtain future business, achieve positive operating results and realise future growth opportunities. These circumstances could have a material adverse effect on the Group's results of operations and financial condition.

The Group's business plans underlying its investments in R&D typically contemplate a long payback period before investments are recouped and assume a certain level of revenue over the course of this period in order to justify the initial investment. There can be no assurance that the commercial, technical and market assumptions underlying the Group's business plans will be accurate, and consequently, the investment payback period may be significantly longer than contemplated or may not be achieved. There is also a risk that the Group invests significant financial resources in R&D programmes that are ultimately unsuccessful in developing new products or producing insights that lead to the improvement of existing products and/or services. For example, the Group's development of the new UltraFan engine, a scalable jet engine design suitable for widebody or narrowbody aircraft and intended to be the successor to the Group's class-leading Trent large jet engine family, represents a significant R&D risk that may result in the Group incurring substantial costs without ultimately developing a commercially successful product that is widely adopted by the Group's key customers, even if the Group is successful in entering into a partnership to share the risk of investment in UltraFan. Should UltraFan engines fail to develop into a viable new product or fail to gain widespread commercial acceptance as a new product, the Group will be required to develop an alternative next-generation engine, at significant additional cost, in order to maintain its market position over the long term. The development of UltraFan engines is also dependent on new and unproven technological innovations that may ultimately fail to deliver the required performance or result in a

marketable product. Spending on R&D could divert the Group's attention and resources from other projects and there can be no assurances such expenditures will ultimately lead to the timely development of new offerings and technologies or identification of, and expansion into, new markets. There can be no assurance that the market for the Group's new product or service offerings will develop or continue to expand or that the Group will be successful in newly identified markets or that the strategic partnerships (including RRSPs and joint ventures) or acquisitions that the Group may enter into in pursuit of developing new offerings and technologies will be successful. In addition, there can be no assurance that government support that the Group currently receives in relation to some of its R&D programmes will continue in the same form or at all, or that the Group's spending on R&D will continue to receive the same tax treatment, particularly in the UK. The failure of the Group's technology to gain market acceptance and/or reductions in governmental support for certain of the Group's R&D programmes could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group's portfolio of products and services competes internationally against the products and services of other aerospace, defence and power systems companies. The presence of large, financially-strong competitors in the majority of its markets means that the Group is susceptible to significant price pressure for OE and services, even in markets that are mature or that have few competitors. In addition, certain competitors have formed joint ventures and other alliances in order to address specific customer requirements. The Group's main competitors also have previously benefited from access to significant government funding programmes as well as the ability to invest heavily in technology and industrial capability. For example, the Export-Import Bank of the United States (Ex-Im Bank) has previously provided financial support to the buyers of General Electric exports in the form of significant loan guarantees. The barriers to entry in the markets for certain of the Group's other products, particularly those of its Power Systems business, are low, as compared to certain of the Group's other activities, and new entrants may decide to compete with the Group in such markets, which could reduce the Group's market share in those markets and have a material adverse effect on the Group's order backlog. In the Defence business's markets, high levels of competition between established businesses for high-value and/or long-term government contracts may result in the Group expending significant resources in competing for one or more of such contracts without ultimately being successful. If the Group cannot compete adequately in the markets in which it operates, this could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

In addition, consolidations among competitors, suppliers and/or customers as well as horizontal integration across value chains could increase competitive pressure on the Group's business, including by increasing the cost and difficulty of sourcing materials and services, reducing the Group's market share in certain markets and/or reducing the Group's profits. Interventions by competition authorities may also change the competitive dynamics of one or more of the Group's markets, including by restricting the Group's activities and/or adopting measures designed to promote increased competition, such as by facilitating participation by new market entrants. Any of these actions, whether taken by competitors, suppliers, customers and/or regulators, could have a negative impact on the Group's competitive position in one or more markets and could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Attempts by third parties or malicious insiders to disrupt or improperly access the Group's IT systems through cyber-attacks or otherwise could result in the manipulation, corruption, or destruction of data, systems or products and could cause harm to the Group, its customers, suppliers and partners

The Group faces certain cyber-security threats, including threats to confidentiality, as well as the availability and integrity of its data and systems. While the Group employs measures designed to prevent, detect and respond to unauthorised activity in its systems, the inadequacy or failure of such measures could result in certain types of attacks, including cyber-attacks causing significant financial or information losses and/or reputational harm. Cyber-security threats are particularly persistent, as they evolve quickly and may include, but are not limited to, computer viruses, attempts to access information, denial of service and other breaches. If the Group is unable to protect sensitive information, its customers or governmental authorities could question the adequacy of its threat mitigation and detection processes and procedures. In addition to extraction of data from the Group's systems, cyber-attacks could involve the destruction, manipulation and/or corruption of the Group's data, including data relating to the Group's R&D programmes, and could also temporarily prevent the Group from offering products and/or providing services to its customers. In addition, a cyber-attack could give rise to product safety concerns that require repairs to or replacement of certain products or parts of products and/or may result in the temporary or permanent suspension of the use of certain products, particularly in the civil aerospace, defence and power

systems markets. See “—*A failure of one or more of the Group’s products could have a material long-term adverse financial and reputational impact?*” below.

The Group could also be subject to cyber-attacks designed to gain access to its proprietary information, including production processes and know-how. The Group considers itself to be at particular risk in this regard, given the activities of its Defence business, particularly under contracts with the US Government and the UK Government, as well as its involvement in nuclear projects, which could result in the Group being targeted by nation states or criminals as a route to obtain government secrets. In particular, the Group handles classified information, including SECRET and TOP SECRET information, from, in particular, the US and UK governments, including information on UK nuclear submarines and the US F-35 combat fighter programme. Loss of this sensitive information either through deliberate or accidental means could result in fines, prosecution and potential debarment from current or future government contracts. Governments also require that the Group puts in place appropriate measures to prevent cyber-attacks and to report any significant attacks that have the potential to endanger national security. Failure to put in place the required measures and to maintain them to an acceptable standard could preclude the Group from tendering for new government contracts. If the Group fails to prevent or otherwise address cyber-attacks designed to gain access to its proprietary information, its critical applications, intellectual property rights and know-how may be jeopardised. This could result in interruption of the Group’s business operations, damage to the Group’s systems and/or increased liability to customers as a result of delays in the provision of products and/or services. Such consequences could, in turn, have a material adverse effect on the Group’s financial position and reputation.

In addition, the Group is party to agreements allowing it to hold and/or have continuing access to the confidential information (in particular, intellectual property) of third parties, where such confidential information is used by the Group as part of its R&D activities, the production of its products or the provision of its services. The Group could face significant financial and/or reputational consequences as a result of the disclosure of such confidential information, whether such disclosure was inadvertent, as a result of the deliberate actions of an employee or external actor, or otherwise. Third parties affected by the unauthorised disclosure of their confidential information could bring claims against the Group, with potentially significant financial consequences. In addition, current or potential strategic partners (including RRSPs) may be less likely to cooperate with the Group on new projects as a result of the damage to the Group’s reputation associated with any unauthorised disclosure. The Group’s rights to use or continue to have access to third-party confidential information could also be significantly restricted or withdrawn, which could have an adverse effect on its R&D activities and/or its ongoing business operations, resulting in a material adverse effect on the Group’s, financial condition, results of operations and prospects.

Moreover, the Group’s employees may, either maliciously, under duress from a third party or unwittingly, release data or damage systems. Although the Group works cooperatively with its customers, suppliers, subcontractors and strategic partners to seek to minimise the impact of cyber-security threats, other security threats or business disruptions, it must rely on the safeguards put in place by these entities, which may affect the security of the Group’s information. The manifestations of risk to the Group’s information technology systems, including with respect to cyber-security, change rapidly and require continued focus and investment by the Group. The failure to adequately protect the Group or prevent such breaches or failures could have a material adverse effect on the Group’s financial position and reputation.

Developments in data protection worldwide (including, in particular, the implementation of the General Data Protection Regulation ((EU) 2016/679) (GDPR), which entered into force on 24 May 2016 and has applied to all European Union member states from 25 May 2018) may also increase the financial and reputational implications for the Group following a significant breach of its IT systems or those of its third-party suppliers, with regulators imposing significant fines.

The Group has a disaster recovery system in place across its core business operations that is designed to enable the recovery of data and the continuation of vital IT infrastructure following disruption caused by natural disaster, human errors, technical failures or malicious third-party cyber-attacks. There can be no assurance, however, that the Group’s disaster recovery system will be successful in recovering data or ensuring the continuation of the Group’s IT infrastructure following accidental or malicious disruption. This may result in permanent loss of data or prolonged disruptions to the Group’s IT infrastructure. As a result, the failure of the disaster recovery system to mitigate the impact of a cyber-event may have a material adverse effect on the Group’s business, financial condition, results or operations and prospects.

Disruption to the Group's external supply chains could have a material adverse effect on its operations

If the Group's external supply chains are not sufficiently resilient to unforeseen events, including the COVID-19 pandemic and government restrictions in response, such events could affect the Group's operations, which could result in significant financial and reputational damage. Major supply chain disruption could result in delayed delivery of the Group's products, which could, in turn, result in increased costs for the Group's business in mitigating the effects of delays and/or compensating customers, as well as damage to the Group's reputation that may reduce demand for its products in the future. For example, the Group experienced difficulties in receiving deliveries from certain Chinese suppliers as a result of the lockdown measures imposed in China during the COVID-19 pandemic. A major disruption of the Group's supply chain could also impede the Group's ability to provide services under its LTSAs, and could damage the Group's prospects of winning future business.

The Group's products and services are delivered through the operation of complex supply chains which rely upon multiple other companies including subcontractors, suppliers and joint ventures to produce and provide raw materials and components and to perform certain of the services that it provides to its customers. Disruption to these external supply chains as a result of problems with key supplier facilities, natural disasters, pandemics, regional conflicts, financial difficulty or insolvency of a critical subcontractor, supplier or joint venture partner, scarcity of materials, export controls or other production issues or delays could reduce the Group's ability to meet its product and service commitments to its customers, which could have a material adverse effect on the Group's operations and financial position. Certain of the Group's products, services and businesses are more dependent on complex external supply chains, particularly in relation to aero engine production and MRO services in the Civil Aerospace business. To maintain the viability of its supply chains, the Group is, in certain cases, required to provide financial or other forms of assistance to subcontractors, suppliers and/or joint venture partners and there is a risk that it may be necessary for the Group to significantly expand the scale of such support in future and/or that the Group may be required to seek alternative subcontractors, suppliers or joint venture partners, to ensure continued supply or other dealings. This could increase the cash amounts that are required to be committed to the Group's supply chains and increase the working capital requirements of the Group's business operations.

The Group is also dependent on joint ventures as part of its business operations. In particular, the Group leases engines through a number of engine leasing joint ventures with GATX Corporation, including Alpha Partners Leasing Limited in the UK, and also relies on certain joint ventures, including Hong Kong Aero Engine Services Limited and Singapore Aero Engine Services Pte Limited, for the provision of some MRO services to customers of the Civil Aerospace business. The Group has also expanded its engine manufacturing operations through joint ventures, including its MTU Yuchai Power Company Limited joint venture in China and its Force MTU Power Systems joint venture with Force Motors Ltd. in India. The Group is able to exercise less operational control and oversight over its joint ventures than it exercises in respect of Group companies performing similar functions, resulting in an increased risk of disruption to the Group's business to the extent that it relies on joint ventures in order to provide products or services to customers, including as part of its supply chains. This increased risk of disruption to the Group's business operations and/or supply chains could be both substantial and sustained where the role of a joint venture business in the Group's supply chains is such that it cannot be quickly or easily replaced. There is also a broader risk of deterioration in the Group's relationships with its joint venture partners, which could ultimately require the Group to significantly adjust aspects of its business operations and/or supply chains, including by exiting certain joint ventures and/or ceasing operations in certain jurisdictions.

In addition, the specialist nature of the products supplied by certain of the Group's suppliers, as well as the quantities of components required by the Group in some cases, results in a heightened risk that the Group may not be able to substitute suppliers quickly, easily or at all if one or more of its current suppliers become unable or unwilling to supply the Group. This could result in increased costs and/or delays in finding alternative suppliers capable of meeting the Group's requirements. In some circumstances, components used in the Group's products are sourced from single-source suppliers. Such suppliers may be affected by a range of circumstances that prevent them from being able to continue to supply the Group including, but not limited to, financial difficulties, insolvency, acquisition by a competitor of the Group or loss of required regulatory approvals. If these suppliers become temporarily or permanently unable to supply the Group, the Group's production of certain of its products could be materially impacted as it may be unable to source such components and may have to redesign any products requiring such components or may have to invest significant time and resources in establishing in-house production of components to satisfy its requirements. Moreover, the Group's order backlog may be adversely

impacted by such events if the Group is perceived by customers as being unable to reliably fulfil future orders, either on time or at all, due to supply chain issues.

The Group relies on efficient inventory management. Certain products and components necessary to the Group's business activities are typically easily available and, as a result, the Group typically maintains a limited inventory of such items. However, if there is widespread disruption to the Group's external supply chains and/or to global supply chains as a whole, there is a risk that low inventory levels of such items may result in disruption to the Group's ability to carry out its business if it is unable to acquire such products and components within expected timeframes. By contrast, certain other products and components necessary to the Group's business activities are typically difficult to source and, as a result, the Group usually maintains a larger inventory of such products and components. These items are recorded as inventory on the Group's consolidated balance sheet. If there is a sudden or unexpected decline in the Group's order backlog and the Group no longer requires the same number of such products and components to carry out its business activities, then there is a risk that the Group may be unable to make economic use of its inventory, which may lose value when such inventory becomes unusable and/or unsellable and, therefore, may have an adverse effect on the Group's balance sheet.

The Group also enters into revenue sharing partnership agreements with certain suppliers in the context of its Civil Aerospace business, whereby its partners provide certain production parts. Discontinuations of these partnerships or default by the Group's partners could also have a material adverse effect on the timing and feasibility of new product development by the Group, and the Group may be unable to replace such partners in a timely manner, or at all. If any of these disruptions occur, they could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The potential for such disruptions to the Group's external supply chains has been heightened by the COVID-19 pandemic and government restrictions introduced in response. The extensive nature of government restrictions may result in further difficulties in the Group's ability to substitute its suppliers where the Group's suppliers and alternative suppliers are concentrated in particular geographic markets that are subject to similar government restrictions. In such circumstances, the Group may be unable to mitigate the impacts of supply chain issues and, therefore, may be subject to a heightened risk of supply disruption. See "*—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*" above.

The Group is exposed to operational risks related to the failure of internal processes, people and systems and disruption to internal supply chains, including an inability to deal with unexpected external events

Operational risks are inherent in the day-to-day operations of the Group and may result in direct or indirect losses that could materially adversely impact the Group's business. Such losses may result from both internal and external events and risks.

The Group requires efficient and reliable operation of its production, assembly and overhaul facilities, distribution centres and networks, IT systems and data centres (in the UK, the US, Germany and Asia). High capital costs of plant and machinery often make it uneconomical to duplicate capabilities across sites. As such, operational disruptions at key manufacturing sites including, in particular, sites in Derby, Bristol, Indianapolis, Friedrichshafen and Dahlewitz could lead to significant disruptions of the Group's business and create a perception that the Group is facing persistent operational issues and may not be able to reliably fulfil future orders either on time or at all, which could have a material adverse effect on the Group's order backlog. Operational disruptions could result from factors including failures of systems, IT infrastructure or machinery and/or damage to the physical infrastructure of the Group's operating sites, including at one or more of the critical sites referred to above. Any such operational disruptions could be significant and there can be no assurance that the Group's contingency and/or recovery plans will be effective in minimising disruptions to the Group's business activities. In addition, certain of the critical sites identified above may become more critical to the Group's activities as a result of the rationalisation of its operations as part of the reorganisation of the Group announced on 20 May 2020 (see "*—The Group may be unable to realise the expected benefits from announced or future reorganisations, including the reorganisation announced on 20 May 2020*" below).

External events that could disrupt the Group's operations include operational failures by third-party service providers, IT security breaches from parties with criminal or malicious intent, natural disasters, concerns with or threats of pandemics, contagious diseases or health epidemics, such as the COVID-19 pandemic, extreme

weather events, terrorist attacks, wars and political, security and social events. Any of these operational risks could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

As a result of the COVID-19 pandemic and government restrictions in response, the Group's operational capacity has been and could be further adversely impacted as a consequence of various factors, including sickness-based personnel absences, remote and disrupted working arrangements, including the requirement to implement social distancing in workplaces, and restricted international and local travel. See "*—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*" above. In particular, remote and disrupted working arrangements may have an impact on the Group's operations and its ability to respond effectively to incidents causing operational disruptions. This operational risk is likely to persist until such time as restrictions imposed by governments in response to the COVID-19 pandemic permit a return to pre-COVID-19 on-site working arrangements. It is not currently possible to predict when this may be feasible, and applicable restrictions affecting working arrangements, as well as the pace at which they are lifted, will vary between jurisdictions.

The Group may seek to divest parts of its business or to expand through acquisitions, entering strategic alliances or forming joint ventures with third parties, any of which may be unsuccessful, may impose additional financial obligations on the Group and/or may divert management's attention

The Group evaluates potential divestments of assets and businesses on an ongoing basis and is targeting divestments (including the ITP Aero business) with the aim of raising gross disposal proceeds of more than £2bn by February 2022 (18 months following the date of its H1 2020 results). If the Group decides to sell assets or a business, whether as part of a planned reorganisation (see "*—The Group may be unable to realise the expected benefits from announced or future reorganisations, including the reorganisation announced on 20 May 2020*" below) or otherwise, it may encounter difficulties in finding buyers, in agreeing acceptable terms or in gaining regulatory approvals. This may impact its ability to complete such sales on time, or at all. Disposals may also result in the loss of products and/or intellectual property that have resulted from previous R&D investment by the Group or a failure to realise full value for the same. When undertaking disposals there can be no guarantee that the expected proceeds will be realised or that the perceived strategic benefits of refocusing the Group's business on the activities of those parts that are retained will be achieved. The Group may fail to raise more than £2bn from the divestments that it is currently considering, either by February 2022 or at all.

Entering into disposal arrangements that contain elements of contingent consideration could expose the Company to the risk that the performance metrics or other conditions on which the contingent elements of the consideration are dependent may not be satisfied and so those elements of the consideration may not be received in full or at all by the Group. Any deferred elements of the consideration for a disposal also give rise to the risk that the purchaser will be unable to pay the deferred or contingent consideration as it falls due in the future. Contractual protections included in the relevant disposal documentation cannot fully eliminate this risk. After the Group reaches an agreement with a purchaser for the divestment of a business, disposal transactions may also result in continued financial involvement in the divested businesses, such as through indemnities, guarantees or other financial arrangements, which could result in additional payment obligations following the disposal transaction. Any such payment obligations could significantly reduce the proceeds ultimately received by the Group as a result of the disposal. The Group may also be required to make future payments under indemnities and/or guarantees provided in connection with previous disposals.

The Group may also seek to enter into strategic alliances, form joint ventures and/or acquire other businesses. For example, the Group is actively exploring new forms of industrial partnership in relation to its UltraFan programme. Strategic alliances, joint ventures and acquisitions are subject to risks that could affect the Group's business and the success of such transactions depends on the Group's ability to identify suitable strategic alliance, joint venture or acquisition opportunities, to assess the value, strengths, weaknesses, liabilities and potential profitability of such opportunities and to negotiate acceptable terms. The Group may encounter difficulties in finding appropriate partners or sellers, in agreeing acceptable terms or in gaining regulatory approvals. One or more of these difficulties may affect the Group's ability to form any new industrial partnership in relation to its UltraFan programme, as well as any other initiatives by the Group to enter into strategic alliances, form joint ventures and/or acquire other businesses. Whether the Group realises the anticipated benefits from any strategic alliance, joint venture or acquisition depends, in part, on its relationship with its strategic

alliance or joint venture partners, the performance of the management team and/or its ability to integrate the operations of the acquired business.

If the Group enters into strategic alliances or joint ventures or makes acquisitions, it may not be able to generate expected revenue, profits, margins or cash flows, or to realise the anticipated benefits of such strategic alliances, joint ventures or acquisitions, including growth or expected synergies. Additionally, the integration of any acquisitions may require greater levels of investment than anticipated, and the Group may incur or assume unknown or unanticipated liabilities or contingencies with respect to customers, employees, suppliers, government authorities (including in relation to issues such as bribery, corruption and data protection) or other parties, which may impact the Group's operating results. One or more of these consequences may result from the Group's efforts in exploring new forms of industrial partnership in relation to its UltraFan programme. The Group may also be unable to exercise effective management control over the operations of its joint ventures, including any such joint ventures on which parts of its business are reliant, including Alpha Partners Leasing Limited, Hong Kong Aero Engine Services Limited and Singapore Aero Engine Services Pte Limited, each of which is considered to be individually material to the Group. The pursuit of any strategic alliance, acquisition or joint venture, including in relation to the UltraFan programme, may demand significant attention from the Group's management that would otherwise be available for day-to-day business operations. The Group's financial results could also be materially adversely affected by legacy liabilities, transaction-related charges, amortisation of expenses related to intangibles, charges for impairment of long-term assets, credit guarantees, partner performance or other indemnification rights.

A failure of one or more of the Group's products could have a material long-term adverse financial and reputational impact

A failure in quality control or an unsafe design could cause the Group's products to fail to meet the safety expectations of its customers and/or regulatory requirements regarding safety. If the Group's products are found to be, or perceived to be, subject to safety issues, this could result in significant remediation, replacement and/or compensation costs, including recalls and/or additional testing requirements. In addition, product liability and warranty claims may arise if the Group's products do not meet customers' quality expectations, if products fail to fully comply with regulations, or if the Group fails to provide care and support in the required form in response to any problems. The Group could also be subject to financial penalties for product issues and/or delays under its contractual arrangements with customers. These consequences could, in turn, result in financial penalties and/or reputational damage for the Group. In addition, if a large number of units of a particular product have already been supplied to customers and are in operation, the emergence of any safety concerns affecting that product could result in significant costs for the Group and have a material adverse effect on the Group's results of operations.

A major product failure in service could result in loss of life and significant financial and reputational damage for the Group. The potential consequences of any such failure are likely to be significant and wide-ranging. The immediate financial consequences would likely include compensation payments and/or penalty payments to those affected and costs associated with investigating a major product failure in order to identify its root cause. The reputational damage suffered by the Group, particularly where a major product failure in service results in loss of life, could substantially reduce future demand for the Group's products and/or require significant spending in order to restore the Group's reputation. Damage to the Group's reputation may also result in reduced use of its products already in service, which may be driven by customer perceptions concerning safety, as well as by identified safety issues. In addition, such safety concerns could result in order cancellations or postponements, which could have a material adverse effect on the Group's order backlog. Extensive regulatory consequences may also result from any failure of the Group's products. These consequences could include financial penalties, the suspension or revocation of the regulatory authorisations that the Group requires to operate elements of its business and/or the withdrawal of certain of the Group's products from some or all of the markets in which they are offered.

A significant safety or performance issue affecting the equipment of one or more customers of the Group could also have a negative impact on the Group if such customers are restricted or prevented from operating equipment that incorporates the Group's products. Even if such issues are completely unrelated to the Group's products, the Group could still experience a material adverse effect on its revenue, for example by reducing its ability to sell further products and/or reducing the revenue that it derives from LTSAs. This could occur, for example, were problems with a particular model of aircraft to result in some or all of that model of aircraft in use with that customer, or globally, being grounded pending further investigation and/or remediation. If the grounded

aircraft were equipped with engines provided by the Group, the flying hours of the Group's engines could be significantly reduced (with an associated reduction in revenue earned under applicable LTSAs), even if the issues affecting the aircraft are unrelated to the Group's products. Production of future aircraft of the same model could then also be delayed, modified or ultimately cancelled, which could reduce the size of the market for the Group's engines by restricting the number of available applications.

Either as a result of smaller safety issues with the Group's products that affected multiple customers, or due to a single major failure in service, product failures could potentially materially reduce the demand for the Group's products and/or restrict its ability to offer those products for a sustained or indefinite period. This could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group may be subject to extensive environmental and/or health-related liabilities in connection with its facilities and operations

The Group's business operations are, and have been in the past, subject to environmental and health-related hazards that are inherent to certain of its activities. In particular, such hazards include: (i) the disposal of radioactive nuclear material; (ii) the discharge of pollutants or hazardous chemicals; (iii) industrial and mechanical accidents; and (iv) occupational and health hazards. Any of these hazards could restrict or prevent the continued operation of one or more of the Group's facilities, reduce the production output of such facilities and/or result in personal injury, death, environmental damage, monetary losses and possible legal liability (including, potentially, liability relating to certain of the Group's historical and now discontinued activities).

The nature and long history of the Group's business creates an increased risk of legal claims by affected parties and/or regulatory enforcement actions relating to the environmental impact of current or former sites. This is a particular risk in respect of those sites that the Group has owned and/or operated for a long period of time, including periods when environmental regulations imposed less stringent requirements than those that are currently applicable or where changes in land use near the Group's sites or former sites have increased the likelihood and/or magnitude of potential liability associated with them. This is particularly true of the Group's facilities at Hucknall and Barnoldswick, which are registered as lower tier COMAH sites in the UK. This registration is required in the UK due to the quantity of hazardous chemical substances stored at these sites. The COMAH registrations indicate that the consequences of any major accident at the sites would not be limited to the sites themselves and there could be an off-site impact on the surrounding area. Regulation 5 of COMAH places a general duty on these sites to take all measures necessary to prevent major accidents and limit their consequences to people and the environment, while Regulation 7 requires the sites to prepare and retain major accident prevention policies.

Certain of the Group's activities, including the disposal of radioactive and hazardous chemical waste, as well as the use of substances such as asbestos, exotic metals, radioactive materials, acids, bases, alcohols and hydrocarbon lubricants as part of manufacturing processes and of fuels and oils as part of the testing of products, may be harmful to people or the environment and present an increased risk of liability and potential future regulatory enforcement action. These hazards may require compliance with licensing requirements, such as those affecting the Group's Nuclear Fuel Production Plant and Neptune testing facility in Derby, which are both licensed and regulated by the Office for Nuclear Regulation in the UK and have licences from the Environment Agency for the disposal of radioactive waste. The hazards associated with the Group's activities could also result in claims and/or regulatory enforcement action under applicable environmental legislation in the jurisdictions in which the Group operates or previously operated facilities. Such claims and/or enforcement action may be instigated for a number of reasons including, but not limited to: (i) land contamination; (ii) environmental pollution; (iii) impacts on the health of those present on sites owned or operated by the Group; and (iv) impacts on the health of those living or working near to such sites. Legal claims may also arise in relation to decommissioned sites previously owned or operated by the Group in respect of environmental matters. Any claims or regulatory enforcement action as described above could have a material adverse effect on the financial position of the Group and could also materially damage the Group's reputation and prospects.

The Group may also be subject to claims from current or former employees, agents or subcontractors alleging breach of applicable health and safety legislation and/or that the Group's activities have contributed to mental and/or physical health problems, some of which may not emerge until many years after their involvement with the Company came to an end. The nature of the Group's business, including the potential for exposure to hazardous materials and historic manufacturing methods (e.g. manual handling, working with vibrating tools and machining of components producing very small metal particles) may result in as-yet-undiagnosed health issues

by current or former employees or others. The Group has previously been party to a number of health-related claims, such as those related to working with asbestos, and has taken action to manage the risk of such claims as appropriate. The Group 2019 Consolidated Financial Statements included a £49m provision for asbestos-related illnesses in former employees, representing an increase of £2m compared to the provision recognised in the Group 2018 Consolidated Financial Statements. However, the Group cannot guarantee that future claims will not be brought by large numbers of current or former employees, agents or subcontractors relating to health, safety and current or previous working practices. Any such claims could materially damage the Group's reputation, employee relations and ability to attract future personnel, any of which could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Failure to deliver a major programme, as experienced in respect of the Trent 1000 in-service issues, could have potentially material adverse financial and reputational consequences

The Group manages complex product programmes that feature demanding technical requirements as well as stringent, and sometimes fluctuating, customer deadlines. This requires co-ordination of the engineering function, manufacturing and assembly operations, external supply chains, partners and other functions. Failure to deliver a major product programme on time, within budget, at required specifications or in line with customer expectations could have material adverse consequences for the Group. These consequences include the risk of customers demanding penalty payments, customers deciding to terminate their contracts or reduce orders, impairment of the carrying value of the Group's intangible assets, potential litigation and reputational damage.

In respect of the Trent 1000 engine, which powers the Boeing 787, the Group has been dealing with significant in-service issues that have affected each of the three variants of the engine (Package B, Package C and TEN). The disruption to the Group's business resulting from the Trent 1000 in-service issues demonstrates some of the potential consequences for the Group's business of programme delivery failures. Specifically, corrosion-related fatigue cracking of turbine blades found in a number of Trent 1000 engines has required extensive inspection, monitoring and remediation work. The Trent 1000 in-service issues have also resulted in an increase in grounded aircraft and a corresponding reduction in flying hours, reducing revenue received by the Group under LTSAs that are priced on a US dollar-per-flying-hour basis. In addition, the required inspection, monitoring and remediation work has diverted production capacity from the Group's ongoing operations. The Trent 1000 in-service issues also led to contractual and non-contractual penalties payable by the Group in respect of those issues and their impact on the Group's customers. This illustrates a risk common to the Group's contractual arrangements with customers for its aircraft engines, which commonly include provisions imposing significant financial penalties on the Group for product issues or failures as well as for delays to scheduled deliveries.

The Group has invested in facilities and people and diverted resources from other areas of the business specifically to manage the level of disruption to its customers resulting from the Trent 1000 in-service issues and is developing longer-term solutions to these issues, resulting in significant costs to the Group to date, and potentially in additional costs in the future as recovery from this issue is still ongoing. The Group has made provisions for Trent 1000 exceptional costs of £690m as at 30 June 2020. This provision represents the Directors' best estimate of the future expenditure required to settle the Group's obligations in relation to the Trent 1000 in-service issues and takes account of information available and different possible outcomes. The Group utilised £328m of the Trent 1000 exceptional costs provision in the six months ended 30 June 2020. This amount comprised customer disruption costs settled in cash and credit notes and the cost of remediation Shop Visits.

The Group announced on 11 August 2020 that, during routine inspections as part of the first scheduled Shop Visits for older Trent XWB-84 engines, it had identified indications of wear in the intermediate pressure compressor of a small number of engines that have been in service for four to five years. The investigation of these issues is at an early stage and it is too early to identify with any certainty their likely financial and/or reputational impact on the Group.

Any failure to identify issues with major programmes at an early stage could result in the proliferation of those issues so as to affect more of the Group's customers, resulting in further reputational and/or financial harm, as well as a material adverse effect on the Group's order backlog. A failure to address programme issues early and in a way that satisfies the concerns of customers could also lead to protracted investigations and/or disputes concerning those programme issues with associated material financial and/or reputational impacts as well as the diversion of the Group's non-financial resources away from other priorities. Where the costs associated with new programmes, including, but not limited to, R&D costs, the costs of establishing production of new products and/

or the costs of successfully introducing products into new markets are higher than expected, this could result in a material adverse effect on the Group's business and results of operations.

The financial and reputational consequences of any failure by the Group to deliver major programmes, including but not limited to the Trent 1000's ongoing in-service issues and any adverse future developments or costs in relation to the Trent XWB-84 compressor wear described above, could have a material adverse financial and reputational effect, which could, in turn, have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The accounting for many of the Group's contracts and programmes requires management to make significant estimates and assumptions and to use judgement. The use of incorrect accounting estimates and assumptions and/or changes to those estimates and assumptions could adversely affect the Group's financial results

A significant portion of the Group's revenue is derived from long-term contracts that fall into different accounting periods and which can extend over significant periods. The most significant of these are LTSAs and, in particular, TotalCare in the Civil Aerospace business. Under these arrangements, the Group's primary obligation is to maintain customers' equipment in a specified operational condition over the period of the contract at the Group's cost.

TotalCare contracts are accounted for based on the stage of completion of the contract, which is assessed by considering the actual costs incurred to date compared to the estimated costs to complete the performance obligations under the relevant contract. In making the assessment of future revenue, costs and the level of profit recognised from these long-term contracts, the Group benchmarks forecast costs against previous programmes, recognising that the reliability of the forecasts will improve as operational experience of an engine increases. The assessment of the estimated profit for each arrangement involves detailed calculations using large and complex databases with a significant level of manual intervention. To the extent that actual revenue or costs differ from those forecast costs or that forecasts change, the cumulative impact is recognised in the period in which such changes or deviations are recognised or incurred. The ongoing assessment of these estimates could have a material impact on the profits of the Civil Aerospace business in an individual financial period.

The estimated revenue and costs relating to the TotalCare contracts are inherently imprecise and significant estimates are required to assess: (i) EFHs, time on wing and other operating parameters; (ii) the pattern of future maintenance activity and the costs to be incurred; and (iii) life-cycle cost improvements over the term of the contracts. The estimates take account of the inherent uncertainties and the risk of non-recovery of any resulting contract balances. An allowance is also made against contract assets arising, based on both the customer's creditworthiness and an assessment of the importance of the particular engine fleet to the customer. Changes in this allowance are recognised in the relevant accounting period. Because of the significance of the estimation and assumption processes used in the Group's accounting, materially different revenue and profits could be recognised if the Group used different assumptions or if the underlying circumstances were to change or if there is a change in judgement. Where underlying assumptions, circumstances or estimates are shown to be inappropriate or inaccurate and are required to be changed, this may adversely affect current and/or future period financial performance.

The termination or expiry of certain long-term contracts, including contracts with government bodies such as the MoD, may impose repayment obligations on the Group, the quantum and timing of which are uncertain. For example, under the terms of two contracts between the Group and the MoD that came to an end in 2018 and 2019, respectively, the Group is subject to repayment obligations that have yet to be fully quantified. Although the repayments under these contracts are contractually due, the timing of when the MoD will require the Group to make the repayments remains uncertain and will depend on the outcome of discussions with the MoD which have not yet taken place. The quantum of the repayments that may be required is also uncertain and is subject to calculations to be made by the MoD under contractual true-up mechanisms. The Group has not requested any confirmation from the MoD as to the timing or quantum of the repayments. Although the MoD is not expected to require payments under these contracts until at least 2023 due to the ongoing COVID-19 pandemic and the support the MoD has provided to the Group and its supply chains as a result, the MoD could enforce its right to require payment of amounts contractually due under the contracts at any time. Where the Group is required to make these or other contractual payments earlier than expected or the quantum of such payments is larger than expected, this may adversely affect the Group's current and/or future cash position and period financial performance.

The COVID-19 pandemic and government restrictions in response could cause greater deviation from underlying assumptions, circumstances or estimates than might otherwise be the case and so could have the potential to increase the negative impacts associated with this risk. In particular, assumptions as to the number of flying hours likely to be completed by each engine in service and/or the likely servicing and maintenance requirements, as well as associated costs, likely to be incurred in relation to those engines are likely to be materially different as a result of the COVID-19 pandemic and government restrictions introduced in response. See “—*The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any “second wave” of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*” above.

The Group may be unable to realise the expected benefits from announced or future reorganisations, including the reorganisation announced on 20 May 2020

The Group announced a major reorganisation of its business on 20 May 2020 to adapt to the lower level of demand from customers anticipated as a result of the impact of the COVID-19 pandemic and government restrictions in response (as described in “—*The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any “second wave” of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*” above). This reorganisation is expected to include the loss of approximately 9,000 roles (subject, where applicable, to consultation) from the Group’s global workforce (with approximately 4,800 already having been lost as at the end of August), out of a monthly average of 51,700 people employed globally in 2019. In addition to expected savings of approximately £700m from the proposed headcount reduction, the Group intends to reduce expenditure across plant and property, capital and other indirect cost areas, with the aim of generating additional annualised savings of approximately £600m. Cash restructuring costs related to the reorganisation are expected to be approximately £800m between 2020 and 2022 (inclusive). There is a risk that the savings generated may be lower than anticipated, and that the final costs of implementing the reorganisation may be higher than anticipated, in which case the Group may ultimately derive less financial benefit than anticipated from the reorganisation.

Expected cost savings from the reorganisation announced on 20 May 2020 are based on the Group’s estimates and actual savings may vary significantly. In particular, proposals to: (i) re-size the Group’s manufacturing footprint; (ii) optimise MRO activities using the Group’s external MRO providers; and (iii) adopt a capital-light spare engine strategy, may fail to achieve their strategic aims, fail to produce the expected financial benefits and/or impose additional unforeseen costs on the Group. In addition, the proposed capital-light spare engine strategy involves a significant change to the Group’s approach to providing spare engines for its customers. The Group’s announced reorganisation may cause operational disruption for the Group, fail to deliver the anticipated cost savings and/or may not be accepted by the Group’s key customers.

Due to the complex and highly regulated nature of the business, benefits from the Group’s cost programmes may be slow to crystallise. The implementation costs of the Group’s reorganisation, restructuring, transformation and cost saving programmes may be higher than expected and, in some instances, during periods of transition related to such programmes, the Group may carry the cost of both old and new systems and/or facilities. As a result of one or more of these measures, the Group may fail to realise, or experience delays in realising, the potential and expected benefits of any reorganisation, including cost reductions, operational efficiencies and other benefits. This could have a material adverse effect on the Group’s business, financial condition, results of operations and prospects.

The Group depends on the recruitment and retention of qualified personnel, and its failure to attract and retain such personnel could reduce the Group’s ability to deliver its strategy

The Group requires sufficient organisational, leadership, technical and functional capability to deal with existing business commitments and for its future growth requirements and plans. The restructuring plans announced in response to the COVID-19 pandemic are expected to result in approximately 9,000 people leaving the Group (with approximately 4,800 of those people already having left by the end of August) and there is no guarantee that the Group’s business will be able to retain key personnel during the restructuring or motivate retained employees both during and following the restructuring.

The Group’s future strategy requires people with engineering, manufacturing, business and digital skills, including, in particular, expertise in: (i) electrical engines and integration of electrical systems into aviation

platforms; (ii) fuel cells; (iii) microgrids; (iv) systems engineering; (v) nuclear engineering; (vi) app development; (vii) artificial intelligence; and (viii) big data. Certain personnel are required to receive security clearance and training in order to work on certain programmes. Additionally, as a result of the international nature of the Group's operations, it is important to hire and retain personnel with relevant experience in local laws, regulations, customs, traditions and business practices. The Group faces a number of challenges that may affect personnel retention such as the efforts to increase the efficiency of its operations and improve the affordability of its products and services, including reducing its workforce, as described above, and consolidating and relocating certain operations, as well as the potential for changes to its compensation and reward structure in light of its changing strategy. The loss of key personnel, difficulties and/or delays in hiring new personnel and an inability to adequately train existing personnel could all have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group's future success also depends substantially on the continued service and performance of its senior management team for the running of its daily operations as well as for the planning and execution of its strategy. There is strong competition worldwide for experienced senior management and personnel with expertise in the engineering sector. If the Group loses the services of members of its senior management team or other key personnel, it may have difficulty, and incur additional costs, in replacing them. If the Group is unable to find suitable replacements in a timely manner, its ability to realise its strategic objectives could be impaired, which could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group's business could be materially adversely affected by any prolonged work stoppages

The Group cannot predict how stable its employment relationships will be or whether it will be able to successfully negotiate agreements with its employees without impacting its financial condition. In addition, a large proportion of the Group's workforce, particularly those members of the Group's manufacturing workforce, are represented by trade unions (in the UK and US) or works councils (in Germany) and the presence of employee representative bodies may limit the Group's flexibility in engaging in dialogues and reaching agreements with its workforce. Approximately 76% of the Group's global workforce was covered by collective bargaining agreements in 2019. Reorganisation or restructuring initiatives, such as the one announced on 20 May 2020, closures, site divestitures and job reductions may also harm the Group's labour relations and public relations and could lead to work stoppages and/or demonstrations.

The Group is currently undergoing a reorganisation and restructuring programme, as referred to above, which is expected to result in a proposed employee headcount reduction of approximately 9,000 (subject, where applicable, to consultation), increasing the Group's exposure to the risk of disputes and workplace disruption as the Group implements multiple, complex and far-reaching changes. Failure to agree mutually beneficial terms between the Group and its employees and/or their representatives, as part of the current restructuring programme or as part of future changes (including future restructurings), could lead to disputes and potential business disruption. In the event that work stoppages and/or demonstrations become prolonged, or the costs of implementing the programme are otherwise higher than anticipated as a result of such disruption, the Group's future operations and financial condition may be negatively affected. Work stoppages could negatively impact the Group's ability to manufacture its products on a timely basis, which could have a material adverse effect on its business, financial condition, results of operations and prospects. Worsening labour relations and the way in which the Group's actions are portrayed by its employees and the media may, in addition, lead to material reputational damage, which could have a further material adverse effect on the Group's prospects.

The Group's business is dependent on its ability to establish and maintain its intellectual property rights in the technology and products used in its operations, as well as on its ability to continue to make use of third-party intellectual property

The Group relies on patent, copyright, trademark, trade secret, know-how and other intellectual property laws and agreements with its employees, customers, suppliers and other parties to establish and maintain its intellectual property rights in the technology and products used in its operations. There can be no assurance that the resources that the Group invests to protect its intellectual property rights will be sufficient or that its intellectual property portfolio will adequately deter misappropriation or improper use of its technology or that it will prevent competitors from independently developing or selling products or services duplicative of or similar to those offered or sold by the Group.

Despite the Group's efforts to protect its intellectual property rights, any of its direct or indirect intellectual property rights could be challenged, invalidated or circumvented. The Group also faces attempts to gain unauthorised access to its IT systems or products for the purpose of improperly acquiring its trade secrets or confidential business information. The theft or unauthorised use or publication of the Group's trade secrets and other confidential information as a result of such an incident could adversely affect its competitive position and the value of R&D (see "*Attempts by third parties or malicious insiders to disrupt or improperly access the Group's IT systems through cyber-attacks or otherwise could result in the manipulation, corruption, or destruction of data, systems or products and could cause harm to the Group, its customers, suppliers and partners*" above). Further, the laws of certain jurisdictions in which the Group seeks to protect or enforce its intellectual property rights may not protect its proprietary rights to the same extent and in the same manner as the laws in Europe and the US. Therefore, in certain jurisdictions the Group may be unable to protect its proprietary technology adequately against unauthorised third-party copying or use, which could result in a material adverse effect on the Group's product offering, competitive position and results of operations.

Although the Group believes that it lawfully complies with the intellectual property rights granted to others, it may be subject to claims asserted against it. These claims may harm the Group's reputation, result in increased costs and limit the Group's ability to offer certain products or services. Any claims or litigation relating to intellectual property, regardless of whether or not the Group is found to have infringed any rights, could be time-consuming and costly, injure the Group's reputation or require the Group to enter into licensing arrangements (potentially on unreasonable terms). An injunction may also be ordered against the Group, preventing it from continuing to use certain intellectual property. Where the Group relies on third-party intellectual property as part of its provision of products and/or services, the Group is exposed to the risk that its right to use such intellectual property may be modified or withdrawn or the costs associated with continued access to that intellectual property could materially increase in the future. Loss of access to the intellectual property may cause significant disruption to the Group's business, including delaying and/or preventing the Group from offering certain of its products or services. These potential costs and consequences of any dispute concerning intellectual property could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The timing and type of contract awards could materially affect the Group's future results of operations and financial condition

The Group's profitability and cash flows may vary materially depending on the types of contracts entered into with customers, the nature of the products sold or the services performed under such contracts, the costs incurred in performing the work, the achievement of contractual performance objectives and the stage of performance at which the right to receive fees is determined, particularly under award and incentive fee contracts.

LTSAs

The Group's order backlog includes a variety of types of contracts for both OE and services. Contract types vary by business and include LTSAs (such as TotalCare agreements in the Civil Aerospace business, which covered 90% of the Group's widebody fleet as at 31 December 2019), fixed-price contracts, fixed-price contracts with escalation, T&M Contracts, cost-plus contracts, cost reimbursable contracts, fixed-price incentive-fee contracts and other arrangements. In 2019, revenue from LTSAs accounted for 39%, 17% and 4% of the total revenue of each of the Group's Civil Aerospace, Defence and Power Systems businesses, respectively. The risks associated with the Group's LTSAs are set out in "*A significant proportion of the Group's revenue is derived from LTSAs and the revenue that it derives from LTSAs may be significantly reduced as a result of events beyond the Group's control*" above.

T&M Contracts

Under T&M Contracts, such as "on wing services" contracts, customers agree to pay the Group on the basis of the work performed and the materials used plus any applicable mark-up. T&M Contracts commonly contain caps on the maximum amount the Group may charge. To the extent that actual costs incurred are higher than any agreed caps, the Group's operating results could be adversely affected. In 2019, revenue from T&M Contracts and other aftermarket services accounted for 21%, 38% and 29% of the total revenue of each of the Group's Civil Aerospace, Defence and Power Systems businesses, respectively.

Cost-reimbursable and cost-plus margin for profit contracts

Contracts for certain defence-related development programmes are on a cost-reimbursable or cost-plus a margin for profit basis. Under cost-reimbursable contracts or cost-plus contracts, the Group is reimbursed for allowable costs and is paid a fee or profit margin which may be fixed or performance-based. In these cases, the associated financial risks to the Group primarily relate to programme cancellation (and consequent loss of revenue) if cost, schedule or technical performance issues arise, resulting in the customer no longer being willing to continue funding the project.

Fixed-price incentive-fee contracts

Under fixed-price incentive-fee contracts, allowable costs incurred are eligible for reimbursement, but are subject to a cost-sharing arrangement. Generally, if the Group's costs exceed a contract's target costs or are not allowable under the applicable regulations, the Group may not be able to obtain reimbursement for all costs and may have its fees reduced or eliminated. To the extent that the contractual price escalations amount to less than the actual cost escalations, the Group's results of operations and financial performance could be materially adversely affected.

Contractual penalties

In addition to risks related to the specific types of contracts listed above, the Group may also face significant financial penalties under its existing contracts for failures to deliver products on time, failures to deliver products to the appropriate specifications and/or as a result of product issues that make its products less effective or that otherwise negatively affect the Group's customers. Such issues may result in uncapped liabilities, in instances where contractual protections limiting the Group's liability are insufficient or are found to be unenforceable in certain jurisdictions.

Order backlog reductions

Changes affecting the Group's order backlog may have a significant negative financial impact on the Group's business, financial position and results of operations. Such changes may include the postponement, cancellation or scaling-back of orders as well as the re-timetabling of deliveries and/or attempts to renegotiate payment terms. These changes to the Group's order backlog could potentially result from: (i) the broader impact of the COVID-19 pandemic and government restrictions in response, as described in "*—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*" above; (ii) general economic, political and geopolitical conditions, as described in "*—Risks Relating to the Group's Industry—The performance of the Group's business is directly linked to general economic conditions, which may adversely affect the Group's business, financial condition, results of operations and prospects*" below; and/or (iii) the trend towards an environmentally regulated global economy, as described in "*—Risks Relating to the Group's Industry—Failure by the Group to adapt to the trend towards an environmentally regulated global economy and an increasing public and governmental focus on environmental protection could make the Group's products less attractive to existing or potential customers and restrict or prevent their continued use*" below. Changes to the Group's order backlog may also result in the Group being over-hedged with respect to certain exchange rate exposures. See "*—The Group's results are affected by fluctuations in foreign exchange rates*".

The Group is exposed to counterparty credit risk, particularly in relation to the financing support that it provides to its customers

One or more of the Group's customers may experience financial difficulties, including insolvency, making them unable to meet payments owed in respect of products and/or services provided by the Group in a timely manner, or at all. Failure of the Group's customers to pay in a timely manner, or at all, could cause the Group's revenue to decline significantly. This is a particular risk in relation to the Group's LTSAs, where the length of the contractual terms results in greater uncertainty with respect to counterparties' abilities to meet financial commitments for the duration of their respective agreements. If a significant customer, such as an aircraft manufacturer, or multiple smaller customers become unwilling or unable to meet their financial commitments and, as a result, default on their payment obligations under agreements entered into with the Group, the Group's financial condition may be materially adversely affected. In particular, the inability of aftermarket customers to

meet payments owed to the Group has resulted in and is likely to continue to result in significantly higher amounts in respect of trade debtors recorded on the Group's consolidated balance sheet and an increased risk that a proportion of these amounts may be ultimately unrecoverable, which could result in a material in-year profit or loss impact on the Group. Increases in amounts owed by aftermarket customers have required and will continue to require regular reviews of the Group's consolidated balance sheet exposure to those customers. Any anticipated future revenue and costs associated with at-risk contracts could be required to be re-assessed for risk, potentially resulting in reduced future margins. In respect of OE customers, the Group may be required to increase its accounting provision for doubtful debts and may also be required to assess any goods held for sale for impairment in light of reduced expected future demand. These consequences could have a material adverse effect on the Group's results of operations and financial condition.

In connection with the sale of its products, the Group occasionally provides financing support for its customers, particularly to customers of the Civil Aerospace business. The Group's commitments relating to these financing arrangements are spread over several years, relate to a number of customers and a broad product portfolio and are generally secured on the asset subject to the financing. These include, as at 30 June 2020, commitments of US\$2.1bn to provide facilities to enable customers to purchase aircraft (of which US\$354m could contractually be called during the remainder of 2020). These facilities may only be used if the customer is unable to obtain financing elsewhere and are priced at a premium to the market rate.

In connection with delivered aircraft, financing arrangements typically take the form of various types of credit-based or asset-value guarantees up to the value of the products purchased. These guarantees commonly involve a Group entity or entities guaranteeing the loan repayment obligations of customers where such customers have borrowed in order to fund purchases of the Group's products. At 30 June 2020, the maximum aggregate discounted gross exposure in respect of delivered aircraft was US\$63m (discounted gross exposure disregards the value of any security or indemnity and is discounted based on the Group's typical borrowing rate in order to reflect the time span over which the exposures could arise). If a customer, which has the benefit of such a guarantee, fails to repay amounts owed to its lenders, the relevant Group entity will be liable to repay the lenders the unpaid amount that has been guaranteed. In doing so, the Group is exposed to the risk of the counterparty being unable to repay some or all of its borrowings and could thereby potentially forego some or all of the revenue and profit the Group would otherwise have earned from the sale of its products.

The COVID-19 pandemic has caused significant financial difficulties for commercial airlines globally. For example: Virgin Australia entered voluntary administration, seeking bankruptcy protection, in Australia on 21 April 2020; Thai Airways received significant financial support from the Thai Government in May 2020 to support a major restructuring; and Air France-KLM agreed a package of financial support comprising approximately €7bn of financial support in the form of loans and guarantees from the French Government and a further €3.4bn of similar support from the Dutch Government, announced in April 2020 and June 2020, respectively. The insolvency of any of the Group's significant customers in similar circumstances could cause significant financial losses for the Group, particularly as a result of the financial support provided to such customers, including the Group being required to make payments under guarantees and/or failure by customers to repay loans made to them by the Group.

Significant events impacting the international aircraft financing market, including the COVID-19 pandemic and government restrictions in response (as described in "*—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*" above), the failure by customers to meet their obligations under such financing agreements or inadequate provisions for customer financing liabilities could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

In addition, there is a risk that the Group could suffer financial losses through the default or non-performance of the financial institutions with which it transacts. Counterparties may fail to comply with or default on contractual commitments with little or no notice to the Group, limiting the Group's ability to take action to mitigate exposure. Additionally, the Group's ability to mitigate its exposures may be constrained by the terms of its contractual arrangements or as a result of adverse market conditions. If one of the Group's counterparties becomes insolvent or files for bankruptcy, the Group's ability to recover any losses suffered as a result of that counterparty's default may be limited by the liquidity of the counterparty or applicable laws governing the bankruptcy proceeding. Although the Group manages its exposures in accordance with its Group treasury policy, which limits the value that can be placed with each approved counterparty to minimise the risk of

loss, there can be no assurance that the Group's policy provides adequate protection to the Group. If any of the foregoing occurs, it could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Goodwill and other intangible assets represent a significant portion of the Group's assets, and any impairment of these assets could negatively impact its results of operations and financial condition

As at 31 December 2019, the Group had goodwill and other intangible assets of £5.4bn, net of accumulated amortisation, which represented 17% of the Group's total assets. Goodwill and intangible assets are recognised when the Group acquires a business based on the purchase price and the value of the acquired assets. Intangible assets are also recognised for participation and development costs, customer aftermarket rights and software.

Subsequent events and unforeseen issues including macro-economic conditions, changes in the outlook of a business or the success of the Group's programmes may adversely affect the value of goodwill or intangible assets and trigger an evaluation of the recoverability of the recognised amounts. The Group's goodwill is subject to an impairment test on an annual basis and all intangible assets are also tested whenever events and circumstances indicate that they may be impaired. If the recoverable amount of an asset (or cash-generating unit) is estimated to be below the carrying value, the carrying value is reduced to the recoverable amount and the impairment loss is recognised as an expense. The recoverable amount is the higher of value in use or estimated fair value less costs to sell. The value in use is the estimated present value of future cash flows using a pre-tax discount rate that reflects the time value of money and the risk specific to the asset. Intangible assets (other than goodwill) are amortised over the estimated useful life of such assets.

Given that intangible assets make up a significant portion of the Group's assets, future determinations of significant write-offs of goodwill or intangible assets as a result of an impairment test could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group operates defined benefit and defined contribution pension schemes, some of which are unfunded, as well as unfunded healthcare and life insurance benefits

The Group operates a number of defined benefit and defined contribution pension schemes for certain of its employees. Defined benefit plans in the UK are funded, with the assets held in separate trustee administered funds. The Group's defined benefit plans outside the UK are comprised of a mixture of funded and unfunded plans. Additionally, in the US, and to a lesser extent in some other countries, the Group's employment practices include the provision of healthcare and life insurance benefits for retired employees under plans that are unfunded.

The principal defined benefit pension funds follow a liability-driven investment strategy to reduce funding risks. However, the funding of the pension schemes may be adversely affected by changes in a number of factors, including investment returns (for example, equity risk, credit risk and counterparty risk on derivatives), long-term interest rate and price inflation expectations, and anticipated members' longevity. Such factors could require the Group to increase the amount of cash contributions payable to these plans. In particular, the COVID-19 pandemic and associated market volatility may also have an adverse impact on the investment returns of the Group's defined benefit pension schemes and could result in increased cash contributions.

The Group carries significant post-retirement liabilities on its balance sheet in relation to UK employees and former UK employees. During 2019, the trustee of the UK pension plan fully insured liabilities for approximately 33,000 former employees with Legal & General Assurance Society. This has removed future pensions funding risk for the Group in respect of this group of former employees who are in receipt of regular retirement income. However, the Group is still exposed to significant pensions funding risks in respect of the ongoing accrual of benefits for some current UK employees, as well as in multiple other countries in which the Group operates.

The UK defined benefit pension plan rules include a provision that enables the trustee to fully wind up the pension plan and trigger a solvency (Section 75) debt if the trustee, after considering advice from an actuary, decides that the plan sponsors are unwilling or unable to make payments due under the plan. The solvency deficit measured at the previous valuation, as at 31 March 2017, was £2,563m. This predates the insurance transaction with Legal & General Assurance Society in 2019 described above and the solvency deficit is anticipated to have been reduced materially as a result of that transaction.

In addition, if certain statutory requirements are met, the pensions regulator in the United Kingdom has the statutory power in certain circumstances to issue contribution notices or financial support directions that, if

issued, could result in significant additional liabilities arising or an acceleration in the payment of liabilities for the Group in relation to its UK defined benefit pension plan.

Contributions paid to the UK defined benefit pension plan since 1 January 2017 include a contingent commitment for a top-up payment to bring the technical provisions funding level up to 107% as at 31 March 2020. The amount payable is capped at £145m and would be payable in three instalments by 31 December 2021, 2022 and 2023 respectively. A determination as to whether or not any top-up payments are required will be based on the next triennial valuation of the Group's pensions arrangements, showing the position as at 31 March 2020, which has already been concluded and the results of which are expected to be available to the Group by the end of 2020. If this shows the technical provisions funding level to be below 107%, the top-up payments will be triggered. Although the rolled forward funding position from the 31 March 2017 valuation indicates that no top-up funding is expected to be required, the revised actuarial valuation could result in a lower technical provisions funding position that could ultimately require further top-up funding to be provided by the Group.

Any requirements to make additional contributions to the Group's pension plans, increases in unfunded post-retirement healthcare liabilities in excess of those currently anticipated or changes to the regulatory or tax treatment of the Group's pension plans could reduce the funds available to meet the Group's other operating, investment and/or financing requirements, which could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group's business involves significant risks and uncertainties that may not be covered by indemnity or insurance

Substantial costs resulting from an accident, failure of or defect in the Group's products or services, natural catastrophes, pandemics, terrorist acts or other incidents or liability arising from the Group's manufacturing operations, products or services in excess of any legal protection, indemnity or the Group's insurance coverage (or for which indemnity or insurance coverage could not be obtained) could have a material adverse effect on the Group's financial condition and results of operations. In particular, the Group does not expect that the circumstances experienced by the Group to date are such that a valid claim can be made for financial loss and/or business interruption under its insurance policy.

Although the Group endeavours to obtain insurance coverage from established insurance carriers to cover certain of these risks and liabilities as it considers appropriate, the amount of insurance coverage that the Group maintains may not be adequate to cover all claims or liabilities, existing coverage may be cancelled and it may not be possible to obtain insurance to protect against all operational risk and liabilities. Any accident, failure or defect related to the Group's products or services, even if fully indemnified or insured, could negatively affect its reputation among its customers and the public and make it more difficult for the Group to compete effectively. Additionally, disputes with insurance carriers over coverage terms or the insolvency of one or more insurance carriers may significantly affect the amount or timing of the Group's cash flows. Such circumstances could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Claims made by the Group under its insurance policies could significantly increase the premia payable under those policies to the extent that it is no longer financially viable for the Group to purchase some types of insurance coverage. The Group may be unable to continue certain of its activities or to offer certain products and/or services when it is unable to obtain insurance on an economic basis to cover the risks associated with these activities, products and/or services. This could have a material adverse effect on the Group by restricting its future operations.

The Group's future results may differ materially from what is expressed or implied by the Group's targets and expectations, as well as its views on recovery for its key markets, presented in this document

The Group's targets and expectations in respect of financial and operating metrics (including free cash flow, cash savings, restructuring costs, capital expenditure and disposal proceeds) and future developments, as well as the Group's views on shape and timing of the recovery of its key markets (in particular the civil aviation market), such as recovery of large engine EFHs and new engine deliveries in respect of its Civil Aerospace and ITP Aero businesses and mission critical power generation in its Power Systems business, set forth in this document are based on the Group's current expectations. The actual results achieved by the Group, as well as the actual recoveries for the Group's key markets, may differ materially from what is expressed or implied by these and similar statements. These statements are based upon a number of expectations (including in particular to the

impact of the COVID-19 pandemic and responses thereto), which are subject to significant business, operational, economic and other risks set forth in this Risk Factors section, many of which are outside of the Group's control. In addition, the assumptions may not continue to reflect the commercial, regulatory and economic environment in which the Group operates. Accordingly, such assumptions that underlie the Group's expectations may change or may not materialise at all. Such statements are forward-looking statements and prospectus recipients should not place undue reliance on these statements.

Risks Relating to the Group's Industry

The performance of the Group's business is directly linked to general economic conditions, which may adversely affect the Group's business, financial condition, results of operations and prospects

Market disruptions and significant economic downturns may develop quickly due to, among other things, crises affecting credit or liquidity markets, regional or global recessions, sharp fluctuations in commodity prices (including oil) and currency exchange rates, as referred to in "*Risks Relating to the Group's Business—The Group's ability to refinance its debt, raise additional debt financing and/or to continue to transact with its customers and suppliers could be constrained by the effects of an actual or potential credit rating downgrade, as well as prevailing market conditions*" above, changes in interest rates, changes in inter-bank lending rates, inflation or deflation, sovereign debt and bank debt rating downgrades, restructurings or defaults. The Group is exposed to a number of market risks, some of which are of a macro-economic nature, such as those described above, and some of which are more specific to the Group's industry, such as a reduction in air travel due to weak economic growth and lower consumer spending or disruption to other customer operations. In particular, the COVID-19 pandemic and government restrictions in response have had and will continue to have a material impact on the Group's business, as well as on the wider economic outlook. See "*Risks Relating to the Group's Business—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*" above.

Deterioration in the economy and in default and recovery rates could also require the Group to increase allowances for impairments or write-offs, which, depending on the amount of the increase, could have a material adverse effect on the Group's business, financial condition, results of operations and prospects. In addition, trends in certain commodity prices, such as oil prices, may have a direct impact on the investment decisions and business outlook of certain of the Group's customers. Volatility in raw material and commodity prices may, therefore, directly or indirectly have a material adverse effect on the Group's business, financial condition, results of operations and prospects. As the Group operates on a global scale, its operations and performance depend significantly on global market and economic conditions. Significant deterioration in the global economic environment, the industries in which the Group sells its products and services, or in the financial stability of one or more of the Group's major customers could result in fewer new orders or cause customers to postpone or cancel contracts, which could result in lower revenue, profitability and cash flows and a reduction in the Group's order backlog.

The Group's Power Systems business offers products to sectors that may be particularly exposed to adverse macro-economic events, including, the commercial marine, oil & gas, mining, power generation and industrial sectors and so could be particularly affected by an economic downturn. The effects of a significant economic downturn, including input price inflation, rising unemployment and reduced consumer spending could reduce or even eliminate growth in these sectors, which could, in turn, result in significant reductions in capital investment. Any such reduction in capital investment could be implemented quickly and could result in a significant decline in demand for certain of the Group's products. At the same time, a more severe macro-economic downturn could impair the Group's ability to recover amounts due from customers experiencing financial difficulties and could ultimately lead to a contraction in the customer base of the Power Systems business if such customers cease to operate.

Demand for aerospace products and services is influenced by a variety of factors, including current and predicted commercial air traffic levels, load factors, aircraft fuel pricing, labour issues, worldwide airline profits, airline consolidation, bankruptcies, competition, the retirement of older aircraft, regulatory changes, terrorism and related safety concerns, pandemic health issues or major natural disasters, general economic conditions, corporate profitability and cost reduction efforts. As past terrorist attacks and the spread of pandemics, including the COVID-19 pandemic, have demonstrated, such events may negatively affect public perception of air travel

safety and comfort, which may, in turn, reduce demand for commercial aircraft. Any retirement of older aircraft earlier than previously expected (including as a result of any restructuring and/or rationalising by commercial airlines of their fleets) could have a significant negative impact on the Group's revenue as it may reduce the payments that the Group receives under LTSAs for the engines used to power those aircraft and could affect other maintenance or servicing activities from which the Group would expect to derive revenue. Any of the conditions referred to above could have a material adverse effect on the demand for air travel and could reduce the sales and margins of the Group's Civil Aerospace business.

The performance of the Group's business is directly linked to domestic and global political developments, which may adversely affect the Group's business, financial condition, results of operations and prospects

US – China geopolitical tensions

Although the ongoing trade dispute between the US and China has not, so far, had a direct material impact on the Group's business as at the date of this document, any prolonged continuation or escalation in the trade dispute between the two countries, including wider economic restrictions, sanctions and/or trade embargoes, could have knock-on effects on the Group's supply chains. These effects could include increased costs, delays in supplying products and services and/or a requirement to significantly adjust the Group's operations in order to mitigate the impact of measures imposed by either country. Deteriorating customer confidence associated with the ongoing trade dispute could also reduce demand for the Group's products, resulting in a further material adverse effect on the Group's business.

The Group's Defence business is heavily reliant on the US Government, with the DoD ultimately accounting for approximately 50% of the Defence business's revenue in 2019 (including purchases from third parties of equipment that incorporates the Group's products), while China is a key, growing market for its Civil Aerospace business, accounting for approximately 20% of the Group's invoiced EFHs in 2019. This could leave the Group particularly exposed to any future escalations in geopolitical tensions between the US and China. Deteriorating international relations between the US and China could result in the Group being put under pressure by one or both of these countries. Such pressure could take the form of: (i) increased regulatory intervention, including changes to export licences and regulatory permissions with little or no notice; (ii) attempts to damage or undermine the business and/or reputation of the Group; (iii) threatened or actual appropriation of the Group's assets; and/or (iv) government pressure to cease or curtail operations in the US or China. If geopolitical circumstances force the Group to scale back or even cease its activities in one or more markets, this could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

2020 US Presidential Election

The outcome of the 2020 US Presidential Election is uncertain, as is the extent of any disruption that the election could cause to the US political landscape and any changes to existing US Government policies that could be implemented either ahead of or following the election. The election may also result in heightened geopolitical tensions between the US and China (or other countries) and there may also be an increased trend in US Government policy towards favouring US domestic markets and production. Such political changes could negatively affect the Group's US operations and success in selling its products and/or services in the US. The Group's Defence business could be significantly impacted as it benefits from R&D funding from US Government agencies, as well the US Government being a significant customer for its products and services. If some or all of the risks described above occur, they could have a material adverse effect on the Group's business, financial condition, results of operations and prospects both in the US and more broadly.

See also “—*The Group is subject to risks in relation to the UK's uncertain future economic relationship with the EU resulting from the UK having withdrawn from membership of the EU on 31 January 2020 and entered into a transition period during which its future relationship with the EU is uncertain*” below.

The Group's results are affected by fluctuations in foreign exchange rates

The global nature of the Group's operations and customer base means that it is exposed to volatility in foreign exchange rates. In particular, the Group has significant cash flows (most significantly US dollars, followed by euro) denominated in currencies other than the functional currency of the relevant trading entity. The Group's largest foreign currency exposure is to the US dollars to pounds sterling exchange rate, relating to net income denominated in US dollars which is then converted into pounds sterling. This exposure has amounted to approximately US\$4bn per annum over the past ten years. The Group is also exposed to the fair values of non-derivative financial instruments denominated in foreign currencies.

With respect to the Group's transactional foreign exchange exposure relating to net income denominated in foreign currencies, the Group has a long-term foreign exchange hedging policy pursuant to which it enters into forward foreign exchange contracts in order to manage transactional foreign currency risks. As a result, the Group holds a substantial pound sterling to US dollar hedge book, which as at 31 December 2019 totalled US\$36.5bn spread across eight years with an average rate of £/US\$1.53. Additionally, the Group holds a smaller euro to US dollar hedge book of US\$5.4bn as at 31 December 2019, with an average rate of €/US\$1.25. Any portion of the Group's foreign currency revenue that is not hedged will be exposed to changes in exchange rates, which may be significant.

There are complexities inherent in determining whether and when the Group's foreign currency exposure will materialise, in particular given the possibility of unpredictable cash flow, revenue variations arising from the level of commercial aircraft flying hours, engine maintenance and services activity, order cancellations, order postponements, delivery delays and related supply chain inputs.

The significant impact of the COVID-19 pandemic on the Group's Civil Aerospace business is expected to lead to a significant reduction in the net US dollar exposure of the business in the next few years, leaving the Group at risk of being in an 'over-hedged' position with a higher value of forward contracts than the expected US dollar net inflows. The Group has already reduced its hedge book from US\$36.5bn to US\$26.2bn, resulting in cash settlement costs totalling £1.46bn comprising £88m of cash costs incurred in the first six months of 2020, no further cash costs in the remainder of 2020, approximately £300m of cash costs in each of 2021 and 2022, and £718m spread over 2023 to 2026. There is a risk that potential further hedge book reductions, with associated costs, will be required where the Group's assumptions as to its likely foreign currency exposure prove to be inaccurate. To the extent that the Group's US dollar revenue over the next few years is lower than its US dollar costs during that period, or pound sterling devalues against the US dollar, the pound sterling cost of the Group's US dollar purchases would increase, negatively impacting its financial performance and position. See "*Risks Relating to the Group's Business—The COVID-19 pandemic has had and is likely to continue to have a material adverse effect on the Group, as would any "second wave" of COVID-19 infections or the emergence of any subsequent pandemic, the ultimate impact of which is dependent on the duration and extent of the pandemic and is therefore not yet known*" above.

The Group may also have difficulty in fully implementing its hedging strategy if its hedging counterparties are unwilling to maintain or increase derivative risk limits with the Group, if the hedging counterparties request collateral to be posted on new hedges and/or the Group is exposed to the risk of non-performance or default by these hedging counterparties. In addition, fluctuations in exchange rates (in particular the US dollar, euro and pound sterling) may have a material adverse effect on the Group's ability to compete with competitors whose costs are incurred in different currencies.

The Group's consolidated revenue, costs, assets and liabilities denominated in currencies other than pounds sterling are translated into pounds sterling for the purposes of compiling its consolidated financial statements using the spot rates required by IFRS. Changes in the value of these currencies relative to pound sterling could, therefore, have an effect on the pound sterling value of the Group's reported revenue, costs, and profits. These risks are not generally hedged.

The Group's results are affected by fluctuations in commodity prices

The Group is also exposed to fluctuations in the price of commodities, including metals, jet fuel, gas and electricity, which are key elements in the production and cost of the Group's products. Some of these raw materials may be rare and/or exhibit significant price volatility and it may not be possible to hedge the prices of those raw materials through long-term price agreements, financial derivatives, strategic stocks or other means. Alternatively, hedges may only be available over short periods. Significant external events, such as the COVID-19 pandemic and government restrictions in response, could also materially impact forecast currency and commodity exposures, potentially resulting in over-hedged positions and derivative liabilities.

Sustained increases in the price of oil could cause the operation of the Group's products and, in particular, the diesel-fuelled products offered by the Power Systems business, to become more expensive for the Group's customers. Such customers could increasingly favour alternative power sources in order to reduce their reliance on oil-based fuels and, in so doing, attempt to cut their overall operating costs and/or reduce their exposure to the price of oil. These changes in customer behaviours could result in a reduction in the demand for certain of the Group's products that use oil-based fuels, particularly in the event of sustained increases in the price of oil.

The Group's inability to offset material price inflation through increased prices to customers or commodity hedges, the impact of external events on forecast currency and commodity exposures and/or oil price rises reducing demand for the Group's products could have a material adverse effect on its business, financial condition, results of operations and prospects.

Failure by the Group to adapt to the trend towards an environmentally regulated global economy and an increasing public and governmental focus on environmental protection could make the Group's products less attractive to existing or potential customers and restrict or prevent their continued use

The Group manufactures complex equipment that is currently heavily dependent on fossil fuels. The world's transition to a low net carbon economy will be dependent on the development of technological solutions that move away from fossil fuels and towards low net carbon energy alternatives. Any failure by the Group to continue to identify opportunities to supply new products that result in lower net carbon emissions and keep pace with technological change in this area could result in the Group's existing products being less attractive to customers and use of such products being restricted and ultimately prevented by regulations limiting greenhouse gas emissions in various jurisdictions in which the Group's customers operate. Such regulatory interventions could include carbon pricing schemes, which could increase the cost for the Group's customers of operating its products.

Regardless of whether the Group is successful in adapting to the trend towards a low net carbon economy, government interventions to further regulate air travel, including imposing additional charges or taxes and/or restricting airport operations could significantly constrain any future growth in international air travel, which could, in turn, limit the growth opportunities available to the Group's Civil Aerospace business. International regulations, agreements and accords influencing government policies globally may make such government interventions more common and extensive in the future.

In addition to increasingly stringent environmental regulations, growing public interest in environmental concerns, and particularly climate change, may result in rising pressure on the Group to reduce its net carbon emissions and to reduce or eliminate its offering of those products that are reliant on fossil fuels. Public pressure and changing consumer behaviour could also have a wider impact on the markets for the Group's products and services, including international passenger air travel in respect of the Civil Aerospace business and the commercial marine, oil & gas, mining, power generation and industrial sectors in respect of the Power Systems business. As well as regulatory interventions, public pressure to use fuels producing lower emissions may require changes to the manufacturing processes and other business operations of the Group itself and also alter the behaviours and preferences of its customers. Such pressure could cause the Group's customers to prefer lower-emissions alternatives; a preference that the Group may not be able to cater for if it does not have a sufficient offering of such products. Public pressure and/or changes in consumer behaviour could cause reductions in the size and/or value of more carbon-intensive markets and could also drive rapid innovation in such markets in order to reduce net carbon emissions and make them more environmentally sustainable. Such public pressure may also result in reduced demand for international air travel and particularly long-haul international air travel, as consumers alter their behaviour by reducing non-essential international travel, shifting toward shorter distance and regional air travel and/or relying on alternative means of transport that produce lower net carbon emissions. In addition, the impact of the COVID-19 pandemic and government restrictions introduced in response may accelerate changes in consumer behaviour, including increasing the propensity to work remotely.

Climate change effectively increases the Group's susceptibility to physical climate-related risks as well as risks associated with the transition to operations with a lower net carbon impact. The Group has identified the need to adapt its products and services for a low net carbon economy as part of its corporate responsibility commitments and global efforts to reduce net carbon emissions. Failure to consider changes in atmospheric conditions could also result in changes in maintenance and overhaul requirements, affecting revenue generated by the Group's in-service fleet and jeopardising the viability of a services-based business model. A failure to transition at pace away from products and services that result in high levels of net carbon emissions and towards lower net carbon alternatives could impact the Group's ability to win future business, achieve operating results, attract and retain talent, secure access to funding and realise future growth opportunities and could also force further governmental intervention to limit emissions.

In addition to climate change, other environmental concerns, such as those relating to air quality and marine pollution may negatively impact the Group's business. The use of products offered by the Group and, in particular, the Power Systems business, could be restricted and ultimately prevented by increasingly stringent

environmental regulations relating to air quality and/or marine pollution in various jurisdictions in which the Group's customers operate. The Group's Power Systems business is heavily reliant on diesel engines across its chosen markets and public concerns in respect of nitrogen oxide and particulate matter emissions, as well as increasing governmental focus on this issue, could result in greater regulation of diesel engines in particular. Regulations restricting the use of diesel-powered vehicles or even prohibiting their use in certain areas or at certain times could reduce the suitability of many of the Group's products for certain applications or for use by certain customers. The International Maritime Organisation's ruling on marine sector emissions in international waters, which seeks to reduce sulphur emissions by 77% may increase demand for marine engines with lower sulphur emissions than those currently produced by the Group.

A failure by the Group to anticipate and prepare for the impact of the trend towards a lower net carbon global economy and an increasing public and governmental focus on environmental protection on its business and chosen markets could restrict the Group's future business operations and leave the Group less able to exploit opportunities in these markets. These consequences could, in turn, have a material adverse effect the Group's business, financial condition, results of operations and prospects.

The Group is subject to risks in relation to the UK's uncertain future economic relationship with the EU resulting from the UK having withdrawn from membership of the EU on 31 January 2020 and entered into a transition period during which its future relationship with the EU is uncertain

Under the terms of the EU Withdrawal Agreement, the UK withdrew from membership of the EU on 31 January 2020 and entered into a transition period which is due to expire on 31 December 2020. During the transition period, the majority of the rights and obligations associated with membership of the EU continue to apply to the UK. The UK Government's stated intention is to negotiate a trade agreement with the EU during the transition period. If the UK fails to conclude a trade agreement with the EU by the expiry of the transition period, the UK will revert to trading with the EU under the rules of the World Trade Organisation.

The uncertainty as to when and whether a trade agreement will be concluded with the EU and what rights and obligations any such agreement will contain will continue to cause both legal and macro-economic uncertainty. The progress of negotiations and failure to reach an agreement to date has increased this uncertainty, particularly given that the transitional arrangements currently in place are due to expire at the end of 2020. Such uncertainty may last for a number of months or years and could negatively impact business and consumer confidence and the economic environment in the UK and across EU member states. The impacts of prolonged legal and macro-economic uncertainty could include reduced demand for the Group's products and services which could, in turn, result in a material adverse effect on the Group's business, financial condition, results of operations and prospects.

In addition, depending on the trade agreement agreed between the UK and the EU, if any, the Group may experience material disruption to its supply chains. In particular, the Group has significant manufacturing operations in the EU, including in Germany and Spain, and also maintains manufacturing sites in the UK, meaning that its European supply chains may be particularly impacted by the future trading arrangements in place from time to time between the UK and the EU. Impacts may include delays to supply chains, including internal supply chains, and regulatory barriers that hinder the operation of the Group's business across what will be a new international trade border. The Group may implement actions to mitigate such impacts, such as its decision to move its design approval for its large aero engines from the UK to Germany and could incur additional costs as a result of such mitigating actions. It is not possible for the Group to anticipate the full potential impact of the UK's withdrawal from membership of the EU and any trade arrangements that may be put in place between the UK and the EU as the nature and scope of any such arrangements remains uncertain.

The Group exports a significant volume of civil aerospace engines from the UK to the EU in order to supply major customers such as Airbus. If the UK and the EU do not reach a trade agreement that places only minimal restrictions on the Group's ability to continue these export activities, then the Group may face additional delays, costs and legal restrictions in supplying products and/or services to customers based in the EU. This could result in contractual penalties for delays, increases in administrative costs associated with customs requirements and/or an inability to continue supplying certain customers.

The introduction of customs duties and tariffs on EU imports into the UK could also result in higher costs for external suppliers, which may then be passed on to the Group. Customs checks for goods moving between the UK and the EU could also increase lead times for deliveries of supplies. As a result, both of the Group's internal

and external supply chains could be adversely affected, particularly in relation to components imported from the EU into the UK to be used in the Group's products and/or services. As well as supply chain delays and disruptions, the Group may need to retain greater stock in order to attempt to mitigate the potential impact of supply disruptions. UK-based suppliers may encounter difficulty obtaining external financing or may be adversely affected by factors such as inflation or the weakening of pound sterling against the US dollar, the euro and other major currencies as a result of the outcome of the arrangements in relation to the UK's withdrawal from membership of the EU, in particular given the context of weakening economic conditions caused by the COVID-19 pandemic and government restrictions in response.

Moreover, the withdrawal of the UK from the EU may negatively impact the Group's ability to compete against European contractors for European defence programmes, which could materially adversely impact the Group's Defence business.

Any of these effects of the UK having withdrawn from membership of the EU, and others that cannot be anticipated, could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Risks Relating to Regulation and Legislation

The Group's business could be negatively affected by a failure to comply with existing laws and regulations, the introduction of changes to existing laws and regulations, regulatory investigations and/or enforcement action

The Group operates in a range of highly regulated industries across the world and is subject to applicable laws and regulations in all such jurisdictions. These include laws and regulations of general applicability as well as those directly related to certain of the Group's products and services, such as civil and military aircraft airworthiness, marine safety, nuclear licensing, product certification, emissions, strategic export controls, sanctions and embargoes, national security, government procurement, the provision of financing to certain of the Group's customers, intellectual property, tax law, health, safety and environmental (HSE) regulations and anti-bribery and corruption laws. See "*Risks Relating to Regulation and Legislation—The Group is subject to increasingly stringent environmental regulations, which could result in increased costs and fines, as well as the potential for reputational damage*" and "*Risks Relating to Regulation and Legislation—Failure to comply with employment laws and regulations, including those relating to immigration, may adversely affect the business*" below. Non-compliance by the Group with legislation or other regulatory requirements in any of these areas could compromise the Group's ability to conduct its business in certain jurisdictions and could expose it to significant financial penalties, debarment from governmental contracts for a period of time, suspension of export privileges (including export credit financing) and/or potential material and long-lasting reputational damage, any of which could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Ongoing risks related to inquiries and/or investigations may increase in the future, depending on changes in government policy or enforcement policies or new interpretations of existing laws and regulations by the relevant authorities. The Group is subject to inquiries and investigations from governments and authorities around the world from time to time and these include requests for information from competition regulators in connection with a variety of specific or industry-related inquiries and investigations. The ITP Aero business holds certain commercially-sensitive, customer information that cannot be shared with the Group's Civil Aerospace business as to do so may be anti-competitive and in breach of applicable legislation and regulations designed to prevent anti-competitive practices, as well as in breach of the contractual assurances given to Pratt & Whitney and General Electric. Although the Group has systems in place to prevent such information being shared in breach of the applicable laws and regulations, these systems may not operate as intended to prevent the sharing of commercially-sensitive information, which could attract increased regulatory scrutiny in the future, including investigations into the Group's systems and controls.

The Group is also required to obtain and maintain licences in respect of the design, manufacture and maintenance of certain of its products, as well as for a number of its sites and facilities, and the risks associated with any failure to comply with such licensing requirements could increase in the future, depending on changes in government policy or enforcement policies or new interpretations of existing laws and regulations by those authorities responsible for supervising the Group's various licences. New procurement regulations, or changes to existing requirements, could also increase compliance costs or otherwise have a material adverse effect on the operating margins of certain of the Group's businesses.

Regulatory enforcement action resulting from competition investigations into the Group's key customers, including Airbus, could have a material negative impact on the Group if the outcome of any of such investigations results in the imposition of significant financial penalties and/or operating restrictions on any of the Group's key customers. This could reduce demand from those customers for the Group's products and/or services. In particular, action taken by the European Commission and/or the US Department of Justice ("DoJ") in relation to the ongoing trade dispute before the World Trade Organization between Airbus and Boeing over aircraft subsidies could have a material impact on demand for the Group's product and services, depending on the ultimate outcome of that dispute. Any reduction in demand for the Group's products and/or services caused by regulatory enforcement action affecting the Group's customers may be prolonged or permanent, depending on the nature of the enforcement action and its impact. The outcome of ongoing competition investigations affecting the Group's customers and/or the potential for new investigations of this type in the future cannot be accurately predicted.

Government agencies routinely audit and investigate government contractors, including the Group, concerning performance under government contracts, cost structure and compliance with applicable laws, regulations and standards as well as the adequacy of, and their compliance with, their own internal control systems and policies. Any costs found to be misclassified or inaccurately allocated to a specific contract may be deemed non-reimbursable and, to the extent already reimbursed, may need to be refunded. Any determination of inadequacy of the Group's systems and policies could result in withholdings on billed receivables and/or penalties.

If an audit, inquiry or investigation results in a determination of improper or illegal activities, this could result in criminal and civil fines as well as administrative sanctions (such as termination of contracts, forfeiture of profits, suspension of payments, fines or suspension/disbarment from conducting business with the government), injunctions against future conduct, disqualifications from directly or indirectly engaging in certain types of business, changes to how the Group sells its products and services, restrictions on the Group's customers that prevent them from operating affected products, the loss of business licences or permits or other restrictions and sanctions which may relate to the Group and/or its officers, senior management and employees. As a significant proportion of the Group's business is with government customers and the Group receives government funding for R&D projects, any investigation findings or sanctions that, directly or indirectly, limit such dealings or the Group's ability to tender for government contracts could significantly limit its business and operations. The Group may also suffer reputational harm due to allegations of impropriety, regardless of whether they are later determined to be true. The outcomes of litigation or government inquiries or investigations in which the Group is involved are unpredictable and could have a material adverse effect on its business, reputation, financial position and results of operations.

The Group's business is subject to ongoing obligations under agreements concluded with the UK and Brazilian authorities that could increase the risks associated with bribery and corruption, including increased compliance costs and potential regulatory enforcement actions that could result in civil and/or criminal liability

In January 2017, the Group concluded negotiations on agreements with the UK Serious Fraud Office ("SFO"), the DoJ and the Brazilian Office of the Federal Prosecution (the "MPF"). Of these, the Group is subject to continuing obligations under the deferred prosecution agreement between Rolls-Royce plc, Rolls-Royce Energy Systems Inc. (together the "**Relevant Group Entities**") and the Director of the SFO (the "**UK DPA**") and the Leniency Agreement between Rolls-Royce plc and the MPF (the "**Brazilian Leniency Agreement**").

UK DPA

The UK DPA is in force until the earlier of 17 January 2022, or a date after 17 January 2021 on which the SFO confirms in writing to the Relevant Group Entities that the UK DPA has concluded.

The Relevant Group Entities are subject to ongoing obligations under the UK DPA, including: (i) a payment of £148m to the SFO due by 31 January 2021; (ii) an obligation to cooperate fully and honestly with the SFO in relation to any prosecution brought by the SFO in respect of any conduct under investigation or pre-investigation by the SFO at any time during the term of the UK DPA; (iii) an obligation to cooperate at the request of the SFO with other UK and foreign law enforcement and regulatory agencies in any investigation or prosecution of any of its present or former officers, directors, employees, agents and consultants, or any other third party, in any

matters relating to the conduct which is the subject of the statement of facts admitted by the Relevant Group Entities under the UK DPA; and (iv) an obligation to review internal control policies and procedures.

If the Relevant Group Entities breach their ongoing obligations, the SFO may apply to the Court for the UK DPA to be terminated, reinstating criminal proceedings. If the Group were to be convicted subject to reinstated criminal proceedings, it would face the risk of debarment from state procurement contracts and contractual termination provisions under business-critical contracts. Any conviction would also have a material adverse impact on the Group's reputation, including a possible adverse impact on its existing and future customer relationships. Once the UK DPA is no longer in force, the SFO may nonetheless instigate new proceedings against the Relevant Group Entities if the SFO believes that during the course of negotiation of the UK DPA that the Group provided inaccurate, misleading or incomplete information to the SFO and the Relevant Group Entities knew, or ought to have known, that the information was inaccurate, misleading or incomplete.

Brazilian Leniency Agreement

Rolls-Royce plc is not subject to any continuing pecuniary obligations under the Brazilian Leniency Agreement. However, Rolls-Royce plc is obliged to: (i) assist the MPF in any other proceedings it brings against third parties concerning the facts subject to the Brazilian Leniency Agreement until a final non-appealable decision in any civil and criminal actions by the MPF has been reached; and (ii) implement improvements to its integrity programme. If Rolls-Royce plc were to breach these obligations, the MPF could reinstate civil proceedings against it.

Consequences of future bribery or corruption convictions

If a Group company were to be convicted, it could lead to the Group being debarred from existing or new state procurement contracts in jurisdictions including the UK, France, Sweden, Finland, Spain, Germany (and, potentially, the other EU Member States), China, Bahrain, India and Turkey. A bribery or corruption conviction could also result in discretionary exclusion or debarment from state procurements under express legislative provisions in jurisdictions including the US, Singapore, Saudi Arabia, Malaysia, Vietnam, Qatar, Egypt, New Zealand, South Africa, Australia, Iran and Kuwait.

A number of the Group's existing contracts (whether with state customers or otherwise) contain express provisions that could give rise to termination rights for counterparties in the event of a criminal conviction of the Group. Certain of the Group's existing contracts also contain termination provisions that could be triggered as a result of the Group incurring significant additional liabilities, including in respect of fines resulting from any criminal convictions. This risk could arise where the contractual counterparty has the ability to terminate on the basis of breach of undertakings and covenants, or there being a direct contractual right to terminate (e.g. on the occurrence of a material adverse change). In addition, a conviction could trigger events of default under the Group's financing arrangements. Moreover, because a number of the Group's financing arrangements contain cross-acceleration provisions, a decision by lenders to accelerate repayment under one agreement could result in a cascade of accelerations across the Group's other financing arrangements.

The Group is subject to export controls and national security-related restrictions, which may change over time with little or no notice

The export market is a key feature of the Group's operations and supply chains and the export of many of its products and technologies are subject to export control regulations. These regulations are constantly changing and vary by jurisdiction. There can be no assurance that the export controls to which the Group is subject will not become more restrictive, that the delivery and export of new products offered by the Group will not also be subject to similar or more stringent controls, including sanctions that could affect a wider portfolio of business, or that geopolitical factors or changing international circumstances, such as those described in "*Risks Relating to the Group's Industry—The performance of the Group's business is directly linked to general economic conditions, which may adversely affect the Group's business, financial condition, results of operations and prospects*" above, will not prohibit business or make it difficult to obtain export licences for one or more customers, either in a timely fashion or at all, or constrain the Group's ability to perform under previously signed contracts in the manner and to the timescales envisaged. In particular, the Group's Defence business develops and offers products that may be considered important to the national security of some of its key customers. The fact that such products may be considered important to national security may mean that those products are particularly likely to be affected by any geopolitical tensions that result in changes to export control regulations.

In addition, certain products made by the Group are controlled as dual-use products with both civilian and military applications and these may also be more likely than other products to be affected by any geopolitical tensions that result in changes to export controls. Certain of the Group's activities are subject to US export controls that restrict the transfer, release or disclosure of certain information by US citizens to non-US citizens, including technical data and software, in addition to goods and services. These restrictions could further constrain the Group's business activities, including its ability to share information within its business. Export controls and/or other national security-related restrictions may prevent the Group from exploiting broader applications of the intellectual property developed in connection with certain products or from offering those products to a broader variety of customers and/or may place limitations on where the Group's supply chain is based. Reduced access to export markets and/or restrictions on the use of intellectual property developed by the Group may have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Geopolitical factors that lead to an unfavourable business climate and significant tensions between major trading parties or blocs including, for example, armed conflicts, political instability, trade protectionism, differing tax or regulatory regimes or changes in key political alliances could all result in countries in which the Group operates altering their approach to export controls and/or national security-related restrictions concerning the products which the Group offers. In particular, a future deterioration in the diplomatic and/or economic relationship between the UK and China, Russia or the Kingdom of Saudi Arabia, in the context of broader international geopolitical measures applied to one or more of those countries, could negatively affect the Group's supply chains and/or prevent or significantly restrict exports that incorporate the Group's products, such as military aircraft engines, to one or more of those countries. Changes in geopolitical relationships, supported by changes in the relevant export control, sanctions and/or national security-related regulations, could occur with little or no notice and could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

The Group is subject to increasingly stringent environmental regulations, which could result in increased costs and fines, as well as the potential for reputational damage

The Group is subject to an array of environmental regulations (including regulations promulgated and enforced by local, national, European and international authorities). In addition, environmental regulations are subject to regular change with a trend towards more stringent requirements. Global differences between such regulations also require additional costs and effort on the part of the Group in order to ensure compliance across all jurisdictions in which it operates. These regulations may have an impact on the specifications for the products produced by the Group, the requirements for, and extent of, the Group's aftermarket services and the Group's own manufacturing facilities and practices. See “—*The Group's business could be negatively affected by a failure to comply with existing laws and regulations, the introduction of changes to existing laws and regulations, regulatory investigations and/or enforcement action*” above.

Any failure by the Group to offer and/or develop products that comply with and/or outperform environmental standards may restrict its ability to offer its products in its key markets and/or the appeal of its products to customers in those markets. The Group may also be required to redesign existing products and/or remove them from service where they fail to meet more stringent environmental standards. In addition, the Group may be required to incur significant additional expenditure in order to ensure that its manufacturing facilities and practices comply with future environmental regulations, including in relation to greenhouse gas emissions, in the various countries in which it operates and any failure to do so could result in the temporary stoppage or closure of such facilities, as well as resulting in fines or other regulatory penalties. If the costs of environmental laws and regulations continue to increase and it is not possible to integrate these additional costs into the price of products, any such increases could reduce the profitability of the Group and have a material adverse effect on the Group's business, financial condition, results of operations and prospects. See “—*Risks Relating to Group's Industry—Failure by the Group to adapt to the trend towards an environmentally regulated global economy and an increasing public and governmental focus on environmental protection could make the Group's products less attractive to existing or potential customers and restrict or prevent their continued use*” above.

Failure to comply with employment laws and regulations, including those relating to immigration, may adversely affect the business

In 2019, the Group had a monthly average of 51,700 employees, which is being reduced considerably as a result of the Group's current reorganisation, and a presence in 50 countries. It regularly attracts and retains

overseas employees who require visas and/or work permits to work in the country in which they are employed. The Group is subject to various regulations governing its relationships with its employees, including such matters as minimum wage requirements, the treatment of part-time workers, employers' national insurance or social security contributions, overtime and other working conditions. A failure to comply with one or more regulations could result in the imposition of sanctions, third-party litigation or result in reputational damage to the Group, any of which could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Additionally, failure by the Group to comply with immigration laws and regulations in any of the countries in which it operates could result in financial or other sanctions. Immigration laws and regulations are subject to legislative and administrative changes as well as changes in their application standards and enforcement. The operations of the Group may be adversely affected if changes in immigration laws or regulations impair its ability to hire overseas personnel. This could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

Risks Relating to the Notes

There is no established trading market for the Notes and one may not develop

The Notes will be new securities for which there currently is no established trading market. The Notes have not been, and will not be, registered under the Securities Act and will be subject to significant restrictions on resale. There can be no assurance regarding the future development of a market for the Notes or the ability of Holders of the Notes to sell their Notes or the price at which such Holders may be able to sell their Notes. If such a market were to develop, the Notes could trade at prices that may be lower than the initial offering prices depending on many factors, including prevailing interest rates, our operating results and the market for similar securities. Therefore, there can be no assurance as to the liquidity of any trading market for the Notes or that active markets for the Notes will develop. We have made an application for the listing of the Notes on the Official List and for admission to trading on the London Stock Exchange's Regulated Market. However, such listing and admission applications may not be approved or, if approved, may not be maintained.

Changes in the Issuer's or the Guarantor's credit ratings could adversely affect the value of the Notes

Any of the rating agencies that rate the Issuer's or the Guarantor's debt has the ability to lower the ratings currently assigned to that debt as a result of its views about the Issuer's or the Guarantor's current or future business, financial condition, results of operations or other matters. Any rating declines could adversely affect the value of the Notes. In addition, the credit ratings ascribed to the Issuer and the Guarantor and the Notes are intended to reflect their ability to meet repayment obligations in respect of the Notes and the Guarantee, and may not reflect the potential impact of all risks related to the structure, the market, the Group and other factors on the value of the Notes. A credit rating is not a recommendation to buy, sell or hold securities and may be subject to revision or withdrawal at any time by the assigning rating organization. Each rating should be evaluated independently of any other rating.

The Notes and the Guarantee will be unsecured obligations of the Issuer and the Guarantor, respectively, and therefore will be structurally subordinated to the debt of their respective subsidiaries or any of their secured debt

The Guarantor is a holding company and derives its operating income and cash flow from its subsidiaries; the Issuer is a holding and operating company and derives a substantial portion of its operating income and cash flow from its subsidiaries.

They rely upon distributions from their subsidiaries to generate funds necessary to meet their obligations, including any payments under the Notes and the Guarantee. The obligations of the Issuer under the Notes are unsecured and rank equally in right of payment with all unsecured, unsubordinated obligations of the Issuer. The obligations of the Group under the Guarantee are unsecured and rank equally with all unsecured, unsubordinated obligations of the Group. These obligations will also be structurally subordinated to the holders of secured debt of the Issuer and the Company, respectively, and to all other creditors of the Group subsidiaries. The Group subsidiaries have certain loan and other debt commitments (excluding IFRS 16 lease liabilities), which at 30 June 2020 totalled £117m (excluding the Issuer). In addition, the Group may incur substantial additional indebtedness in the future. The Indenture will not place any limitation on the amount of unsecured debt that may be incurred by the Group or any of its subsidiaries (including the Issuer).

Investors in the Notes may have limited recourse against the independent auditors

The independent auditor's reports on the Group Consolidated Financial Statements and the Issuer Consolidated Financial Statements include language limiting the auditors' scope of duty in relation to such reports and the various financial statements to which they relate. In particular, the Auditor's reports, in accordance with guidance issued by The Institute of Chartered Accountants in England and Wales, includes the following wording with respect to the Group 2019 Consolidated Financial Statements:

"This report, including the opinions, has been prepared for and only for the Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing."

and with respect to the Group 2018 Consolidated Financial Statements and the Issuer Consolidated Financial Statements:

"This report, including the opinions, has been prepared for and only for the parent Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing."

The SEC would not permit such limiting language to be included in a registration statement or a prospectus used in connection with an offering of securities registered under the Securities Act or in a report filed under the Exchange Act. If a U.S. court (or any other court) were to give effect to the language quoted above, the recourse that investors in the Notes may have against the Auditors based on their reports or the consolidated financial statements to which they relate could be limited.

Enforcement of U.S. judgments may be difficult

The Issuer and the Company are companies incorporated under the laws of England and Wales, and a substantial portion of all their respective assets are located in jurisdictions outside the United States. Accordingly, it could be difficult for Holders of Notes to recover against the Issuer and the Company on judgments of U.S. courts predicated upon civil liabilities under the U.S. federal securities laws.

In addition, while the Guarantor will agree, in accordance with the terms of the Indenture, to accept service of process in any suit, action or proceeding with respect to the Indenture or the Notes brought in any federal or state court located in New York City by an agent designated for such purpose, and to submit to the jurisdiction of such courts in connection with such suits, actions or proceedings, it may be difficult for Holders of the Notes to effect service within the United States upon directors, officers and experts who are not residents of the United States in order to institute actions in U.S. courts predicated solely upon civil liability under U.S. federal or state securities laws or other laws of the United States. There may be doubt as to the enforceability in non-U.S. jurisdictions in original actions, or in actions for enforcement of judgments of U.S. courts, of civil liabilities predicated solely upon the U.S. federal or state securities laws or other laws of the United States. You should not assume that the non-U.S. jurisdictions: (a) would enforce judgments of U.S. courts obtained in actions against such persons predicated upon civil liabilities under the federal securities laws of the United States or "blue sky" laws of any state within the United States; or (b) would enforce, in original actions, liabilities against such persons predicated upon civil liabilities under the federal securities laws of the United States or "blue sky" laws of any state within the United States.

The assets of the subsidiaries of the Company (excluding the Issuer) will be subject to prior claims by creditors of those subsidiaries

You will not have a claim as a creditor against the Company's subsidiaries that are not the Issuer. None of the Company's subsidiaries will guarantee the Notes. Therefore, the assets of the Company's subsidiaries (excluding the Issuer) will be subject to prior claims by creditors of those subsidiaries, whether secured or unsecured. Except for the Issuer, the Company's subsidiaries will have no obligation, contingent or otherwise, to pay amounts due under the Notes or to make any funds available to pay those amounts, whether by dividend, distribution, loan or other payment. The Notes will therefore be structurally subordinated to all indebtedness and

other obligations of any subsidiary of the Company (excluding the Issuer) such that, in the event of insolvency, liquidation, reorganization, dissolution or other winding up of any such subsidiary, all of such subsidiary's creditors (including trade creditors and preferred stockholders, if any) would be entitled to payment in full out of such subsidiary's assets before the Holders of the Notes would be entitled to any payment.

There are only limited covenants in the Indenture

The Indenture will contain only limited covenants, including those restricting the ability of the Issuer and the Company to create certain liens, securing certain capital market indebtedness and engage in certain merger, acquisition and sale transactions. The limitation on liens and limitation on mergers and acquisitions covenants contain exceptions that will allow, amongst others, the incurrence of liens with respect to material assets and the security of bank loans, amongst other forms of debt. In light of these exceptions, Holders of the Notes may be structurally or contractually subordinated to new lenders.

The Issuer and the Company may not be able to repurchase the Notes if it experiences a change of control

The Indenture will require the Issuer or the Company to offer to repurchase the Notes when certain change of control events occur in respect of the Company. If a change of control of the Company occurs, you will have the right to require the Issuer or the Company to repurchase some or all of your Notes at a purchase price in cash equal to 101% of the principal amount of your Notes to be repurchased plus accrued and unpaid interest to, but excluding, the repurchase date.

In the event that the Company experiences a change of control that results in the Issuer or the Company having to repurchase the Notes, the Issuer and Company may not have sufficient financial resources to satisfy their respective obligations under the Notes and their other indebtedness. In addition, the change of control covenant in the Indenture offered hereby will not cover all corporate reorganizations, mergers or similar transactions and may not provide you with protection in a highly leveraged transaction.

The ability of Holders of Notes to require the Issuer or the Company to repurchase Notes as a result of a disposition of "substantially all" of the Company's assets may be uncertain

The definition of change of control in the Indenture will include a phrase relating to the direct or indirect sale, transfer, conveyance or other disposition of "all or substantially all" of the assets or properties of the Company and its subsidiaries, taken as a whole. Although there is a limited body of case law interpreting the phrase "substantially all", there is no precise established definition of the phrase under applicable law. Accordingly, the ability of a Holder of Notes to require the Issuer or the Company to repurchase such Notes as a result of a sale, transfer, conveyance or other disposition of less than all of the assets or properties of the Company and its subsidiaries taken as a whole to another person or group is uncertain.

The Notes will not be entitled to registration rights and we do not currently intend to register the Notes under applicable securities laws, and there are restrictions on your ability to transfer or resell the Notes

The Notes are being offered and sold pursuant to an exemption from registration under the Securities Act and applicable state securities laws and we do not currently intend to register the Notes or to offer to exchange the Notes for Notes registered under the Securities Act. The Holders of the Notes will not be entitled to require the Issuer or the Company to register the Notes for resale or otherwise. Therefore, you may transfer or resell the Notes in the United States only in a transaction exempt from or not subject to the registration requirements of the Securities Act and applicable state securities laws, as applicable, and you may be required to bear the risk of your investment for an indefinite period of time.

Our credit ratings may not reflect the risks of investing in the Notes

Our credit ratings are an assessment by rating agencies of our ability to pay our debts when due. Consequently, real or anticipated changes in our credit ratings will generally affect the value of the Notes. These credit ratings may not reflect the potential impact of risks relating to structure or marketing of the Notes. Agency ratings are not a recommendation to buy, sell or hold any security and may be revised or withdrawn at any time by the issuing organization. Each agency's rating should be evaluated independently of any other agency's rating. There can be no assurance that our credit ratings will remain in effect for any given period of time or that such ratings will not be lowered, suspended or withdrawn entirely by the rating agencies, if, in each rating agency's judgment, circumstances so warrant.

Actual or anticipated changes or downgrades in our credit ratings, including any announcement that our ratings are under further review for a downgrade, could affect the value of the Notes, may increase our borrowing costs and may negatively impact our ability to incur additional debt.

It is possible in certain circumstances for one class of creditors of the Issuer or the Guarantor to approve a Restructuring Plan, which is binding on all creditors of the Issuer or the Guarantor and which may adversely affect the rights of Holders of the Notes and the price or value of their investment in the Notes

Where the Issuer or Guarantor encounters, or is likely to encounter, financial difficulties that are affecting, or will or may affect, its ability to carry on business as a going concern, it may propose a Restructuring Plan (a “Plan”) with its creditors under Part 26A of the Companies Act 2006 (introduced by the Corporate Insolvency and Governance Act 2020) to eliminate, reduce, prevent or mitigate the effect of any of those financial difficulties. Should this happen, creditors whose rights are affected are organised into creditor classes and can vote on any such Plan (subject to being excluded from the vote by the English courts for having no genuine economic interest in the Issuer or Guarantor). Provided that one class of creditors (who would receive a payment, or have a genuine economic interest in the Issuer or Guarantor) has approved the Plan, and in the view of the English courts any dissenting class(es) who did not approve the Plan are no worse off under the Plan than they would be in the event of the “relevant alternative” (such as, broadly, liquidation or administration), then the English court can sanction the Plan where it would be a proper exercise of its discretion. A sanctioned Plan is binding on all creditors and members, regardless of whether they approved it. Any such sanctioned Plan in relation to the Issuer or the Guarantor may, therefore, adversely affect the rights of Holders of the Notes and the price or value of their investment in the Notes, as it may have the effect of modifying or disapplying certain terms of the Notes (by, for example, writing down the principal amount of the Notes, modifying the interest payable on the Notes, the maturity date or dates on which any payments are due or substituting the Issuer) or modifying or disapplying certain terms of the Guarantee or substituting the Guarantor.

If the conditions to the escrow are not satisfied, the Issuer will be required to redeem the Notes, which means that you may not obtain the return you expect on the Notes

The equivalent of the gross proceeds from the Offering will be held in an escrow account pending the satisfaction of certain conditions, some of which are outside of the Issuer’s or the Guarantor’s control. If the consummation of the Rights Issue does not occur on or before the date that is 60 calendar days after the Issue Date, or upon the occurrence of certain other events, the Notes will be subject to a special mandatory redemption and you may not obtain the return you expect to receive on the Notes.

Your decision to invest in the Notes is made at the time of purchase. Changes in our business or financial condition, or the terms of the Rights Issue, between the closing of this offering and the completion of the Rights Issue, will have no effect on your rights as a purchaser of the Notes.

CAPITALIZATION

The following table sets forth our consolidated cash and cash equivalents and capitalization as at 30 June 2020. You should read the following table together with “*Use of Proceeds*”, “*Operating and Financial Review*”, “*Description of the Notes and the Guarantee*” and the Group Consolidated Interim Financial Statements and the notes thereto incorporated by reference into this Offering Memorandum:

	As at 30 June 2020 (£m)
Cash and cash equivalents⁽¹⁾	4,239
Debt:	
Total debt⁽²⁾⁽³⁾⁽⁴⁾	6,427
Overdrafts	8
Bank loans	2,534
2.375% Notes 2020 US\$500 million	409
2.125% Notes 2021 €750 million	698
0.875% Notes 2024 €550 million	519
3.625% Notes 2025 US\$1,000 million	906
3.375% Notes 2026 £375 million	423
1.625% Notes 2028 €550 million	553
CCFF commercial paper	299
Other loans	78
Equity:	
Called-up share capital	386
Share premium account	319
Capital redemption reserve	161
Cash flow hedging reserve	(124)
Merger reserve	650
Translation reserve	846
Accumulated losses	(10,386)
Equity attributable to ordinary shareholders ⁽⁵⁾	(8,148)
Total capitalization⁽⁶⁾	(1,721)

- (1) As at 31 July 2020, cash and cash equivalents was £3,580m.
- (2) Including short-term, medium-term and long-term borrowings. As at 30 June 2020, all of the Group’s debt for borrowed money was unsecured and the Group had £117m (excluding IFRS 16 lease liabilities) of debt at a subsidiary level (other than where the Issuer is an obligor). For more information, see “*Operating and Financial Review—Liquidity and Capital Resources*”.
- (3) Not shown are total lease liabilities of £2,337m as at 30 June 2020.
- (4) Excluding fair value of swaps hedging fixed rate borrowings. Outstanding notes are shown at amortised cost. The aggregate amount of outstanding notes as at 30 June 2020 was £3,508m. To hedge the cross currency and interest rate risk on these notes, the Group has entered into interest rate swaps that may or may not be designated into hedging relationships for accounting purposes. Movement in the fair value of these notes will be offset by movement in the fair value of the cross currency interest rate swaps. The fair value of the interest rates swaps designated into fair value hedging relationships at 30 June 2020 was a financial asset of £515m. The fair value of the interest rates swaps not designated into hedging relationships at 30 June 2020 was a financial liability of £59m.
- (5) Equity attributable to ordinary equity shareholders of the Company includes accumulated losses of £10,386m as at 30 June 2020.
- (6) Equal to Debt plus Equity. Does not include cash and cash equivalents.

On 20 August 2020, Rolls-Royce plc entered into the £2bn Term Loan Facility Agreement between, among others, Rolls-Royce plc (as borrower), the Company (as guarantor), a syndicate of banks (as original lenders) and J.P. Morgan Europe Limited (as agent). This facility is currently undrawn. Under the terms of the Term Loan Facility Agreement, the lenders have made available to Rolls-Royce plc a pound sterling term facility in an aggregate amount of £2bn consisting of a £1.6bn term facility guaranteed by UK Export Finance and a £400m

commercial term facility, with a repayment date of 20 August 2025. In addition, UK Export Finance has indicated that it would, in principle, support an extension of its 80% guarantee of our existing £2bn five year Term Loan Facility to support an increase in the loan amount of up to £1bn. This is subject to completion of the Rights Issue, agreement of terms with lenders and approval of those terms by UK Export Finance and HM Treasury, and there is therefore no guarantee that this increase will take place. As the aggregate gross proceeds from this Offering and the concurrent offering of the Eurobonds exceed the Guarantor's initial minimum target size of £1bn, the Guarantor may decide not to seek to utilise all of the potential £1bn increase in the Term Loan Facility. See "*Description of Certain Other Indebtedness—Financing arrangements—Term Loan Facility*" for further information.

On 29 September 2020, Rolls-Royce plc entered into the Bridge Facility Mandate Letter with BNP Paribas, London Branch, Citibank N.A., London Branch and HSBC Bank plc. The Bridge Facility Mandate Letter provides that, subject to the execution of the Bridge Facility Agreement, completion of the Rights Issue and cancellation in full of the commitments under the £1.9bn Liquidity Facility, the Bridge Underwriters will make available to Rolls-Royce plc, as borrower, a pound sterling term loan facility of up to £1bn, with a maturity date 24 months from the date of the Bridge Facility Agreement. The Company will guarantee borrowings under the Bridge Facility Agreement. See "*Description of Certain Other Indebtedness—Financing arrangements—Bridge Facility Mandate Letter*" for further information.

On 1 October 2020, we announced our intention to raise gross proceeds of approximately £2bn from the Rights Issue (approximately £1.98bn after deduction of estimated commissions, fees and expenses). The Rights Issue requires the approval of the Company's shareholders and the Company has convened a general meeting to approve the resolutions required to implement the Rights Issue for 27 October 2020. The Rights Issue is underwritten by the Rights Issue Underwriters, subject to customary conditions. If the General Meeting approves the Rights Issue and the rights are admitted to trading on the London Stock Exchange, such underwriting will become unconditional.

In addition to the Rights Issue and this Offering, concurrent with this Offering, we have priced an offering of senior unsecured notes denominated in euros and/or pound sterling pursuant to a separate offering memorandum. The offering of the Eurobonds is expected to settle on or around the settlement date for this Offering and is subject to customary closing conditions. This Offering of Notes is not contingent upon the completion of the concurrent offering of the Eurobonds and the offering of the Eurobonds is not contingent upon the completion of this Offering. See "*Overview—Recent Developments—Substantially Concurrent Eurobond Offering*".

USE OF PROCEEDS

We estimate the net proceeds to us from our sale of Notes to be approximately £762 million after deducting the underwriting discount and our estimated offering expenses.

The net proceeds of this Offering, together with those of the Rights Issue and the concurrent offering of the Eurobonds, will be used to enhance our financial resilience to deliver a more appropriate balance sheet in order to position us for the post-COVID-19 environment by: (A) improving our liquidity headroom as we continue to navigate an uncertain outlook for the commercial aviation industry; proceeds will also address upcoming debt and RCF maturities as they fall due, including the required cancellation of the Liquidity Facility (which is currently undrawn) on completion of the Rights Issue and through repayment of the Group's debt facilities with near term maturities, which the Company currently plans to do as they fall due (principally: (i) the US\$500m 2.375% notes due 14 October 2020; (ii) the €750m 2.125% notes due 18 June 2021; and (iii) the £300m Commercial Paper issued under the CCFF due 17 March 2021); (B) delivering a step-change in the leverage profile of the Group post-COVID-19 and continued improvement with the targeted return of FCF of at least £750m (excluding disposals) as early as 2022; and (C) supporting disciplined execution and investment, enabling the Group to maximise value from its existing capabilities and deliver disposals in a manner that ensures enhanced value for our Shareholders.

The estimated sources and uses relating to this Offering, the Rights Issue and the concurrent offering of the Eurobonds are shown below. Actual amounts may vary from estimated amounts depending on several factors, including differences between estimated and actual fees and expenses, differences in exchange rates and interim debt repayments.

Sources	(£m)	Uses	(£m)
Rights Issue ⁽¹⁾	£2,060	Repayment of US\$500 million 2.375% Notes due 2020 ⁽²⁾	£329 ⁽⁵⁾
		Estimated fees and expenses (including underwriters' discounts and commissions) of the Rights Issue and this Offering and the concurrent offering of the Eurobonds ⁽²⁾	£99
Notes offered hereby ⁽²⁾⁽³⁾	£772		
Notes denominated in euros offered concurrently with this Offering ⁽²⁾⁽³⁾	£680	Held as cash ⁽⁴⁾	£3,629
Notes denominated in pounds sterling offered concurrently with this Offering ⁽³⁾	£545		
Total Sources	£4,057	Total Uses	£4,057

- (1) On 1 October 2020, we announced our intention to raise gross proceeds of approximately £2bn from the Rights Issue (approximately £1.98bn after deduction of estimated commissions, fees and expenses). The Rights Issue requires the approval of the Company's shareholders and the Company has convened a general meeting to approve the resolutions required to implement the Rights Issue for 27 October 2020. The Rights Issue is underwritten by the Rights Issue Underwriters, subject to customary conditions. If the General Meeting approves the Rights Issue and the rights are admitted to trading on the London Stock Exchange, such underwriting will become unconditional.
- (2) US dollars converted to pounds sterling at 1.2953:1 and euros converted to pounds sterling at 1.1037:1.
- (3) In addition to the Rights Issue and this Offering, concurrent with this Offering, we have priced an offering of senior unsecured notes denominated in euros and/or pound sterling pursuant to a separate offering memorandum. The offering of the Eurobonds is expected to settle on or around the settlement date for this Offering and is subject to customary closing conditions. This Offering of Notes is not contingent upon the completion of the concurrent offering of the Eurobonds and the offering of the Eurobonds is not contingent upon the completion of this Offering. See "Overview—Recent Developments—Substantially Concurrent Eurobond Offering".
- (4) May be used to pay down drawings under our Revolving Credit Facility.
- (5) Reflects a net cash repayment at maturity of £329m reflecting the maturing US\$500m notes and the maturing interest rate swap designated as a fair value hedging instrument under IFRS 9 associated with such notes.

Our £1.9bn Liquidity Facility Agreement between, among others, Rolls-Royce Holdings plc, certain financial institutions (as lenders) and J.P. Morgan Europe Limited (as agent), dated 29 April 2020, requires

prepayment and the cancellation of commitments thereunder using proceeds from any capital markets offerings. This facility is undrawn. We will cancel the commitments thereunder and terminate the Liquidity Facility Agreement following the completion of this Offering, the concurrent offering of the Eurobonds and the Rights Issue.

On 20 August 2020, Rolls-Royce plc entered into the £2bn Term Loan Facility Agreement between, among others, Rolls-Royce plc (as borrower), the Company (as guarantor), a syndicate of banks (as original lenders) and J.P. Morgan Europe Limited (as agent). This facility is currently undrawn. See “*Description of Certain Other Indebtedness—Financing arrangements—Term Loan Facility*” for further information.

In addition, UK Export Finance has indicated that it would, in principle, support an extension of its 80% guarantee of our existing £2bn five year Term Loan Facility to support an increase in the loan amount of up to £1bn. This is subject to completion of the Rights Issue, agreement of terms with lenders and approval of those terms by UK Export Finance and HM Treasury, and there is therefore no guarantee that this increase will take place. As the aggregate gross proceeds from this Offering and the concurrent offering of the Eurobonds exceed the Guarantor’s initial minimum target size of £1bn, the Guarantor may decide not to seek to utilise all of the potential £1bn increase in the Term Loan Facility.

On 29 September 2020, Rolls-Royce plc entered into the Bridge Facility Mandate Letter with BNP Paribas, London Branch, Citibank, N.A., London Branch and HSBC Bank plc. The Bridge Facility Mandate Letter provides that, subject to the execution of the Bridge Facility Agreement, completion of the Rights Issue and cancellation in full of the commitments under the £1.9bn Liquidity Facility, the Bridge Underwriters will make available to Rolls-Royce plc, as borrower, a pound sterling term loan facility of up to £1bn, with a maturity date 24 months from the date of the Bridge Facility Agreement. The Company will guarantee borrowings under the Bridge Facility Agreement. See “*Description of Certain Other Indebtedness—Financing arrangements—Bridge Facility Mandate Letter*” for further information.

SELECTED FINANCIAL INFORMATION

The following tables set forth selected historical consolidated financial data for the Group, as well as certain other financial and operating data. The selected historical consolidated financial data set forth below as of and for the years ended 31 December 2019, 2018 and 2017 has been derived from the Group Consolidated Financial Statements and the selected historical consolidated financial data set forth below as of and for the six months ended 30 June 2020 and 2019 has been derived from the unaudited Group Consolidated Interim Financial Statements. This selected financial information is not necessarily representative of our results of operations for any future period or our financial condition at any future date.

This selected historical financial information and other data should be read in conjunction with and are qualified in their entirety by reference to the financial statements, including the notes thereto incorporated by reference in this Offering Memorandum, and the information set forth under “*Use of Proceeds*”, “*Capitalization*”, “*Summary Financial Information*”, “*Operating and Financial Review*”, “*Presentation of Financial, Market and Other Information*” and “*Description of the Group and Its Business*”, each of which is included elsewhere in this Offering Memorandum.

The Group Consolidated Financial Statements and the Group Consolidated Interim Financial Statements have been prepared in accordance with IFRS. The Group 2019 Consolidated Financial Statements and the Group 2018 Consolidated Financial Statements have been audited by PricewaterhouseCoopers LLP, as stated in their audit reports incorporated by reference in this Offering Memorandum.

Reported Consolidated Financial Information

Group Consolidated Income Statement Data

Group Consolidated Income Statement Data	Six months ended 30 June		Year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
Revenue	5,824	7,883	16,587	15,729	14,747
Cost of sales ⁽²⁾	(6,511)	(6,882)	(15,645)	(14,531)	(12,325)
Gross (loss)/profit	(687)	1,001	942	1,198	2,422
Commercial and administrative costs ⁽²⁾	(443)	(614)	(1,128)	(1,595)	(1,222)
Research and development costs ⁽²⁾	(712)	(349)	(770)	(768)	(843)
Share of results of joint ventures and associates	73	45	104	4	9
Operating (loss)/profit	(1,769)	83	(852)	(1,161)	366
Gain arising on acquisition and disposal of businesses ⁽³⁾	2	118	139	358	785
(Loss)/profit before financing and taxation	(1,767)	201	(713)	(803)	(1,151)
Financing income	24	73	252	271	2,911
Financing costs ⁽⁴⁾	(3,624)	(1,065)	(430)	(2,415)	(164)
Net financing costs	(3,600)	(992)	(178)	(2,144)	2,747
Loss before taxation⁽⁵⁾	(5,367)	(791)	(891)	(2,947)	3,898
Taxation	(11)	(116)	(420)	554	(515)
Loss for the period	(5,378)	(907)	(1,311)	(2,393)	3,383

Group Consolidated Income Statement Data	Six months ended 30 June		Year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
Attributable to:					
Ordinary shareholders	(5,380)	(909)	(1,315)	(2,401)	3,382
Non-controlling interests	2	2	4	8	1
Loss for the period	(5,378)	(907)	(1,311)	(2,393)	3,383
Other comprehensive (expense)/ income	683	(708)	(1,013)	182	290
Total comprehensive expense for the period	(4,695)	(1,615)	(2,324)	(2,211)	3,673

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) In H1 2020, included within cost of sales, commercial and administrative costs and research and development costs are exceptional items relating to impairments and write-offs, as a result of the financial and operational impact of COVID-19. Impairments and provisions related to the Group-wide restructuring activity announced on 20 May 2020 to reshape and resize the Group have also been recorded. In H1 2019, exceptional charges related to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs were included within cost of sales and commercial and administrative costs. In 2019, included within cost of sales and commercial and administrative costs are exceptional charges relating to the Civil Aerospace business’s programmes, impairment charges and restructuring costs. In 2018, included within revenue, cost of sales and commercial and administrative costs are exceptional charges relating to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs. See “*Operating and Financial Review—Key factors affecting the Group’s results of operations—Macro-economic environment, COVID-19 pandemic and impact on the relevant industries, particularly aviation, and measures to bolster liquidity*” and “*Operating and Financial Review—Key factors affecting the Group’s results of operations—Product in-service performance*” as well as Note 2 of the Group Consolidated Interim Financial Statements, Note 2 of the Group 2019 Consolidated Financial Statements and Note 2 of the Group 2018 Consolidated Financial Statements for further information.
- (3) Trigno Energy Srl was disposed of on 7 May 2020, the Knowledge Management business was disposed of on 3 February 2020, the North America Civil Nuclear business was disposed of on 31 January 2020 and Qinous GmbH was acquired on 15 January 2020. Commercial Marine was disposed of on 1 April 2019 and RRPD was disposed of on 15 April 2019. L’Orange was disposed of on 1 June 2018. ITP Aero was acquired on 19 December 2017. See “*Operating and Financial Review—Key factors affecting the Group’s results of operations—Acquisitions and divestments*”, Note 21 of the Group Consolidated Interim Financial Statements, Note 27 of the Group 2019 Consolidated Financial Statements and Note 25 of the Group 2018 Consolidated Financial Statements for further information. See also “*Presentation of Financial, Market and Other Information—Presentation of financial information—Results restatements and effects of acquisitions and disposals on financial reporting—ITP Aero*”.
- (4) Included within financing costs in H1 2020 and H1 2019 are fair value changes on derivative contracts. For further details see Note 2 and Note 4 of the Group Consolidated Interim Financial Statements.
- (5) (Loss)/profit before taxation disclosed on a statutory and underlying basis. For further details see Note 2 of the Group Consolidated Interim Financial Statements.

Group Consolidated Balance Sheet

Group Consolidated Balance Sheet	As at 30 June		As at 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
ASSETS					
Intangible assets	5,329	5,437	5,442	5,295	5,565
Property, plant and equipment	4,612	4,768	4,803	4,929	4,658
Right-of-use assets ⁽²⁾	1,540	2,104	2,009	—	—

Group Consolidated Balance Sheet	As at 30 June		As at 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
Investments – joint ventures and associates	421	405	402	412	375
Investments - other	25	16	14	22	26
Other financial assets	463	437	467	343	610
Deferred tax assets	2,062	2,149	1,887	2,092	1,451
Post-retirement scheme surpluses	1,736	1,143	1,170	1,944	2,125
Non-current assets	16,188	16,459	16,194	15,037	14,810
Inventories	4,818	4,711	4,320	4,287	3,803
Trade receivables and other assets	6,066	4,764	5,065	4,690	4,353
Contract assets	1,610	2,217	2,095	2,057	1,945
Taxation recoverable	38	27	39	34	17
Other financial assets	181	33	86	22	36
Short-term investments	—	—	6	6	3
Cash and cash equivalents	4,239	4,208	4,443	4,974	2,953
Current assets	16,952	15,960	16,054	16,070	13,110
Assets held for sale	—	—	18	750	7
TOTAL ASSETS	33,140	32,419	32,266	31,857	27,927
LIABILITIES					
Borrowings and lease liabilities	(1,776)	(464)	(775)	(858)	(82)
Other financial liabilities	(640)	(918)	(493)	(647)	(601)
Trade payables and other liabilities	(8,299)	(8,216)	(8,450)	(8,292)	(6,885)
Contract liabilities	(4,538)	(4,248)	(4,228)	(3,794)	(4,104)
Current tax liabilities	(265)	(178)	(172)	(138)	(209)
Provisions for liabilities and charges	(1,124)	(919)	(858)	(1,122)	(550)
Current liabilities	(16,642)	(14,943)	(14,976)	(14,851)	(12,431)
Borrowings and lease liabilities	(6,988)	(6,065)	(4,910)	(3,804)	(3,406)
Other financial liabilities	(5,465)	(3,636)	(3,094)	(3,542)	(2,461)
Trade payables and other liabilities	(1,793)	(1,964)	(2,071)	(1,940)	(2,238)
Contract liabilities	(6,566)	(5,515)	(6,612)	(5,336)	(3,607)
Deferred tax liabilities	(785)	(661)	(618)	(962)	(1,071)
Provisions for liabilities and charges	(1,529)	(756)	(1,946)	(795)	(393)
Post-retirement scheme deficits	(1,496)	(1,478)	(1,378)	(1,303)	(1,387)
Non-current liabilities	(24,622)	(20,075)	(20,629)	(17,682)	(14,563)
Liabilities associated with assets held for sale	—	—	(15)	(376)	—
TOTAL LIABILITIES	(41,264)	(35,018)	(35,620)	(32,909)	(26,994)
NET LIABILITIES	(8,124)	(2,599)	(3,354)	(1,052)	933
EQUITY					
Called-up share capital	386	383	386	379	368
Share premium account	319	269	319	268	195
Capital redemption reserve	161	160	159	161	162
Cash flow hedging reserve	(124)	(105)	(96)	(106)	(112)
Merger reserve	650	567	650	406	3

Group Consolidated Balance Sheet	As at 30 June		As at 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
Translation reserve	846	731	397	809	657
Accumulated losses	(10,386)	(4,628)	(5,191)	(2,991)	(343)
Equity attributable to ordinary shareholders	(8,148)	(2,623)	(3,376)	(1,074)	930
Non-controlling interests	24	24	22	22	3
TOTAL EQUITY	(8,124)	(2,599)	(3,354)	(1,052)	933

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) IFRS 16 has been adopted from 1 January 2019 and under the transitional arrangements the Group has adopted IFRS 16 on a modified retrospective basis. There has been no restatement of 2018 comparatives. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 16” and Notes 1 and 29 to the Group 2019 Consolidated Financial Statements.

Group Consolidated Cash Flow Data

	Six months ended 30 June		Year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
Reconciliation of cash flows from operating activities					
Net cash (outflow)/inflow from operating activities ⁽²⁾⁽³⁾	(2,319)	243	2,297	2,226	1,512
Net cash outflow from investing activities	(428)	(166)	(918)	(975)	(1,154)
Net cash inflow/(outflow) from financing activities ...	2,387	(840)	(1,792)	702	(127)
Change in cash and cash equivalents	(360)	(763)	(413)	1,953	231
Cash and cash equivalents at beginning of period ..	4,435	4,952	4,952	2,933	2,771
Exchange gains/(losses) on cash and cash equivalents	156	(7)	(104)	66	(69)
Cash and cash equivalents at end of period⁽⁴⁾	4,231	4,182	4,435	4,952	2,933

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. This does not affect cash flows, but has changed the reconciliation of operating profit to net cash inflow from operating activities. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) Includes an impairment of £58m in respect of Bergen Engines in 2019 and £160m in respect of Commercial Marine in 2018.
- (3) Includes Trent 1000 insurance receipts of £173m in 2019.
- (4) The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement.

Underlying Consolidated Financial Information

The Group’s results are presented on a reported and underlying basis. The Group believes this provides an insight into its in-year performance as underlying results reflect the substance of trading activity, including the

impact of the Group's foreign exchange forward contracts, which economically hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges and exceptional items. The adjustments between the underlying income statement and the reported income statement are set out in more detail in Note 2 to the Group 2019 Consolidated Financial Statements and Note 2 to the Group 2018 Consolidated Financial Statements incorporated by reference herein and in "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Underlying financial information*". See "*Reconciliations of Non-IFRS Measures to Reported Financial Information*" for a reconciliation between each underlying measure and the nearest IFRS measure.

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited) (£m)	(audited)	(restated) (unaudited)
Underlying revenue	5,561	7,353	15,450	15,067	13,671
Underlying gross (loss)/profit	(967)	1,030	2,387	2,450	2,246
Underlying operating (loss)/profit	(1,669)	203	808	616	306
Underlying net financing	(1,575)	(110)	(225)	(150)	(107)
Underlying (loss)/profit before tax	(3,244)	93	583	466	199
Underlying taxation	(82)	(121)	(277)	(161)	(155)
Underlying (loss)/profit for the period . . .	(3,326)	(28)	306	305	44

The table below sets out the financial performance of each business of the Group's as well as the Group's non-core business for the years ended 31 December 2019 and 2018 and the six months ended 30 June 2020 and 2019.

	Underlying Revenue ⁽¹⁾					Underlying Operating (Loss)/Profit ⁽¹⁾				
	For the six months ended 30 June		For the year ended 31 December			For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018 ⁽²⁾	2017 ⁽³⁾	2020	2019	2019	2018 ⁽²⁾	2017 ⁽³⁾
	(unaudited)	(unaudited)	(audited)	(unaudited)	(unaudited)	(unaudited)	(unaudited)	(audited)	(unaudited)	(unaudited)
	(£m)									
Civil Aerospace	2,527	4,018	8,107	7,378	6,598	(1,826)	(21)	44	(162)	(343)
Power Systems	1,250	1,408	3,545	3,434	3,008	22	104	357	315	261
Defence	1,553	1,494	3,250	3,124	3,180	210	173	415	427	454
ITP Aero	346	457	936	779	—	10	32	111	67	—
Non-core business ⁽⁴⁾ . . .	91	285	189	781	—	(6)	(8)	(2)	(15)	(55)
Corporate and inter- segment	(206)	(309)	(577)	(429)	885	(79)	(77)	(117)	(16)	(11)
Total Group	5,561	7,353	15,450	15,067	13,671	(1,669)	203	808	616	306

- (1) The measures in this table are non-IFRS measures. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures*" for the definitions and "*Reconciliations of Non-IFRS Measures to Reported Financial Information*" for reconciliations to the closest IFRS measures.
- (2) The underlying results for Power Systems for 31 December 2018 have been restated to reclassify the North America Civil Nuclear business as non-core, as presented for 2019.
- (3) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*" and Note 27 to the Group 2018 Consolidated Financial Statements.
- (4) In 2019, non-core business included the Commercial Marine business which was disposed of on 1 April 2019, RRPD which was disposed of on 15 April 2019, L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including former Energy businesses not included in the disposal to Siemens in 2014. In 2018, non-core business included the Commercial Marine business, RRPD and L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including Retained Energy. Non-core business shown here for 31 December 2018 have been restated to include the North America Civil Nuclear business. In 2017, non-core business included Commercial Marine (held for sale from 1 June 2018), L'Orange and other smaller non-core businesses.

Other Financial Data

	As at or for the six months ended 30 June		As at or for the year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)	(unaudited)	(audited)	(audited)	(restated)
	(£m except as indicated)				
Net (debt)/funds ⁽²⁾	(4,069)	(1,937)	(993)	611	(305)
Free cash flow ⁽²⁾	(2,801)	(429)	873	568	259
Capital expenditure as a proportion of underlying revenue ⁽²⁾⁽³⁾	4.0%	4.7%	4.8%	6.0%	5.3%
Self-funded R&D as a proportion of underlying revenue ⁽²⁾⁽⁴⁾	8.2%	7.0%	7.2%	7.6%	7.6%

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) This measures in this table are non-IFRS measures. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures” for the definitions and “Reconciliations of Non-IFRS Measures to Reported Financial Information” for reconciliations to the closest IFRS measures.
- (3) Defined as cash purchases of property, plant and equipment in the period relative to underlying revenue. This measure demonstrates the balance between essential investments in infrastructure and delivering short-term shareholder returns.
- (4) Defined as in-year self-funded cash expenditure on R&D before any capitalisation or amortisation relative to underlying revenue. This measure demonstrates the balance between long-term strategic investments and delivering short-term shareholder returns.

Order backlog

Order backlog, also known as unrecognised revenue, is the amount of revenue on current contracts that is expected to be recognised in future periods. It refers to contracted consideration that is expected to be recognised as revenue when performance obligations are satisfied in the future. The parties to these contracts have approved the contract and the Group’s customers do not have a unilateral enforceable right to terminate the contract without compensation. The Group excludes Civil Aerospace OE orders (for deliveries beyond the next 7 to 12 months) that its customers have placed where they retain a right to cancel. The value of the Group’s order backlog may not be reflective of the revenue the Group will actually earn in future periods.

The Group’s order backlog as at 31 December 2019 and 2018 was £60.9bn and £63.1bn, respectively. The table below shows the Group’s order backlog by segment for the periods indicated:

Order backlog (in £bn)	As at 31 December					
	2019			2018		
	Within five years	After five years	Total	Within five years	After five years	Total
Civil Aerospace	22.9	25.6	48.5	22.1	30.2	52.3
Power Systems	2.6	0.3	2.9	2.9	0.2	3.1
Defence	7.7	0.9	8.6	6.3	0.5	6.8
ITP Aero	0.7	0.2	0.9	0.8	0.1	0.9
Total	33.9	27.0	60.9	32.1	31.0	63.1

Within the 0 to 5 years category, contracted revenue in Defence will largely be recognised in the next three years, contracted revenue in Power Systems will be recognised over the next two years as it is a short-cycle business, and contracted revenue in ITP Aero (where internal Group revenue has been eliminated) will be evenly spread over the next five years. See “Description of the Group and Its Business—Order backlog”.

Although the position will have changed since year-end 2019, the Group only presents order backlog on an annual basis and does not collect the relevant data throughout the year.

Reconciliations of Non-IFRS Measures to Reported Financial Information

Reconciliation of underlying revenue to reported revenue

The following table presents a reconciliation of underlying revenue for the Group to the Group's consolidated revenue as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Reported revenue	5,824	7,883	16,587	15,729	14,747
Impact of settled derivative contracts on trading transactions ⁽¹⁾	(263)	(530)	(1,137)	(781)	(1,076)
Exceptional programme charges ⁽²⁾	—	—	—	119	—
Total adjustments	(263)	(530)	(1,137)	(662)	(1,076)
Underlying revenue	5,561	7,353	15,450	15,067	13,671

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.

- (1) The adjustments for realised gains/(losses) on settled derivative contracts include adjustments to reflect the gains/(losses) in the same period as the related trading cash flows. In H1 2020, the impact of measuring revenue and costs and the impact of valuation of assets and liabilities using the period end exchange rate rather than the achieved rate or the exchange rate that is expected to be achieved by the use of the hedge book increased reported revenue by £263m (H1 2019: £530m) and reduced loss before financing and taxation by £664m (H1 2019: increased profit by £80m).
- (2) Included within exceptional programme charges in 2018 is £119m relating to the decision by Airbus to cease A380 deliveries in 2021.

Reconciliation of underlying gross (loss)/profit to reported gross (loss)/profit

The following table presents a reconciliation of underlying gross (loss)/profit for the Group to the Group's consolidated gross (loss)/profit as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Reported gross (loss)/profit	(687)	1,001	942	1,198	2,422
Underlying adjustments and adjustments to foreign exchange	(280)	29	1,445	1,252	(176)
Underlying gross (loss)/profit	(967)	1,030	2,387	2,450	2,246

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.

Reconciliation of underlying commercial and administrative costs to reported commercial and administrative costs

The following table presents a reconciliation of underlying commercial and administrative costs for the Group to the Group's consolidated commercial and administrative costs as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Reported commercial and administrative costs	(443)	(614)	(1,128)	(1,595)	(1,222)
Underlying adjustments and adjustments to foreign exchange ⁽¹⁾	(15)	61	149	434	72
Underlying commercial and administrative costs⁽¹⁾	(458)	(553)	(979)	(1,161)	(1,150)

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.

(1) Includes underlying restructuring charges of £14m, £16m and £18m, which were shown separately in the financial statements for the years-ended 31 December 2019, 2018 and 2017 respectively.

Reconciliation of underlying R&D costs to reported research and development costs

The following table presents a reconciliation of underlying R&D costs for the Group to the Group's consolidated research and development costs as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Reported research and development costs	(712)	(349)	(770)	(768)	(843)
Underlying adjustments and adjustments to foreign exchange	376	28	74	79	67
Underlying R&D costs	(336)	(321)	(696)	(689)	(776)

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.

Reconciliation of underlying share of results of joint ventures and associates to reported share of results of joint ventures and associates

The following table presents a reconciliation of underlying share of results of joint ventures and associates for the Group to the Group's consolidated share of results of joint ventures and associates as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Reported share of results of joint ventures and associates	73	45	104	4	9
Underlying adjustments and adjustments to foreign exchange	19	2	6	28	(5)
Underlying share of results of joint ventures and associates	92	47	110	32	4

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.

Reconciliation of underlying operating (loss)/profit to reported operating (loss)/profit

The following table presents a reconciliation of underlying operating (loss)/profit for the Group to the Group's consolidated operating (loss)/profit as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Reported operating (loss)/profit	(1,769)	83	(852)	(1,161)	366
Impact of settled derivative contracts on trading transactions ⁽¹⁾	(664)	(80)	(145)	23	(294)
Unrealised fair value changes on derivative contracts held for trading ⁽²⁾	4	2	1	1	(24)
Exceptional programme (credits)/charges ⁽³⁾	(498)	59	1,409	976	—
Exceptional restructuring charges ⁽⁴⁾	366	69	136	317	104
Effect of acquisition accounting ⁽⁵⁾	66	71	163	175	129
Impairments and asset write-offs ⁽⁶⁾	1,065	—	84	155	—
Pension past service credit ⁽⁷⁾	(248)	—	—	121	—
Other	9	(1)	12	9	25
Total adjustments	(100)	120	1,660	1,777	(60)
Underlying operating (loss)/profit	(1,669)	203	808	616	306

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.

- (1) Includes adjustments to reflect the gains/(losses) in the same period as the related trading cash flows. In H1 2020, the impact of measuring revenue and costs and the impact of valuation of assets and liabilities using the period end exchange rate rather than the achieved rate or the exchange rate that is expected to be achieved by the use of the hedge book increased reported revenue by £263m (H1 2019: £530m) and reduced loss before financing and taxation by £664m (H1 2019: increased profit by £80m).
- (2) Includes adjustments included in equity accounted joint ventures and excludes those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit before taxation.
- (3) Includes programme charges and associated contract losses. Included within programme exceptional items is £1,361m (2018: £790m; 2017: nil), £1,531m (2018: £905m; 2017: nil) at prevailing exchange rates, in respect of the abnormal wastage costs on the Trent 1000. This includes £0.2bn of insurance receipts in respect of the Trent 1000 in-service issues. In addition, there is an exceptional item of £48m (2018: £186m; 2017: nil), £49m (2018: £218m; 2017: nil) at prevailing exchange rates, that relates to the decision by Airbus to cease A380 deliveries in 2021. During H1 2020, the total estimated Trent 1000 abnormal wastage costs have reduced by £498m as a result of COVID-19, made up of £321m (a gross provision release of £450m, offset by the impact of expected actual exchange rates and the share of the costs borne by RRSAs) related to remediation Shop Visit costs and customer disruption costs and an improvement of £177m in the position on contract losses.
- (4) The costs include: £88m in 2019 (2018: £223m; 2017: nil) in respect of the Group-wide restructuring programme announced on 14 June 2018; costs relating to ongoing multi-year significant restructuring programmes including restructuring at Power Systems and in respect of Defence, reflecting actions to remove cost and improve operational efficiency. As at 30 June 2020, the Group recorded an exceptional restructuring charge of £366m following the announcement on 20 May 2020 to reshape and resize the Group due to the financial and operational impact of COVID-19. As at 30 June 2019, an exceptional restructuring charge of £69m was recognised, which included £39m in respect of the Group-wide restructuring programme announced on 14 June 2018, along with other multi-year restructuring programmes across the Group.
- (5) Includes the amortization of intangible assets arising on previous acquisitions.
- (6) In 2019, there has been an impairment of £58m relating to Bergen Engines AS, and impairment charge and asset write offs of £26m following the announcement to sell the North America Civil Nuclear business within the Power Systems business segment. The impairment charge in 2018 of £155m related to Commercial Marine. The Group has assessed the carrying value of its assets given the financial and operational impact of COVID-19 on the Group's future cash flow forecasts. Consequently, a number of impairments and write-offs have been recorded as at 30 June 2020. Impairments comprise: intangible assets £391m, mainly related to programme intangibles; property, plant and equipment £241m (including £145m related to site rationalization); right-of-use assets £319m, comprising engines of £310m and £9m of site rationalisation; and a £15m impairment on the carrying value of investments held. Other write-offs include £110m of participation fees in contract assets and £4m in provisions for site rationalization, offset by £15m for RRSA deferred cost contributions in payables. These write-offs are primarily a result of the impact of COVID-19.
- (7) Cost of equalisation of pension benefits between men and women in 2018. In H1 2020, the Group recorded an exceptional past service gain of £248m following changes to the pension benefits under the terms of the Rolls-Royce UK Pension Fund defined benefit scheme. Of the £248m gain, £79m related to the restructuring described above.

Reconciliation of underlying net financing cost to reported net financing cost

The following table presents a reconciliation of underlying net financing cost for the Group to the Group's consolidated net financing cost as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017 ^(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Reported net financing cost	(3,600)	(992)	(178)	(2,144)	2,747
Impact of settled derivative contracts on trading transactions ⁽¹⁾	584	123	(80)	(163)	(196)
Unrealised fair value changes on derivative contracts held for trading ⁽²⁾	2,729	738	6	2,144	(2,648)
Unrealised net losses on closing future over-hedged position ⁽³⁾	(1,369)	—	—	—	—

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017 ^(*)
	(unaudited)		(£m)		
					(restated, unaudited)
Unrealised fair value change to derivative contracts held for financing ⁽⁴⁾	88	15	(1)	3	3
Impact of discount rate changes ⁽⁵⁾	(30)	—	40	—	—
Exceptional programme charges ⁽⁶⁾	21	—	—	15	—
Loss/(gains) arising on acquisitions and disposals ⁽⁷⁾ . . .	—	—	8	8	—
Other	2	6	(20)	(13)	(13)
Total adjustments	2,025	882	(47)	1,994	(2,854)
Underlying net financing cost . .	(1,575)	(110)	(225)	(150)	(107)

- (*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (1) The adjustments for realised (gains)/losses on settled derivative contracts include adjustments to reflect the losses in the same period as the related trading cash flows. In H1 2020, the impact of measuring revenue and costs and the impact of valuation of assets and liabilities using the period end exchange rate rather than the achieved rate or the exchange rate that is expected to be achieved by the use of the hedge book increased reported revenue by £263m (H1 2019: £530m) and reduced loss before financing and taxation by £664m (H1 2019: increased profit by £80m). Underlying financing excludes the impact of revaluing monetary assets and liabilities at the period end exchange rate.
- (2) The adjustments for unrealised fair value changes to derivative contracts contain those included in equity accounted joint ventures and exclude those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit before taxation.
- (3) In response to the deterioration in the medium-term outlook caused by COVID-19 and the related reduction in anticipated net US dollar cash inflows, the Group took action during H1 2020 to reduce the size of the US dollar hedge book by transacting offsetting foreign exchange forward contracts across 2020-2026, resulting in a £1,457m charge to underlying results. This comprised of £88m cash costs incurred in the period and included within reported financing costs. The remaining £1,369m included in unrealised loss (shown above) is the net cost of closing out the over-hedged position in future years. The cost related to future years has been included as an underlying financing charge within the underlying performance. It is reversed in arriving at reported performance on the basis that the cumulative fair value changes on these derivative contracts are recognised as they arise. See Note 4 to the Group Consolidated Interim Financial Statements.
- (4) Includes the losses on hedge ineffectiveness in the period of £13m in 2019 (2018: losses £3m; 2017: nil), and £15m in H1 2020 (H1 2019: losses of £15m) and net fair value losses of £73m in H1 2020 (H1 2019: nil) on any interest rate swaps not designated into hedging relationships for accounting purposes.
- (5) Included within discount rate changes is £30m relating to Trent 900 and £10m relating to Trent 1000 for the impact from the change in discount rates on contract losses recorded in exceptional items in prior years as a result of the fall in US bonds, which drives the calculation of the risk-free rate.
- (6) £15m discount rate unwind in 2018 related to the Trent 1000 wastage charges recorded at 30 June 2018. During H1 2020, the £21m discount rate unwind related to the Trent 1000 wastage charges recorded at 30 June 2018 and 31 December 2019.
- (7) Gains/(losses) arising on the acquisitions and disposals of businesses. See Note 21 to the Group Consolidated Interim Financial Statements, Note 27 to the Group 2019 Consolidated Financial Statements and Note 25 to the Group 2018 Consolidated Financial Statements for more details (also including the amortisation of intangible assets arising on previous acquisitions).

Reconciliation of underlying (loss)/profit before taxation to reported (loss)/profit before taxation

The following table presents a reconciliation of underlying (loss)/profit before taxation for the Group to the Group's consolidated (loss)/profit before taxation as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		(restated, unaudited)
Reported (loss)/profit before taxation	(5,367)	(791)	(891)	(2,947)	3,898
Impact of settled derivative contracts on trading transactions ⁽¹⁾	(80)	43	(225)	(140)	(490)
Unrealised fair value changes on derivative contracts held for trading ⁽²⁾	2,733	740	7	2,145	(2,672)
Unrealised net losses on closing future over-hedged position ⁽³⁾	(1,369)	—	—	—	—
Unrealised fair value change to derivative contracts held for financing ⁽⁴⁾	88	15	(1)	3	3
Exceptional programme charges ⁽⁵⁾	(477)	59	1,409	991	—
Impact of discount rate changes ⁽⁶⁾	(30)	—	40	—	—
Exceptional restructuring charges ⁽⁷⁾	366	69	136	317	104
Effect of acquisition accounting ⁽⁸⁾	66	71	163	175	129
Loss/(gains) arising on acquisitions and disposals ⁽⁹⁾	(2)	(118)	(131)	(350)	(785)
Impairments and asset write-offs ⁽¹⁰⁾	1,065	—	84	155	—
Pension past service credit ⁽¹¹⁾	(248)	—	—	121	—
Other	11	5	(8)	(4)	12
Total adjustments	2,123	884	1,474	3,413	(3,699)
Underlying (loss)/profit before taxation	(3,244)	93	583	466	199

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15" and Note 27 to the Group 2018 Consolidated Financial Statements.

- (1) The adjustments for realised (gains)/losses on settled derivative contracts include adjustments to reflect the losses in the same period as the related trading cash flows. In H1 2020, the impact of measuring revenue and costs and the impact of valuation of assets and liabilities using the period end exchange rate rather than the achieved rate or the exchange rate that is expected to be achieved by the use of the hedge book reduced reported loss before taxation by £80m (H1 2019: £43m). Underlying financing excludes the impact of revaluing monetary assets and liabilities at the period end exchange rate.
- (2) The adjustments for unrealised fair value changes to derivative contracts include those included in equity accounted joint ventures and exclude those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit.

- (3) In response to the deterioration in the medium-term outlook caused by COVID-19 and the related reduction in anticipated net US dollar cash inflows, the Group took action during H1 2020 to reduce the size of the US dollar hedge book by transacting offsetting foreign exchange forward contracts across 2020-2026, resulting in a £1,457m charge to underlying results. This comprised of £88m cash costs incurred in the period and included within reported financing costs. The remaining £1,369m included in unrealised loss (shown above) is the net cost of closing out the over-hedged position in future years. The cost related to future years has been included within the underlying performance. It is reversed in arriving at reported performance on the basis that, the cumulative fair value changes on these derivative contracts are recognised as they arise.
- (4) Includes the losses on hedge ineffectiveness in the period of £13m (2018: losses £3m; 2017: nil) and £15m in H1 2020 (H1 2019: losses of £15m) and net fair value losses of £73m in H1 2020 (H1 2019: nil) on any interest rate swaps not designated into hedging relationships for accounting purposes.
- (5) Included within programme exceptional items is £1,361m (2018: £790m; 2017: nil), £1,531m (2018: £905m; 2017: nil) at prevailing exchange rates, in respect of the abnormal wastage costs on the Trent 1000. This includes £0.2bn of insurance receipts in respect of the Trent 1000 in-service issues. Also includes £15m discount rate unwind in 2018 related to the Trent 1000 wastage charges recorded at 30 June 2018. In addition, there is an exceptional item of £48m (2018: £186m; 2017: nil), £49m (2018: £218m; 2017: nil) at prevailing exchange rates, that relates to the decision by Airbus to cease A380 deliveries in 2021. For information on the associated provisions see Note 20 to the Group 2019 Consolidated Financial Statements. During H1 2020, the total estimated Trent 1000 abnormal wastage costs have reduced by £498m as a result of COVID-19, made up of £321m (a gross provision release of £450m, offset by the impact of expected actual exchange rates and the share of the costs borne by RRSAs) related to remediation Shop Visit costs and customer disruption costs and an improvement of £177m in the position on contract losses.
- (6) Included within discount rate changes is £30m relating to Trent 900 and £10m relating to Trent 1000 for the impact from the change in discount rates on contract losses recorded in exceptional items in prior years as a result of the fall in US bonds, which drives the calculation of the risk-free rate.
- (7) The Group recorded an exceptional restructuring charge of £136m in 2019 (2018: £317m; 2017: £104m). The costs include: £88m in 2019 (2018: £223m; 2017: nil) in respect of the Group-wide restructuring programme announced on 14 June 2018; costs relating to ongoing multi-year significant restructuring programmes including restructuring at Power Systems and in respect of Defence, reflecting actions to remove cost and improve operational efficiency.
- (8) Includes the amortisation of intangible assets arising on previous acquisitions.
- (9) Gains/(losses) arising on the acquisitions and disposals of businesses. See Note 21 to the Group Consolidated Interim Financial Statements, Note 27 to the Group 2019 Consolidated Financial Statements and Note 25 to the Group 2018 Consolidated Financial Statements for more details.
- (10) In 2019, there has been an impairment of £58m relating to Bergen Engines AS, and impairment charge and asset write offs of £26m following the announcement to sell the North America Civil Nuclear business within the Power Systems business segment. The impairment charge in 2018 of £155m related to Commercial Marine. During H1 2020 the Group has assessed the carrying value of its assets given the financial and operational impact of COVID-19 on the Group's future cash flow forecasts. Consequently, a number of impairments and write-offs have been recorded at 30 June 2020. Impairments comprise: intangible assets £391m, mainly related to programme intangibles; property, plant and equipment £241m (including £145m related to site rationalization); right-of-use assets £319m, comprising engines of £310m and £9m of site rationalisation; and a £15m impairment on the carrying value of investments held. Other write-offs include £110m of participation fees in contract assets and £4m in provisions for site rationalization, offset by £15m for RRSA deferred cost contributions in payables. These write-offs are primarily a result of the impact of COVID-19.
- (11) The cost of equalisation of pension benefits between men and women in 2018. See Note 19 to the Group 2018 Consolidated Financial Statements. In H1 2020, the Group recorded an exceptional past service gain of £248m following changes to the pension benefits under the terms of the RRUKPF defined benefit scheme. Of the £248m gain, £79m related to the restructuring described above.

Reconciliation of underlying taxation to reported taxation

The following table presents a reconciliation of underlying taxation for the Group to the Group's taxation as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		(restated, unaudited)
Reported taxation	(11)	(116)	(420)	554	(515)
Impact of settled derivative contracts on trading transactions ⁽¹⁾	2	(21)	99	14	97
Unrealised fair value changes on derivative contracts held for trading ⁽²⁾	(191)	6	89	(366)	463
Unrealised fair value of excess derivative contracts held for trading ⁽³⁾	106	—	—	—	—
Exceptional programme charges ⁽⁴⁾	—	—	—	(176)	—
Exceptional restructuring charges ⁽⁵⁾	(9)	(13)	(17)	(63)	(31)
Effect of acquisition accounting ⁽⁶⁾	(17)	(16)	(47)	(42)	(35)
(Losses)/gains arising on acquisitions and disposals ⁽⁷⁾ . . .	—	—	—	5	—
Impairments and asset write-offs ⁽⁸⁾	(164)	—	—	—	—
Pension past service credit ⁽⁹⁾	87	—	—	(41)	—
Changes in tax rates and recognition of ACT ⁽¹⁰⁾	116	—	—	(43)	(113)
Other	(1)	39	19	(3)	(21)
Total adjustments	(71)	(5)	143	(715)	360
Underlying taxation	(82)	(121)	(277)	(161)	(155)

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15" and Note 27 to the Group 2018 Consolidated Financial Statements.

- (1) The adjustments for realised (gains)/losses on settled derivative contracts include adjustments to reflect the losses in the same period as the related trading cash flows.
- (2) Includes tax impact of adjustments included in equity accounted joint ventures and excludes tax impact of those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit before taxation.
- (3) Includes tax impact on the underlying charge taken to reduce the size of the US dollar hedge book by transacting offsetting foreign exchange forward contracts across 2020-2026.
- (4) Includes tax impact of programme charges and associated contract losses.
- (5) Tax impact of exceptional restructuring charges, which includes: £88m in 2019 (2018: £223m; 2017: nil) in respect of the Group-wide restructuring programme announced on 14 June 2018; costs relating to ongoing multi-year significant restructuring programmes including restructuring at Power Systems and in respect of Defence, reflecting actions to remove cost and improve operational efficiency.
- (6) Includes tax impact of the amortisation of intangible assets arising on previous acquisitions.

- (7) Gains/(losses) arising on the acquisitions and disposals of businesses. See Note 27 to the Group 2019 Consolidated Financial Statements and Note 25 to the Group 2018 Consolidated Financial Statements for more details (also including the amortisation of intangible assets arising on previous acquisitions).
- (8) Tax impact of the impairment and asset write offs. Includes the tax impact of the 2019 impairment of £58m relating to Bergen Engines AS, and impairment charge and asset write offs of £26m following the announcement to sell the North America Civil Nuclear business within the Power Systems business segment. Also includes the tax impact of the £155m impairment recorded in 2018 in relation to Commercial Marine.
- (9) Tax impact of the cost of equalisation of pension benefits between men and women in 2018. See Note 19 to the Group 2018 Consolidated Financial Statements.
- (10) In 2017, changes in tax rates and recognition of ACT includes a £163m credit relating to the recognition of Advance Corporation Tax (ACT) as a deferred tax asset due to changes in tax rules which restricted the off-set of brought forward tax losses and accelerated UK tax payments against which the ACT could be offset. This was partially offset by a £50m charge relating to changes in tax rates in the US and Spain, respectively. In 2018, the £43m charge relates to changes in tax rates in the US and Spain, respectively.

Reconciliation of underlying (loss)/profit for the period to reported (loss)/profit for the period

The following table presents a reconciliation of underlying (loss)/profit for the period for the Group to the Group's consolidated (loss)/profit for the period as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		(restated, unaudited)
Reported (loss)/profit for the period	(5,378)	(907)	(1,311)	(2,393)	3,383
Impact of settled derivative contracts on trading transactions ⁽¹⁾	(78)	22	(126)	(126)	(393)
Unrealised fair value changes on derivative contracts held for trading ⁽²⁾	2,542	746	96	1,779	(2,209)
Unrealised fair value of excess derivative contracts held for trading ⁽³⁾	(1,263)	—	—	—	—
Unrealised fair value change to derivative contracts held for financing ⁽⁴⁾	88	15	(1)	3	3
Exceptional programme charges ⁽⁵⁾	(477)	59	1,409	815	—
Impact of discount rate changes ⁽⁶⁾	(30)	—	40	—	—
Exceptional restructuring charges ⁽⁷⁾	357	56	119	254	73
Effect of acquisition accounting ⁽⁸⁾	49	55	116	133	94
Gains/(losses) arising on acquisitions and disposals ⁽⁹⁾	(2)	(118)	(131)	(345)	(785)
Impairments and write-offs ⁽¹⁰⁾	901	—	84	155	—
Pension past service credit ⁽¹¹⁾	(161)	—	—	80	—
Changes in tax rates and recognition of ACT ⁽¹²⁾	116	—	—	(43)	(113)
Other	10	44	11	(7)	(9)
Total adjustments	2,052	879	1,617	2,698	(3,339)
Underlying (loss)/profit for the period	(3,326)	(28)	306	305	44

- (*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (1) The adjustments for realised (gains)/losses on settled derivative contracts include adjustments to reflect the losses in the same period as the related trading cash flows. The adjustments for realised (gains)/losses on settled derivative contracts include adjustments to reflect the losses in the same period as the related trading cash flows. In H1 2020, the impact of measuring revenue and costs and the impact of valuation of assets and liabilities using the period end exchange rate rather than the achieved rate or the exchange rate that is expected to be achieved by the use of the hedge book reduced reported loss for the period by £80m (H1 2019: £43m). Underlying financing excludes the impact of revaluing monetary assets and liabilities at the period end exchange rate.
 - (2) The adjustments for unrealised fair value changes to derivative contracts include those included in equity accounted joint ventures and exclude those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit.
 - (3) In response to the deterioration in the medium-term outlook caused by COVID-19 and the related reduction in anticipated net US dollar cash inflows, the Group took action during H1 2020 to reduce the size of the US dollar hedge book by transacting offsetting foreign exchange forward contracts across 2020-2026, resulting in a £1,457m charge to underlying results. This comprised of £88m cash costs incurred in the period and included within reported financing costs. The remaining £1,369m included in unrealised loss (shown above) is the net cost of closing out the over-hedged position in future years. The cost related to future years has been included within the underlying performance. It is reversed in arriving at reported performance on the basis that, the cumulative fair value changes on these derivative contracts are recognised as they arise.
 - (4) Includes post-tax impact of the losses on hedge ineffectiveness in the period of £13m (2018: losses £3m; 2017: nil).
 - (5) Included within programme exceptional items is £1,361m (2018: £790m; 2017: nil), £1,531m (2018: £905m; 2017: nil) at prevailing exchange rates, in respect of the abnormal wastage costs on the Trent 1000. This includes £0.2bn of insurance receipts in respect of the Trent 1000 in-service issues. Also includes £15m discount rate unwind in 2018 related to the Trent 1000 wastage charges recorded at 30 June 2018. In addition, there is an exceptional item of £48m (2018: £186m; 2017: nil), £49m (2018: £218m; 2017: nil) at prevailing exchange rates, that relates to the decision by Airbus to cease A380 deliveries in 2021. For information on the associated provisions see Note 20 to the Group 2019 Consolidated Financial Statements. During H1 2020, the total estimated Trent 1000 abnormal wastage costs have reduced by £498m as a result of COVID-19, made up of £321m (a gross provision release of £450m, offset by the impact of expected actual exchange rates and the share of the costs borne by RRSAs) related to remediation Shop Visit costs and customer disruption costs and an improvement of £177m in the position on contract losses.
 - (6) Included within discount rate changes is the post-tax impact of £30m relating to Trent 900 and £10m relating to Trent 1000 for the impact from the change in discount rates on contract losses recorded in exceptional items in prior years as a result of the fall in US bonds, which drives the calculation of the risk-free rate.
 - (7) Post-tax impact of exceptional restructuring charges, which includes: £88m in 2019 (2018: £223m; 2017: nil) in respect of the Group-wide restructuring programme announced on 14 June 2018; costs relating to ongoing multi-year significant restructuring programmes including restructuring at Power Systems and in respect of Defence, reflecting actions to remove cost and improve operational efficiency.
 - (8) Post tax impact of the amortisation of intangible assets arising on previous acquisitions.
 - (9) Gains/ (losses) arising on the acquisitions and disposals of businesses. See Note 27 to the Group 2019 Consolidated Financial Statements and Note 25 to the Group 2018 Consolidated Financial Statements for more details (also including the amortisation of intangible assets arising on previous acquisitions).
 - (10) Post tax impact of impairments and asset write-offs. Includes the post-tax impact of the 2019 impairment of £58m relating to Bergen Engines AS, and impairment charge and asset write offs of £26m following the announcement to sell the North America Civil Nuclear business within the Power Systems business segment. Also includes the post-tax impact of the £155m impairment recorded in 2018 in relation to Commercial Marine.
 - (11) Post-tax impact of the cost of equalisation of pension benefits between men and women in 2018. See Note 19 to the Group 2018 Consolidated Financial Statements.
 - (12) In 2017, changes in tax rates and recognition of ACT includes a £163m credit relating to the recognition of Advance Corporation Tax (ACT) as a deferred tax asset due to changes in tax rules which restricted the off-set of brought forward tax losses and accelerated UK tax payments against which the ACT could be offset. This was partially offset by a £50m charge relating to changes in tax rates in the US and Spain, respectively. In 2018, the £43m charge relates to changes in tax rates in the US and Spain, respectively.

Reconciliation of free cash flow to reported change in cash and cash equivalents

The following table presents a reconciliation of free cash flow for the Group to the Group's consolidated change in cash and cash equivalents as reported in accordance with IFRS:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017(*)
	(unaudited)		(£m)		(restated, unaudited)
Change in cash and cash equivalents	(360)	(763)	(413)	1,953	231
Returns to shareholders	90	85	224	219	214
Net cash flow from changes in borrowings and lease liabilities (2018: finance leases)	(2,637)	679	1,385	(1,091)	(200)
(Decrease)/increase in short-term investments	(6)	(6)	—	3	—
Changes in group structure	(2)	(458)	(409)	(583)	(264)
Acquisition of ITP Aero	—	—	—	—	(263)
Acquisition of eAircraft	—	—	43	—	—
Disposal of Commercial Marine and RRPD	—	(458)	(453)	—	—
Disposal of L'Orange	—	—	—	(573)	—
Other acquisitions and disposals	(2)	—	1	(10)	(1)
Payments of financial penalties from agreements with investigating bodies	135	102	102	—	286
Exceptional restructuring costs	87	66	216	70	—
Pension fund contribution	—	—	35	—	—
Other	41	6	4	(3)	(8)
Capital element of lease repayments ⁽¹⁾	(149)	(140)	(271)	—	—
Free cash flow	(2,801)	(429)	873	568	259
Post-acquisition free cash flow of ITP Aero	n/a	n/a	n/a	n/a	14
Free cash flow excluding ITP Aero	n/a	n/a	n/a	n/a	273

(*) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15" and Note 27 to the Group 2018 Consolidated Financial Statements.

(1) As IFRS 16 has been adopted with effect from 1 January 2019, no adjustments have been made to present the comparative period on a consistent basis.

Reconciliation of net funds/(debt)

The following tables present a reconciliation of net funds/(debt) for the Group to the nearest Group IFRS measures for the periods indicated:

	At 1 January 2020	Funds flow	Exchange differences	Fair value adjustments (£m)	Reclassifications	Other movements in lease liabilities	At 30 June 2020
H1 2020 (unaudited)							
Cash at bank and in hand	825	110	36	—	—	—	971
Money market funds	1,095	(44)	—	—	—	—	1,051
Short-term deposits	2,523	(426)	120	—	—	—	2,217
Cash and cash equivalents (per balance sheet)	4,443	(360)	156	—	—	—	4,239
Overdrafts	(8)	—	—	—	—	—	(8)
Cash and cash equivalents (per cash flow statement)	4,435	(360)	156	—	—	—	4,231
Short-term investments	6	(6)	—	—	—	—	—
Other current borrowings	(427)	(283)	(3)	(31)	(690)	—	(1,434)
Non-current borrowings	(2,896)	(2,503)	(5)	(271)	690	—	(4,985)
Lease liabilities	(2,354)	149	(150)	—	—	18	(2,337)
Financial liabilities	(5,677)	(2,637)	(158)	(302)	—	18	(8,756)
Net (debt)/funds excluding fair value of swaps	(1,236)	(3,003)	(2)	(302)	—	18	(4,525)
Fair value of swaps hedging fixed rate borrowings	243	—	—	213	—	—	456
Net (debt)/funds	(993)	(3,003)	(2)	(89)	—	18	(4,069)
<i>Net funds/(debt) (excluding lease liabilities)</i>	<i>1,361</i>						<i>(1,732)</i>

	At 31 December 2018	Transition to IFRS 16 and reclassification	At 1 January 2019	Funds flow	Exchange differences (£m)	Fair value adjustments	Reclassification	Other movements on leases	At 30 June 2019
H1 2019 (unaudited)									
Cash at bank and in hand	1,023	—	1,023	(103)	4	—	—	—	924
Money market funds	1,222	—	1,222	228	(4)	—	—	—	1,446
Short-term deposits	2,729	—	2,729	(884)	(7)	—	—	—	1,838
Cash and cash equivalents (per balance sheet)	4,974	—	4,974	(759)	(7)	—	—	—	4,208
Overdrafts	(22)	—	(22)	(4)	—	—	—	—	(26)
Cash and cash equivalents (per cash flow statement)	4,952	—	4,952	(763)	(7)	—	—	—	4,182
Short-term investments	6	—	6	(6)	—	—	—	—	—
Other current borrowings	(802)	(14)	(816)	542	(1)	5	192	—	(78)
Non-current borrowings	(3,609)	(65)	(3,674)	(3)	—	(111)	(192)	—	(3,980)
Finance leases	(229)	229	—	—	—	—	—	—	—
Lease liabilities	—	(2,477)	(2,477)	184	(21)	—	—	(131)	(2,445)
Financial liabilities	(4,640)	(2,327)	(6,967)	723	(22)	(106)	—	(131)	(6,503)
Net funds/(debt) excluding fair value of swaps	318	(2,327)	(2,009)	(46)	(29)	(106)	—	(131)	(2,321)
Fair value of swaps hedging fixed rate borrowing	293	—	293	—	—	91	—	—	384
Net funds/(debt)	611	(2,327)	(1,716)	(46)	(29)	(15)	—	(131)	(1,937)
<i>Net funds/(debt) (excluding lease liabilities)</i>	<i>840</i>	<i>(79)</i>	<i>761</i>						<i>508</i>

	At 31 December 2018	Transition to IFRS 16 and reclassification	At 1 January 2019	Funds flow	Net funds on acquisition / disposal	Exchange differences	Fair value adjustments	Reclassifications	Other movements on leases	At 31 December 2019
	(£m)									
2019										
Cash at bank and in hand	1,023	—	1,023	(179)	—	(19)	—	—	—	825
Money market funds	1,222	—	1,222	(124)	—	(3)	—	—	—	1,095
Short-term deposits	2,729	—	2,729	(124)	—	(82)	—	—	—	2,523
Cash and cash equivalents										
(per balance sheet)	4,974	—	4,974	(427)	—	(104)	—	—	—	4,443
Overdrafts	(22)	—	(22)	14	—	—	—	—	—	(8)
Cash and cash equivalents										
(per cash flow statement)	4,952	—	4,952	(413)	—	(104)	—	—	—	4,435
Short-term investments	6	—	6	—	—	—	—	—	—	6
Other current borrowings	(802)	(14)	(816)	799	—	2	5	(417)	—	(427)
Non-current borrowings	(3,609)	(65)	(3,674)	315	(1)	4	43	417	—	(2,896)
Finance leases	(229)	229	—	—	—	—	—	—	—	—
Lease liabilities	—	(2,477)	(2,477)	271	—	66	—	3	(217)	(2,354)
Financial liabilities	(4,640)	(2,327)	(6,967)	1,385	(1)	72	48	3	(217)	(5,677)
Net funds/(debt) excluding fair value of swaps	318	(2,327)	(2,009)	972	(1)	(32)	48	3	(217)	(1,236)
Fair value of swaps hedging fixed rate borrowings	293	—	293	—	—	—	(50)	—	—	243
Net funds/(debt)	611	(2,327)	(1,716)	972	(1)	(32)	(2)	3	(217)	(993)
Net funds/(debt) (excluding lease liabilities)	840	(79)	761							1,361

	At 1 January 2018	Funds flow	Exchange differences	Fair value adjustments	Reclassifications	At 31 December 2018
	(£m)					
2018						
Cash at bank and in hand	838	170	15	—	—	1,023
Money market funds	589	630	3	—	—	1,222
Short-term deposits	1,526	1,155	48	—	—	2,729
Cash and cash equivalents (per balance sheet)	2,953	1,955	66	—	—	4,974
Overdrafts	(20)	(2)	—	—	—	(22)
Cash and cash equivalents (per cash flow statement)	2,933	1,953	66	—	—	4,952
Short-term investments	3	3	—	—	—	6
Other current borrowings	(39)	(38)	(1)	15	(739)	(802)
Non-current borrowings	(3,292)	(972)	—	(84)	739	(3,609)
Finance leases	(137)	(81)	(11)	—	—	(229)
Financial liabilities	(3,468)	(1,091)	(12)	(69)	—	(4,640)
Net (debt)/funds excluding fair value of swaps	(532)	865	54	(69)	—	318
Fair value of swaps hedging fixed rate borrowings	227	—	—	66	—	293
Net (debt)/funds excluding fair value of swaps	(305)	865	54	(3)	—	611

Organic change numbers

Where stated, certain percentage change or absolute change figures in this document with respect to underlying measures are presented on an ‘organic change’ basis. Any such references to ‘organic changes’ are presented on a constant translational currency (constant currency) basis by applying the prior year’s average exchange rates to the translation of overseas entities in both the financial information presented for the prior year and for the current year and exclude changes in perimeter due to acquisitions and disposals.

The following tables disaggregate the year-on-year movements in selected underlying financial information in terms of organic growth and foreign exchange movements. The organic growth movements form the basis of the organic change figures used in this document. The underlying financial information is reconciled to financial information as reported in accordance with IFRS in the section “—Reconciliations of Non-IFRS Measures to Reported Financial Information”.

Both the prior year and current year financial information in the tables below exclude changes in perimeter due to acquisitions and disposals and as a result are not directly comparable to the financial information elsewhere in this document, which includes the impact of changes in perimeter due to acquisitions and disposals.

Total underlying results

For the six months ended 30 June					
	2019	Organic Change	Net M&A ⁽¹⁾ (unaudited) (£m)	Foreign Exchange	2020
Underlying revenue	7,353	(1,613)	(211)	32	5,561
Underlying original equipment revenue	3,407	(484)	(86)	13	2,850
Underlying aftermarket revenue	3,946	(1,129)	(125)	19	2,711
Underlying gross profit/(loss)	1,030	(1,959)	(48)	10	(967)
Commercial and administrative costs	(553)	55	41	(1)	(458)
Research and development costs	(321)	(21)	8	(2)	(336)
Joint ventures and associates	47	43	—	2	92
Underlying operating profit/(loss)	203	(1,882)	1	9	(1,669)

- (1) Impact of changes in perimeter due to acquisitions and disposals, specifically Qinous GmbH acquired on 15 January 2020 and the Commercial Marine business sold on 1 April 2019, RRPD sold on 15 April 2019.

For the year ended 31 December					
	2018	Organic Change	Net M&A ⁽¹⁾ (£m)	Foreign Exchange	2019
Underlying revenue⁽²⁾	15,067	958	(629)	54	15,450
Underlying original equipment revenue	7,530	220	(300)	6	7,456
Underlying aftermarket revenue	7,537	738	(329)	48	7,994
Underlying gross profit	2,450	82	(161)	16	2,387
Commercial and administrative costs	(1,177)	41	139	4	(993)
Research and development costs	(689)	(37)	33	(3)	(696)
Joint ventures and associates	32	72	—	6	110
Underlying operating profit	616	158	11	23	808

- (1) Impact of changes in perimeter due to acquisitions and disposals, specifically the Commercial Marine business sold on 1 April 2019, RRPD sold on 15 April 2019 and L'Orange sold on 1 June 2018.
- (2) Includes £(93)m (2018: £(196)m) of revenue recognised in the year relating to performance obligations satisfied in previous years.

For the year ended 31 December					
	2017	Organic Change	Net M&A ⁽¹⁾ (£m)	Foreign Exchange	2018
Underlying revenue	13,671	1,148	285	(37)	15,067
Underlying original equipment revenue	6,748	555	228	(1)	7,530
Underlying aftermarket revenue	6,923	593	57	(36)	7,537
Underlying gross profit	2,246	81	136	(13)	2,450
Commercial and administrative costs	(1,168)	35	(48)	4	(1,177)
Research and development costs	(776)	106	(20)	1	(689)
Joint ventures and associates	4	31	0	(3)	32
Underlying profit before financing	306	253	68	(11)	616

- (1) Impact of changes in perimeter due to acquisitions and disposals, specifically L'Orange sold on 1 June 2018 and ITP Aero acquired on 19 December 2017.

Civil Aerospace (excluding non-core operations)

For the six months ended 30 June				
	2019	Organic Change	Foreign Exchange	2020
	(unaudited) (£m)			
Underlying revenue	4,018	(1,496)	5	2,527
Underlying original equipment revenue	1,570	(374)	2	1,198
Underlying aftermarket revenue	2,448	(1,122)	3	1,329
Underlying gross profit/(loss)	276	(1,842)	4	(1,562)
Commercial and administrative costs	(185)	14	(1)	(172)
Research and development costs	(157)	(24)	1	(180)
Joint ventures and associates	45	42	1	88
Underlying operating (loss)/profit	(21)	(1,810)	5	(1,826)

For the year ended 31 December				
	2018	Organic Change	Foreign Exchange	2019
	(£m)			
Underlying revenue	7,378	723	6	8,107
Underlying original equipment revenue	3,119	132	(5)	3,246
Underlying aftermarket revenue	4,259	591	11	4,861
Underlying gross profit	493	121	8	622
Commercial and administrative costs	(344)	38	—	(306)
Research and development costs	(332)	(42)	—	(374)
Joint ventures and associates	21	78	3	102
Underlying operating (loss)/profit	(162)	195	11	44
Underlying revenue				
Large engine	5,039	733	—	5,774
<i>Original equipment</i>	2,374	196	—	2,569
<i>Aftermarket</i>	2,665	537	—	3,205
Business aviation	1,084	37	(4)	1,119
<i>Original equipment</i>	620	28	(6)	642
<i>Aftermarket</i>	466	9	2	477
Regional aviation				
Aftermarket	291	57	7	355
V2500	962	(103)	—	859
<i>Original equipment</i>	126	(91)	—	35
<i>Aftermarket</i>	836	(12)	—	824
Total				
Original equipment	3,119	133	(6)	3,246
Aftermarket	4,259	591	9	4,859

For the year ended 31 December				
	2017	Organic Change	Foreign Exchange	2018
	(£m)			
Underlying revenue	6,598	784	(4)	7,378
Underlying original equipment revenue	2,890	224	5	3,119
Underlying aftermarket revenue	3,708	560	(9)	4,259
Underlying gross profit	473	26	(6)	493
Commercial and administrative costs	(373)	29	—	(344)
Research and development costs	(454)	122	—	(332)
Joint ventures and associates	11	12	(2)	21
Underlying operating (loss)/profit	(343)	189	(8)	(162)

For the year ended 31 December				
	2017	Organic Change	Foreign Exchange	2018
	(£m)			
Underlying revenue				
Large engine	4,422	624	(1)	5,039
<i>Original equipment</i>	2,090	284	—	2,374
<i>Aftermarket</i>	2,332	340	(1)	2,665
Business aviation	973	105	1	1,084
<i>Original equipment</i>	582	33	5	620
<i>Aftermarket</i>	391	72	(4)	464
Regional aviation				
<i>Aftermarket</i>	278	19	(4)	292
V2500	926	36	—	962
<i>Original equipment</i>	218	(93)	—	126
<i>Aftermarket</i>	708	129	—	836
Total				
Original equipment	2,890	224	5	3,119
Aftermarket	3,708	560	(9)	4,259

Power Systems (excluding non-core operations)

For the six months ended 30 June				
	2019 ⁽¹⁾	Organic Change	Foreign Exchange	2020 ⁽¹⁾
	(unaudited) (£m)			
Underlying revenue	1,408	(160)	2	1,250
Underlying original equipment revenue	923	(100)	—	823
Underlying aftermarket revenue	485	(60)	2	427
Underlying gross profit	370	(106)	1	265
Commercial and administrative costs	(176)	22	—	(154)
Research and development costs	(89)	1	(1)	(89)
Joint ventures and associates	(1)	1	—	—
Underlying operating profit/(loss)	104	(82)	—	22

- (1) Excludes the impact of changes in perimeter due to acquisitions and disposals, specifically Qinous GmbH acquired on 15 January 2020 and the North America Civil Nuclear business, which has been treated as a disposal group held for sale at 31 December 2019 and hence classified as non-core.

For the year ended 31 December				
	2018 ⁽¹⁾	Organic Change	Foreign Exchange	2019 ⁽¹⁾
	(£m)			
Underlying revenue	3,434	142	(31)	3,545
Underlying original equipment revenue	2,310	97	(21)	2,386
Underlying aftermarket revenue	1,124	45	(10)	1,159
Underlying gross profit/(loss)	866	52	(9)	909
Commercial and administrative costs	(364)	(14)	4	(374)
Research and development costs	(188)	11	1	(176)
Joint ventures and associates	1	(3)	—	(2)
Underlying operating profit/(loss)	315	46	(4)	357

- (1) Excludes the impact of changes in perimeter due to acquisitions and disposals, specifically L'Orange sold on 1 June 2018 and the North America Civil Nuclear business, which has been treated as a disposal group held for sale at 31 December 2019 and hence classified as non-core.

For the year ended 31 December				
	2017 ⁽¹⁾	Organic Change	Foreign Exchange	2018 ⁽¹⁾
	(£m)			
Underlying revenue	3,008	446	30	3,484
Underlying original equipment revenue	1,956	345	21	2,322
Underlying aftermarket revenue	1,052	101	9	1,162
Underlying gross profit	797	78	7	882
Commercial and administrative costs	(351)	(25)	(2)	(378)
Research and development costs	(181)	(5)	(2)	(188)
Joint ventures and associates	(4)	5	—	1
Underlying operating profit	261	53	3	317

(1) Excludes the impact of changes in perimeter due to acquisitions and disposals, specifically L'Orange sold on 1 June 2018.

Defence (excluding non-core operations)

For the six months ended 30 June				
	2019	Organic Change	Foreign Exchange	2020
	(unaudited) (£m)			
Underlying revenue	1,494	35	24	1,553
Underlying original equipment revenue	653	16	9	678
Underlying aftermarket revenue	841	19	15	875
Underlying gross profit	295	32	5	332
Commercial and administrative costs	(77)	1	—	(76)
Research and development costs	(48)	—	(1)	(49)
Joint ventures and associates	3	—	—	3
Underlying operating profit	173	33	4	210

For the year ended 31 December				
	2018	Organic Change	Foreign Exchange	2019
	(£m)			
Underlying revenue	3,124	43	83	3,250
Underlying original equipment revenue	1,452	(26)	35	1,461
Underlying aftermarket revenue	1,672	69	48	1,789
Underlying gross profit	690	(41)	20	669
Commercial and administrative costs	(173)	18	(3)	(158)
Research and development costs	(100)	(4)	(1)	(105)
Joint ventures and associates	10	(1)	—	9
Underlying operating profit/(loss)	427	(28)	16	415

For the year ended 31 December				
	2017	Organic Change	Foreign Exchange	2018
	(£m)			
Underlying revenue	3,180	1	(57)	3,124
Underlying original equipment revenue	1,398	79	(25)	1,452
Underlying aftermarket revenue	1,782	(78)	(32)	1,672
Underlying gross profit/(loss)	728	(25)	(13)	690
Commercial and administrative costs	(192)	18	1	(173)
Research and development costs	(89)	(12)	1	(100)
Joint ventures and associates	7	3	—	10
Underlying operating profit/(loss)	454	(16)	(11)	427

ITP Aero (excluding non-core operations)

For the six months ended 30 June				
	2019	Organic Change	Foreign Exchange	2020
	(unaudited) (£m)			
Underlying revenue	457	(112)	1	346
Underlying original equipment revenue	400	(134)	1	267
Underlying aftermarket revenue	57	22	—	79
Underlying gross profit/(loss)	80	(34)	1	47
Commercial and administrative costs	(33)	10	—	(23)
Research and development costs	(15)	1	(1)	(15)
Joint ventures and associates	—	—	1	1
Underlying operating profit/(loss)	32	(23)	1	10

For the year ended 31 December				
	2018	Organic Change	Foreign Exchange	2019
	(£m)			
Underlying revenue	779	166	(9)	936
Underlying original equipment revenue	666	124	(8)	782
Underlying aftermarket revenue	113	42	(1)	154
Underlying gross profit	156	52	(2)	206
Commercial and administrative costs	(59)	(4)	1	(62)
Research and development costs	(30)	(3)	—	(33)
Underlying operating profit/(loss)	67	45	(1)	111

For the year ended 31 December				
	2017 ⁽¹⁾	Organic Change	Foreign Exchange	2018
	(£m)			
Underlying revenue	725	47	7	779
Underlying original equipment revenue	554	107	5	666
Underlying aftermarket revenue	171	(60)	2	113
Underlying gross profit	159	(5)	2	156
Commercial and administrative costs	(61)	3	(1)	(59)
Research and development costs	(33)	4	(1)	(30)
Underlying operating profit	65	2	—	67

- (1) ITP Aero was acquired on 19 December 2017. The financial information for 2017 presented in this table presents the results of the ITP Aero business on a 100% ownership basis for comparison purposes only, as if the Group had owned 100% of ITP Aero for the whole of 2017, and such financial information is unaudited.

OPERATING AND FINANCIAL REVIEW

This *Operating and Financial Review* is intended to convey management's perspective on the Group's operational performance and financial performance as measured in accordance with IFRS. The Group intends this disclosure to assist readers in understanding and interpreting the financial statements incorporated by reference in this document. This *Operating and Financial Review* is based on, and should be read in conjunction with, the Group Consolidated Financial Statements and the Group Consolidated Interim Financial Statements, which are incorporated by reference in this document, as well as "*Presentation of Financial, Market and Other Information—Presentation of financial information*". In this analysis, all references to "**H1 2020**" are to the six months ended 30 June 2020, "**H1 2019**" are to the six months ended 30 June 2019, "**2019**" are to the year ended 31 December 2019, "**2018**" are to the year ended 31 December 2018 and "**2017**" are to the year ended 31 December 2017.

The following discussion also contains trend information and forward-looking statements. Actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below and elsewhere in this document, particularly under "Forward-Looking Statements" and "Risk Factors".

The Group makes reference herein to certain non-IFRS financial information. See "*Presentation of Financial, Market and Other Information—Presentation of financial information*".

Overview of the Group's Business

The Group designs, develops, manufactures and services integrated power systems for use in the air, on land and at sea. It does so by developing world-leading technology, producing highly efficient products and providing through-life services in each of the Group's markets. As at 30 June 2020, the Group had an installed base of approximately 187,000 power systems in service worldwide, including 5,663 large engines, 7,398 business aviation aero engines, approximately 16,000 defence engines and approximately 157,000 reciprocating engines across a number of land and sea markets. The Group's products are sold in over 150 countries and it employs about 51,700 people worldwide.

The Group operates through the following four core businesses, which comprise its operating segments:

- **Civil Aerospace:** the Civil Aerospace business is a major manufacturer of aero engines for the large commercial aircraft ("**LCA**"), regional jet and business aviation markets. The business uses engineering expertise, in-depth knowledge and capabilities to provide through-life support solutions for its customers.
- **Power Systems:** the Power Systems business is a leading provider of high-speed and medium-speed reciprocating engines, and complete propulsion and power generation systems and service offerings. It serves the marine, defence, power generation and industrial markets and includes civil nuclear operations that supply safety-critical systems.
- **Defence:** the Defence business is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and helicopter applications. It has significant scale in the naval market and is the technical authority for through-life support of the nuclear powerplant for the Royal Navy's submarine fleet.
- **ITP Aero:** the ITP Aero business is a global leader in aero-engine subsystem design. Alongside the development, manufacturing, assembly and testing of engine components, it provides MRO services for regional airlines, business aviation, industrial and defence applications.

In 2019, the Civil Aerospace, Power Systems, Defence and ITP Aero businesses contributed 51%, 22%, 20% and 6%, respectively, of the underlying revenue generated by the Group's business.

The table below summarises the Group's financial performance for the periods presented on an underlying and reported basis:

	As at or for the six months ended 30 June		As at or for the year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)		(£m except as indicated)		(restated, unaudited)
Reported revenue ⁽¹⁾	5,824	7,883	16,587	15,729	14,747
Underlying revenue ⁽¹⁾⁽²⁾	5,561	7,353	15,450	15,067	13,671
Reported operating (loss)/profit ⁽¹⁾	(1,769)	83	(852)	(1,161)	366
Underlying operating (loss)/profit ⁽¹⁾⁽²⁾	(1,669)	203	808	616	306
Reported (loss)/profit before tax ⁽¹⁾	(5,367)	(791)	(891)	(2,947)	3,898
Underlying (loss)/profit before tax ⁽¹⁾⁽²⁾	(3,244)	93	583	466	199
Free cash flow ⁽²⁾	(2,801)	(429)	873	568	259
Order backlog ⁽³⁾ (in £bn)	n/a	n/a	60.9	63.1	55.0

(1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15" and Note 27 to the Group 2018 Consolidated Financial Statements.

(2) This metric is a non-IFRS measure. See "Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information" for the definitions and reconciliation to the closest IFRS measures.

(3) Order backlog is reported only at year end.

Key factors affecting the Group's results of operations

The Group's results of operations have been affected in the periods under review, and are expected to continue to be affected, by the following principal factors relating to the Group's business.

Macro-economic environment, COVID-19 pandemic and impact on the relevant industries, particularly aviation, and measures to bolster liquidity

The Group's results and financial condition is affected by macro-economic conditions, including in particular those affecting its key end-markets.

The COVID-19 pandemic has resulted in wide-ranging measures being implemented by governments across the world in an attempt to contain the spread of the virus, including travel restrictions and advisories, curfews, quarantines, lockdowns and other restrictions on movement and non-essential services. This has had a significant effect on the Group. The commercial aerospace sector in which the Group's Civil Aerospace and ITP Aero businesses operate has been particularly affected. Much of the global airline fleet has been temporarily grounded, resulting in a fall in global airline demand (as measured by RPKs) by 94%, 91%, 87% and 80% in April, May, June and July 2020, respectively, compared to the same period in 2019 (according to IATA). Given a relatively resilient performance in January and February, overall capacity for H1 2020 reduced by 51%.

As a result, the Group experienced a severe reduction in the total EFHs of the Civil Aerospace business's large engines (which are used to power widebody commercial passenger aircraft). Large engine EFHs reduced by 47% to 4.0m in H1 2020 compared to H1 2019, including a reduction of 80% in April, the trough for activity. In H1 2020, the number of widebody original equipment engines delivered fell by 47% compared to H1 2019. Over the same period, the number of business aviation original equipment engines delivered fell by 8%.

This reduction in large engine and business aviation deliveries also resulted in an increase in the number of engines held by the Group as inventory.

The COVID-19 pandemic has had, and is expected to continue to have, a material effect on revenue generated by the Civil Aerospace business from sales of aftermarket services, as well as the costs it incurs in delivering such services. As described further in "—Long-term service agreements and contract accounting adjustments", lower EFHs means the Group incurs less overhaul costs and therefore, under IFRS 15, recognises

less revenue and may make adjustments to past recognised revenue as required under IFRS 15. In 2019, the Civil Aerospace business earned £4,861m of underlying revenue (60% of its total revenue) from aftermarket services (principally LTSAs). In H1 2020, the Civil Aerospace business earned £1,329m of underlying revenue (53% of its total underlying revenue) from aftermarket services.

A reduction in the EFHs of commercial aircraft results in a corresponding decrease of cash flow received by the Group from its LTSAs, which are priced on a US dollar-per-flying-hour basis. A lower volume of EFHs also results in a reduction of aircraft servicing and maintenance requirements that the Group manages for other customers outside of such agreements, which are priced on a time and materials basis. In 2019, the Civil Aerospace business generated cash profit of approximately £1.9bn from its widebody engine aftermarket services. Cash generated from aftermarket services has been materially affected in H1 2020 and is expected to continue to be affected due to lower flying activity as a result of the COVID-19 pandemic until at least 2024, at which point the Group anticipates a recovery in its large engine EFHs back to 2019 levels.

The table below shows large engine EFHs and deliveries for H1 2020 and the Group's estimates for future periods.

	H1 2020	Estimated		
		FY 2020	FY 2021	FY 2022
Large engine EFHs (as % of 2019 levels)	53%	~45%	~70%	~90%
Large engine deliveries (including spare engines)	137	Around 250 per year		

The decline in demand for air travel has also already resulted, and is likely to continue to result, in a decline in orders for new aircraft globally and in requests from customers to delay delivery of (and payment for) certain orders already placed. Airbus and Boeing have significantly reduced production rates of the widebody aircraft for which the Group supplies engines. As mentioned above, the Group has already experienced a reduction in demand for its aircraft engines; during H1 2020, revenue in the Civil Aerospace business from sales of original equipment fell by 24% compared to H1 2019. However, due to the low profitability on new original equipment engine sales – particularly widebody engines, which are typically sold at a loss (e.g. in 2019 the Group's average loss per widebody engine was approximately £1.2m) – the Group does not expect this decrease in original equipment sales to directly adversely impact the Civil Aerospace business's profitability. New original equipment engine sales do however generally result in new LTSAs with the Group's customers, which will not be forthcoming to the extent the level of new original equipment engine sales remains low. The significantly higher profitability of sales of aftermarket services under these LTSAs compared to original equipment in the Civil Aerospace business makes the resulting decline in sales of aftermarket services more significant to near-term financial performance for the Group. See "*Description of the Group and Its Business—Business Segments—Overview—Civil Aerospace—Aftermarket*" for more details.

As a result of the factors described above, there was a 37% reduction in underlying revenue in the Civil Aerospace business in H1 2020 compared to H1 2019. The commercial aerospace activities of the ITP Aero business, which accounted for approximately 77% of its underlying revenue in 2019, have experienced a similar deterioration in end market demand.

The COVID-19 pandemic has also significantly affected short-term demand across a number of the Power Systems business's end markets, in particular its industrial markets. Naval and governmental end-market demand has remained robust. As a result, in H1 2020 revenue from the Group's Power Systems business declined by £158m, or 11%, as compared to H1 2019, with underlying operating profit down by 79% and a 27% reduction year-on-year in orders in H1 2020. As economic activity resumes, demand is expected to recover, although uncertainty remains regarding the overall shape and timing of any recovery. In the medium term, some end markets may also experience structurally higher demand as a result of the COVID-19 pandemic, notably in mission-critical power generation.

See also "*Changes in the level of government defence spending*".

Accordingly, the Group has been, and expects to continue to be, significantly impacted by the COVID-19 pandemic, in particular in its Civil Aerospace business.

In response to the sudden market deterioration, the Group also executed a number of specific mitigating actions to reduce its cash expenditure with an expected cash flow benefit of at least £1bn in 2020, of which

approximately £350m was achieved in H1 2020. These mitigating actions include minimising discretionary expenditure such as non-critical capital expenditure projects, by around one third compared to the Group's initial expectations for 2020 and cancellation of capacity expansion projects that are no longer required; a significant reduction in discretionary spend on consulting, professional fees and subcontractors, together with a material reduction in travel expenditure; a review of R&D and engineering expenditure, which led to expenditure reductions reflecting a re-phasing of certain programmes, such as UltraFan, over a longer period of time; and an approximately 10% reduction global salary costs, largely achieved through temporary pay cuts for senior management, use of government furlough schemes and pay deferrals for staff. See "*Forward-Looking Statements*".

In addition to these cash savings, the Group also moved quickly to reduce direct purchase volumes, as well as cancelling the final 2019 shareholder payment to preserve an additional £137m of cash in 2020. As announced in the Group's 2020 Half Year Results Announcement, no interim shareholder payment was proposed for 2020.

In addition, the Group:

- entered into a £1.9bn Liquidity Facility with a maturity of October 2021 (which is currently undrawn and will be cancelled on completion of the Rights Issue);
- issued £300m of commercial paper through the UK government's CCFF; and
- entered into the £2bn five-year Term Loan Facility, which is supported by an 80% guarantee from UK Export Finance, which is currently undrawn.

In addition, the Group has identified a number of potential disposals (which include the ITP Aero business) to raise gross proceeds of more than £2bn by February 2022 (18 months following the date of its 2020 Half Year Results Announcement) and the appropriate preparation work is under way.

While the Group has implemented a number of cost reduction actions to mitigate the effect of the COVID-19 pandemic, these have not been sufficient to offset the total negative cash impact across the Group. In H1 2020, the Group therefore reported an underlying operating loss in the period of £1.7bn and negative free cash flow of £2.8bn. Recent trends in EFHs for the Civil Aerospace business have shown some early signs of recovery from their April low points, led by an increase in flight activity in China, Asia Pacific and the Middle East. However, uncertainty remains regarding the overall shape and timing of any recovery.

More broadly, the Group is generally dependent on macro-economic conditions, particularly in markets with significant flight activity. Based on KfW IPEX-Bank data, the Group estimates that the aerospace industry typically grows at around 1.5 times global GDP growth rate, and accordingly the impact of the COVID-19 pandemic and the recovery profile of global GDP in the medium term and longer term are significant for the Group.

In assessing the adoption of the going concern basis in the Group Consolidated Interim Financial Statements (see Note 1 thereto), the Directors considered the forecast cash flows of the Group and the liquidity available over an eighteen-month period to 28 February 2022 which reflected their expectations of future trading at that point in time. They paid particular attention to the impact of the COVID-19 outbreak on the Group's Civil Aerospace and ITP Aero businesses. The Group expected the Civil Aerospace business to be most significantly impacted. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—General*".

Cost reduction and restructuring initiatives

The Group has implemented a number of cost reduction and restructuring activities during the periods under review, and these have had and will continue to have a significant impact on its results. In June 2018, the Group announced a major 24-month restructuring programme designed to create smaller and more cost-effective support functions and reduce management layers as well as focusing on the simplification of processes and delivery of a more agile working culture. The Group delivered net cumulative headcount reduction of approximately 2,900 FTEs through 31 December 2019 and run-rate cost savings of £269m in FY2019. As a result of this programme, the Group incurred exceptional restructuring costs of £317m and £136m in 2018 and 2019, respectively.

More recently, on 20 May 2020, the Group announced a major restructuring of the Group to adjust to the new level of anticipated demand from customers in certain of the Group's end markets as a result of the COVID-19 pandemic. This includes a major restructuring programme to reduce the size of the Group's Civil Aerospace business and the central Group functions, in order to restore margins and reduce capital intensity. See "*Description of the Group and Its Business—The Group's Strategy*" for further details with respect to these core elements.

The Group expects this programme to result in a proposed reduction in headcount by at least 9,000 roles (subject, where applicable, to consultation) from a global workforce of 52,000, with around 8,000 of these proposed headcount reductions in the Civil Aerospace business (approximately one third of the Civil Aerospace business pre-COVID-19 total) and a further 1,000 mainly from central functions, reflecting the reduced revenue base of the Group, each subject to a formal statutory consultation process. By the end of August, approximately 4,800 people had left the business, with at least 5,000 expected by the year-end, spread across the UK, Germany, Singapore and other regions. This includes more than 2,500 voluntary severance and early retirement agreements in the UK, substantially reducing the need for compulsory redundancy. Consultation on headcount reductions across the Group continues, in line with applicable requirements, including in the UK, Germany and Spain. The consultation also includes dialogue on the strategic site review. This programme is designed to deliver larger, permanent savings to replace the mitigating actions delivered by the Group in H1 2020. The Group anticipates total annual pre-tax run-rate cash savings of at least £1.3bn across the Group to be achieved by the end of 2022 (including remaining savings of approximately £100m from the restructuring programme announced in 2018), with approximately £700m of these savings directly related to proposed headcount reduction and the rest from reduced expenditure across plant and property, capital and other indirect cost areas. The phasing of the expected £800m cash restructuring costs is expected to be approximately £400m in 2020, £300m in 2021 and £100m in 2022. These collective actions will result in increased operational leverage and leave the Group with a smaller central function and a re-sized Civil Aerospace business that is capable of delivering materially improved cash returns despite a smaller end market. See "*Description Of the Group and its Business—The Group's Strategy—Reducing central functions*" for further information, including a table summarising the proposed headcount reductions and expected savings. Also See "*Forward-Looking Statements*" and "*Risk Factors—Risks Relating to the Group's Business—The Group may be unable to realise the expected benefits from announced or future reorganisations, including the reorganisation announced on 20 May 2020*".

The Group incurred £366m of exceptional charges in H1 2020, of which £347m related to the May 2020 restructuring programme, and more will follow as the programme progresses. These will primarily be accounted for as cost of sales with the remainder being accounted for in capital expenditure and commercial and administrative costs.

The Group expects its future results to be significantly impacted by this programme, both as a result of the targeted cost savings as well as the associated restructuring costs.

Product transition in Civil Aerospace business

The Group has in recent years invested heavily in new product developments in the Civil Aerospace business and brought to market a number of major new products. No new large commercial aircraft are expected to be launched in the medium term. As a result, while the Group is currently investing in next-generation technologies (for example UltraFan, which is intended to be the successor to the Group's class-leading Trent wide-bodied jet engine family), overall R&D spend in the Civil Aerospace business is expected to reduce modestly in the coming years.

The ongoing transition to newer, more fuel efficient engines, such as the Trent XWB and Trent 7000, creates near-term challenges for the Group as cash costs are higher in the early stages of these programmes, because newer programmes typically see early customer price discounting and higher initial manufacturing costs, as well as continued R&D spend relating to post-launch product improvement. However, as the Group's new engine programmes mature, these up-front costs are expected to ease. For example, the average loss made by the Group per widebody engine delivery has reduced from approximately £1.6m in 2017 to approximately £1.2m in 2019, with continued improvement expected in the coming years. The Group expects that the roll-out of new engines will also increase the Group's market share in the civil aerospace market and that the Group's installed base of engines will deliver significant aftermarket revenue over a number of years.

Product in-service performance

The Group's financial results have been significantly affected by performance issues on its Trent 1000 engines over the periods under review. Its results will continue to be affected in forthcoming periods. However, the cash costs associated with the Trent 1000 programme are expected to reduce in the coming years.

Due to the complexity of designing and building aero engines, the introduction of new products entails various risks, particularly with respect to in-service performance. Since 2016, the Trent 1000 engine, which powers the Boeing 787 and as at 31 December 2019 constituted 13% of the Group's engines in service (a total of 658 engines), has been experiencing three significant technical issues, which have affected each of the three variants of the engine (Package B, Package C and TEN). These issues relate to the durability of the engines (i.e. how frequently they need to be overhauled, serviced and repaired). These issues are unprecedented in scale and following the airworthiness directive required the Group to make various modifications to Trent 1000 engines in service, which led to a large number of grounded aircraft.

In November 2019, the Group announced the outcome of a further review of the Trent 1000 TEN programme, following further technical issues that were identified in 2019. This resulted in a revised timeline and a reduced estimate of durability for the improved high pressure turbine blade for the TEN variant.

The Group continues to make good progress rolling out the required modifications to the Trent 1000, with the number of aircraft on the ground due to these issues being reduced to zero as at 30 June 2020. Of the nine technical fixes required, the Group has so far designed eight and certified seven, and these are now being incorporated into the fleet. Of the two modifications awaiting certification, one has been designed and the other is currently undergoing testing, with both expected to be ready for incorporation into the fleet by the end of the six months ending 30 June 2021.

Implementing such modifications entails significant costs for the Group, and the Group has provided significant compensation to affected customers.

In 2018, the Group incurred £431m of cash costs on Trent 1000 in-service issues and separately a related £790m non-cash exceptional charge was recognised reflecting the abnormal portion of costs to resolve the Trent 1000 in-service issues, which fall outside the scope of normal TotalCare costs.

In 2019, the Group incurred £578m of cash costs on Trent 1000 in-service issues, which were partially offset by £173m of related insurance receipts. In 2019, as a consequence of the issues noted above in relation to the Trent 1000 TEN programme, a further non-cash exceptional charge of £1,361m (at underlying exchange rates) was recognised in the 2019 Group income statement. The charge was £1,531m at prevailing exchange rates and net of £203m reflecting insurance receipts and contract accounting adjustments. Of the exceptional charge (at prevailing exchange rates before insurance receipts and contract accounting adjustments), £1,275m was recorded in relation to Trent 1000 exceptional costs and £459m in relation to contract losses.

During 2019, the Group utilised £672m of the Trent 1000 exceptional costs provision. This represents customer disruption costs settled in cash and credit notes, and related remediation Shop Visit costs. The Group expects to utilise the balance of this provision over the periods from 2020 to 2023. Provisions for contract losses, including the £459m recognised in 2019 in relation to contract losses under the Trent 1000 programme, are recorded when the direct costs to fulfil a contract are assessed as being greater than the expected revenue. Provisions for contract losses are expected to be utilised over the term of the customer contracts, typically within 10 to 15 years.

In H1 2020, the Group recognised a £498m exceptional provision reversal, reflecting a £321m net improvement in the outlook for future in-service cash costs relating to Trent 1000, alongside a £177m improvement in expected future losses on a small number of loss-making contracts, both due to the impact of COVID-19 on industry activity. During H1 2020, in-service cash costs on Trent 1000 were £135m.

The making of estimates required to settle the obligation relating to Trent 1000 claims and to settle long-term contracts assessed as onerous is a key source of estimation uncertainty when preparing the Group's financial statements. As at 30 June 2020, the Group had provisions of £690m in respect of settling its obligation relating to Trent 1000 claims and to settle long-term contracts assessed as onerous (31 December 2019: £2,155m; 31 December 2018: £985m) and considers the contract loss provision and Trent 1000 exceptional cost provision to be the most sensitive to changes in estimates.

The Group expects total in-service cash costs across all Trent 1000 variants of around £2.4bn between 2017 and 2023 (inclusive). The Group expects cash costs of £450m to £550m in 2020 (of which £135m was incurred in H1 2020) and a similar level in 2021, before declining significantly thereafter. These primarily comprise the cost of replacing affected parts as well as customer disruption related compensation.

Exchange rates and hedging

The Group's results are influenced by a variety of currencies owing to the geographical diversity of the Group's operations and customers. The Group utilises forward foreign exchange contracts in order to manage transactional foreign currency risks. The significant majority of this exposure is concentrated in the Civil Aerospace business, where transactions are typically carried out in US dollars but where the business has a substantial non-US dollar cost base due to its manufacturing footprint in the UK and Germany, and is therefore exposed to exchange rate fluctuations. Accordingly, the Group has significant cash flows denominated in currencies other than the functional currency of the relevant trading entity (most significantly in US dollars, followed by euros). This creates a large net exposure to pound sterling to US dollar exchange rates and a smaller exposure to euro to US dollar exchange rates, which the Group seeks to manage using derivatives to insulate against sudden movements in the relevant exchange rates, so as to maintain relatively stable long-term foreign exchange rates on settled transactions.

The Group's most significant exposure is to net US dollar income (calculated as the difference between revenue received by the Group denominated in US dollars and costs incurred by the Group in US dollars) which is converted into pounds sterling. The Group hedges its pound sterling/US dollar exposure by forecasting net US dollar receipts up to ten years forward. Hedges are taken out within prescribed maximum and minimum hedge positions set out in the Group FX policy. The maximum and minimum policy bands decline gradually over the ten-year horizon and are calculated as a percentage of forecast net income. A similar policy is operated for the Group's euro/US dollar exposure.

For accounting purposes, these derivative contracts are not designated in hedging relationships (with the exception of those taken out by the Group's Spanish subsidiary, ITP Aero, where they are designated in cash flow hedges) and accordingly the majority of the Group's hedge positions are marked to market through financing costs in the Group's income statement. Such mark-to-market adjustment on foreign exchange contracts can be material. For example, in 2019, mark-to-market adjustments on derivatives had a £7m positive impact profit/loss for the year compared to a negative impact on profit/loss for 2018 of £2,144m and a positive impact of £2,648m in 2017 (in each case the vast majority of such impact was due to the movement in the opening to closing spot FX rate). Underlying financial information reflects the achieved rates.

At 31 December 2019, the Group's pounds sterling to US dollar hedge book was US\$36.5bn at nominal value (31 December 2018: US\$36.8bn), spread across eight years with an average rate of £/US\$1.53. Additionally, the Group holds a smaller euro to US dollar hedge book of US\$5.4bn, as at 31 December 2019, with an average rate of €/US\$1.25.

See Note 17 to the Group 2019 Consolidated Financial Statements for further information.

The COVID-19 pandemic has had a significant impact on the Group's Civil Aerospace business, as outlined in the sections titled "*—End market conditions*" in "*Description of the Group and Its Business*". This impact is expected to lead to a significant reduction in the net US dollar exposure of the business in the next few years, leaving the Group at risk of being in an 'over-hedged' position with a higher value of forward contracts than expected US dollar net inflows. As at 30 June 2020, the Group had therefore reduced its hedge book from US\$36.5bn to US\$26.2bn. This will result in cash settlement costs totalling approximately £1.46bn comprising £88m of cash costs in 2020 (incurred in the first half), approximately £300m in each of 2021 and 2022 and £718m spread over 2023 to 2026. The related underlying financing charge was recognised in the Group's underlying income statement for the six months ended 30 June 2020. If the Group's forecasts change, it is possible that the Group may need to settle further unutilised forward contracts by purchasing US dollars, although where possible, the Group will seek to mitigate this effect by moving forward contracts into future periods.

In addition, the Group was net purchaser of US dollars in H1 2020 and was, therefore, unable to utilise its hedge book in the period. This resulted in the translation of the Group's H1 2020 underlying results at an effective GBP:US\$ rate of 1.24. This compared to an effective GBP:US\$ rate of 1.53 in H1 2019, when the Group utilised its hedge book to sell excess US dollars.

The table below sets out the Group's estimated sensitivity based on certain assumptions to a change of 0.01 US dollar or euro cents in the period average spot rates used to translate revenue, profits and balance sheets of overseas entities into pounds sterling for the year ended 31 December 2019 (all else remaining consistent):

Currency	Impact on revenue of 0.01 decrease	Impact on revenue of 0.01 increase	Impact on profit of 0.01 decrease	Impact on profit of 0.01 increase
		(£m)		
US dollars	16	(16)	4	(4)
Euros	46	(46)	7	(7)

For the year ended 31 December 2019, underlying revenue and underlying profit before taxation for the Group's core business were impacted positively by translational foreign exchange effects by £54m and £20m, respectively.

Long-term service agreements and contract accounting adjustments

The Group offers aftermarket services through both T&M Contracts and "power-by-the-hour" style LTSAs, which have different revenue recognition treatments under IFRS 15.

For T&M Contracts, the Group charges a customer for the material and labour costs of maintenance at the point of consumption, meaning revenue and profit are recognised at the time the services are performed.

For LTSA contracts, the Group typically receives payment (and, therefore, cash inflows) from the customer over the contractual period as the engine is being utilised by the customer. However, the Group recognises revenue from LTSA contracts on a proportional basis as costs are incurred, which typically reflect when the engine undergoes maintenance and overhaul. To determine the recognisable revenue for a contract, the Group estimates the total costs for delivering its contracted services over the life of the contract and the total payments it will receive over the life of the contract. The Group then recognises such total expected payments as revenue in each accounting period in proportion to the percentage of costs estimated to have been incurred during the period, thereby providing a stable margin over the life of the contract.

As a result, the Group from time to time has to update its previous estimates of the total costs and revenue expected across the life of an LTSA contract. If estimated costs are increased or total revenue has decreased, too much revenue will have been recognised in prior periods and vice versa. In such cases, past revenue is de-recognised and a new cost incurrence profile is created and used to recognise revenue over the rest of the life of the contract (again giving a stable margin for the rest of the life of the contract). The Group refers to such changes as "contract accounting adjustments" (or "contract catch-ups").

As a significant portion of the Group's installed engine base has been delivered recently relative to product life (and therefore not yet subject to overhaul or meaningful regular maintenance), cash receipts on many LTSA contracts in recent years have exceeded revenue recognised. The excess of cash received over revenue recognised is carried on the Group's balance sheet as "contract liabilities" representing cash received but not yet recognised in respect of such contracts. Conversely, "contract assets" are also recognised on the Group balance sheet and represent where revenue recognised exceeds cash received. Within contract liabilities and contract assets, LTSAs liabilities and assets are the largest respective components (£6,783m of total contract liabilities of £10,840m and £1,086m of total contract assets of £2,095m, each as at 31 December 2019).

The COVID-19 pandemic has resulted in significantly lower EFHs and therefore less cash being received under LTSA contracts and fewer overhauls occurring, which results in less revenue being recognised. In addition, as certain engines are likely to be used less over their life than before the COVID-19 pandemic, the estimated contract life cash payment in respect of such engines will be lower and therefore the amounts of revenue to be recognised will be lower. Lower usage may result in reduced contract delivery costs for the Group but overall, the Group expects revenue to fall by a greater proportion than costs, reducing the profitability of certain LTSA contracts.

In H1 2020, due to the low levels of flying resulting from COVID-19, there was an underlying £78m reduction in the net LTSA balance. This was driven by widebody engines in particular, where cash receipts fell due to the lower flying activity, but Shop Visit volumes increased modestly year-on-year, driving revenue recognition. However, this underlying change was more than offset by the impact of contract accounting adjustments due to lower EFHs and an increased risk of parked aircraft and retirements in the medium term due to COVID-19. These contract accounting adjustments reduced revenue by £866m.

Research and development spending

Levels of the Group's R&D spending from period to period depend in part on the lifecycle of the Group's products and programmes. In recent periods, such spending increased in line with the launch of a number of new programmes, in particular in the Civil Aerospace business. While the Group expects a modest decrease in R&D spend in the medium term, it expects a change in how such investment is deployed. Following the completion of several new programmes in the Civil Aerospace business, the Group expects R&D spend in this business to decrease in the near to medium term, while R&D spend relating to new products in the Power Systems and Defence businesses is expected to increase. The Group also expects increased R&D spend relating to lower net carbon emission as well as next-generation technologies.

Self-funded R&D as a proportion of underlying revenue in 2019, 2018 and 2017 represented 7.2%, 7.6% and 7.6%, respectively. In H1 2020, self-funded R&D decreased by 12% compared to H1 2019, reflecting the Group's cost mitigation efforts to re-phase non-critical spending.

R&D capitalised in 2019, 2018 and 2017 was £481m, £498m and £347m, respectively, and in H1 2020 and H1 2019 £152m and £224m, respectively. The decrease in H1 2020 reflected the increasing maturity of the Group's new Civil Aerospace engine programmes, with R&D on the Trent 1000 and Pearl 15 engines no longer falling within the capitalisation window.

The net underlying R&D costs charged to the income statement decreased from £724m in 2017 to £650m in 2018 and increased to £688m in 2019. In H1 2020, the net underlying R&D charge increased to £336m from £321m in H1 2019, reflecting a reduction in overall cash R&D spend, offset by a reduction in capitalisation of R&D, which reflected the increasing maturity of new engine programmes and the resulting drop in capitalisation.

Consistent with the long-term needs and nature of the business, the Group has made, and expects to continue to make, significant technology and R&D investments. However, the Group expects overall R&D expenditure to decrease, both in absolute terms and measured as self-funded R&D as a proportion of underlying revenue, as a result of cost cutting initiatives and a reduction of investment in the Civil Aerospace business, partly due to the product cycle and heavy investment in this area in the past. The Group expects this revised approach to capital allocation to result in an overall reduction in R&D and capital expenditure from £1.9bn in 2019 to approximately £1.5bn in 2022. In the medium term, this investment strategy is expected to result in approximately 20% of capital and engineering expenditure directed towards the Power Systems business (compared to 14% in 2017 to 2019), with approximately 20% focused on the Defence business (compared to 9% in 2017 to 2019).

Expenditure (self-funded) incurred on R&D is distinguished as relating either to a research phase or to a development phase. All research phase R&D related costs are charged to the income statement as R&D costs. R&D costs, categorised as development expenditure, are capitalised as an internally generated intangible asset rather than charged to the income statement, only if they meet strict criteria, relating in particular to technical feasibility and generation of future economic benefits. The Group considers that it is not possible to distinguish reliably between R&D activities until relatively late in the program.

Expenditure capitalised is amortised as part of the R&D charge in the Group's income statement over its useful economic life, up to a maximum of 15 years from the entry into service of the product.

Acquisitions and divestments

The Group has identified a number of potential disposals (which include the ITP Aero business) to raise gross proceeds of more than £2bn within the 18 months following 27 August 2020 (the date of its 2020 Half Year Results Announcement) and the appropriate preparation work is under way.

In addition, during the periods under review, a number of material acquisitions and divestments took place. These are summarized below. Other smaller acquisitions and divestments are detailed in Note 21 to the Group Consolidated Interim Financial Statements, Note 27 to the Group 2019 Consolidated Financial Statements and Note 25 to the Group 2018 Consolidated Financial Statements.

On 7 March 2020, the Group signed an agreement to acquire 100% of the shares of Kinolt Group S.A., a Belgium company that designs and manufactures uninterruptible power supply systems, from 3i Group. The transaction was completed on 1 July 2020 for a cash consideration of €144m, with a further amount payable subject to finalisation of the completion accounts.

On 1 April 2019, the Group completed the sale of its Commercial Marine business to KONGSBERG for £547m, which had been announced on 6 July 2018. The business was disclosed as a disposal group held for sale from 30 June 2018. In the Group's H1 2018 interim financial statements, the Group reported an impairment charge of £160m as a result of the decision to classify Commercial Marine as a business held for sale. Upon the disposal of Commercial Marine on 1 April 2019, and in accordance with IAS 21 *The Effects of Changes in Foreign Exchange Rates*, the Group recycled the cumulative currency translation reserve through the Group's income statement in 2019. This resulted in a cumulative currency translation gain of £98m.

On 1 June 2018, the Group sold its L'Orange business, part of Rolls-Royce Power Systems, to Woodward Inc. for €673m. Under the sale agreement, the cash consideration may be adjusted by up to +/-€44m, based on L'Orange aftermarket sales over the five-year period to 31 May 2023 and this will be reviewed at each reporting date over the adjustment period, based on actual sales. No significant change has been identified to the cash consideration as at 30 June 2020. The Group recorded a profit on disposal of the business (net of disposal costs) of £358m.

On 19 December 2017, the Group completed the acquisition of a 53.1% interest in Industria de Turbo Propulsores SA (ITP Aero) owned by SENER Grupo de Ingenieria SA (SENER). Prior to this transaction the Group already held a 46.9% interest. The total consideration was €718m and was paid in shares in eight instalments commencing on 15 January 2018. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Results restatements and effects of acquisitions and disposals on financial reporting—ITP Aero*".

Changes in the level of government defence spending

In the Defence business (particularly the UK submarines business) and the Power Systems business's defence and marine activities revenue is primarily generated by selling products and services directly or indirectly to national governments, in particular the United States and the United Kingdom governments. In 2019, underlying revenue generated by the Defence business was £3,250m, which represented 20% of the Group's total underlying revenue for the period and underlying revenue generated by the defence and civil nuclear end markets represented 9% and 3%, respectively, of the Power Systems business's total underlying revenue for the period.

During the periods under review, the Defence business remained resilient as underlying revenue and underlying operating profit for the Defence business were 4% higher and 3% lower, respectively, in 2019 compared to 2018, and 4% and 21% higher, respectively, in H1 2020 compared to H1 2019. The Defence order backlog as at 31 December 2019 was 26% higher than as at 31 December 2018.

The Group believes it is possible that as a result of a prolonged global economic downturn, global defence budgets may be reduced, which could impact spending and orders from the Group's customers in the defence market.

Description of principal income statement items

The following section presents the Group's income statement line items derived from the Group's 2019 consolidated income statement. For a description of the Group's key accounting policies see "*Key areas of judgement and sources of estimation uncertainty*" and Note 1 to the Group 2019 Consolidated Financial Statements.

Revenue

Revenue includes amounts received and receivable from the provision of goods and services, in particular from sales of original equipment and from aftermarket services arising from the installed original equipment fleet.

The Group offers aftermarket services through both T&M Contracts and "power-by-the-hour" style LTSAs, which have different revenue recognition treatments under IFRS 15. See "*Key factors affecting the Group's results of operations—Long-term service agreements and contract accounting adjustments*" for further information.

The Group recognises revenue in accordance with IFRS 15 and has established its revenue recognition policy in accordance with this standard. See “—Key areas of judgement and sources of estimation uncertainty — Key areas of judgment —Revenue recognition”.

Cost of sales and gross profit

Cost of sales includes the costs associated with the provision of the goods and services including: direct labour, bought-in materials and parts, direct overheads and warranty costs. Gross profit is equal to revenue less cost of sales. Also included within cost of sales are exceptional charges relating to the Civil Aerospace business's programmes, impairment charges and restructuring costs.

Commercial and administrative costs

Commercial and administrative costs include costs relating to non-productive and head office functions including legal, marketing, finance and human resources functions.

Research and development costs

R&D costs include the costs of developing new and improved technologies and products, reduced by costs capitalised in the period, and including the amortisation of certain costs capitalised in previous periods. The Group receives non-refundable cash entry fees from RRSPs. These cash entry fees, which are a contribution from partners towards the Group's R&D costs, are held on the balance sheet and recognised as a reduction in cost of sales incurred on a 15-year straight-line basis. Where the Group refers to “**self-funded R&D**”, it refers to the proportion of R&D spend, net of contributions received from third party RRSPs.

Shares of results of joint ventures and associates

Shares of results of joint ventures and associates include the Group's share of the post-tax results of such joint ventures and associates.

Gain arising on the acquisition of businesses

Gain arising on the acquisition of businesses represents a situation where the fair value of the net assets acquired is higher than the consideration paid.

Gain arising on the disposal of businesses

Gain arising on the disposal of businesses represents the difference between the proceeds and the carrying value of the business prior to its disposal and the recycling to the income statement of the cumulative foreign exchange translation difference recognised in other comprehensive income.

Financing income

Financing income represents fair value gains on foreign currency and commodity contracts, interest receivable and foreign exchange gains.

Financing costs

Financing costs represent fair value losses on foreign currency and commodity contracts, interest payable, foreign exchange losses, charges relating to the factoring of receivables and the unwinding of the discounting of prior year provisions.

Taxation

The tax charge/credit on the profit or loss for the period comprises current and deferred tax. Tax is charged or credited in the income statement or other comprehensive income as appropriate, except when it relates to items credited or charged directly to equity in which case the tax is also dealt with in equity.

Results of Operations

The following is a discussion of the Group's key operating measures and results of operations comparing H1 2020 and H1 2019 and 2019, 2018 and 2017.

Group results of operations for H1 2020 and H1 2019

In the discussion below, the Group's results are presented on a reported and underlying basis. The Group believes this provides an insight into its in-period performance as underlying results reflect the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which economically hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges, exceptional items and other one-off items which are market driven and outside the control of management. The adjustments between the underlying income statement and the reported income statement are set out in more detail in Note 2 to the Group Consolidated Interim Financial Statements incorporated by reference herein and in "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Underlying financial information*". See "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*" for a reconciliation between each underlying measure and the nearest IFRS measure. In addition, the Group presents increases and decreases in certain of its underlying measures on an organic basis as well as on an arithmetic basis, see "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*" and "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*" for a reconciliation.

Group Underlying Income Statement ⁽¹⁾	For the six months ended 30 June		Change	Organic Change ⁽²⁾
	2020	2019		
	(unaudited) (£m)		(%)	(%)
Underlying revenue	5,561	7,353	-24%	-23%
Underlying gross (loss)/profit	(967)	1,030	n.m.	n.m.
Underlying commercial and administrative costs	(458)	(553)	-17%	-11%
Underlying R&D costs	(336)	(321)	+5%	+7%
Underlying share of results of joint ventures and associates	92	47	+96%	+90%
Underlying operating (loss)/profit	(1,669)	203	n.m.	n.m.
Underlying net financing	(1,575)	(110)	n.m.	
Underlying (loss)/profit before tax	(3,244)	93	n.m.	
Underlying taxation	(82)	(121)	-32%	
Underlying loss for the period	(3,326)	(28)	n.m.	

n.m. means not meaningful.

- (1) The measures in this table are non-IFRS measures. See "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*" for the definitions and reconciliation to the closest IFRS measures.
- (2) Organic change presented for select measures only. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*" for further information.

The table below presents the Group's income statement as reported for the periods indicated and should be read in conjunction with, and is qualified in its entirety by reference to, the Group Consolidated Interim Financial Statements and notes thereto, which are incorporated by reference in this document.

Group Consolidated Income Statement	For the six months ended 30 June		Change (%)
	2020 (unaudited)	2019 (unaudited)	
	(£m)		
Revenue	5,824	7,883	-26%
Cost of sales ⁽¹⁾	(6,511)	(6,882)	-5%
Gross (loss)/profit	(687)	1,001	n.m.
Commercial and administrative costs ⁽¹⁾	(443)	(614)	-28%
Research and development costs ⁽¹⁾	(712)	(349)	104%
Share of results of joint ventures and associates	73	45	62%
Operating (loss)/profit	(1,769)	83	n.m.
Gain arising on the disposal of businesses ⁽²⁾	2	118	-98%
(Loss)/profit before financing and taxation	(1,767)	201	n.m.
Financing income	24	73	-67%
Financing costs ⁽³⁾	(3,624)	(1,065)	n.m.
Net financing costs	(3,600)	(992)	n.m.
Loss before taxation	(5,367)	(791)	n.m.
Taxation	(11)	(116)	-91
Loss for the period	(5,378)	(907)	n.m.
Attributable to:			
Ordinary Shareholders	(5,380)	(909)	n.m.
Non-controlling interests	2	2	—
Loss for the period	(5,378)	(907)	n.m.

n.m. means not meaningful.

- (1) In H1 2020, included within cost of sales, commercial and administrative costs and research and development costs are exceptional items relating to impairments and write-offs, as a result of the financial and operational impact of COVID-19. Impairments and provisions related to the Group-wide restructuring activity announced on 20 May 2020 to reshape and resize the Group have also been recorded. In H1 2019, exceptional charges related to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs were included within cost of sales and commercial and administrative costs. See “—Key factors affecting the Group's results of operations—Macro-economic environment, COVID-19 pandemic and impact on the relevant industries, particularly aviation, and measures to bolster liquidity” and “—Key factors affecting the Group's results of operations—Product in-service performance” and Note 2 of the Group Consolidated Interim Financial Statements and Note 2 of the Group 2019 Consolidated Financial Statements for further information.
- (2) The North America Civil Nuclear business was disposed of on 31 January 2020, the Knowledge Management business was disposed of on 3 February 2020 and Trigno Energy Srl was disposed of on 7 May 2020. Qinous GmbH was acquired on 15 January 2020. Commercial Marine was disposed of on 1 April 2019 and RRPD was disposed of on 15 April 2019. See “—Key factors affecting the Group's results of operations—Acquisitions and divestments” and Note 21 of the Group Consolidated Interim Financial Statements for further information.
- (3) Included within financing costs are fair value changes on derivative contracts. See Note 2 and Note 4 of the Group Consolidated Interim Financial Statements for further information.

Group revenue

Underlying revenue

Underlying revenue for H1 2020 and H1 2019 was £5,561m and £7,353m, respectively. The £1,792m, or 24% (£1,613m or 23% on an organic basis), decrease was principally a result of a significant decrease in both underlying original equipment revenue and underlying aftermarket revenue due to the impact of COVID-19. The

largest impact was in the Civil Aerospace business, for which underlying revenue decreased by 37% on an organic basis, due to a significant reduction in new engine deliveries as well as the £866m negative impact of COVID-19 related contract accounting adjustments reducing revenue from LTSA contracts. In the ITP Aero business underlying revenue decreased by 24% on an organic basis, predominantly reflecting lower original equipment volumes for commercial aerospace. In the Power Systems business, underlying revenue decreased by 11% on an organic basis, principally due to significant declines in the second quarter as the impact of COVID-19 increased, driven by weak industrial demand, partially offset by resilience from government customers. The Defence business, for which underlying revenue increased by 2% on an organic basis, was resilient.

Reported revenue

Reported revenue for H1 2020 and H1 2019 was £5,824m and £7,883m, respectively. The £2,059m, or 26%, decrease was principally a result of the same reasons as the decrease of underlying revenue and foreign exchange movements.

Type of reported revenue analysis

The Group's reported revenue by type of reported revenue for H1 2020 and H1 2019 is shown below:

	For the six months ended 30 June	
	2020 (unaudited)	2019 (unaudited)
	(£m)	
Original equipment recognised at a point in time ⁽¹⁾	2,359	3,153
Original equipment recognised over time ⁽²⁾	455	521
Aftermarket services recognised at a point in time ⁽¹⁾	1,611	1,897
Aftermarket services recognised over time ⁽²⁾	1,293	2,267
Total customer contract revenue	5,718	7,838
Other revenue	106	45
Total revenue	5,824	7,883

- (1) Revenue recognised at a point in time means that the Group charges a customer for goods or services at the point of consumption, with revenue recognised at the time the goods are delivered or services are performed.
- (2) Revenue recognised over time means that the Group receives cash payments from a customer over time, but only recognises revenue on a cost-incurred basis, i.e. when the product or service is delivered to the customer.

Cost of sales and gross profit

Underlying gross (loss)/profit

Underlying gross (loss)/profit for H1 2020 and H1 2019 was a loss of £967m and a profit of £1,030m, respectively. The £1,997m decrease was predominantly driven by a £1,562m loss in the Civil Aerospace business, partly offset by positive contributions from the Defence, Power Systems and ITP Aero businesses. The substantial loss in the Civil Aerospace business includes the impact of £814m of predominantly COVID-19 related negative LTSA contract accounting adjustments alongside lower aftermarket activity and the impact of fixed cost under-recovery.

Reported cost of sales and gross profit

Reported gross (loss)/profit for H1 2020 and H1 2019 was a loss of £687m and a profit of £1,001m, respectively. The £1,688m decrease was principally a result of the same reasons as the increase of underlying cost of sales and gross profit, partially offset by the Trent 1000 provision release in H1 2020.

Commercial and administrative costs

Underlying commercial and administrative costs

Underlying commercial and administrative costs for H1 2020 and H1 2019 were £458m and £553m, respectively. The £95m, or 17% (11% on an organic basis), decrease was principally a result of significant efforts across the Group to reduce discretionary spending in response to COVID-19, including professional fees, consultancy spend and travel.

Reported commercial and administrative costs

Reported commercial and administrative costs for H1 2020 and H1 2019 were £443m and £614m, respectively. The £171m, or 28%, decrease was principally a result of the same reasons as the decrease in underlying commercial and administrative costs, as well as additional savings at a reported level due to cost reductions on transformation projects related to the June 2018 restructuring programme. These activities were paused during H1 2020 in order to preserve cash.

Research and development costs

Underlying R&D costs

Underlying R&D costs for H1 2020 and H1 2019 were £336m and £321m, respectively. The £15m, or 5% (7% on an organic basis), increase was principally a result of a significant reduction in capitalisation, reflecting the maturity of key aero engine programmes.

Cash self-funded R&D spend decreased by 12% (on an organic basis), reflecting the Group's cost mitigation efforts to re-phase non-critical spending.

Reported research and development costs

Reported R&D costs for H1 2020 and H1 2019 were £712m and £349m, respectively. The £363m, or 104%, increase was principally a result of the same reasons as the increase of underlying R&D costs, as well as R&D impairment charges in H1 2020 of £352m.

Cash expenditure for H1 2020 and H1 2019 was £456m and £518m, respectively. The 12% reduction reflected the Group's cost mitigation efforts and re-phasing of non-critical spending. R&D capitalised in H1 2020 and H1 2019 was £152m and £224m, respectively. The £72m reduction reflected the Group's cost mitigation efforts and re-phasing of non-critical spending.

Share of results of joint ventures and associates

Underlying share of results of joint ventures and associates

Underlying share of results of joint ventures and associates for H1 2020 and H1 2019 was £92m and £47m, respectively. The £45m, or 96% (90% on an organic basis), increase was principally a result of increased servicing activity in overhaul bases, higher profit on disposal of engines to joint venture partners and lower elimination of profit on sale of spare engines to joint ventures due to lower engine volumes.

Reported share of results of joint ventures and associates

Reported share of results of joint ventures and associates for H1 2020 and H1 2019 was £73m and £45m, respectively. The £28m, or 62%, increase was principally a result of increased servicing activity in overhaul bases, higher profit on disposal of engines to joint venture partners and lower elimination of profit on sale of spare engines to joint ventures due to lower engine volumes.

Operating (loss)/profit

Underlying operating (loss)/profit

Underlying operating (loss)/profit for H1 2020 and H1 2019 was a loss of £1,669m and a profit of £203m, respectively. The £1,872m decrease was principally a result of the decrease in underlying gross profit and higher underlying R&D costs, partly offset by higher underlying profit from joint ventures and associates and a reduction in underlying commercial and administrative costs. The underlying operating loss in the Civil Aerospace business of £1,826m was partially offset by a £210m contribution from the Defence business, with modest underlying operating profit in the Power Systems and ITP Aero businesses.

Reported operating (loss)/profit

Reported operating (loss)/profit for H1 2020 and H1 2019 was a loss of £1,769m and a profit of £83m, respectively. The £1,852m decrease was principally a result of the same reasons as the decrease in underlying

operating (loss)/profit as well as impairment charges of £1.1bn, restructuring charges of £0.4bn, £0.1bn cash cost on settling over-hedged derivatives in H1 2020, partly offset by a £0.5bn provision release in relation to Trent 1000 and a pension past service credit of £0.3bn.

Gain arising on the disposal of businesses (reported only)

Gain arising on the disposal of businesses for H1 2020 and H1 2019 was £2m and £118m, respectively. The £116m, or 98%, decrease was principally a result of the Group recognising a profit on disposal on the sale of Commercial Marine and Rolls-Royce Power Developments in H1 2019 of £118m (£98m of which related to recycling of the cumulative foreign currency reserve), compared with smaller disposals in H1 2020 resulting in a profit on disposal of £2m.

(Loss)/profit before financing and taxation (reported only)

The (loss)/profit before financing and taxation for H1 2020 and H1 2019 was a loss of £1,767m and a profit of £201m, respectively. The £1,968m increase was principally a result of the reasons discussed for reported operating (loss)/profit above and the gain arising on the disposal of businesses, also discussed above.

Financing income and financing costs

Underlying net financing

Underlying net financing for H1 2020 and H1 2019 was £1,575m and £110m, respectively. The £1,465m increase was principally a result of the Group reducing the size of its US dollar hedge book by US\$10.3bn in response to a lower medium-term outlook for US dollar cash receipts following COVID-19. This action resulted in a £1.46bn charge taken within underlying financing costs in H1 2020; this has been accounted for in the reported costs via the marked to market charge.

Underlying other financing costs were £118m and £110m in H1 2020 and H1 2019, respectively. Other financing costs included interest receivable and payable, and other net financing charges.

Reported financing income and financing costs

Financing income for H1 2020 and H1 2019 was £24m and £73m, respectively. The £49m, or 67%, decrease was principally a result of a decrease in interest receivable and financing on post-retirement scheme surpluses, and the net fair value on commodity contracts moving from a gain in H1 2019 to a loss in H1 2020.

Financing costs for H1 2020 and H1 2019 were £3,624m and £1,065m, respectively. The £2,559m increase was principally a result of a £2.6bn charge related to the fair value changes on derivative contracts.

Reported other financing costs of £969m included interest payable, net fair value losses on non-hedge accounted interest rate swaps, net fair value losses on commodity contracts, net foreign exchange losses, and other financing charges marginally offset by interest receivable and financing on post-retirement scheme surpluses.

(Loss)/profit before taxation

Underlying (loss)/profit before taxation

Underlying (loss)/profit before tax for H1 2020 and H1 2019 was a loss of £3,244m and a profit of £93m, respectively. The £3,337m decrease primarily reflected the impact of COVID-19 on the Civil Aerospace business with lower aftermarket services profit, under-utilisation of operations, lower spare engine sales as well as £1.2bn of COVID-19 related contract accounting adjustments and one-time charges resulting from a reduction in forecast flying hours, a reassessment of the timing and parking of aircraft and the viability of airlines. Lower expected US dollar receipts over the next seven years resulted in a £1.46bn underlying finance charge as the Group took the necessary decision to reduce the size of its hedge book by US\$10.3bn. These factors were partially offset by resilience in the Group's Defence business and the Group's cost saving initiatives.

Reported profit/(loss) before taxation

Reported loss before taxation for H1 2020 and H1 2019 was £5,367m and £791m, respectively. The £4,576m increase was principally a result of the factors mentioned in the above discussions of the Group's underlying results before taxation, and were further impacted by £1.1bn impairment charges and write-offs, £0.4bn exceptional restructuring charges and adverse FX fluctuations leading to a £2.6bn non-cash loss due to a negative movement on the mark-to-market of the hedge book, partly offset by the reversal of the £1.46bn charge related to reducing the size of the hedge book (on the basis that the reported numbers include the mark-to-market impact) and £0.5bn improvements in the expected in-service costs of Trent 1000 durability issues, which were all a consequence of COVID-19.

Taxation

Underlying taxation

Underlying taxation for H1 2020 and H1 2019 was £82m and £121m, respectively. The underlying tax rate in H1 2020 was (2.5)%, compared with 130.1% in H1 2019. This decrease reflects the tax on profits in higher tax jurisdictions such as the US and Germany together with the fact that some of the deferred tax on UK losses previously recognised has been de-recognised.

Reported taxation

Reported taxation for H1 2020 and H1 2019 was a charge of £11m and £116m, respectively. The reported tax rate in H1 2020 was (0.2)%, compared with (14.7)% in H1 2019. The charges in H1 2020 and H1 2019 were primarily driven by the non-recognition of the deferred tax asset on UK losses. H1 2020 was further impacted by the derecognition of some of the deferred tax asset on UK losses previously recognised.

Loss for the period

Underlying loss for the period

Underlying loss for H1 2020 and H1 2019 was £3,326m and £28m, respectively, a £3,298m increase, due to the reasons discussed above.

Reported loss for the period

Reported loss for H1 2020 and H1 2019 was £5,378m and £907m, respectively, a £4,471m increase, due to the reasons discussed above.

Segment results of operations for H1 2020 and H1 2019

The Group's underlying revenue and underlying operating profit by segment for H1 2020 and H1 2019 are presented in the table below. For a reconciliation of reported underlying results to reported results, see *"Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information"*.

The tables below show the Group's underlying results for each business as well as the Group's non-core business for the periods indicated.

	Civil Aerospace	Power Systems	Defence	ITP Aero	Non-core business ⁽¹⁾	Corporate and inter- segment	Group underlying
Six months ended 30 June 2020 (unaudited) ⁽²⁾	(£m)						
Underlying revenue from sale of original equipment	1,198	823	678	267	40	(156)	2,850
Underlying revenue from aftermarket services	1,329	427	875	79	51	(50)	2,711
Total underlying revenue	2,527	1,250	1,553	346	91	(206)	5,561
Underlying gross (loss)/profit	(1,562)	265	332	47	7	(56)	(967)
Commercial and administrative costs	(172)	(154)	(76)	(23)	(10)	(23)	(458)
R&D costs	(180)	(89)	(49)	(15)	(3)	—	(336)
Share of results of joint ventures and associates	88	—	3	1	—	—	92
Underlying operating (loss)/profit	(1,826)	22	210	10	(6)	(79)	(1,669)

- (1) Non-core business includes Bergen Engines AS, the North America Civil Nuclear business until the date of disposal on 31 January 2020, the Knowledge Management System business until the date of disposal on 3 February 2020, the Commercial Marine business until the date of disposal on 1 April 2019, RRPD until the date of disposal on 15 April 2019 and other smaller businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy).
- (2) The measures in this table are non-IFRS measures. See *"Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information"* for the definitions and reconciliation to the closest IFRS measures.

	Civil Aerospace	Power Systems	Defence	ITP Aero	Non-core business ⁽¹⁾	Corporate and inter- segment	Group underlying
Six months ended 30 June 2019 (unaudited) ⁽²⁾	(£m)						
Underlying revenue from sale of original equipment	1,570	923	653	400	128	(267)	3,407
Underlying revenue from aftermarket services	2,448	485	841	57	157	(42)	3,946
Total underlying revenue	4,018	1,408	1,494	457	285	(309)	7,353
Underlying gross profit/(loss)	276	370	295	80	54	(45)	1,030
Commercial and administrative costs	(185)	(176)	(77)	(33)	(50)	(32)	(553)
R&D costs	(157)	(89)	(48)	(15)	(12)	—	(321)
Share of results of joint ventures and associates	45	(1)	3	—	—	—	47
Underlying operating (loss)/profit	(21)	104	173	32	(8)	(77)	203

- (1) Non-core business for H1 2019 has been restated to include Bergen Engines AS and the North America Civil Nuclear business. Non-core business includes Bergen Engines AS, the North America Civil Nuclear business until the date of disposal on 31 January 2020, the Knowledge Management System business until the date of disposal on 3 February 2020, the Commercial Marine business until the date of disposal on 1 April 2019, RRPD until the date of disposal on 15 April 2019 and other smaller businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy).
- (2) The measures in this table are non-IFRS measures. See *"Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information"* for the definitions and reconciliation to the closest IFRS measures.

Civil Aerospace

The financial performance of the Civil Aerospace business on an underlying basis is summarised below for the periods presented:

	As at and for the six months ended 30 June		Change	Organic change ⁽²⁾
	2020 (unaudited)	2019 (unaudited)		
Civil Aerospace Business				
Key Financial Performance⁽¹⁾	(£m except as indicated)		(% except as indicated)	
Engine deliveries (number)	240	369	-35%	-35%
Underlying revenue	2,527	4,018	-37%	-37%
Underlying original equipment revenue	1,198	1,570	-24%	-24%
Underlying aftermarket services revenue	1,329	2,448	-46%	-46%
Underlying gross (loss)/profit	(1,562)	276	n.m.	n.m.
Underlying gross margin (%)	-61.8%	6.9%	-6,870bps	-6,880bps
Underlying operating result	(1,826)	(21)	n.m.	n.m.
Underlying operating margin (%)	-72.3%	-0.5%	-7,180bps	-7,190bps

n.m. means not meaningful.

- (1) Certain measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.
- (2) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

Underlying revenue

Underlying revenue for the Civil Aerospace business for H1 2020 and H1 2019 was £2,527m and £4,018m, respectively. The £1,491m, or 37% (37% on an organic basis), decrease was principally a result of a 24% reduction in underlying original equipment revenue due to lower delivery volumes and a 46% reduction in underlying aftermarket revenue, driven primarily by negative LTSA contract accounting adjustments totalling £866m.

Underlying operating profit/(loss)

Underlying operating loss for the Civil Aerospace business for H1 2020 and H1 2019 was £1,826m and £21m, respectively. The £1,805m increase was principally a result of the gross loss outlined below.

Underlying gross (loss)/profit decreased by £1,838m to a loss of £1,562m in H1 2020 from a profit of £276m in H1 2019 and underlying gross margin decreased by 68.7 percentage points on an organic basis, principally reflecting lower aftermarket profit, underutilisation of operations, lower spare engine sales and £1.2bn of largely COVID-19 related one-time charges, comprising: an £814m negative impact from LTSA contract accounting adjustments principally driven by a forecast reduction in engine flying hour receipts as a result of COVID-19; the up-front recognition of future losses also largely due to COVID-19 as certain contracts have either become loss-making or have seen an increase in expected losses, resulting in a £309m charge with the largest impact being on the Trent 900 programme; and a £95m charge reflecting specific customer provisions and the deterioration of the market credit ratings of the Group’s customers in the Civil Aerospace business largely due to COVID-19.

As mentioned above, in H1 2020, contract accounting adjustments had a £814m net negative impact on underlying operating profit (H1 2019: negative net impact of £33m).

Overall, the R&D charge to profit increased to £180m from £157m in H1 2019 reflecting a modestly lower cash spend which was more than offset by lower capitalisation. Underlying commercial and administrative costs were 8% lower on an organic basis year-on-year due to management cost control actions.

Power Systems

The financial performance of the Power Systems business on an underlying basis is summarised below for the periods presented:

	As at and for the six months ended 30 June		Change	Organic change ⁽³⁾
	2020 (unaudited)	2019 (restated, unaudited) ⁽²⁾		
Power Systems Business				
Key Financial Performance⁽¹⁾				
	(£m except as indicated)		(% except as indicated)	
Underlying revenue	1,250	1,408	-11%	-11%
Underlying original equipment revenue	823	923	-11%	-11%
Underlying aftermarket services revenue	427	485	-12%	-12%
Underlying gross profit	265	370	-28%	-28%
Underlying gross margin (%)	21.2%	26.3%	-510bps	-510bps
Underlying operating profit	22	104	-79%	-79%
Underlying operating margin (%)	1.8%	7.4%	-560bps	-560bps

(1) The measures in this table are non-IFRS measures. See “Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information” for the definitions and reconciliation to the closest IFRS measures.

(2) The underlying results for Power Systems for 30 June 2019 have been restated to reclassify Bergen Engines AS and the North America Civil Nuclear business as non-core.

(3) Organic change presented for select measures only. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes” for further information.

Underlying revenue

Underlying revenue for the Power Systems business for H1 2020 and H1 2019 was £1,250m and £1,408m, respectively. The £158m, or 11% (11% on an organic basis), decrease was principally a result of underlying original equipment revenue decreasing by 11% on an organic basis, principally driven by weak demand, particularly in industrial end markets, while government marine and power generation sales were resilient; underlying aftermarket revenue decreased by 12% on an organic basis, driven by lower utilisation of the Power Systems business’s installed base due to reduced industrial and construction activity, as well as the impact of mobility restrictions.

Underlying operating profit

Underlying operating profit for the Power Systems business for H1 2020 and H1 2019 was £22m and £104m, respectively. The £82m, or 79% (79% on an organic basis), decrease was principally a result of the decrease in gross profit. Underlying gross profit decreased by 28% on an organic basis to £265m, principally due to the reduction in underlying revenue as well as reduced factory utilisation and included a negative impact from inventory write-downs as a result of COVID-19. This resulted in a 510 basis point organic decrease in underlying gross margins to 21.2%. Commercial and administrative costs of £154m in H1 2020 were 12% lower on an organic basis reflecting management actions to reduce discretionary costs. The R&D charge in H1 2020 was flat at £89m, with spending being increasingly focused on lower carbon technology including gas, microgrids, and hybrid engine system programmes.

Defence

The financial performance of the Defence business on an underlying basis is summarised below for the periods presented:

	As at and for the six months ended 30 June		Change	Organic change ⁽²⁾
	2020 (unaudited)	2019 (unaudited)		
Defence Business				
Key Financial Performance⁽¹⁾	(£m except as indicated)		(% except as indicated)	
Underlying revenue	1,553	1,494	+4%	+2%
Underlying original equipment revenue	678	653	+4%	+2%
Underlying aftermarket services revenue	875	841	+4%	+2%
Underlying gross profit	332	295	+13%	+11%
Underlying gross margin (%)	21.4%	19.7%	+170bps	+170bps
Underlying operating profit	210	173	+21%	+20%
Underlying operating margin (%)	13.5%	11.6%	+190bps	+190bps

- (1) The measures in this table are non-IFRS measures. See “Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information” for the definitions and reconciliation to the closest IFRS measures.
- (2) Organic change presented for select measures only. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes” for further information.

Underlying revenue

Underlying revenue for the Defence business for H1 2020 and H1 2019 was £1,553m and £1,494m, respectively. The £59m, or 4% (2% on an organic basis), increase was driven by both underlying original equipment revenue increasing by 2% on an organic basis and a 2% increase in underlying aftermarket revenue, which was driven by growth in naval repairs and higher spare parts sales.

Underlying operating profit

Underlying operating profit for the Defence business for H1 2020 and H1 2019 was £210m and £173m, respectively. The £37m, or 21% (20% on an organic basis), increase was principally due to improved product mix and the revenue growth outlined above, with operational disruption from COVID-19 kept to a minimum. The underlying operating margin improved by 190 basis points on an organic basis to 13.5%.

R&D spend in H1 2020 was stable reflecting the timing of spend on new programmes. Commercial and administrative costs in H1 2020 were broadly flat at £76m, principally due to actions taken to reduce costs.

ITP Aero

The financial performance of the ITP Aero business on an underlying basis is summarised below for the periods presented:

	As at and for the six months ended 30 June		Change	Organic change ⁽²⁾
	2020 (unaudited)	2019 (unaudited)		
ITP Aero Business				
Key Financial Performance⁽¹⁾	(£m except as indicated)		(% except as indicated)	
Underlying revenue	346	457	-24%	-24%
Underlying original equipment revenue	267	400	-33%	-33%
Underlying aftermarket services revenue	79	57	+39%	+39%
Underlying gross profit	47	80	-41%	-42%
Underlying gross margin (%)	13.6%	17.5%	-390bps	-410bps
Underlying operating profit	10	32	-69%	-70%
Underlying operating margin (%)	2.9%	7.0%	-410bps	-430bps

- (1) The measures in this table are non-IFRS measures. See “Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information” for the definitions and reconciliation to the closest IFRS measures.

- (2) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

Underlying revenue

Underlying revenue for the ITP Aero business for H1 2020 and H1 2019 was £346m and £457m, respectively. The £111m, or 24% (24% on an organic basis), decrease was principally a result of sales being impacted by lower engine volumes on civil programmes, particularly in widebody, with the ITP Aero business’s defence revenue also being lower, reflecting a reduction in TP400 original equipment volumes and phasing on EJ200.

Underlying original equipment revenue decreased by 33% on an organic basis, principally driven by lower engine volumes on civil programmes. Underlying aftermarket revenue increased by 39% on an organic basis.

Underlying operating profit

Underlying operating profit for the ITP Aero business for H1 2020 and H1 2019 was £10m and £32m, respectively. The £22m, or 69% (70% on an organic basis), decrease was principally a result of the challenging trading environment in civil aviation with lower volumes and COVID-19 disruption.

Group results of operations for 2019 and 2018

In the discussion below, the Group’s results are presented on a reported and underlying basis. The Group believes this provides an insight into its in-year performance as underlying results reflect the substance of trading activity, including the impact of the Group’s foreign exchange forward contracts, which economically hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges, exceptional items and other one-off charges. The adjustments between the underlying income statement and the reported income statement are set out in more detail in Note 2 to the Group 2019 Consolidated Financial Statements and Note 2 to the Group 2018 Consolidated Financial Statements incorporated by reference herein and in “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Underlying financial information*”. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for a reconciliation between each underlying measure and the nearest IFRS measure. In addition, the Group presents increases and decreases in certain of its underlying measures on an organic basis as well as on an arithmetic basis, see “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” and “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for a reconciliation.

Group Underlying Income Statement⁽¹⁾	For the year ended 31 December		Change (%)	Organic Change⁽²⁾ (%)
	2019	2018		
	(£m)			
Underlying revenue	15,450	15,067	+3%	+7%
Underlying gross profit	2,387	2,450	-3%	n/a
Underlying commercial and administrative costs	979	1,161	-16%	-4%
Underlying R&D costs	696	689	-1%	+6%
Underlying share of results of joint ventures and associates	110	32	n.m.	n.m.
Underlying operating profit	808	616	+31%	+25%
Underlying net financing	(225)	(150)	+50%	
Underlying profit before tax	583	466	+25%	
Underlying taxation	(277)	(161)	+72%	
Underlying profit for the period	306	305		

n.m. means not meaningful.

- (1) The measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.
- (2) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

The table below presents the Group's income statement as reported for the periods indicated and should be read in conjunction with, and is qualified in its entirety by reference to, the Group 2019 Consolidated Financial Statements and notes thereto, which are incorporated by reference in this document.

Group Consolidated Income Statement	For the year ended 31 December		Change
	2019	2018	
	(£m)		(%)
Revenue⁽¹⁾	16,587	15,729	+5%
Cost of sales ⁽¹⁾	(15,645)	(14,531)	+8%
Gross profit	942	1,198	-21%
Commercial and administrative costs ⁽¹⁾	(1,128)	(1,595)	-29%
Research and development costs	(770)	(768)	0%
Share of results of joint ventures and associates	104	4	n.m.
Operating loss	(852)	(1,161)	-27%
Gain arising on the disposal of businesses ⁽²⁾	139	358	-61%
Loss before financing and taxation	(713)	(803)	-11%
Financing income	252	271	-7%
Financing costs	(430)	(2,415)	-82%
Net financing costs	(178)	(2,144)	-92%
Loss before taxation	(891)	(2,947)	-70%
Taxation	(420)	554	-176%
Loss for the year	(1,311)	(2,393)	-45%
Attributable to:			
Ordinary Shareholders	(1,315)	(2,401)	-45%
Non-controlling interests	4	8	-50%
Loss for the year	(1,311)	(2,393)	-45%

n.m. means not meaningful.

- (1) In 2019, included within cost of sales and commercial and administrative costs are exceptional charges relating to the Civil Aerospace business's programmes, impairment charges and restructuring costs. In 2018, included within revenue, cost of sales and commercial and administrative costs are exceptional charges relating to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs. See "*Key factors affecting the Group's results of operations—Product in-service performance*" and Note 2 of the Group 2019 Consolidated Financial Statements and the Group 2018 Consolidated Financial Statements for further information.
- (2) RRPD was disposed of on 15 April 2019; Commercial Marine was disposed of on 1 April 2019; L'Orange was disposed of on 1 June 2018. See "*Key factors affecting the Group's results of operations—Acquisitions and divestments*", Note 27 of the Group 2019 Consolidated Financial Statements and Note 25 of the Group 2018 Consolidated Financial Statements for further information.

Group revenue

Underlying revenue

Underlying revenue for 2019 and 2018 was £15,450m and £15,067m, respectively. The £383m, or 3% (7% on an organic basis), increase was a result of growth in both underlying original equipment revenue and underlying aftermarket revenue, particularly in the Civil Aerospace and Power Systems businesses, which was partially offset by the disposal of Commercial Marine in early 2019, as the Group received a full year of revenue from this business in 2018 but only three months of revenue in 2019.

The Civil Aerospace business delivered growth in underlying original equipment revenue of 4% on an organic basis, principally reflecting higher widebody engine delivery volumes. Underlying aftermarket revenue in the Civil Aerospace business increased by 14% on an organic basis, due to increased maintenance Shop Visits driving LTSA revenue recognition as well as higher sales of spare parts.

The Power Systems business delivered organic growth of 4% in underlying original equipment revenue, principally due to strength in certain power generation markets, notably for data centres. Underlying aftermarket

revenue grew by 4% on an organic basis, reflecting continued progress on the Group's aftermarket strategy, particularly due to a more advanced spare parts sales approach and a greater emphasis on LTSAs which saw a further increase in revenue during the year.

Underlying revenue from the Defence business increased by 1% on an organic basis, reflecting organic growth of 4% in underlying aftermarket revenue, driven by increased activity in transport and combat, but was partially offset by a modest decline in underlying sales from original equipment principally due to lower transport engine deliveries.

The ITP Aero business's underlying revenue increased by 21% on an organic basis reflecting volume growth largely across its civil programmes.

Reported revenue

Reported revenue for 2019 and 2018 was £16,587m and £15,729m, respectively. The £858m, or 5%, increase was principally a result of the same reasons as the increase of underlying revenue, as well as a positive impact of changes in foreign exchange rates, which was partially offset by the disposal of Commercial Marine in early 2019, as the Group received a full year of revenue from this business in 2018 but only three months of revenue in 2019.

Type of reported revenue analysis

The Group's reported revenue by type of reported revenue for 2019 and 2018 is shown below:

	For the year ended 31 December	
	2019	2018
	(£m)	
Original equipment recognised at a point in time ⁽¹⁾	6,958	6,647
Original equipment recognised over time ⁽²⁾	1,094	1,168
Aftermarket services recognised at a point in time ⁽¹⁾	3,744	3,842
Aftermarket services recognised over time ⁽²⁾	4,667	4,018
Total customer contract revenue	16,463	15,675
Other revenue	124	54
Total revenue	16,587	15,729

- (1) Revenue recognised at a point in time means that the Group charges a customer for goods or services at the point of consumption, with revenue recognised at the time the goods are delivered or services are performed.
- (2) Revenue recognised over time means that the Group receives cash payments from a customer over time, but only recognises revenue on a cost-incurred basis, i.e. when the product or service is delivered to the customer.

Geographical analysis

The Group's reported revenue by destination of the ultimate operation for 2019 and 2018 is shown below:

	For the year ended 31 December	
	2019	2018
	(£m)	
United Kingdom	1,805	1,505
Germany	961	1,177
Switzerland	520	675
Spain	375	343
France	284	251
Italy	235	304
Russia	106	79
Norway	87	246
Rest of Europe	979	815
Europe	5,352	5,395
United States of America	4,720	5,041
Canada	298	366
North America	5,018	5,407
South America	377	351
United Arab Emirates	438	105
Rest of Middle East	714	584
Middle East	1,152	689
China	1,698	1,483
Singapore	702	452
Japan	607	365
South Korea	252	334
India	82	82
Malaysia	32	111
Rest of Asia	590	588
Asia	3,963	3,415
Africa	246	152
Australasia	361	229
Other	118	91
Total	16,587	15,729

Cost of sales and gross profit

Underlying gross profit

Underlying gross profit for 2019 and 2018 was £2,387m and £2,450m, respectively. The £63m, or 3%, decrease was principally the result of the Group's recent disposals leading to a reduction in the underlying gross profit, which more than offset organic improvements in the Civil Aerospace, Power Systems, and ITP Aero businesses.

Underlying gross profit in the Civil Aerospace business increased by 25% on an organic basis, principally as a result of increased spare parts sales, higher LTSA servicing activity, and a material improvement in the net impact of contract accounting adjustments to LTSA profits. An LTSA contract accounting adjustment reflects the impact of a change in the Group's expectations for profitability on an LTSA, leading to a requirement for a one-off positive or negative adjustment to the revenue and profit recognised on the contract to date. In 2019, these adjustments led to a positive £33m contribution to underlying gross profit (2018: net negative impact of £276m), principally driven by lower than expected servicing costs in business aviation. The factors above more than offset modestly lower LTSA underlying gross margins, reflecting Shop Visit mix, and a £70m exchange rate-related headwind principally reflecting the revaluation of US dollar creditors and deposits.

The Power Systems business generated an increase of 6% in underlying gross profit on an organic basis, with an underlying gross margin of 26%, which was principally driven by volume growth and improvements in product mix (in 2018, underlying gross margin was 25%).

The Defence business's underlying gross profit decreased by 6% on an organic basis with underlying gross margins 160 basis points lower on an organic basis. This principally reflected product mix, with lower transport engine delivery volumes, particularly on the Trent 700 MRTT, as well as the non-repeat of prior-year benefits to LTSA margins from one-off customer settlements.

The ITP Aero business's underlying gross profit increased by 33% on an organic basis with underlying gross margin improvement of 200 basis points on an organic basis compared to an underlying gross margin of 20% in 2018, principally driven by higher original equipment volumes, improved pricing and a benefit from the impact of a change made to simplify the ITP Aero business's trading relationship and contractual terms with the Civil Aerospace business. This was net neutral at the Group level, with a corresponding increase in eliminations.

Reported cost of sales and gross profit

Reported gross profit for 2019 and 2018 was £942m and £1,198m, respectively. The £256m, or 21%, decrease was principally a result of the same reasons discussed above in connection with the increase in underlying gross profit in 2019, as well as an additional exceptional programme charge of £457m in 2019, which were partially offset by a £71m decrease in impairments and asset write-offs.

Commercial and administrative costs

Underlying commercial and administrative costs

Underlying commercial and administrative costs for 2019 and 2018 were £979m and £1,161m, respectively. The £182m, or 16%, decrease was principally a result of a £137m reduction following the disposal of the Group's Commercial Marine business in early 2019 and a reduction of the commercial and administrative costs across the Group's Civil Aerospace, Power Systems, Defence and ITP Aero businesses as well as corporate function by £39m to £938m, reflecting headcount savings and management actions to reduce discretionary spend as part of the Group-wide restructuring programme announced on 4 June 2018, partially offset by cost escalation and higher sales-related activities in the Power Systems business.

Reported commercial and administrative costs

Reported commercial and administrative costs for 2019 and 2018 were £1,128m and £1,595m, respectively. The £467m, or 29%, decrease was principally a result of the restructuring programme headcount charges and management actions to reduce discretionary spend, the sale of Commercial Marine in early 2019, which resulted in a decrease of £137m, and a one-off cost in 2018, that did not repeat in 2019, of £121m in respect of the equalisation of pension benefits between men and women (see Note 21 to the Group 2019 Consolidated Financial Statements).

Research and development costs

Underlying R&D costs

Underlying R&D costs for 2019 and 2018 were £696m and £689m, respectively. The £7m, or 1%, increase was principally a result of a £38m increase in the level of underlying R&D costs across the Civil Aerospace, Power Systems, Defence and ITP Aero businesses, reflecting the Civil Aerospace business's widebody and new business aviation programmes following the recent entry into service of several new engine programmes, and a lower level of capitalisation. This was partially offset by a £23m reduction in the R&D charge as a result of the disposal of Commercial Marine.

Reported research and development costs

Reported R&D costs for 2019 and 2018 were £770m and £768m, respectively, a £2m increase. Cash expenditure decreased by £27m in 2019 and was marginally lower than in 2018, primarily due to the factors described above for underlying R&D costs. There was a small decrease of £17m in the amount of R&D capitalised in 2019 compared with 2018 and a £12m increase in the amount amortised and impaired.

Share of results of joint ventures and associates

Underlying share of results of joint ventures and associates

Underlying share of results of joint ventures and associates for 2019 and 2018 was £110m and £32m, respectively. The £78m increase was principally driven by increased servicing activity in the Civil Aerospace business's MRO bases (i.e. MRO contract sites), as well as higher profits on the disposals of engines in Rolls-Royce & Partners Finance, the Group's engine financing joint venture.

Reported share of results of joint ventures and associates

Reported share of results of joint ventures and associates for 2019 and 2018 was £104m and £4m, respectively. The £100m increase was principally driven by increased servicing activity in overhaul bases and higher profit on disposal of engines in Rolls-Royce & Partners Finance (the Group's engine financing joint venture).

Operating (loss)/profit

Underlying operating profit

Underlying operating profit for 2019 and 2018 was £808m and £616m, respectively. The £192m, or 31% (25% on an organic basis), increase was principally a result of improved performance across the Group's Civil Aerospace, Power Systems, Defence and ITP Aero businesses. Underlying operating profit for these businesses increased by £179m in 2019, driven by a £102m increase in underlying gross profit, lower commercial and administrative costs, and a higher share of results from joint ventures and associates, offsetting the modestly higher R&D spend. The underlying operating loss also reflects the disposal of the loss-making Commercial Marine business on 1 April 2019.

Reported operating loss

Reported operating loss for 2019 and 2018 was £852m and £1,161m, respectively. The £309m, or 27%, improvement was principally a result of the same reasons as the increase of underlying operating profit, a positive impact of changes in foreign exchange rates, which was partially offset by the additional exceptional charge in 2019 in respect of exceptional programme charges.

Gain arising on the disposal of businesses (reported only)

Gain arising on the disposal of businesses for 2019 and 2018 was £139m and £358m, respectively. The £219m, or 61%, decrease was principally a result of a large disposal in 2018 and smaller disposals in 2019. The Group completed the sale of the Commercial Marine business to KONGSBERG on 1 April 2019 and recognised a profit of £106m (£98m of which related to the recycling of the cumulative foreign currency reserve), and RRPD on 15 April 2019 with a gain arising on disposal of £33m, each recognised in 2019. In 2018, the Group recognised a gain on the sale of L'Orange of £358m.

Profit/(loss) before financing and taxation (reported only)

The loss before financing and taxation for 2019 and 2018 was £713m and £803m, respectively. The £90m, or 11%, decrease was principally a result of the reasons discussed for reported operating loss above and the gain arising on the disposal of businesses, also discussed above.

Financing income and financing costs

Underlying net financing

Underlying net financing for 2019 and 2018 was £225m and £150m, respectively. The £75m, or 50%, increase was principally a result of a £60m increase in net interest payable to £132m largely due to the adoption of IFRS 16. Other financing costs were £93m in 2019, modestly higher than the £78m in the previous year. Other financing costs included charges relating to the factoring of receivables and the unwinding of the discounting of prior year provisions.

Reported financing income and financing costs

Financing income for 2019 and 2018 was £252m and £271m, respectively. The £19m, or 7%, decrease was principally a result of £77m lower net foreign exchange gains, which was partially offset by £50m higher net fair value gains on interest rate swaps and commodity contracts and £4m higher interest receivable as well as other small movements.

Financing costs for 2019 and 2018 were £430m and £2,415m, respectively. The £1,985m, or 82%, decrease was principally a result of a £2,101m decrease in the net fair value losses on foreign currency and commodity contracts, principally due to mark-to-market adjustments of derivative contracts due to exchange rate changes, which was partially offset by an increase in interest payable of £75m and a £64m increase in other financing costs plus other small movements. Other financing costs included charges relating to the factoring of receivables and the unwinding of the discounting of prior year provisions.

Profit/(loss) before taxation

Underlying profit/(loss) before taxation

Underlying profit before tax for 2019 and 2018 was £583m and £466m, respectively. The £117m, or 25%, increase was principally a result of the increase in underlying operating profit, offset by higher underlying net financing costs discussed above.

Reported profit/(loss) before taxation

Reported loss before taxation for 2019 and 2018 was £891m and £2,947m, respectively. The £2,056m, or 70%, improvement was principally a result of the factors mentioned in the above discussions of the Group's reported results.

Taxation

Underlying taxation

Underlying taxation for 2019 and 2018 was £277m and £161m, respectively. The £116m, or 72%, increase was principally a result of a higher tax charge relating to prior year profits in the Group's German business. The underlying tax rate in 2019 was 47.5%, compared with 34.5% in 2018. This increase was primarily driven by the non-recognition of a deferred tax asset on UK losses arising in 2019.

Reported taxation

Reported taxation for 2019 and 2018 was a tax charge of £420m and a tax credit of £554m, respectively. There was a negative reported effective tax rate of (47.1)% in 2019, compared with 18.8% in 2018, due to a tax charge on a reported loss in 2019. The charge in 2019 was primarily due to the non-recognition of a deferred tax asset on UK losses arising in 2019 and the de-recognition of some of the deferred tax asset relating to foreign exchange derivative contracts.

Profit/(loss) for the year

Underlying profit/(loss) for the year

Underlying profit for the year for 2019 and 2018 was £306m and £305m, respectively, a £1m increase, due to the reasons discussed above.

Reported profit/(loss) for the Year

Reported loss for the year for 2019 and 2018 was £1,311m and £2,393m, respectively, a £1,082m, or 45%, decrease, due to the reasons discussed above.

Segment results of operations for 2019 and 2018

The Group's underlying revenue and underlying operating profit by segment for 2019 and 2018 are presented in the table below. For a reconciliation of reported underlying results to reported results, see "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*".

The tables below show the Group's underlying results for each business as well as the Group's non-core business for the periods indicated.

	Civil Aerospace	Power Systems	Defence	ITP Aero	Non-core business ⁽¹⁾	Corporate and inter- segment	Group underlying
(£m)							
Year ended 31 December 2019⁽²⁾							
Underlying revenue from sale of original equipment	3,246	2,386	1,461	782	83	(502)	7,456
Underlying revenue from aftermarket services	4,861	1,159	1,789	154	106	(75)	7,994
Total underlying revenue	8,107	3,545	3,250	936	189	(577)	15,450
Underlying gross profit/(loss)	622	909	669	206	45	(64)	2,387
Commercial and administrative costs	(299)	(374)	(151)	(61)	(41)	(53)	(979)
Restructuring	(7)	—	(7)	(1)	1	—	(14)
Research and development costs	(374)	(176)	(105)	(33)	(8)	—	(696)
Share of results of joint ventures and associates	102	(2)	9	—	1	—	110
Underlying operating profit/(loss) ...	44	357	415	111	(2)	(117)	808

(1) Non-core business includes the North America Civil Nuclear business and the Knowledge Management System business which have been treated as a disposal group held for sale as at 31 December 2019, the Commercial Marine business which was disposed of on 1 April 2019, RRPD which was disposed of on 15 April 2019, and other smaller non-core businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy).

(2) The measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.

	Civil Aerospace	Power Systems ⁽¹⁾	Defence	ITP Aero	Non-core business ⁽²⁾	Corporate and inter- segment	Group underlying
(restated unaudited)							
(£m)							
Year ended 31 December 2018⁽³⁾							
Underlying revenue from sale of original equipment	3,119	2,310	1,452	666	358	(375)	7,530
Underlying revenue from aftermarket services	4,259	1,124	1,672	113	423	(54)	7,537
Total underlying revenue	7,378	3,434	3,124	779	781	(429)	15,067
Underlying gross profit	493	866	690	156	210	35	2,450
Commercial and administrative costs	(336)	(363)	(170)	(57)	(184)	(51)	(1,161)
Restructuring	(8)	(1)	(3)	(2)	(2)	—	(16)
Research and development costs ..	(332)	(188)	(100)	(30)	(39)	—	(689)
Share of results of joint ventures and associates	21	1	10	—	—	—	32
Underlying operating (loss)/profit	(162)	315	427	67	(15)	(16)	616

(1) The underlying results for Power Systems for 31 December 2018 have been restated to reclassify the North America Civil Nuclear business as non-core, as presented for 2019.

(2) Non-core business includes the Commercial Marine business which was disposed of on 1 April 2019, RRPD which was disposed of on 15 April 2019, L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy). Non-core business for the year ended 31 December 2018 has been restated to include the North America Civil Nuclear business.

(3) The measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.

Civil Aerospace

The financial performance of the Civil Aerospace business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December			
	2019	2018	Change	Organic change ⁽²⁾
Civil Aerospace Business				
Key Financial Performance ⁽¹⁾	(£m except as indicated)		(% except as indicated)	
Order backlog (<i>in £bn</i>)	48.5	52.3	-7%	n/a
Engine deliveries (<i>number</i>)	729	686	+6%	+6%
Underlying revenue	8,107	7,378	+10%	+10%
Underlying original equipment revenue	3,246	3,119	+4%	+4%
Large engine	2,569	2,374	+8%	+8%
Business aviation	642	620	+4%	+5%
V2500	35	126	-72%	-72%
Underlying aftermarket services revenue	4,861	4,259	+14%	+14%
Large engine	3,205	2,665	+20%	+20%
Business aviation	477	466	+3%	+2%
Regional	355	291	+22%	+19%
V2500	824	836	-2%	-2%
Underlying gross profit	622	493	+26%	+25%
Underlying gross margin (%)	7.7%	6.7%	+100bps	+90bps
Underlying operating result	44	(162)	+127%	n.m.
Underlying operating margin (%)	0.5%	-2.2%	+270bps	+260bps

n.m means not meaningful.

- (1) Certain measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.
- (2) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

Underlying revenue

Underlying revenue for the Civil Aerospace business for 2019 and 2018 was £8,107m and £7,378m, respectively. The £729m, or 10% (10% on an organic basis), increase was driven by growth in both underlying original equipment revenue and strong growth in underlying aftermarket revenue, which increased by 4% on an organic basis to £3,246m and by 14% on an organic basis to £4,861m, respectively.

Large engine underlying original equipment revenue increased by 8% on an organic basis principally driven by an increase of 41 in widebody engine delivery volumes to 510. This principally reflected strong growth in Trent 7000 engines for the Airbus A330neo production ramp-up. Large engine underlying aftermarket revenue increased by 20% on an organic basis to £3,205m (2018: £2,665m), principally driven by higher servicing volumes. Major LTSA Shop Visits increased by 7% to 306, and check and repair visits, led by Trent 1000 activity, increased by 16% to 660.

In business aviation, underlying original equipment revenue increased by 5% on an organic basis with deliveries broadly stable at 219 engines (2018: 217 engines), principally reflecting improved product mix, while underlying aftermarket revenue increased by 2% on an organic basis.

Regional aviation underlying aftermarket revenue increased by 19% on an organic basis, principally driven by the AE3007 and Tay-powered fleets.

V2500 underlying original equipment revenue decreased by 72% on an organic basis, principally due to end-of-life production on the Airbus A320ceo. The decrease of 2% on an organic basis in V2500 underlying aftermarket revenue principally reflected a modest reduction in spare parts sales, with the payment from Pratt & Whitney Aero Engines International relating to EFHs remaining stable.

Underlying operating profit/(loss)

Underlying operating result for the Civil Aerospace business for 2019 and 2018 was a profit of £44m and a loss of £162m, respectively. The £206m (£195m on an organic basis), increase was principally a result of higher underlying gross profit, increased profit from joint ventures and lower commercial and administrative costs, which more than offset an R&D charge that was 13% higher on an organic basis.

Underlying gross profit improved by £121m and underlying gross margin by 90 basis points, each on an organic basis. This was principally driven by increased aftermarket activity, higher spare parts sales, and a material improvement in the net impact of contract accounting adjustments to LTSA profits (see “—Key factors affecting the Group’s results of operations” and “—Description of principal income statement items—Revenue” for further information). In 2019, contract accounting adjustments had a £33m net positive impact on underlying operating profit (2018: negative net impact of £276m). This was principally driven by improvements in servicing costs in business aviation, which was partially offset by a reassessment of costs and utilisation across various widebody programmes. Underlying gross profit was negatively affected by a modestly lower LTSA underlying gross margin principally due to the mix of Shop Visits, exchange rate-related headwind principally relating to the revaluation of US dollar creditors and deposits, and a modest impact from higher customer charges. The profit contribution from spare engine sales was relatively stable year-on-year.

Self-funded R&D cash spend reduced by £18m to £767m reflecting lower investment in existing widebody and business aviation programmes and an increase in next generation technology, including the UltraFan demonstrator. Net R&D capitalisation was £60m lower, driven by widebody and business aviation development programme maturity. Overall, the R&D charge to profit increased to £374m from £332m in 2018. Underlying commercial and administrative costs were 11% lower on an organic basis year-on-year. Joint venture profit of £102m (2018: £21m) reflected increased servicing activity in overhaul bases and higher profit on disposal of engines in Rolls-Royce & Partners Finance Limited (the Group’s engine financing joint venture).

Power Systems

The financial performance of the Power Systems business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December			
	2019	2018 (restated unaudited) ⁽²⁾	Change	Organic change ⁽²⁾
Power Systems Business				
Key Financial Performance⁽¹⁾	(£m except as indicated)		(% except as indicated)	
Order backlog (<i>in £bn</i>)	2.9	3.1	-6%	n/a
Underlying revenue	3,545	3,434	+3%	+4%
<i>Underlying original equipment revenue</i>	2,386	2,310	+3%	+4%
<i>Underlying aftermarket services revenue</i>	1,159	1,124	+3%	+4%
Underlying gross profit	909	866	+5%	+6%
Underlying gross margin (%)	25.6%	25.2%	+40bps	+50bps
Underlying operating profit	357	315	+13%	+15%
Underlying operating margin (%)	10.1%	9.2%	+90bps	+90bps

- (1) Certain measures in this table are non-IFRS measures. See “Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information” for the definitions and reconciliation to the closest IFRS measures.
- (2) The underlying results for Power Systems for 31 December 2018 have been restated to reclassify the North America Civil Nuclear business as non-core, as presented for 2019.
- (3) Organic change presented for select measures only. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes” for further information.

Underlying revenue

Underlying revenue for the Power Systems business for 2019 and 2018 was £3,545m and £3,434m, respectively. The £111m, or 3% (4% on an organic basis), increase was principally a result of a 4% organic

increase in underlying original equipment revenue principally driven by strong demand for critical power generation products, notably to serve the data centre market, and a 4% increase in underlying aftermarket revenue on an organic basis. This was partially offset by an expected reduction in demand from the construction and agriculture sectors, following the non-recurrence of the emissions-led pre-buy effect seen in 2018. Underlying aftermarket revenue increased by 4% on an organic basis, principally reflecting higher spare parts sales and a 6% increase in underlying revenue from LTSAs on an organic basis.

Underlying operating profit

Underlying operating profit for the Power Systems business for 2019 and 2018 was £357m and £315m, respectively. The £42m, or 13% (15% on an organic basis), increase was principally a result of underlying revenue growth and underlying gross margin improvement, which was partially offset by higher commercial and administrative costs. Underlying gross profit increased by 6% on an organic basis to £909m, partly due to a better product mix, which resulted in a 50 basis point organic increase in underlying gross margins to 25.6% principally as a result of better product mix. Commercial and administrative costs of £374m in 2019 were 3% higher on an organic basis year-on-year reflecting cost escalation, additional spend on digital solutions, and higher sales-related activities. The R&D charge in 2019 reduced by £11m on an organic basis reflecting the timing of key projects, with cash spend modestly higher.

Defence

The financial performance of the Defence business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December			
	2019	2018	Change	Organic change ⁽²⁾
Defence Business				
Key Financial Performance⁽¹⁾	(£m except as indicated)		(% except as indicated)	
Order backlog (<i>in £bn</i>)	8.6	6.8	+26%	n/a
Underlying revenue	3,250	3,124	+4%	+1%
<i>Underlying original equipment revenue</i>	<i>1,461</i>	<i>1,452</i>	<i>+1%</i>	<i>-2%</i>
<i>Underlying aftermarket services revenue</i>	<i>1,789</i>	<i>1,672</i>	<i>+7%</i>	<i>+4%</i>
Underlying gross profit	669	690	-3%	-6%
Underlying gross margin (%)	20.6%	22.1%	-150bps	-160bps
Underlying operating profit	415	427	-3%	-7%
Underlying operating margin (%)	12.8%	13.7%	-90bps	-110bps

(1) Certain measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.

(2) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

Underlying revenue

Underlying revenue for the Defence business for 2019 and 2018 was £3,250m and £3,124m, respectively. The £126m, or 4%, increase (a 1% increase on an organic basis) was principally a result of higher underlying revenue from services, up 7% (4% on an organic basis), with original equipment revenue increasing by 1% (2% decline on an organic basis).

Underlying original equipment revenue decreased by 2% on an organic basis principally driven by fewer deliveries of transport engines due to the phasing of orders, including lower volumes of Trent 700s MRTT aircraft and AE series engines for the C-130J and V-22. These effects were partially offset by increased volumes for LiftSystem hardware for the F-35B. Underlying aftermarket revenue increased by 4% on an organic basis, driven by higher LTSA volume for the AE1107 and AE2100 transport engines, together with increased T&M Contracts revenue from EJ200 aftermarket.

Underlying operating profit

Underlying operating profit for the Defence business for 2019 and 2018 was £415m and £427m, respectively. The £12m, or 3% (7% on an organic basis), decrease was principally a result of lower underlying gross profit, as anticipated, which was partially offset by lower commercial and administrative costs.

Underlying gross profit in 2019 of £669m decreased by 6% on an organic basis, driven by the lower original equipment volumes in transport, particularly on the Trent 700 MRTTs, and lower LTSA margins principally due to the non-repeat of one-off customer settlements in 2018. A modest increase in R&D spend in 2019 of £4m (on an organic basis) reflected ongoing investment to support future programmes across the Group's Defence business product portfolio.

Commercial and administrative costs in 2019 were £22m lower year-on-year (on an organic basis) at £151m, principally due to benefits from management's ongoing restructuring efforts.

ITP Aero

The financial performance of the ITP Aero business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December		Change	Organic change ⁽²⁾
	2019	2018		
ITP Aero Business				
Key Financial Performance⁽¹⁾	(£m except as indicated)		(% except as indicated)	
Order backlog (<i>in £bn</i>)	0.9	0.9	—	n/a
Underlying revenue	936	779	+20%	+21%
<i>Underlying original equipment revenue</i>	782	666	+17%	+19%
<i>Underlying aftermarket services revenue</i>	154	113	+36%	+37%
Underlying gross profit	206	156	+32%	+33%
Underlying gross margin (%)	22.0%	20.0%	+200bps	+200bps
Underlying operating profit	111	67	+66%	+67%
Underlying operating margin (%)	11.9%	8.6%	+330bps	+330bps

(1) Certain measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.

(2) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

Underlying revenue

Underlying revenue for the ITP Aero business for 2019 and 2018 was £936m and £779m, respectively. The £157m, or 20% (21% on an organic basis), increase was principally a result of volume growth largely across its civil programmes, which was partially offset by a reduction in defence sales.

Underlying original equipment revenue increased by 19% on an organic basis driven by higher engine volumes on civil programmes, with the ITP Aero business's module deliveries up 20% on Trent engine programmes and 40% higher for non-Rolls-Royce programmes. This was partially offset by a reduction in defence sales. Underlying revenue from aftermarket increased by 37% on an organic basis principally due to higher spare parts sales, largely from Rolls-Royce engine programmes. Underlying revenue also benefitted from a change made to simplify ITP Aero's trading relationship and contractual terms with the Civil Aerospace business. This was net neutral at Group level.

Underlying operating profit

Underlying operating profit for the ITP Aero business for 2019 and 2018 was £111m and £67m, respectively. The £44m, or 66% (67% on an organic basis), increase was principally a result of higher underlying gross profit, driven by higher original equipment volumes and improved pricing. Underlying operating profit also

benefitted from the change in the ITP Aero business's trading terms with the Civil Aerospace business, with a corresponding negative impact in Group eliminations. The improvement in operating profit in 2019 was partially offset by commercial and administrative costs, which increased by 9% on an organic basis to £61m, and R&D cost, which increased by 10% on an organic basis to £33m due to ongoing investments in aerospace programmes.

Group results of operations for 2018 and 2017

In the discussion below, the Group's results are presented on a reported and underlying basis. The Group believes this provides an insight into its in-year performance as underlying results reflect the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which economically hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges, exceptional items and other one-off charges. The adjustments between the underlying income statement and the reported income statement are set out in more detail in Note 2 to the Group 2018 Consolidated Financial Statements incorporated by reference herein and "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Underlying financial information*". See "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*" for a reconciliation between each underlying measure and the nearest IFRS measure. In addition, the Group presents increases and decreases in certain of its underlying measures on an organic basis as well as on an arithmetic basis, see "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*" and "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*" for a reconciliation.

Group Underlying Income Statement ⁽²⁾	For the year ended 31 December		Change	Organic Change ⁽³⁾
	2018	2017 ⁽¹⁾ (restated, unaudited) (£m)		
Underlying revenue	15,067	13,671	+10%	+8%
Underlying gross profit	2,450	2,246	+9%	n/a
Underlying commercial and administrative costs	1,161	1,150	+1%	-3%
Underlying R&D costs	689	776	-11%	-14%
Underlying share of results of joint ventures and associates	32	4	n.m.	n.m.
Underlying operating profit	616	306	+101%	+102%
Underlying net financing	(150)	(107)	+40%	
Underlying profit before tax	466	199	+134%	
Underlying taxation	(161)	(155)	+4%	
Underlying profit for the period	305	44	n.m.	

n.m. means not meaningful.

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*" and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) The measures in this table are non-IFRS measures. See "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*" for the definitions and reconciliation to the closest IFRS measures.
- (3) Organic change presented for select measures only. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*" for further information.

The table below presents the Group's income statement as reported for the periods indicated and should be read in conjunction with, and is qualified in its entirety by reference to, the Group 2018 Consolidated Financial Statements and notes thereto, which are incorporated by reference in this document.

Group Consolidated Income Statement	For the year ended 31 December		Change
	2018	2017 ⁽¹⁾ (restated, unaudited) (£m)	
Revenue	15,729	14,747	+7%
Cost of sales ⁽²⁾	(14,531)	(12,325)	+18%
Gross profit	1,198	2,422	-51%
Commercial and administrative costs ⁽²⁾	(1,595)	(1,222)	+31%
Research and development costs	(768)	(843)	-9%
Share of results of joint ventures and associates	4	9	-56%
Operating (loss)/profit	(1,161)	366	n.m.
Gain arising on the acquisition of businesses ⁽³⁾	—	785	—
Gain arising on the disposal of businesses ⁽⁴⁾	358	—	—
(Loss)/profit before financing and taxation	(803)	1,151	n.m.
Financing income	271	2,911	-91%
Financing costs	(2,415)	(164)	n.m.
Net financing costs	(2,144)	2,747	n.m.
(Loss)/profit before taxation	(2,947)	3,898	n.m.
Taxation	554	(515)	n.m.
(Loss)/profit for the year	(2,393)	3,383	n.m.
Attributable to:			
Ordinary Shareholders	(2,401)	3,382	n.m.
Non-controlling interests	8	1	n.m.
(Loss)/profit for the year	(2,393)	3,383	n.m.

n.m. means not meaningful.

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) In 2018, included within revenue, cost of sales and commercial and administrative costs are exceptional charges relating to the Trent 1000 and Trent 900 Civil Aerospace programmes and restructuring costs. See “—Key factors affecting the Group's results of operations—Product in-service performance” and Note 2 of the Group 2018 Consolidated Financial Statements for further information.
- (3) ITP Aero was acquired on 19 December 2017. See “—Key factors affecting the Group's results of operations—Acquisitions and divestments” and Note 25 of the Group 2018 Consolidated Financial Statements for further information.
- (4) L'Orange was disposed of on 1 June 2018. See “—Key factors affecting the Group's results of operations—Acquisitions and divestments” and Note 25 of the Group 2018 Consolidated Financial Statements for further information.

Group revenue

Underlying revenue

Underlying revenue for 2018 and 2017 was £15,067m and £13,671m, respectively. The £1,396m, or 10% (8% on an organic basis), increase was a result of growth in both underlying original equipment revenue and underlying aftermarket revenue, primarily in the Civil Aerospace and Power Systems businesses, as well as the acquisition of the ITP Aero business in December 2017. The Civil Aerospace business's underlying revenue increased by 12% on an organic basis, reflecting underlying original equipment revenue growth of 8% on an organic basis driven by large engine pricing improvements and higher volumes of spare engines to support the Group's growing in-service fleet.

Underlying aftermarket revenue in the Civil Aerospace business increased by 15% on an organic basis, reflecting growth in LTSA Shop Visits and higher spare parts sales. The Power Systems business delivered strong underlying revenue growth of 15% on an organic basis with strength across almost all of its end markets, driving underlying revenue growth in both original equipment (18% on an organic basis) and aftermarket (10% on an organic basis). The Defence business's underlying revenue remained stable with a modest increase in original equipment, offset by reduced aftermarket revenue, reflecting phasing of work on UK submarines. The ITP Aero business's underlying revenue increased by 6% on an organic basis.

Reported revenue

Reported revenue for 2018 and 2017 was £15,729m and £14,747m, respectively. The £982m, or 7%, increase was principally a result of the same reasons as the increase of underlying revenue, which was partially offset by a negative impact of changes in foreign exchange rates.

Type of reported revenue analysis

The Group's reported revenue by type of revenue for 2018 and 2017 is shown below:

	For the year ended 31 December	
	2018	2017 ⁽¹⁾
		(restated, unaudited)
	(£m)	
Original equipment recognised at a point in time ⁽²⁾	6,647	6,129
Original equipment recognised over time ⁽³⁾	1,168	1,139
Aftermarket services recognised at a point in time ⁽²⁾	3,842	3,625
Aftermarket services recognised over time ⁽³⁾	4,018	3,818
Total customer contract revenue	15,675	14,711
Other revenue	54	36
Total revenue	15,729	14,747

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*" and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) Revenue recognised at a point in time means that the Group charges a customer for goods or services at the point of consumption, with revenue recognised at the time the goods are delivered or services are performed.
- (3) Revenue recognised over time means that the Group receives cash payments from a customer over time, but only recognises revenue on a cost incurred basis, i.e., when the product or service is delivered to the customer.

Geographical analysis

The Group's reported revenue by destination of the ultimate operation for 2018 and 2017 is shown below:

	For the year ended 31 December	
	2018	2017 ⁽¹⁾
		(restated, unaudited)
	(£m)	
United Kingdom	1,505	1,709
Germany	1,177	915
Switzerland	675	787
France	251	379
Spain	343	256
Norway	246	194
Italy	304	283
Russia	79	56
Rest of Europe	815	664
Europe	5,395	5,243
United States of America	5,041	4,279
Canada	366	313
North America	5,407	4,592
South America	351	173
Saudi Arabia	282	285
Rest of Middle East	407	734
Middle East	689	1,019
China	1,483	1,534
Singapore	452	449
Japan	365	216
South Korea	334	243
Malaysia	111	89
India	82	110
Rest of Asia	588	530
Asia	3,415	3,171
Africa	152	235
Australasia	229	205
Other	91	109
Total	15,729	14,747

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See "*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*" and Note 27 to the Group 2018 Consolidated Financial Statements.

Cost of sales and gross profit

Underlying gross profit

Underlying gross profit for 2018 and 2017 was £2,450m and £2,246m, respectively, an increase of £204m, or 9%. Underlying gross profit in the Civil Aerospace business was stable with underlying gross margins declining 50 basis points to 6.7%, reflecting progress on reducing widebody original equipment engine losses and increased spare engine volumes, offset by higher negative LTSA contract accounting adjustments. The Power Systems business's underlying gross profit increased by 11% (10% on an organic basis) to £882m, principally due to strong revenue growth offset by lower underlying gross margins principally due to product mix. The Defence business's underlying gross profit of £690m decreased by 5% (2% on an organic basis) with underlying margins modestly weaker principally due to lower original equipment combat volumes and lower margins on submarine aftermarket revenue in the year. The ITP Aero business's underlying gross profit was broadly stable at £156m.

Reported cost of sales and gross profit

Reported gross profit for 2018 and 2017 was £1,198m and £2,422m, respectively. The £1,224m, or 51%, decrease was principally a result of the same reasons as the increase of underlying gross profit, which were more than offset by exceptional programme charges of £1,123m and a goodwill impairment write-off of £155m.

Commercial and administrative costs

Underlying commercial and administrative costs

Underlying commercial and administrative costs for 2018 and 2017 were £1,161m and £1,150m, respectively. The increase was £11m, or 1% on a headline basis, however on an organic basis underlying commercial and administrative costs decreased, including a 2% reduction across the Group's Civil Aerospace, Power Systems, Defence and ITP Aero businesses.

Reported commercial and administrative costs

Reported commercial and administrative costs for 2018 and 2017 were £1,595m and £1,222m, respectively. The £373m, or 31%, increase was principally a result of the same reasons as the increase of underlying commercial and administrative costs, a one-off charge of £121m in 2018 in respect of the equalisation of pension benefits between men and women (see Note 21 to the Group 2019 Consolidated Financial Statements), and an exceptional restructuring charge of £223m in respect of the Group-wide restructuring programme announced in June 2018.

Research and development costs

Underlying R&D costs

Underlying R&D costs for 2018 and 2017 were £689m and £776m, respectively. The £87m, or 11%, decrease was principally a result of a change in the Group's capitalisation policy in the Civil Aerospace business, leading to a £188m increase in capitalisation of R&D in the Civil Aerospace business. This change more than offset an 8% increase in the self-funded cash R&D spend of the Group to £1,105m.

Reported research and development costs

Reported R&D costs for 2018 and 2017 were £768m and £843m, respectively. The £75m, or 9%, decrease was principally a result of £104m higher cash expenditure primarily driven by investment in new engine technologies in the Civil Aerospace business, specifically the UltraFan and on the Group's new business aviation engine family, higher spend on the Trent 1000 and future programmes in the Defence business. This was offset by a £151m increase in the amount of R&D capitalised in 2018 compared with 2017 and a £28m decrease in the amount amortised and impaired.

Share of results of joint ventures and associates

Underlying share of results of joint ventures and associates

Underlying share of results of joint ventures and associates for 2018 and 2017 was £32m and £4m, respectively. The £28m increase was principally driven by higher Shop Visit volumes in the Civil Aerospace business's joint venture overhaul bases, which was partially offset by the ITP Aero business no longer being reported as a joint venture.

Reported share of results of joint ventures and associates

Reported share of results of joint ventures and associates for 2018 and 2017 was £4m and £9m, respectively. The £5m, or 56%, decrease was principally driven by the profit performance of joint ventures and associates and any offsetting adjustments for intercompany trading.

Operating (loss)/profit

Underlying operating (loss)/profit

Underlying operating profit for 2018 and 2017 was £616m and £306m, respectively. The £310m, or 101% (102% on an organic basis), increase was principally a result of 20% growth in the Power Systems business's

underlying operating profit on an organic basis (to £317m), as well as a £191m improvement on an organic basis in the Civil Aerospace business, reflecting a number of factors: further progress in reducing original equipment unit losses in large engines (which decreased by 13%); higher sales of spare engines and spare parts; a £188m increase in net R&D capitalisation; partially offset by an increase in the net negative impact of LTSA contract accounting adjustments (see “—Key factors affecting the Group’s results of operations” and “—Description of principal income statement items—Revenue”), which totalled £276m (2017: £149m).

Reported operating (loss)/profit

Reported operating result for 2018 and 2017 was a loss of £1,161m and a profit of £366m, respectively. The £1,527m decrease was principally a result of the same reasons as the increase of underlying operating profit, which was more than offset by the following one-off items that occurred in 2018: an impairment charge of £155m in respect of Commercial Marine; exceptional programme charges of £1,123m; a charge of £121m in respect of the equalisation of pension benefits between men and women (see Note 21 to the Group 2019 Consolidated Financial Statements); and an exceptional restructuring charge of £223m in respect of the Group-wide restructuring programme announced in June 2018.

Gain arising on the acquisition of businesses (reported only)

Gain arising on the acquisition of businesses for 2018 and 2017 was £nil and £785m, respectively. In 2017, the Group completed the acquisition of 53.1% of shares of ITP Aero which it did not already own, which resulted in a gain of £785m. This gain comprised: (i) a bargain purchase of £303m, which arose because the fair value of the 53.1% share acquired was higher than the consideration paid; and (ii) a revaluation gain of £482m on the existing 46.9% share already held by the Group (see Note 25 to the Group 2018 Consolidated Financial Statements for further information).

Gain arising on the disposal of businesses (reported only)

Gain arising on the disposal of businesses for 2018 and 2017 was £358m and £nil, respectively, principally as a result of a gain on the sale of L’Orange of £358m recognised in 2018.

(Loss)/profit before financing and taxation (reported only)

The result before financing and taxation for 2018 and 2017 was a loss of £803m and a profit of £1,151m, respectively. The £1,954m decrease was principally a result of the reasons discussed for reported operating loss above and the gain arising on the acquisition and disposal of the businesses discussed above.

Financing income and financing costs

Underlying net financing

Underlying net financing for 2018 and 2017 was £150m and £107m, respectively. The £43m, or 40%, increase was driven in part by the inclusion of the ITP Aero business, which was acquired on 19 December 2017 and therefore not included in the Group’s 2017 financial results, as well as an increase in interest payable due to higher interest rates, the carry cost associated with pre-funding the Group’s 2019 debt maturities as part of mitigation planning in connection with the withdrawal of the UK from the EU and was partially offset by interest received on the proceeds of the L’Orange disposal.

Reported financing income and financing costs

Financing income for 2018 and 2017 was £271m and £2,911m, respectively. The £2,640m, or 91%, decrease was principally a result of a £16m higher interest receivable which was more than offset by a £2,648m decrease net fair value gain on foreign currency and commodity contracts and a £33m decrease in net foreign exchange gains.

Financing costs for 2018 and 2017 were £2,415m and £164m, respectively. The £2,251m increase was primarily a result of a £40m increase in interest payable, an increase of £2,144m in net fair value losses on foreign currency and commodity contracts, principally due to mark-to-market adjustments of derivative contracts due to exchange rate changes, and an increase in foreign exchange differences of £22m, as well as other small movements.

(Loss)/profit before taxation

Underlying (loss)/profit before taxation

Underlying profit before tax for 2018 and 2017 was £466m and £199m, respectively. The £267m, or 134%, increase was principally a result of the higher underlying operating profit delivered in 2018 as discussed above, which was partially offset by the increase in underlying financing costs.

Reported (loss)/profit before taxation

Reported result before taxation for 2018 and 2017 was a loss of £2,947m and a profit of £3,898m, respectively. The £6,845m decrease was principally a result of the factors mentioned in the above discussions of the Group's reported results.

Taxation

Underlying taxation

The Group's underlying taxation charge for 2018 and 2017 was £161m and £155m, respectively. The underlying effective tax rate was 34.5% in 2018 compared with 77.9% in 2017. The underlying tax charge did not increase in line with profits mainly due to reductions in US tax rates and the benefit of tax credits. The reduction in the 2018 underlying tax rate compared to the prior year was primarily driven by the increase in underlying profit in 2018 together with the lower US tax rate and benefit of tax credits. The rate remained high principally due to the impact of UK losses and the mix of profits arising in other countries with higher tax rates, predominantly the US and Germany.

Reported taxation

Reported taxation for 2018 and 2017 was a tax credit of £554m and a tax charge of £515m, respectively. The reported effective tax rate was 18.8% in 2018 compared with 13.2% in 2017. In 2018, the reported tax credit was higher mainly due to the exempt gain on the disposal of L'Orange. In 2017, the reported tax charge was lower mainly due to the exempt gain arising on the acquisition of the ITP Aero business and the recognition of advance corporation tax as a deferred tax asset.

(Loss)/profit for the year

Underlying (loss)/profit for the year

Underlying profit for the year for 2018 and 2017 was £305m and £44m, respectively, a £261m increase, due to the reasons discussed above.

Reported (loss)/profit for the year

Reported (loss)/profit for the year for 2018 and 2017 was a £2,393m loss and a £3,383m profit, respectively, a £5,776m decrease, due to the reasons discussed above.

Segment results of operations for 2018 and 2017

The Group's underlying revenue and underlying profit by segment for 2018 and 2017 are presented in the table below. For a reconciliation of reported underlying results to reported results, see "*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*".

The tables below show the Group's underlying results for each business as well as the Group's non-core business for the periods indicated.

	Civil Aerospace	Power Systems	Defence	ITP Aero	Non-core business ⁽¹⁾	Corporate and inter- segment	Group underlying
Year ended 31 December 2018⁽²⁾	(£m)						
Underlying revenue from sale of original equipment	3,119	2,322	1,452	666	346	(375)	7,530
Underlying revenue from aftermarket services	4,259	1,162	1,672	113	385	(54)	7,537
Total underlying revenue	7,378	3,484	3,124	779	731	(429)	15,067
Underlying gross profit	493	882	690	156	194	35	2,450
Commercial and administrative costs	(336)	(377)	(170)	(57)	(170)	(51)	(1,161)
Restructuring	(8)	(1)	(3)	(2)	(2)	—	(16)
Research and development costs	(332)	(188)	(100)	(30)	(39)	—	(689)
Share of results of joint ventures and associates	21	1	10	—	—	—	32
Underlying operating (loss)/profit	(162)	317	427	67	(17)	(16)	616

(1) Non-core business includes the Commercial Marine business disposed of on 1 April 2019, RRPD disposed of on 15 April 2019, L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy).

(2) The measures in this table are non-IFRS measures. See "Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information" for the definitions and reconciliation to the closest IFRS measures.

	Civil Aerospace	Power Systems	Defence	ITP Aero	Corporate	Non-core businesses ⁽¹⁾	Inter- segment	Group underlying
Year ended 31 December 2017⁽²⁾⁽³⁾	(restated, unaudited)							
	(£m)							
Underlying revenue from sale of original equipment	2,890	1,956	1,398	—	—	504	—	6,748
Underlying revenue from aftermarket services	3,708	1,052	1,782	—	—	381	—	6,923
Total underlying revenue	6,598	3,008	3,180	—	—	885	—	13,671
Underlying gross profit	473	797	728	—	—	248	—	2,246
Commercial and administrative costs	(362)	(350)	(188)	—	(55)	(195)	—	(1,150)
Restructuring	(11)	(1)	(4)	—	—	(2)	—	(18)
Research and development costs	(454)	(181)	(89)	—	—	(52)	—	(776)
Share of results of joint ventures and associates ⁽⁴⁾	11	(4)	7	—	—	(10)	—	4
Underlying operating (loss)/profit	(343)	261	454	—	(55)	(11)	—	306

(1) Non-core business includes Commercial Marine (held for sale from 1 June 2018), L'Orange sold on 1 June 2018 and other smaller non-core businesses.

(2) The 2017 figures have been restated for IFRS 15, an update to the provisional fair values of the ITP Aero acquisition and other adjustments. See Note 27 to the Group 2018 Consolidated Financial Statements.

(3) The measures in this table are non-IFRS measures. See "Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information" for the definitions and reconciliation to the closest IFRS measures.

(4) The elimination of transactions with joint ventures has been included in the results of joint ventures and associates, previously this was included within cost of sales. See Note 11 to the Group 2018 Consolidated Financial Statements.

Civil Aerospace

The financial performance of the Civil Aerospace business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December			Organic change ⁽³⁾
	2018	2017 ⁽¹⁾	Change	
Civil Aerospace Business Key Financial Performance ⁽²⁾	(£m except as indicated)	(restated, unaudited)	(% except as indicated)	
Order backlog (<i>in £bn</i>)	52.3	45.7	+14%	n/a
Engine deliveries (<i>number</i>)	686	683	—	—
Underlying revenue	7,378	6,598	+12%	+12%
Underlying original equipment revenue	3,119	2,890	+8%	+8%
<i>Large engine</i>	2,374	2,090	+14%	+14%
<i>Business aviation</i>	620	582	+7%	+7%
<i>V2500</i>	126	218	-42%	-42%
Underlying aftermarket services revenue	4,259	3,708	+15%	+15%
<i>Large engine</i>	2,665	2,332	+14%	+14%
<i>Business aviation</i>	466	391	+19%	+20%
<i>Regional</i>	291	278	+5%	+6%
<i>V2500</i>	836	708	+18%	+18%
Underlying gross profit	493	473	+4%	+5%
Underlying gross margin (%)	6.7%	7.2%	-50bps	-40bps
Underlying operating result	(162)	(343)	+53%	+55%
Underlying operating margin (%)	-2.2%	-5.2%	+300bps	+310bps

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) Certain measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.
- (3) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

Underlying revenue

Underlying revenue for the Civil Aerospace business for 2018 and 2017 was £7,378m and £6,598m, respectively. The £780m, or 12% (12% on an organic basis), increase was a result of growth in underlying original equipment revenue, which increased by 8% on an organic basis to £3,119m, and growth in underlying aftermarket revenue of 15% on an organic basis to £4,259m.

Underlying original equipment revenue increased principally as a result of increases in large engines (up 14% on an organic basis) driven by improved widebody engine pricing and higher sales volumes of spare engines to support the growing in-service fleet. Underlying revenue growth from increased sales of spare engines to joint ventures contributed £112m to underlying revenue growth. Large engine original equipment deliveries in 2018 included initial sales of Trent XWB-97 for the Airbus A350-1000, and Trent 7000 for the A330neo, both of which entered into service in 2018. Large engine underlying aftermarket revenue increased 14% on an organic basis to £2,665m (2017: £2,332m) driven by increased LTSA Shop Visit volumes, with major refurbishments up 19% and check & repair volumes up 60%. The growth in check and repair activity was driven by Trent 1000 part durability issues. The increase in major refurbishments reflected the Group’s maturing in-service fleet, with engines that entered service in the early part of this decade, largely Trent 700s, reaching their first refurbishment. Sales of spare parts not covered by LTSAs also increased year-on-year.

Within business aviation, underlying original equipment revenue increased by 7% on an organic basis reflecting increased demand from aircraft manufacturers. The increase of 20% on an organic basis in underlying

aftermarket revenue reflected a combination of increased servicing activity and a positive contract accounting adjustment which benefitted underlying revenue.

The increase of 7% on an organic basis in regional aviation underlying revenue was driven by higher sales of spare parts.

On the V2500, underlying original equipment revenue decreased by 42% on an organic basis, reflecting production slowdown on the Airbus A320ceo. The increase of 18% on an organic basis in V2500 underlying aftermarket revenue to £836m was driven by increased servicing and higher spare part sales together with a modest increase in the payment for EFHs.

Underlying operating result

Underlying operating loss for the Civil Aerospace business for 2018 and 2017 was £162m and £343m, respectively. The £181m (£191m on an organic basis) decrease was principally a result of underlying gross profit increasing by 5% on an organic basis to £493m with a slight deterioration in underlying gross margin by 40 basis points on an organic basis to 6.7%. Reduced installed original equipment losses, higher profit from increased spare engine sales and strong demand for time and materials activity drove increased underlying gross profit. These effects were partially offset by a material negative impact from contract accounting adjustments. Before these contract accounting adjustments the Civil Aerospace business's underlying gross margins were up 100 basis points on an organic basis.

Under long-term contract accounting, increases or decreased in revenue or cost assumptions can lead to positive or negative adjustments for profits that have already been recognised over the life of a programme to date, with particular impact from mature programmes where small changes may impact a significant portion of the profitability already recognised on the contract. In 2018, there was a net negative contract accounting impact of £276m (2017: £149m) which comprised three components: lifecycle cost benefits of £38m primarily reflecting lower servicing costs for business aviation; increased technical costs of £80m to reflect the reassessed costs of technical issues across various engine programmes, including rectifying manufacturing quality issues on Trent 900 turbine blades; and higher operational costs of £234m, reflecting the then latest information regarding future aircraft utilisation patterns and the resultant effects on Shop Visit cost, particularly with respect to mature programmes.

Self-funded R&D rose by £66m to £787m, reflecting increased investment in the new family of engines for business aviation and next generation technology, including the UltraFan demonstrator. This was more than offset by an increase in net R&D capitalisation of £188m reflecting technical maturity across a number of programmes. It also reflected the policy application change, applied from 30 June 2017, that aligns with European peers and best practice relating to the point at which the Group starts capitalising development costs to reflect current engine programmes reaching technical maturity earlier in the development cycle than has been the case historically. Overall, the expensed R&D charge decreased from £454m in 2017 to £332m in 2018. Commercial and administrative costs were 7% lower on an organic basis year-on-year reflecting reductions in headcount driven by the Group's restructuring programme. The increase in profit from joint ventures and associates to £21m (2017: £11m) reflected higher Shop Visit volumes in joint venture overhaul bases, partially offset by the ITP Aero business no longer being reported as a joint venture.

Power Systems

The financial performance of the Power Systems business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December		Change	Organic change ⁽³⁾
	2018	2017 ⁽¹⁾ (restated, unaudited)		
Power Systems Business Key Financial Performance ⁽²⁾	(£m except as indicated)	(£m except as indicated)	(% except as indicated)	
Order backlog (<i>in £bn</i>)	3.1	2.4	+29%	n/a
Underlying revenue	3,484	3,008	+16%	+15%
<i>Underlying original equipment revenue</i>	2,322	1,956	+19%	+18%
<i>Underlying aftermarket services revenue</i>	1,162	1,052	+10%	+10%
Underlying gross profit	882	797	+11%	+10%
Underlying gross margin (%)	25.3%	26.5%	-120bps	-120bps
Underlying operating profit	317	261	+21%	+20%
Underlying operating margin (%)	9.1%	8.7%	+40bps	+40bps

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) Certain measures in this table are non-IFRS measures. See “*Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information*” for the definitions and reconciliation to the closest IFRS measures.
- (3) Organic change presented for select measures only. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes*” for further information.

Underlying revenue

Underlying revenue for the Power Systems business for 2018 and 2017 was £3,484m and £3,008m, respectively. The £476m, or 16% (15% on an organic basis), increase was principally a result of underlying original equipment revenue increasing by 18% on an organic basis driven by strong demand across a broad range of end markets.

Key contributors were commodity related markets, emissions regulatory led demand in construction and agricultural sectors and increased governmental project volumes. In power generation the strong demand for diesel and gas systems was partially offset by the non-recurrence in 2018 of high levels of Chinese demand in 2017. Underlying aftermarket revenue increased by 10% on an organic basis, primarily due to improved commodity markets driving higher engine running hours and increasing demand for spare parts. The growth in major maintenance activities, in particular with ferry operators, as well as the growth in aftermarket activity in the Middle East also contributed to the growth. Strong underlying revenue growth on LTSAs reflected the Group’s earlier success in securing new contracts in rail and marine markets.

Underlying operating result

Underlying operating profit for the Power Systems business for 2018 and 2017 was £317m and £261m, respectively. The £56m, or 21% (20% on an organic basis), increase was principally a result of increased sales volumes.

Underlying gross profit rose by £78m reflecting volume growth, however, product mix changes resulted in an underlying gross margin decline of 120 basis points on an organic basis to 25.3% principally as a result of strong growth in lower-margin construction and agricultural activity. Commercial and administrative costs of £377m were 7% higher on an organic basis year-on-year, principally due to pay escalation and strategic investments. The increase of 3% on an organic basis in the Group’s R&D charge reflected increases in investment in future engine platforms and progress on the Group’s electrification strategy and automation engineering capabilities.

Defence

The financial performance of the Defence business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December		Change	Organic change ⁽³⁾
	2018	2017 ⁽¹⁾ (restated, unaudited)		
Defence Business Key Financial Performance ⁽²⁾	(£m except as indicated)	(£m except as indicated)	(% except as indicated)	
Order backlog (in £bn)	6.8	5.8	+17%	n/a
Underlying revenue	3,124	3,180	-2%	+0%
Underlying original equipment revenue	1,452	1,398	+4%	+6%
Underlying aftermarket services revenue	1,672	1,782	-6%	-4%
Underlying gross profit	690	728	-5%	-3%
Underlying gross margin (%)	22.1%	22.9%	-80bps	-80bps
Underlying operating profit	427	454	-6%	-4%
Underlying operating margin (%)	13.7%	14.3%	-60bps	-50bps

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) Certain measures in this table are non-IFRS measures. See “Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information” for the definitions and reconciliation to the closest IFRS measures.
- (3) Organic change presented for select measures only. See “Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes” for further information.

Underlying revenue

Underlying revenue for the Defence business for 2018 and 2017 was £3,124m and £3,180m, respectively. The £56m, or 2% decrease (flat on an organic basis), was principally a result of an increase in underlying original equipment revenue which was 6% higher on an organic basis year-on-year, driven principally by increased demand for transport engines such as the MRTT aircraft and an original equipment contract for the UK’s Dreadnought submarine programme, and a decrease in underlying aftermarket revenue of 4% on an organic basis, as increased LTSA revenue on EJ200 and Adour were more than offset by lower underlying aftermarket revenue principally due to the phasing of work on UK submarines.

Underlying operating profit

Underlying operating profit for the Defence business for 2018 and 2017 was £427m and £454m, respectively. The £27m, or 6% (4% on an organic basis), decrease was principally a result of moderately lower underlying gross profit and an £11m increase in higher R&D spend reflecting the Group’s focus on future technology development, which was partially offset by lower commercial and administrative costs, which decreased by £18m principally as a result of actions taken across the business to manage discretionary spend.

Underlying gross profit of £690m decreased by 3% on an organic basis, driven by lower original equipment combat volumes and lower margins on a bridging contract for submarines aftermarket following the introduction of single source contract regulations. This was partially offset by increased sales of MRTT engines and improved LTSA margins driven by customer settlements and higher AE engine volume.

ITP Aero

The financial performance of the ITP Aero business on an underlying basis is summarised below for the periods presented:

	As at or for the year ended 31 December			
	2018	2017 ⁽¹⁾	Change	Organic change ⁽³⁾
		(restated, unaudited)		
ITP Aero Business Key Financial Performance ⁽²⁾	(£m except as indicated)		(% except as indicated)	
Order backlog (<i>in £bn</i>)	0.9	1.1	-18%	n/a
Underlying revenue	779	725	+7%	+6%
<i>Underlying original equipment revenue</i>	666	554	+20%	+19%
<i>Underlying aftermarket services revenue</i>	113	171	-34%	-35%
Underlying gross profit	156	159	-2%	-3%
Underlying gross margin (%)	20.0%	21.9%	-190bps	-200bps
Underlying operating profit	67	65	+3%	+3%
Underlying operating margin (%)	8.6%	9.0%	-40bps	-30bps

- (1) ITP Aero was acquired on 19 December 2017. The Group's stake in this business prior to the acquisition was accounted for using the equity method and a share of its profit or loss recognised in the Group's income statement. The Group held a 46.9% stake in this business prior to the acquisition and this interest was accounted for using the equity method and a share of its profit or loss recognised in the Group's income statement. The financial information for 2017 presented in this table and the discussion below presents the results of the ITP Aero business on a 100% ownership basis for comparison purposes only, as if the Group had owned 100% of ITP Aero for the whole of 2017, and such financial information is unaudited. In addition, following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15" and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) Certain measures in this table are non-IFRS measures. See "Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information" for the definitions and reconciliation to the closest IFRS measures.
- (3) Organic change presented for select measures only. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Organic changes" for further information.

Underlying revenue⁽¹⁾

Underlying revenue for the ITP Aero business for 2018 and 2017 was £779m and £725m, respectively. The £54m, or 7% (6% on an organic basis), increase was principally a result of progress in civil aerospace underlying original equipment revenue, which saw strong growth from increased volumes across Rolls-Royce and Pratt & Whitney programmes as well as improved pricing. This more than offset lower defence underlying original equipment revenue, driven by a reduction in EJ200 and TP400 delivery volumes. Underlying aftermarket revenue was lower, with weakness on certain civil aerospace programmes more than offsetting a significant improvement in defence aftermarket.

Underlying operating profit⁽¹⁾

Underlying operating profit for the ITP Aero business for 2018 and 2017 was £67m and £65m, respectively. The £2m, or 3% (3% on an organic basis), increase was principally a result of higher underlying gross margins in civil original equipment, reflecting better pricing and good progress reducing unit costs. Underlying operating profit growth was delivered despite a profit headwind from the impact of the share of Trent 1000 in-service issues that were allocated to the ITP Aero business. Underlying gross margins in defence were lower principally due to reduced EJ200 engine volumes.

- (1) ITP Aero was acquired on December 19, 2017. The Group held a 46.9% stake in this business prior to the acquisition and this interest was accounted for using the equity method and a share of its profit or loss recognised in the Group's income statement. The financial information for 2017 presented in this discussion presents the results of the ITP Aero business on a 100% ownership basis for comparison purposes only, as if the Group had owned 100% of ITP Aero for the whole of 2017, and such financial information is unaudited.

Liquidity and Capital Resources

Overview

The Group's operations are funded through operating cash flows together with various shareholders' funds, bank borrowings, bonds and notes. The Board's objective is to retain sufficient financial investments and committed borrowing facilities to ensure that the Group can both meet its medium-term operational commitments and cope with unforeseen obligations and opportunities.

A strong balance sheet is required for the markets in which the Group operates and strengthening its balance sheet remains the Group's primary capital allocation priority. The Group views this as particularly important due to its long-term customer relationships and the cyclical nature of civil aviation. The Group has an ambition to return to a net cash position in the base case over the next few years and to secure an investment grade credit rating in the medium term.

Funding and liquidity

The Group's capital structure reflects the judgement of the Board as to the appropriate balance of funding required. The Group seeks to hold cash and short-term investments which, together with committed borrowing facilities, enable it to manage its liquidity risk. As at 30 June 2020, the Group had aggregate liquidity of £6.1bn, including cash and cash equivalents of £4.2bn and undrawn borrowing facilities of £1.9bn. As at 31 December 2019, the Group had aggregate liquidity of £6.9bn, including cash and cash equivalents of £4.4bn and undrawn borrowing facilities of £2.5bn.

In March 2020, the Group utilised the second and final extension option to extend the maturity of its £2.5bn committed bank borrowing facility from 2024 to 2025.

Following the onset of the COVID-19 pandemic in early 2020, the Group took immediate action to increase available liquidity. In March 2020, the Group drew down its £2.5bn Revolving Credit Facility in full and in April 2020, the Group entered into a £1.9bn Liquidity Facility that matures in October 2021. The Liquidity Facility does not contain any extension options and contains a mandatory prepayment and cancellation clause in case the Group receives proceeds from any capital markets offering.

The Group is also participating in the Covid Corporate Financing Facility ("CCFF"), a scheme whereby the Bank of England will purchase pound sterling-denominated commercial paper, with a maturity of one week to twelve months. The Group issued £300m of commercial paper under the CCFF scheme on 27 April 2020, with a maturity date of 17 March 2021. The funding received under the CCFF scheme will be used to help fund the Group's ongoing business operations.

On 20 August 2020, Rolls-Royce plc entered into the Term Loan Facility Agreement between, among others, Rolls-Royce plc (as borrower), the Company (as guarantor), a syndicate of banks (as original lenders) and J.P. Morgan Europe Limited (as agent). This facility is currently undrawn. See "*Description of Certain Other Indebtedness—Financing arrangements—Term Loan Facility*" for further information.

In addition, UK Export Finance has indicated that it would, in principle, support an extension of its 80% guarantee of the Group's existing £2bn five year Term Loan Facility to support an increase in the loan amount of up to £1bn. This is subject to completion of the Rights Issue, agreement of terms with lenders and approval of those terms by UK Export Finance and HM Treasury, and there is therefore no guarantee that this increase will take place. As the aggregate gross proceeds from this Offering and the concurrent offering of the Eurobonds exceed the Guarantor's initial minimum target size of £1bn, the Guarantor may decide not to seek to utilise all of the potential £1bn increase in the Term Loan Facility.

On 29 September 2020, Rolls-Royce plc entered into the Bridge Facility Mandate Letter with BNP Paribas, London Branch, Citibank, N.A., London Branch and HSBC Bank plc. The Bridge Facility Mandate Letter provides that, subject to the execution of the Bridge Facility Agreement, completion of the Rights Issue and cancellation in full of the commitments under the £1.9bn Liquidity Facility, the Bridge Underwriters will make available to Rolls-Royce plc, as borrower, a pound sterling term loan facility of up to £1bn, with a maturity date 24 months from the date of the Bridge Facility Agreement. See "*Description of Certain Other Indebtedness—Financing arrangements—Bridge Facility Mandate Letter*" for further information.

The Civil Aerospace business operates as a negative working capital business as a result of a combination of various factors. See "*Description of the Group and Its Business—Receivables and payables*" for more details. As

a result, the reduced level of activity in the civil aerospace market during H1 2020 as a consequence of the COVID-19 pandemic and government restrictions imposed in response has caused a significant cash outflow from the Civil Aerospace business.

The Group has historically undertaken the sale of trade receivables, without recourse, to banks (commonly known as invoice discounting or factoring). This activity has previously been used to normalise customer receipts as certain aerospace customers have extended their payment terms. This in turn has helped normalise Group cash flows in line with physical delivery volumes. During H1 2020, invoice discounting has substantially reduced. As at 30 June 2020, £19m was drawn under factoring facilities, a decrease of £1,098m compared to December 2019, representing cash collected before it was contractually due from the customer. Trade receivables factored are generally due within the following quarter.

As part of the Group's overall financing strategy and to ensure that the Group maintains what the Board considers to be the appropriate capital structure in order to facilitate its long-term success, the Group is planning to raise additional debt finance through this Offering and the concurrent offering of the Eurobonds, intended to raise gross proceeds of at least £1bn.

Borrowings and lease liabilities

Borrowings are funded in various currencies using derivatives where appropriate to achieve a required currency and interest rate profile. The maturity profile of the borrowing facilities is regularly reviewed to seek that refinancing levels are manageable in the context of the business and market conditions.

The table below sets out the Group's borrowings as at the dates indicated:

	Current		Non-Current		Total	
	As at		As at		As at	
	30 June	31 December	30 June	31 December	30 June	31 December
	2020	2019	2020	2019	2020	2019
	(unaudited)		(unaudited)		(unaudited)	
			(£m)			
Unsecured						
Overdrafts	8	8	—	—	8	8
Bank Loans	18	27	2,516	16	2,534	43
2.375% Notes 2020 US\$500m ⁽¹⁾	409	378	—	—	409	378
2.125% Notes 2021 €750m ⁽¹⁾	698	—	—	655	698	655
0.875% Notes 2024 €550m ⁽²⁾	—	—	519	481	519	481
3.625% Notes 2025 US\$1,000m ⁽²⁾	—	—	906	781	906	781
3.375% Notes 2026 £375m ⁽³⁾	—	—	423	410	423	410
1.625% Notes 2028 €550m ⁽²⁾	—	—	553	501	553	501
Total loan notes	1,107	378	2,401	2,828	3,508	3,206
CCFF commercial paper ⁽⁴⁾	299	—	—	—	299	—
Other loans ⁽⁵⁾	10	22	68	52	78	74
Lease Liabilities						
Lease liabilities – property	51	50	440	473	491	523
Lease liabilities – aero engines	254	261	1,488	1,463	1,742	1,724
Lease liabilities – equipment	29	29	75	78	104	107
Total lease liabilities	334	340	2,003	2,014	2,337	2,354
Total	1,776	775	6,988	4,910	8,764	5,685

(1) These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of pound sterling interest, which form a fair value hedge.

(2) These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of pound sterling interest, which form a fair value hedge. They are also subject to interest rate swap agreements under which the Group has undertaken to pay fixed rates of interest, which are classified as fair value through profit and loss.

(3) These notes are the subject of interest rate swap agreements under which the Group has undertaken to pay floating rates of interest, which form a fair value hedge. They are also subject to interest rate swap agreements under which the Group has undertaken to pay fixed rates of interest, which are classified as fair value through profit and loss.

- (4) On 27 April 2020, the Group issued commercial paper of £300m to the COVID-19 Corporate Financing Facility (CCFF), a fund operated by the Bank of England on behalf of HM Treasury. The borrowings are repayable on 17 March 2021 and are held on the balance sheet at amortised cost.
- (5) Other loans of £10m (2019: £8m) are held by entities classified as joint operations. The loans are disclosed after adjustments have been made on consolidation to eliminate the extent of the Group's interest in the entity.

The table below sets out the maturity profile of the Group's debt obligations as at 30 June 2020:

	Within 1 year	Between 1 year and 2 years	Between 2 years and 5 years (unaudited) (£m)	After 5 years	Total
At 30 June 2020					
Overdrafts	8	—	—	—	8
Bank loans	18	6	2,510	—	2,534
2.375% Notes 2020 US\$500m	409	—	—	—	409
2.125% Notes 2021 €750m	698	—	—	—	698
0.875% Notes 2024 €550m	—	—	519	—	519
3.625% Notes 2025 US\$1,000m	—	—	—	906	906
3.375% Notes 2026 £375m	—	—	—	423	423
1.625% Notes 2028 €550m	—	—	—	553	553
CCFF commercial paper	299	—	—	—	299
Other loans	10	29	26	13	78
Total unsecured	1,442	35	3,055	1,895	6,427

£435m of drawn borrowings have matured or will mature in 2020 (£775m including lease liabilities). Debt maturities of approximately £3.2bn will take place between 30 June 2020 and the end of 2021, comprising the £1.9bn Liquidity Facility (which is currently undrawn), £0.3bn of CCFF commercial paper, and two bonds of US\$500m and €750m, respectively.

During 2019, the Group repaid £1.1bn of borrowings (excluding lease liabilities) (including £858m of drawn borrowings which matured during the year).

The Group conducts some of its business through a number of joint ventures. Certain joint ventures incur debt at the joint venture level. A major proportion of the debt of these joint ventures is secured on the assets of the respective companies and is non-recourse to the Group.

Subject to Board and/or shareholder approval, the Company issues C Shares twice a year as an alternative to paying a cash dividend, the interim payment in January 2020 in respect of the year ended 31 December 2019 being the last payment made. C Shares in respect of a year are issued in the following year, if applicable. Shareholders are able to redeem any number of their C Shares for cash. Any C Shares retained attract a dividend of 75% of LIBOR on the 0.1p nominal value of each share, paid on a twice-yearly basis, and have limited voting rights. The Company has the option to compulsorily redeem the C Shares, at any time, if the aggregate number of C Shares in issue is less than 10% of the aggregate number of C Shares issued, or on the acquisition or capital restructuring of the Company. As at 30 June 2020, 28,993,228,557 C Shares were outstanding.

See "Description of Certain Other Indebtedness—Financing arrangements" for a discussion of the Group's key financing contracts.

Net funds/(debt)

Net funds/(debt) is defined as the sum of cash and cash equivalents plus short-term investments, less non-current borrowings and current borrowings, finance leases (2018 and earlier) and lease liabilities (2019 and 30 June 2020), and including the fair value of swaps hedging fixed rate borrowings at period end.

As at 30 June 2020 and 31 December 2019, 2018 and 2017 the Group had net debt of £1,732m, net funds of £1,361m, net funds of £611m and net debt of £305m, respectively, in each case excluding lease liabilities. The table below presents the Group's net funds as at 31 December 2019 and 30 June 2020:

Group Net Funds	As at 30 June 2020 (unaudited)	As at 31 December 2019
	(£m)	
Cash at bank and in hand	971	825
Money market funds	1,051	1,095
Short-term deposits	2,217	2,523
Cash and cash equivalents (per balance sheet)	4,239	4,443
Overdrafts	(8)	(8)
Cash and cash equivalents (per cash flows statement)	4,231	4,435
Short-term investments	—	6
Other current borrowings	(1,434)	(427)
Non-current borrowings	(4,985)	(2,896)
Lease liabilities	(2,337)	(2,354)
Financial liabilities	(8,756)	(5,677)
Net(debt) excluding fair value of swaps	(4,525)	(1,236)
Fair value of swaps hedging fixed rate borrowings ⁽¹⁾	456	243
Net (debt)	(4,069)	(993)
<i>Net (debt)/ funds (excluding lease liabilities)</i>	<i>(1,732)</i>	<i>1,361</i>

(1) All interest rate swaps are entered into for risk management purposes, although these may not be designated into hedging relationships for accounting purposes. See Note 19 to the Group 2019 Consolidated Financial Statements.

Cash and cash equivalents include cash at bank and in hand, investments in money-market funds and short-term deposits with a maturity of three months or less on inception. The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement. Cash and cash equivalents as at 30 June 2020 and 31 December 2019 included £42m and £34m (2018: £31m) of restricted cash, respectively, that is not available for general use by the Group. This balance primarily relates to cash held in non-wholly owned subsidiaries and joint arrangements. See “*Risk Factors—Risks Relating to the Group’s Business—The Group’s ability to refinance its debt, raise additional debt financing and/or to continue to transact with its customers and suppliers could be constrained by the effects of an actual or potential credit rating downgrade, as well as prevailing market conditions*”.

Working Capital

In the Rights Issue prospectus dated 1 October 2020, in accordance with the requirements for such document, we stated that:

“In the opinion of the Company, taking into account its available debt facilities and the net proceeds of the Rights Issue, the working capital available to the Group is sufficient for its present requirements (that is, for at least 12 months following the date of this document). For the avoidance of doubt, this assessment of the Group’s working capital does not include the proceeds of [this Offering and the concurrent offering of the Eurobonds] or from an Bridge Facility or potential increase in the size of the Term Loan Facility.

In making the above Working Capital Statement, the Company, as required by the ESMA Recommendations, has assessed whether there is sufficient margin or headroom to cover a “reasonable worst case” scenario. The Company’s view of that scenario includes certain assumptions regarding the potential impact on the Group of the COVID-19 pandemic. Given the inherent uncertainty as to the severity, extent and duration of the disruption caused by the COVID-19 pandemic and therefore its ultimate impact on the Group, the Company believes that it is appropriate to provide additional disclosure of the key COVID-19-related assumptions underpinning this scenario, on which the Working Capital Statement is dependent.

The “reasonable worst case” scenario is based in principle on a general assumption that there will be a “second wave” of COVID-19 infections that results in the re-introduction of stringent lockdown restrictions

(including restrictions on travel between countries) across many parts of the world in November 2020 for three months, with a gradual recovery of the global economy and the Group taking place once those restrictions are lifted. The resulting key underlying COVID-19 specific assumptions included in the modelling for that scenario in relation to particular businesses are set out below.

Civil Aerospace

The impact of the COVID-19 pandemic will significantly affect EFHs, engine deliveries and Shop Visits across the Civil Aerospace division.

- Flying hours of widebody aircraft using the Civil Aerospace business's engines¹ will decrease by 64% in 2020 (compared to 2019), before increasing by 28% in 2021 (compared to 2020). The equivalent metric for H1 2022 is expected to be 20% higher than in H2 2021.
- Flying hours of business aviation and regional aircraft using the Civil Aerospace business's engines¹ will decrease by 37% in 2020 (compared to 2019), before increasing by 1% in 2021 (compared to 2020). The equivalent metric for H1 2022 is expected to be 32% higher than in H2 2021.
- Widebody OE engine deliveries, which are supplied for use in new aircraft, will decrease by 48% in 2020 (compared to 2019), and decrease further by 47% in 2021 (compared to 2020). The equivalent metric for H1 2022 is expected to be 3% lower than in H2 2021.
- Widebody spare engine deliveries, which are supplied to replace engines of aircraft already in operation, will decrease by 65% in 2020 (compared to 2019), and decrease further by 41% in 2021 (compared to 2020). The equivalent metric for H1 2022 is expected to be 3% lower than in H2 2021.
- Business aviation engine deliveries will decrease by 18% in 2020 (compared to 2019), and decrease further by 33% in 2021 (compared to 2020). The equivalent metric for H1 2022 is expected to be 12% higher than in H2 2021.
- The number of Shop Visits carried out will decrease by 16% in 2020 (compared to 2019), and decrease further by 7% in 2021 (compared to 2020). The equivalent metric for H1 2022 is expected to be 1% lower than in H2 2021.

Power Systems

The impact of the COVID-19 pandemic impact on general economic conditions (as indicated by changes in GDP or other macro-economic growth rates and oil price fluctuations) will impact customer demand across the Power Systems business, albeit to different extents in each of Power Systems' end markets.

- Underlying revenue from the marine segment of the Power Systems business will decrease by 29% in 2020 (compared to 2019), before decreasing by a further 9% in 2021 (compared to 2020). This will be driven, in particular, by changes in demand in the yacht and commercial vessel end markets resulting mainly from shipyard shutdowns due to the COVID-19 pandemic. The equivalent metric for H1 2022 is expected to be 10% lower than in H2 2021.
- Underlying revenue from the power generation segment of the Power Systems business will decrease by 19% in 2020 (compared to 2019), before increasing by 1% in 2021 (compared to 2020). This will be driven, in particular, by delays to data centre construction activities resulting from the COVID-19 pandemic. The equivalent metric for H1 2022 is expected to be 17% lower than in H2 2021.
- Underlying revenue from the industrial segment of the Power Systems business, which serves end markets including construction, agriculture, rail, oil & gas and mining, will decrease by 32% in 2020 (compared to 2019), before decreasing by a further 17% in 2021 (compared to 2020). This overall decline will be driven, in particular, by reduced end market demand resulting from lower levels of investment in oil & gas markets due to commodity prices being lower than before the COVID-19 pandemic. The equivalent metric for H1 2022 is expected to be 12% lower than in H2 2021.

¹ The majority of the Civil Aerospace business's LTSAs in relation to ongoing support and maintenance of its engines generate revenue by charging customers on a per flying hour basis.

- Underlying revenue from the aftersales segment, which comprises spare parts, repair and servicing activities, will decrease by 25% in 2020 (compared to 2019) driven, in particular, by lower equipment utilisation levels and mobility restrictions on service engineers. It will then increase by 32% in 2021 (compared to 2020) driven, in particular, by recovery of equipment utilisation and catch up of outstanding maintenance activities. The equivalent metric for H1 2022 is expected to be 18% lower than in H2 2021.

Defence

Trading in the Defence business will remain substantially unaffected by the COVID-19 pandemic in 2020, 2021 and H1 2022, with no material changes to aggregate levels of customer demand or to customers' trading terms as a result of the COVID-19 pandemic.

The Working Capital Statement in this document has been prepared in accordance with the ESMA Recommendations relating to working capital statements, and the technical supplement to the FCA Statement of Policy published on 8 April 2020 relating to the COVID-19 crisis."

Cash flow

The table below summarises the Group's change in net funds, trading cash flow and free cash flow for the periods presented:

	Six months ended 30 June			Year ended 31 December		
	2020	2019 ^(*)	Change	2019	2018	Change
	(unaudited)					
Summary Funds Flow Statement ⁽¹⁾			(£m)			
Underlying operating (loss)/profit	(1,669)	203	(1,872)	808	616	192
Depreciation and amortisation	499	511	(12)	1,068	756	312
Lease payments (capital plus interest)	(190)	(184)	(6)	(319)	—	(319)
Additions of intangible assets	(176)	(274)	98	(591)	(680)	89
Purchases of property, plant and equipment	(221)	(348)	127	(747)	(905)	158
Change in inventory	(301)	(433)	132	(43)	(616)	573
Movement on receivables/payables/ contract balances (excluding Civil LTSA)	(1,521)	391	(1,912)	574	1,197	(623)
Underlying movement in Civil Aerospace LTSA contract balances	788	128	660	754	679	75
Movement on provisions	132	(271)	403	(506)	(242)	(264)
Net interest received and paid	(26)	(45)	19	(73)	(70)	(3)
Cash flows on settlement of excess foreign exchange contracts	(88)	—	(88)	—	—	—
Cash flows on financial instruments net of realised losses included in operating profit	(53)	(33)	(20)	—	—	—
Trent 1000 insurance receipt	—	—	—	173	—	173
Other	(35)	25	(60)	(41)	22	(63)
Trading cash flow	(2,861)	(330)	(2,531)	1,057	757	300
Contributions to defined benefit pensions in excess of underlying PBT charge	94	1	93	(9)	59	(68)
Taxation paid	(34)	(100)	66	(175)	(248)	73
Group free cash flow	(2,801)	(429)	(2,372)	873	568	305
Shareholder payments	(90)	(85)	(5)	(224)	(219)	(5)
Acquisitions of businesses	(8)	—	(8)	(43)	—	(43)
Disposal of businesses	10	458	(448)	453	573	(120)
Exceptional group restructuring	(87)	(66)	(21)	(216)	(70)	(146)
Penalties paid on agreements with investigating bodies	(135)	(102)	(33)	(102)	—	(102)

	Six months ended 30 June		Change	Year ended 31 December		Change
	2020	2019 ^(*)		2019	2018	
	(unaudited)					
Summary Funds Flow Statement ⁽¹⁾			(£m)			
Difference in fair values of derivative contracts held for financing	(89)	(15)	(74)	—	—	—
Payments of lease principal less new leases and other non-cash adjustments to lease liabilities	167	53	114	123	—	123
Foreign exchange	(2)	(29)	27	(98)	54	(152)
Pension fund contribution	—	—	—	(35)	—	(35)
Reclassification of other financial liabilities to borrowings	—	—	—	(79)	—	(79)
Other ⁽⁴⁾	(41)	(6)	(35)	(8)	10	(18)
IFRS 16 impact (non cash)	—	—	—	(123)	—	(123)
Change in net (debt)/funds	(3,076)	(221)	(2,855)	521	916	(315)

(*) The comparative information for the period ended 30 June 2019 has been re-presented to be on a comparable basis with the presentation adopted for the period ended 30 June 2020. There is no change to trading or Group free cash flow. In summary, items previously included in 'other' within 'trading cash flow', which related to 'movements in receivables/payables' or movements in 'contract balances' or movements in 'lease payments' have been included within those items. In addition, the presentation of 'core' is consistent with that described in Note 2 to the Group Consolidated Interim Financial Statements.

- (1) The derivation of the summary funds flow statement above from the reported cash flow statement is included in Note 28 to the Group 2019 Consolidated Financial Statements.
- (2) Disposed entities include Commercial Marine and RRPD in 2019 and both of these plus L'Orange in 2018.
- (3) Non-core businesses include the former Energy businesses not sold to Siemens and North America Civil Nuclear business.
- (4) Largely relates to the timing of cash flows on a prior period disposal where the Group retains the responsibility for collecting cash before passing it on to the acquirer.

Free cash flow is a measure of financial performance reflecting cash flow available for distribution among stakeholders funding the business (including debt holders and shareholders). Free cash flow is calculated as trading cash flow less recurring tax and post-employment benefit expenses. It excludes payments made to shareholders, amounts spent (or received) on business acquisitions, SFO payments and foreign exchange changes on net funds. The Board considers that free cash flow reflects cash generated from the Group's underlying trading.

The Group free cash flow in H1 2020 and H1 2019 was an outflow of £2.8bn and an outflow of £429m respectively, reflecting the reduction in engine flying hour receipts and a substantial working capital related outflow that included a cessation of invoice discounting.

Net debt (including lease liabilities) increased from £993m on 31 December 2019 to £4,069m at 30 June 2020. The change is primarily driven by the free cash outflow of £2,801m.

Expenditure on intangible assets of £176m was incurred in H1 2020 (H1 2019: £274m), including £152m of R&D capitalisation (H1 2019: £224m). The reduction in R&D capitalisation was due to the increasing maturity of the new Civil Aerospace engine programmes, with R&D on the Trent 1000 and Pearl 15 engines no longer falling within the capitalisation window. Capital expenditure on property, plant and equipment decreased by £127m to £221m in H1 2020 (H1 2019: £348m) as a result of cash saving measures taken in response to the impact of the COVID-19 pandemic. Inventory increased by £301m in H1 2020 (H1 2019: £433m increase), driven by the Civil Aerospace business due to an increase in the number of assembled engines held in inventory reflecting the reduction in aircraft manufacturer delivery schedules and inventory built to support planned spare engine sales in the second half of 2020.

Receivables/payables increased by £1,521m in H1 2020 (H1 2019: £391m decrease), primarily reflecting a £1.1bn increase in trade receivables driven by cessation of receivables discounting during H1 2020. The remaining £0.4bn was driven primarily by a reduction in trade payables in the Civil Aerospace business,

including a reduction in the amounts owed to joint ventures and RRSPs, largely due to the significant reduction in manufacturing volumes as a result of the COVID-19 pandemic. In addition, there was a modest impact from lower original equipment deposits due to the reduction in large engine delivery levels.

The Civil Aerospace business's net LTSA balance represents deferred revenue and is a core part of the Group's business model where it receives payments from its customers in respect of its long-term service and overhaul agreements. In H1 2020, due to the low levels of flying during the period as a result of the COVID-19 pandemic, there was an underlying £788m reduction in the net civil aerospace LTSA balance. This was driven by widebody engines in particular, where cash receipts fell due to the lower flying activity, but Shop Visit volumes increased modestly year-on-year, driving revenue recognition. However, this underlying change was more than offset by the impact of contract accounting adjustments due to lower EFHs and an increased risk of parked aircraft and retirements in the medium term due to the COVID-19 pandemic.

The movement in provisions of £132m in H1 2020 (H1 2019: £(271)m) principally reflected a growth in the provision balance, with Trent 1000 provision utilisation during the period more than offset by new provisions charges taken in underlying operating profit, largely as a result of the COVID-19 pandemic. The new provisions taken include a £309m impact from the up-front recognition of future losses on loss-making Civil Aerospace contracts.

Net interest paid of £26m in H1 2020 was £19m lower than the £45m in H1 2019. This lower level of net interest paid is largely the result of the £1.1bn reduction in total unsecured borrowings in 2019.

In H1 2020, cash pension contributions were £94m lower than the pensions charge on the income statement (H1 2019: £1m lower). This £93m year-on-year movement was largely driven by timing, reflecting some early payments made by the Group during the second half of 2019 and the deferral of some payments into the second half of 2020.

The lower cash tax in H1 2020 of £34m (H1 2019: £100m) was mainly due to US tax payments being deferred to the second half of 2020 under COVID-19 tax measures.

In 2019, there was a £395m reduction in net funds to £521m in 2019 from £916m in 2018, compared to an increase in net funds of £996m in 2018 from net debt of £80m in 2017, principally as a result of the following factors.

An increase of £312m in depreciation and amortisation to £1,068m was largely due to an additional charge relating to right-of-use assets following the adoption of IFRS 16 from 1 January 2019. Lease payments of £319m in 2019 reflect the cash cost of leases in 2019. In 2018, prior to the adoption of IFRS 16, the equivalent lease payments were reflected within underlying operating profit. Under IFRS 16 the depreciation charge is recorded in underlying operating profit.

Expenditure on intangible assets of £591m was incurred in 2019, which included £481m of R&D capitalisation (2018: £498m), largely reflecting ongoing investment in the Civil Aerospace business's programmes including the Trent 7000, Trent XWB and Pearl engine programmes. Capital expenditure on property, plant and equipment decreased by £158m to £747m in 2019 (2018: £905m) principally due to several capacity and modernisation programmes nearing completion in 2018. Spend in 2019 reflected the Group's ongoing investment in manufacturing capability, projects to modernise its facilities, and spare engines to support its growing in-service fleet in the Civil Aerospace business. Inventory increased by £43m (2018: £616m) in 2019 principally due to volume growth in the Civil Aerospace and Power Systems businesses, with a significant improvement in the second half following a £433m increase in the first half. This inventory position was driven by a high level of assembled engines and aftermarket parts held in the Civil Aerospace business, as well as growth in the Power Systems business principally due to programme delays, production relocation projects, and product mix. Higher delivery volumes and greater focus on supply chain management in the second half of the year drove a significant reduction in inventory, with a strong improvement in the Civil Aerospace business in particular.

Receivables/payables decreased by £574m in 2019, a significant reduction year-on-year, reflecting higher trade and other payables principally due to increased trading activity led by the Civil Aerospace business; a number of customer deposits, notably in the Defence business driven by strong order intake, and an increase in trade and other receivables, which reflected volume-related growth partially offset by actions taken to reduce overdue customer receivables.

The Civil Aerospace business's net LTSA balance represents deferred revenue and is a core part of the Group's business model where it receives payments from its customers in respect of its long-term service and overhaul agreements. In 2019, the LTSA net balance increased by £754m (excluding FX); the opening balance was £4,487m and the closing balance was £5,698m. This movement included a £100m increase driven by negative contract accounting adjustments to revenue (2018: £303m). The underlying change, net of these contract accounting adjustments, was £654m. This reflected invoiced engine flying hour receipts in excess of revenue traded together with customer deposits received in the year.

The movement in provisions of £506m in 2019 largely included utilisation of the Trent 1000 exceptional provision. The remainder primarily covered cash costs from onerous contracts and restructuring activity.

Pension cash contributions were in line with the profit and loss charge in 2019. There was a £68m year-on-year movement, reflecting the non-recurrence of a 2018 benefit from changing to quarterly payments.

Acquisitions and disposals in 2019 included the completion of the disposals of Commercial Marine and RRPD with combined net proceeds of £453m. The £573m cash inflow in 2018 related to the disposal of the L'Orange business, previously within the Power Systems business. Costs of £43m were incurred in 2019 relating to the acquisition of Siemens' eAircraft business.

Following the agreements reached with investigating authorities in January 2017, a payment schedule for financial penalties was established. No payments were due in 2018 and a payment of £102m was made in 2019. In 2020 and 2021, £130m and £148m (plus interest) are due respectively.

The table below shows the Group's consolidated cash flow statement for the periods presented:

	Six months ended 30 June			Year ended 31 December	
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)				(restated, unaudited)
	(£m)				
Reconciliation of cash flows from operating activities					
Operating (loss)/profit ⁽²⁾	(1,769)	83	(852)	(1,161)	366
(Profit)/loss on disposal of property, plant and equipment	19	—	(13)	11	11
Share of results of joint ventures and associates	(73)	(45)	(104)	(4)	(9)
Dividends received from joint ventures and associates	28	36	92	105	79
Amortisation and impairment of intangible assets ⁽³⁾	550	153	372	565	343
Depreciation and impairment of property, plant and equipment ⁽³⁾	495	229	532	521	450
Depreciation and impairment of right-of-use assets	513	200	411	—	—
Adjustment of return conditions in lease liabilities	(42)	—	—	—	—
Impairment of and other movements on investments	19	—	1	6	14
(Decrease)/increase in provisions	(130)	(172)	1,108	1,003	(1)
Increase in inventories	(301)	(433)	(43)	(616)	(194)
Movement in trade receivables/payables and other assets/ liabilities	(1,925)	215	73	1,263	229
Movement in contract assets/liabilities	642	473	1,737	1,307	1,329
Penalties paid on agreements with investigating bodies . . .	(135)	(102)	(102)	—	(286)
Cash flows on other financial assets and liabilities held for operating purposes	(35)	(314)	(757)	(732)	(664)
Interest received	12	—	31	—	—
Net defined benefit post-retirement (credit)/cost recognised in (loss)/profit before financing	(116)	107	222	352	240
Cash funding of defined benefit post-retirement schemes	(38)	(106)	(266)	(181)	(249)
Share-based payments	1	20	30	35	34
Other	—	(1)	—	—	—
Net cash (outflow)/inflow from operating activities before taxation	(2,285)	343	2,472	2,474	1,692
Taxation paid	(34)	(100)	(175)	(248)	(180)
Net cash (outflow)/inflow from operating activities⁽⁴⁾	(2,319)	243	2,297	2,226	1,512

	Six months ended 30 June			Year ended 31 December	
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)			(restated, unaudited)	
	(£m)				
Cash flows from investing activities					
Net movement in unlisted investments	(14)	2	3	(6)	(4)
Additions of intangible assets	(204)	(283)	(640)	(680)	(647)
Disposals of intangible assets	10	2	13	13	7
Purchases of property, plant and equipment	(226)	(349)	(747)	(905)	(730)
Disposals of property, plant and equipment	1	7	50	43	4
Disposals of right-of-use assets	7	—	—	—	—
Acquisitions of businesses	(8)	—	(43)	—	263
Disposals of businesses	10	458	453	573	—
Movement in investments in joint ventures and associates and other movements on investments	(4)	(2)	(8)	(13)	(47)
Other/Disposals of joint ventures	—	(1)	1	—	—
Net cash outflow from investing activities	(428)	(166)	(918)	(975)	(1,154)
Cash flows from financing activities					
Repayment of loans	(21)	(585)	(1,136)	(37)	(160)
Proceeds from increase in loans ⁽⁵⁾	2,807	46	22	1,054	309
Capital element of lease payments (2018: capital element of finance lease payments)	(149)	(140)	(271)	(23)	(6)
Net cash flow from increase/(decrease) in borrowings and leases	2,637	(679)	(1,385)	994	143
Interest received	—	19	—	27	14
Interest paid	(38)	(64)	(104)	(92)	(64)
Interest element of lease payments (2018: interest element of finance lease payments)	(39)	(44)	(88)	(5)	(3)
Cash flows on settlement of excess foreign exchange contract ⁽⁶⁾	(88)	—	—	—	—
Decrease/(increase) in short-term investments	6	6	—	(3)	—
Issue of ordinary shares (net of expenses)	—	1	24	1	21
Purchase of ordinary shares	(1)	(15)	(15)	(1)	(24)
Dividends to NCI	—	—	(4)	(3)	—
Other transactions in ordinary shares	—	21	—	—	—
Redemption of C Shares	(90)	(85)	(220)	(216)	(214)
Net cash inflow/(outflow) from financing activities	2,387	(840)	(1,792)	702	(127)
Change in cash and cash equivalents	(360)	(763)	(413)	1,953	231
Cash and cash equivalents at beginning of period	4,435	4,952	4,952	2,933	2,771
Exchange gains/(losses) on cash and cash equivalents	156	(7)	(104)	66	(69)
Cash and cash equivalents at end of period⁽⁷⁾	4,231	4,182	4,435	4,952	2,933

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. This does not affect cash flows, but has changed the reconciliation of operating profit to net cash inflow from operating activities. See “*Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15*” and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) During H1 2020, the Group received £17m from the British Government as part of the UK furlough scheme. This was recognised within operating loss.
- (3) In 2019, an impairment of £58m in respect of Bergen Engines was included in these lines (2018: £160m in respect of Commercial Marine).
- (4) Operating cash flow includes Trent 1000 insurance receipts of £173m.

- (5) Includes drawdown of the £2.5bn Revolving Credit Facility and cash received from the COVID-19 Corporate Financing Facility (CCFF). See Note 16 to the Group Consolidated Interim Financial Statements for further details.
- (6) The impact of COVID-19 on the aerospace industry resulted in a deterioration in net US dollar receipts across the Group leading to a net US dollar outflow in the period. During H1 2020, the Group incurred a cash outflow of £88m as a result of US dollar purchasing required to settle US\$476m of foreign exchange contracts that were originally in place to sell US dollar receipts during H1 2020. See Note 2 and Note 4 to the Group Consolidated Interim Financial Statements.
- (7) The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement.

Net cash flows from operating activities

Net cash inflows from operating activities in 2019, 2018 and 2017 were £2,297m, £2,226m and £1,512m, respectively. The 3% decrease from 2018 to 2019 principally resulted from operating loss (£309m), net joint venture impact (£113m), amortisation of intangible assets (£193m), payment of financial penalties (£102m), movements on receivables/payables (£1,190m), net pension impact (£215m) and taxation paid (£73m), offset by amortisation of right-of use assets (£411m – adoption of IFRS 16 in 2019), movements in provisions (£105m), movements in inventories (£573m) and movements in contract assets and liabilities (£430m). The 47% increase from 2017 to 2018 principally resulted from amortisation of intangible assets and property plant and equipment (£293m), provisions (£1,004m), movements in receivables/payables (£1,034m), financial penalties paid (£286m) and net pension impact (£180m), offset by a reduction in operating profit (£1,527m), movements in inventories (£422m) and taxation paid (£68m). Net cash inflows/outflows from operating activities for H1 2020 and H1 2019 were an outflow of £2,319m and an inflow of £243m, respectively. The decrease from H1 2019 to H1 2020 principally resulted from the impact of COVID-19 and the significant reduction in engine flying hour receipts during H1 2020.

Net cash flows from investing activities

Net cash outflows from investing activities in 2019, 2018 and 2017 were £918m, £975m and £1,154m, respectively. The 6% decrease from 2018 to 2019 principally resulted from lower additions of intangible assets and property plant and equipment in 2019 compared with 2018 (£198m) offset by movements in acquisitions and disposals of businesses (£163m). The 16% decrease from 2017 to 2018 principally resulted from acquisitions and disposals of businesses (£310m) offset by purchases of intangible assets and property plant and equipment (£208m). Net cash inflows/outflows from investing activities for H1 2020 and H1 2019 were an outflow of £428m and an outflow of £166m, respectively. The decrease from H1 2019 to H1 2020 principally resulted from a reduction in capital expenditure across intangible assets and property, plant and equipment through a combination of measures to reduce cash expenditure by ceasing or re-phasing non-critical expenditure.

Net cash flows from financing activities

Net cash flows from financing activities in 2019, 2018 and 2017 were an outflow of £1,792m, an inflow of £702m and an outflow of £127m, respectively. The decrease from 2018 to 2019 principally resulted from movements in borrowings (£2,131m) and lease payments (£331m – adoption of IFRS 16 in 2019). The increase from 2017 to 2018 principally resulted from movements in borrowings (£868m). Net cash inflows/outflows from financing activities for H1 2020 and H1 2019 were an inflow of £2,387m and an outflow of £840m, respectively. The change from H1 2019 to H1 2020 principally resulted from the drawdown of the £2.5bn Revolving Credit Facility and cash received from the COVID-19 Corporate Financing Facility (CCFF), partially offset by interest paid (£77m), cash flow on settlement of excess derivative contracts (£88m) and redemption of C shares (£90m).

Capital expenditure

Capital expenditure for tangible fixed assets is defined as the cost of acquiring property, plant and equipment. The Group also has expenditure in respect of intangible assets representing the Group's long-term assets and includes goodwill, certification costs and participation fees, development expenditure, customer relationships, software and other items detailed. See Note 10 of the Group 2019 Consolidated Financial Statements and the Group 2018 Consolidated Financial Statements, and Note 10 of the Group Consolidated Interim Financial Statements for further details on property, plant and equipment.

The Group subjects all capital expenditure to a careful examination of risks and future cash flows to seek to ensure that they create shareholder value. All major investments, including the launch of major programmes, require Board approval. The Group has a portfolio of projects at different stages of their lifecycles. All of the Group's major investments and projects are assessed using a range of financial measures, including discounted cash flow and return on investment.

The table below shows the Group's capital expenditure on property, plant and equipment and the Group's self-funded R&D each as a proportion of underlying revenue for the periods indicated:

	For the six months ended 30 June		For the year ended 31 December		
	2020	2019	2019	2018	2017 ⁽¹⁾
	(unaudited)				(restated, unaudited)
	(£m except as indicated)				
Underlying revenue ⁽²⁾	5,561	7,353	15,450	15,067	13,671
Capital expenditure ⁽³⁾	221	348	747	905	730
Capital expenditure as a proportion of underlying revenue ⁽⁴⁾	4.0%	4.7%	4.8%	6.0%	5.3%
Self-funded R&D ⁽⁵⁾	456	518	1,118	1,145	1,041
Self-funded R&D as a proportion of underlying revenue ⁽⁶⁾	8.2%	7.0%	7.2%	7.6%	7.6%

- (1) Following the adoption of IFRS 15 in 2018, certain financial information for 2017 has been restated to reflect this standard. The restated financial information for 2017 also includes an update to the 2017 provisional fair values of the ITP Aero acquisition following completion of the acquisition on 19 December 2017 and other prior period adjustments. See "Presentation of Financial, Market and Other Information—Presentation of financial information—Impact of changes in accounting standards—IFRS 15" and Note 27 to the Group 2018 Consolidated Financial Statements.
- (2) This metric is a non-IFRS measure. See "Selected Financial Information—Reconciliations of Non-IFRS Measures to Reported Financial Information" for the definitions and reconciliation to the closest IFRS measures.
- (3) Defined as cash purchases of property, plant and equipment in the period.
- (4) Defined as cash purchases of property, plant and equipment in the period relative to underlying revenue. This measure demonstrates the balance between essential investments in infrastructure and delivering short-term shareholder returns.
- (5) Defined as self-funded cash expenditure on R&D before any capitalisation or amortisation. All R&D expenditure in the presented periods was self-funded, i.e. the self-funded R&D represents the total R&D expenditure of the Group.
- (6) Defined as self-funded cash expenditure on R&D before any capitalisation or amortisation relative to underlying revenue. This measure demonstrates the balance between long-term strategic investments and delivering short-term shareholder returns.

Expenditure on property, plant and equipment

Expenditure relating to purchases of property, plant and equipment for H1 2020 and H1 2019 was £221m and £348m, respectively.

The decrease in expenditure of property, plant, equipment in H1 2020 from H1 2019 was a result of cash saving measures taken in response to the impact of the COVID-19 pandemic. Expenditure of property, plant and equipment for 2019, 2018 and 2017 was £747m, £905m and £730m, respectively. The decrease in expenditure of property, plant, equipment in 2019 from 2018 reflects several capacity and modernisation programmes nearing completion in 2018; spend in 2019 reflected the Group's ongoing investment in manufacturing capability, projects to modernise the Group's facilities, and spare engines to support the Group's growing in-service fleet in the Civil Aerospace business. The increase in expenditure of property, plant, and equipment in 2018 from 2017 reflects investment in capacity across the Group's large engine manufacturing footprint as the Group readies itself for future growth, and investment in the Defence business as part of its commitment to the next generation submarines programmes.

Property, plant and equipment has been reviewed for impairment in accordance with the requirements of IAS 36 Impairment of Assets ("IAS 36"). Following the announcement of 20 May 2020 to reshape and resize the Group given the financial and operational impact of the COVID-19 pandemic, a strategic review of the Group's property portfolio has been performed. Where the Group expects to exit a site, the carrying value of the related land and buildings have been impaired to their recoverable amount by reference to their fair value less cost of

disposal. An impairment charge of £59m has been recognised in H1 2020. The Group has also reviewed whether plant and equipment and assets under construction relating to these locations can be relocated to other parts of the Group for future use. Where no alternative use has been identified, the carrying value of these assets have been impaired to their recoverable amount by reference to their scrap values. An impairment charge of £96m has been recognised in H1 2020. Of the total impairment charge of £155m in H1 2020, £145m relates to site rationalisation.

Expenditure on intangible assets

Intangible assets represent the Group's long-term assets and include goodwill, certification costs and participation fees, development expenditure, customer relationships, software and other items detailed in Note 9 of the Group 2019 Consolidated Financial Statements, Note 9 of the Group 2018 Consolidated Financial Statements, and Note 9 of the Group Consolidated Interim Financial Statements.

Expenditure relating to intangible assets for H1 2020 and H1 2019 was £176m and £274m, respectively. The decrease in expenditure on intangible assets between H1 2019 and H1 2020 reflected £152m of R&D capitalisation (H1 2019: £224m) due to the increasing maturity of the Group's new Civil Aerospace engine programmes, with R&D on the Trent 1000 and Pearl 15 engines no longer falling within the capitalisation window. Expenditure relating to intangible assets for 2019, 2018 and 2017 was £591m, £680m and £647m, respectively. The decrease in expenditure on intangible assets between 2018 and 2019 reflected ongoing investment in the Civil Aerospace business's programmes including the Trent 7000, Trent XWB and Pearl engine programmes. The increase in expenditure on intangibles between 2017 and 2018 resulted from R&D capitalisation of £498m, largely relating to the Civil Aerospace business, together with further investment in software applications of £110m.

Contractual obligations

The table below sets out the contractual maturity of the Group's financial liabilities as at 31 December 2019:

Contractual Maturity Analysis of Financial Liabilities	Gross values				Carrying Value
	Within one year	Between one and two years	Between two and five years	After five years	
			(£m)		
Borrowings	(511)	(722)	(662)	(1,704)	(3,331)
Lease liabilities	(425)	(306)	(872)	(1,258)	(2,354)
Financial RRSAs	(35)	(7)	(14)	(63)	(110)
Other liabilities	(34)	(23)	(10)	(5)	(72)
C Shares	(31)	—	—	—	(31)
Trade payables and similar items	(5,677)	(62)	(20)	(90)	(5,849)
Other non-derivative financial liabilities	(1,162)	(308)	(35)	(36)	(1,541)
Contract liabilities	(131)	—	—	—	(131)
Total	(8,006)	(1,428)	(1,613)	(3,156)	(13,419)

Commercial commitments and contingent liabilities

Contingent liabilities exist in respect of guarantees provided by the Group in the ordinary course of business for product delivery, performance and reliability. The Group has, in the normal course of business, entered into arrangements in respect of export finance, performance bonds, countertrade obligations and minor miscellaneous items. Various Group undertakings are parties to legal actions and claims which arise in the ordinary course of business, some of which are for substantial amounts. As a consequence of the insolvency of an insurer, the Group is no longer fully insured against known and potential claims from employees who worked for certain of the Group's UK based businesses for a period prior to the acquisition of those businesses by the Group. While the outcome of some of these matters cannot precisely be foreseen, the Directors do not expect any of these arrangements, legal actions or claims, after allowing for provisions already made, to result in significant loss to the Group.

As at 30 June 2020, the Group's share of equity accounted entities' contingent liabilities is nil (31 December 2019: nil).

In connection with the sale of its products the Group will, on some occasions, provide financing support for its customers – generally in respect of civil aircraft. The Group's commitments relating to these financing arrangements are spread over several years, relate to a number of customers and a broad product portfolio and are generally secured on the asset subject to the financing. These include commitments of US\$2.1bn at 30 June 2020 (31 December 2019: US\$2.8bn) (on a discounted basis) to provide facilities to enable customers to purchase aircraft (of which US\$354m could be called during the remainder of 2020). These facilities may only be used if the customer is unable to obtain financing elsewhere and are priced at a premium to the market rate.

In connection with delivered aircraft, such financing arrangements typically take the form of various types of credit-based or asset-value guarantees up to the value of the products purchased. These guarantees commonly involve a Group entity or entities guaranteeing the loan repayment obligations of customers where such customers have borrowed in order to fund purchases of the Group's products.

Commitments on delivered aircraft in excess of the amounts provided are shown in the table below. These are reported on a discounted basis at the Group's borrowing rate to better reflect the time span over which these exposures could arise. These amounts do not represent values that are expected to crystallise. The commitments are denominated in US dollars. As the Group does not generally adopt cash flow hedge accounting for future foreign exchange transactions, this amount is reported, together with the pound sterling equivalent at the reporting date spot rate. The values of aircraft providing security are based on advice from a third-party specialist aircraft appraiser. As at 30 June 2020, the maximum aggregate discounted gross exposure in respect of delivered aircraft was US\$63m (discounted gross exposure disregards the value of any security or indemnity and is discounted based on the Group's typical borrowing rate in order to reflect the time span over which the exposures could arise). See also Note 20 of the Group 2019 Consolidated Financial Statements.

	30 June 2020		31 December 2019	
	£m	US\$m	£m	US\$m
	(unaudited)			
Gross commitments	51	63	60	79
Value of security*	(10)	(12)	(9)	(11)
Guarantees	(8)	(10)	(8)	(11)
Net commitments	33	41	43	57
Net commitments with security reduced by 20% ⁽¹⁾	33	41	43	57
* Security includes unrestricted cash collateral of	—	—	—	—

(1) Although sensitivity calculations are complex, the reduction of the relevant security by 20% illustrates the sensitivity of the contingent liability to changes in this assumption.

In January 2017, after full cooperation, the Company concluded deferred prosecution agreements with the SFO and the US Department of Justice and a leniency agreement with the MPF, the Brazilian federal prosecutors. Other authorities are investigating members of the Group for matters relating to misconduct in relation to historical matters. The Group is responding appropriately. Action may be taken by further authorities against the Company or Company individuals. In addition, the Group could still be affected by other actions from customers and customers' financiers. The Directors are not currently aware of any matters that are likely to lead to a material financial loss over and above the penalties imposed to date, but cannot anticipate all the possible actions that may be taken or their potential consequences.

The Group has financial liabilities arising from financial RRSAs, representing gross original equipment and aftermarket cash receipts before sharing these with its RRSPs, as contractually required. These financial liabilities are valued at each reporting date using the amortised cost method. This involves calculating the present value of the forecast cash flows of the arrangements using the internal rate of return at the inception of the arrangements as the discount rate.

Restructuring provisions are made for Group approved, formal restructuring programmes where the restructuring has either commenced or has been publicly announced. Included is the Group-wide restructuring programme announced on 14 June 2018, which is an on-going multi-year restructuring programme across the business and reflects the severance costs as well as the consultancy costs that will help deliver the planned reductions. The majority of the provision is expected to be utilised over the next two years.

The Group's captive insurance company retains a portion of the exposures it insures on behalf of the remainder of the Group. Significant delays occur in the notification and settlement of claims and judgement is

involved in assessing outstanding liabilities, the ultimate cost and timing of which cannot be known with certainty at the balance sheet date. The insurance provisions are based on information currently available, however it is inherent in the nature of the business that ultimate liabilities may vary. Provisions for outstanding claims are established to cover the outstanding expected liability as well as claims incurred but not yet reported.

Various legal proceedings claims and investigations are pending against the Group. Legal contingencies are discussed in Note 25 to the Group 2019 Consolidated Financial Statements and in Note 19 to the Group Consolidated Interim Financial Statements.

Pension obligations

The Group operates a number of defined benefit and defined contribution schemes:

- The UK defined benefit scheme is funded, with the assets held in a separate trustee administered fund. Employees are entitled to retirement benefits based on either their final or career average salaries and length of service. As at 30 June 2020 and 31 December 2019, the post-retirement scheme deficits for the UK scheme were £nil and £nil, respectively.
- Overseas defined benefit schemes are a mixture of funded and unfunded plans and provide benefits in line with local practice. Additionally in the US, and to a lesser extent in some other countries, the Group's employment practices include the provision of healthcare and life insurance benefits for retired employees. These schemes are unfunded. As at 30 June 2020 and 31 December 2019, the post-retirement scheme deficits for overseas schemes were £1,496m and £1,378m, respectively.

The valuations of the defined benefit schemes are based on the most recent funding valuations, where relevant, updated by the scheme actuaries to 31 December 2019.

The defined benefit schemes expose the Group to actuarial risks such as longevity, interest rate, inflation and investment risks. In the UK, and in the principal US and Canadian pension schemes, the Group has adopted investment policies to mitigate some of these risks. This involves investing a significant proportion of the schemes' assets in liability driven investment portfolios, which hold investments designed to offset interest rate and inflation rate risks. In addition, during 2019, the UK scheme has completed a buy-in/buy-out of pensioner liabilities.

On 31 July 2020 the Group commenced a statutory consultation on a proposal to close the UK defined benefit pension plan to future accrual from 31 December 2020. Subject to that consultation, the Group anticipates the mechanism for implementing closure of the UK defined benefit pension plan will be via a rule amendment, which would be subject to the consent of the trustee of the plan.

As at 30 June 2020 and 31 December 2019, total post-retirement scheme deficits were £1,496m and £1,378m, respectively, and total post-retirement scheme surpluses were £1,736m and £1,170m, respectively. See Note 21 to the Group 2019 Consolidated Financial Statements and Note 18 to the Group Consolidated Interim Financial Statements for further information.

Financial risk management policies

The following is an overview of the principal market risks to which the Group is subject. These risks are also described in "Risk Factors". See, in particular, "*Risk Factors—Risks Relating to the Group's Business—The Group is exposed to counterparty credit risk, particularly in relation to the financing support that it provides to its customers*" and "*Risk Factors—Risks Relating to the Group's Industry—The Group's results are affected by fluctuations in foreign exchange rates*" and "*Risk Factors—Risks Relating to the Group's Industry—The Group's results are affected by fluctuations in commodity prices*".

The principal financial risks to which the Group is exposed are: foreign currency exchange rate risk; liquidity risk; credit risk; interest rate risk; and commodity price risk. The Board has approved policies for the management of these risks.

Foreign currency exchange rate risk

The Group has significant cash flows (most significantly US dollars, followed by euros) denominated in currencies other than the functional currency of the relevant trading entity. To manage its exposures to changes in values of future foreign currency cash flows, so as to maintain relatively stable long-term foreign exchange rates on settled transactions, the Group enters into derivative forward foreign currency transactions.

The Group economically hedges its pound sterling/US dollar exposure by forecasting net US dollar receipts up to ten years forward. Hedges are taken out within prescribed maximum and minimum hedge positions set out in the Group FX policy. The maximum and minimum policy bands decline gradually over the ten-year horizon and are calculated as a percentage of forecast net income. A similar policy is operated for the Group's euro/US dollar exposure. For accounting purposes, these derivative contracts are not designated in hedging relationships with the exception of those taken out by the Group's Spanish subsidiary, ITP Aero, where they are designated in cash flow hedges. ITP Aero is exposed predominantly to net US dollar receipts that it hedges against euros using foreign exchange forward contracts.

The Group regards its interests in overseas subsidiary companies as long-term investments. The Group aims to match its translational exposures by matching the currencies of assets and liabilities.

Liquidity risk

The Group's policy is to hold financial investments and maintain committed facilities at a level sufficient to ensure that the Group has available funds to meet its medium-term capital and funding obligations and to meet any unforeseen obligations and opportunities. The Group holds cash and short-term investments, which together with the committed facilities, enable the Group to manage its liquidity risk.

Credit risk

The Group is exposed to credit risk to the extent of non-payment by either its customers or the counterparties of its financial instruments. The effective monitoring and controlling of credit risk is a key component of the Group's risk management activities. The Group has credit policies covering both trading and financial exposures. Credit risks arising from treasury activities are managed by a central treasury function in accordance with the Group credit policy. The objective of the policy is to diversify and minimise the Group's exposure to credit risk from its treasury activities by ensuring the Group transacts strictly with 'BBB' or higher rated financial institutions based on pre-established limits per financial institution. The Group's revenue is generated from customers located across multiple geographical locations (see note 2), these customers are typically: aircraft manufacturers and airline operators relating to the Civil Aerospace business; government defence departments for the UK and US; multiple smaller entities for the Power Systems business; and aero engine manufacturers for the ITP Aero business. While there are a limited number of customers related to the Civil Aerospace and Defence businesses, they are spread across various geographical locations. The maximum exposure to credit risk at the balance sheet date is represented by the carrying value of each financial asset, including derivative financial instruments.

Interest rate risk

The Group's interest rate risk is primarily in relation to its fixed rate borrowings (fair value risk), floating rate borrowings and cash and cash equivalents (cash flow risk). Interest rate derivatives are used to manage the overall interest rate profile of the Group.

The fixed or floating rate interest rate decision on long-term borrowings is determined for each new agreement at the point it is entered into. The aggregate interest rate position of the Group is reviewed regularly and can be revised at any time in order to react to changes in market conditions or circumstances.

The Group also has exposures to the fair values of non-derivative financial instruments such as US dollars, euros and pounds sterling and fixed rate borrowings. To manage the risk of changes in these fair values, the Group has entered into fixed-to-floating interest rate swaps and cross-currency interest rate swaps which for accounting purposes are designated as fair value hedges. The swaps have similar critical terms to the hedged items, such as the reference rate, reset dates, notional amounts, payment dates and maturities. Therefore, there is an economic relationship and the hedge ratio is established as 1:1. Possible sources of ineffectiveness in the fair value hedge relationship are changes in the credit risk of either party to the interest rate swap and, for cross-currency interest rate swaps, the cross-currency basis risk as this risk is present in the hedging instrument only. Another possible source of ineffectiveness would be if the notional of the borrowings is less than the notional of the derivative, for example in the event of a partial repayment of hedged debt prior to its maturity.

The Group has exposure to changes in cash flows due to changes in interest rates. To manage this risk the Group has entered into floating-to-fixed interest rate swaps to hedge a proportion of its floating rate exposure to fixed rates. The swaps have similar critical terms to the floating leg of swaps that form part of the fair value

hedges, such as the reference rate, reset dates, notional amounts, payment dates and maturities. For accounting purposes, these derivative contracts are generally not designated as hedging instruments.

The Group's Spanish subsidiary, ITP Aero, has also entered into a floating-to-fixed interest rate swap to hedge the cash flow risk on a floating rate borrowing which for accounting purposes is designated as a cash flow hedge.

Commodity risk

The Group has exposures to the price of jet fuel and base metals arising from business operations. To minimise its cash flow exposures to changes in commodity prices, the Group enters into derivative commodity transactions. The commodity hedging policy is similar to the Group FX policy, in that the Group forecasts highly probable exposures to commodities, and takes out hedges within prescribed maximum and minimum levels as set out in the policy. The maximum and minimum policy bands decline gradually over time. For accounting purposes, these derivative contracts are generally not designated in hedging relationships.

Other price risk

The Group's cash equivalent balances represent investments in money-market instruments, with a term of up to three months. The Group does not consider that these are subject to significant price risk.

Derivative financial instruments

The Group uses various financial instruments to manage its exposure to movements in foreign exchange rates.

Where the effectiveness of a hedging relationship in a cash flow hedge is demonstrated, changes in the fair value that are deemed effective are included in the cash flow hedge reserve and released to match actual payments on the hedged item. The Group uses commodity swaps to manage its exposure to movements in the price of commodities (jet fuel and base metals). To hedge the currency risk associated with a borrowing denominated in a foreign currency, the Group has currency derivatives designated as part of fair value hedges. The Group uses interest rate swaps and forward rate agreements to manage its exposure to movements in interest rates.

Key areas of judgement and sources of estimation uncertainty

The determination of the Group's accounting policies requires judgement. The subsequent application of these policies requires estimates; the actual outcome may differ from that calculated. The key judgements and key sources of estimation uncertainty at the balance sheet date, that have a significant risk of causing material adjustment to the carrying amounts of assets and liabilities within the next financial year, are discussed below.

In addition to the key areas of judgment and significant accounting policies discussed in this section, the Group considers certain sensitivities based on various factors assessed by the Group. These sensitivities are not discussed in this section. Sensitivities for key sources of estimation risk are disclosed in the relevant notes to the financial statements where this is appropriate and practicable. Please see Note 1 to the Group Consolidated Interim Financial Statements, Note 1 to the Group 2019 Consolidated Financial Statements and Note 1 to the Group 2018 Consolidated Financial Statements for further information for the sensitivities relevant to such financial statements.

Significant accounting policies

The Group's significant accounting policies are set out below. With the exception of IFRS 16 and IFRIC 23, which have been adopted with effect from 1 January 2019, these accounting policies have been applied consistently to all periods presented in this document.

Presentation of underlying results

The Group measures financial performance on an underlying basis. The Group believes this is the most appropriate basis to measure the Group's in-year performance as underlying results reflect the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which economically

hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges, exceptional items and other one-off charges. It is also consistent with the way that financial performance is measured by management and reported to the Board in accordance with IFRS 8. Further details are given in Note 2 to the Group 2019 Consolidated Financial Statements.

Basis of consolidation

The Group 2019 Consolidated Financial Statements include the Company's financial statements and its subsidiary undertakings together with the Group's share of the results in joint arrangements and associates made up to 31 December 2019.

A subsidiary is an entity controlled by the Company. Control exists when the Company has power over an entity, exposure to variable returns from its involvement with an entity and the ability to use its power over an entity so as to affect the Company's returns.

A joint arrangement is an entity in which the Group holds a long-term interest and which is jointly controlled by the Group and one or more other venturers under a contractual arrangement. Joint arrangements may be either joint ventures or joint operations. An associate is an entity, being neither a subsidiary nor a joint arrangement, in which the Group holds a long-term interest and where the Group has a significant influence. The results of joint ventures and associates are accounted for using the equity method of accounting. Joint operations are accounted for using proportionate accounting.

Any subsidiary undertaking, joint arrangement or associate sold or acquired during the year are included up to, or from, the date of change of control. Transactions with non-controlling interests are recorded directly in equity.

The Commercial Marine business was disposed of on 1 April 2019 and RRPD was disposed of on 15 April 2019.

The Group announced the proposed disposal of the North America Civil Nuclear business on 26 September 2019, and the Knowledge Management System business on 17 December 2019. Both North America Civil Nuclear and Knowledge Management System have been treated as a disposal group held for sale at 31 December 2019, with their assets and liabilities presented separately in the balance sheet. These disposals were completed on 31 January 2020 and 3 February 2020 respectively. In 2018, L'Orange was disposed of on 1 June and Commercial Marine was treated as a disposal group and held for sale (see Note 27 to the Group 2019 Consolidated Financial Statements).

On 30 September 2019, the Group acquired Siemens' eAircraft business and in accordance with IFRS 3 Business Combinations, the fair value of the assets and liabilities acquired have been consolidated in the Group's results from the date of acquisition (see Note 27 to the Group 2019 Consolidated Financial Statements).

All intra-group transactions, balances, income and expenses are eliminated on consolidation. Adjustments are made to eliminate the profit or loss arising on transactions with joint arrangements and associates to the extent of the Group's interest in the entity.

Revenue recognition

Revenue recognised comprises sales to the Group's customers after discounts and amounts payable to customers. Revenue excludes value added taxes. The transaction price of a contract is typically clearly stated within the contract, although the absolute amount may be dependent on escalation indices and long-term contracts require the key estimates highlighted above. Refund liabilities where sales are made with a right of return are not typical in the Group's contracts. Where they do exist, and consideration has been received, a portion, based on an assessment of the expected refund liability is recognised within other payables. The Group has elected to use the practical expedient not to adjust revenue for the effect of financing components, where the expectation is that the period between the transfer of goods and services to customers and the receipt of payment is less than a year.

Sales of standard original equipment, spare parts and time and materials overhaul services are generally recognised on transfer of control to the customer. This is generally on delivery to the customer, unless the

specific contractual terms indicate a different point. The Directors consider whether there is a need to constrain the amount of revenue to be recognised on delivery based on the contractual position and any relevant facts, however, this is not typically required.

Sales of services and original equipment specifically designed for the contract (most significantly in the Defence business) are recognised by reference to the progress towards completion of the performance obligation, using the cost method described in the key judgements, provided the outcome of contracts can be assessed with reasonable certainty.

The Group generates a significant portion of its revenue and profit on aftermarket arrangements arising from the installed original equipment fleet. As a consequence, in particular in the Civil Aerospace business's large engine business, the Group will often agree contractual prices for original equipment deliveries that take into account the anticipated aftermarket arrangements and therefore sometimes this may result in losses being incurred on original equipment. As described in the key judgements, these contracts are not combined. The consideration in the original equipment contract is therefore allocated to original equipment performance obligations and the consideration in the aftermarket contract to aftermarket performance obligations.

- Future variable revenue from long-term contracts is constrained to take account of the risk of non-recovery of resulting contract balances from reduced utilisation, e.g. EFHs, based on historical forecasting experience and the risk of aircraft being parked by the customer.
- A significant amount of revenue and cost related to long-term contract accounting is denominated in currencies other than that of the relevant Group undertaking, most significantly US dollar transactions in pound sterling and euro denominated undertakings. These are translated at estimated long-term exchange rates.
- The assessment of stage of completion is generally measured for each contract. However, in certain cases, such as for CorporateCare agreements where there are many contracts covering aftermarket services, each for a small number of engines, the Group accounts for a portfolio of contracts together as the effect on the Group 2019 Consolidated Financial Statements would not differ materially from applying the standard to the individual contracts in the portfolio. When accounting for a portfolio of LTSAs the Group uses estimates and assumptions that reflect the size and composition of the portfolio.
- A contract asset/liability is recognised where payment is received in arrears/advance of the costs incurred to meet performance obligations.
- Where material, wastage costs (see key judgements in Note 1 to the Group 2019 Consolidated Financial Statements) are recorded as an exceptional non-underlying expense.

If the expected costs to fulfil a contract exceed the expected revenue, a contract loss provision is recognised for the excess costs.

The Group pays participation fees to airframe manufacturers, its customers for original equipment, on certain programmes. Amounts paid are initially treated as contract assets and subsequently charged as a reduction to the original equipment revenue when the engine is transferred to the customer.

The Group has elected to use the practical expedient to expense as incurred any incremental costs of obtaining or fulfilling a contract if the amortisation period of an asset created would have been one year or less. Where costs to obtain a contract are recognised in the balance sheet they are amortised over the performance of the related contract (average of three years).

Risk and revenue sharing arrangements

The payments to suppliers of their shares of the programme cash flows for their production components are charged to cost of sales as programme revenue arises. Cash entry fees received are initially deferred on the balance sheet and recognised as a reduction in cost of sales incurred, on a 15-year straight-line basis pro rata over the estimated number of units produced.

The Group has arrangements with third parties who invest in a programme and receive a return based on its performance, but do not undertake development work or supply parts. Such arrangements (financial RRSAs) are financial instruments as defined by IAS 32 Financial Instruments: Presentation and are accounted for using the amortised cost method.

Royalty payments

Where a government or similar body has previously acquired an interest in the intellectual property of a programme, royalty payments are matched to the related sales.

Government grants

Government grants are recognised in the income statement so as to match them with the related expenses that they are intended to compensate. Where grants are received in advance of the related expenses, they are initially recognised in the balance sheet and released to match the related expenditure. Non-monetary grants are recognised at fair value.

Interest

Interest receivable/payable is credited/charged to the income statement using the effective interest method. Where borrowing costs are attributable to the acquisition, construction or production of a qualifying asset, such costs are capitalised as part of the specific asset.

Taxation

The tax charge/credit on the profit or loss for the year comprises current and deferred tax:

- Current tax is the expected tax payable for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.
- Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of the assets and liabilities for financial reporting purposes and the amounts used for tax purposes and is calculated using the enacted or substantively enacted rates that are expected to apply when the asset or liability is settled. In the UK, the deferred tax liability on the pension scheme surplus is recognised consistently with the basis for recognising the surplus, i.e. at the rate applicable to refunds from a trust.

Tax is charged or credited to the income statement or other comprehensive income as appropriate, except when it relates to items credited or charged directly to equity in which case the tax is also dealt with in equity.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and joint arrangements, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax is not recognised on taxable temporary differences arising on the initial recognition of goodwill or for temporary differences arising from the initial recognition of assets and liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised. Further details on the Group's tax position can be found in the section "*Other Financial Information*" of the Group 2019 Consolidated Financial Statements.

Foreign currency translation

Transactions denominated in currencies other than the functional currency of the relevant trading entity (most significantly US dollars, followed by euros) are translated into the functional currency at the average monthly exchange rate when the transaction occurs. Monetary assets and liabilities denominated in foreign currencies are translated into the relevant functional currency at the rate prevailing at the year end. Exchange differences arising on foreign exchange transactions and the retranslation of assets and liabilities into functional currencies at the rate prevailing at the year end are included in profit/(loss) before taxation.

The trading results of Group undertakings are translated into pounds sterling at the average exchange rates for the year. The assets and liabilities of overseas undertakings, including goodwill and fair value adjustments arising on acquisition, are translated at the exchange rates prevailing at the year end. Exchange adjustments arising from the retranslation of the opening net investments, and from the translation of the profits or losses at average rates, are recognised in OCI. The cumulative amount of exchange adjustments was, on transition to IFRS in 2004, deemed to be nil.

Financial instruments – classification and measurement.

Financial assets

Financial assets primarily include trade receivables, cash and cash equivalents (comprising cash at bank, money market funds and short-term deposits), short-term investments, derivatives (foreign exchange, commodity and interest rate contracts), and unlisted investments.

- Trade receivables are classified either as held to collect and measured at amortised cost or as held to collect and sell and measured at fair value through other comprehensive income (“FVOCI”). The Group may sell trade receivables due from certain customers before the due date. Any trade receivables from such customers that are not sold at the reporting date are classified as ‘held to collect and sell’.
- Cash and cash equivalents (consisting of balances with banks and other financial institutions, money-market funds, short-term deposits) and short-term investments are subject to low market risk. Cash balances and short-term investments are measured at fair value through profit and loss (“FVPL”). Money market funds and short-term deposits are measured at FVOCI.
- Derivatives and unlisted investments are measured at FVPL.

Financial liabilities

Financial liabilities primarily consist of trade payables, borrowings, derivatives, financial RRSAs and C Shares.

- Derivatives are classified and measured at FVPL.
- All other financial liabilities are classified and measured at amortised cost.

Financial instruments – impairment of financial assets and contract assets

IFRS 9 sets out the basis for the accounting of expected credit losses (“ECLs”) on financial assets and contract assets resulting from transactions within the scope of IFRS 15. The Group has adopted the simplified approach to provide for ECLs, measuring the loss allowance at a probability weighted amount that considers reasonable and supportable information about past events, current conditions and forecasts of future economic conditions of customers. These are incorporated in the simplified model adopted by using credit ratings which are publicly available or through internal risk assessments derived using the customer’s latest available financial information. The ECLs are updated at each reporting date to reflect changes in credit risk since initial recognition. ECLs are calculated for all financial assets in scope, regardless of whether or not they are overdue.

Financial instruments – hedge accounting

Forward foreign exchange contracts and commodity swaps (derivative financial instruments) are held to manage the cash flow exposures of forecast transactions denominated in foreign currencies or in commodities respectively. In general, the Group has chosen to not apply hedge accounting in respect of these exposures. Prior to its acquisition in 2017, ITP Aero adopted hedge accounting for its equivalent exposures. It has continued to do so, although the value of the derivatives is not material, relative to those held by the rest of the Group.

The Group economically hedges the fair value and cash flow exposures of its borrowings. Cross-currency interest rate swaps are held to manage the fair value exposures of borrowings denominated in foreign currencies and are designated as fair value hedges. Interest rate swaps are held to manage the interest rate exposures of fixed and floating rate borrowings and may be designated as fair value hedges, cash flow hedges or FVPL as appropriate.

Derivative financial instruments qualify for hedge accounting when: (i) there is a formal designation and documentation at inception of the hedge of the hedging relationship and the Group’s risk management objective and strategy for undertaking the hedge; and (ii) the hedge is expected to be effective.

Changes in the fair values of derivatives that are designated as fair value hedges are recognised directly in the income statement. The fair value changes of effective cash flow hedge derivatives are recognised in OCI and subsequently recycled in the income statement to match the recognition of the hedged item. Any ineffectiveness in the hedging relationships is included in the income statement.

Hedge accounting is discontinued when the hedging instrument expires or is sold, terminated, exercised, or no longer qualifies for hedge accounting. At that time, for cash flow hedges and if the forecast transaction remains probable, any cumulative gain or loss on the hedging instrument recognised in OCI is retained until the forecast transaction occurs. If a hedged transaction is no longer expected to occur, the net cumulative gain or loss is recycled to the income statement.

Financial instruments – replacement of benchmark interest rates

Following the financial crisis, the reform and replacement of benchmark interest rates such as pound sterling LIBOR and other interbank offered rates (“**IBORs**”) has become a priority for global regulators. There is currently uncertainty regarding the timing and precise nature of these changes. The Group’s risk exposure that is directly affected by the interest rate benchmark reform is its portfolio of long-term borrowings of £3.0bn as at 31 December 2019. These borrowings are hedged, using interest rate swaps and cross-currency interest rate swaps, for changes in fair value attributable to the relevant benchmark interest rate. However, as part of the reforms noted above, the UK Financial Conduct Authority has decided to no longer compel panel banks to participate in the IBOR submission process after the end of 2021 and to cease oversight of these benchmark interest rates. Regulatory authorities and private sector working groups have been discussing alternative benchmark rates for IBOR. It is currently anticipated that IBOR rates will be replaced with a backward looking risk-free rate based on actual transactions.

Management is in the process of establishing a committee to oversee the Group’s IBOR transition plan. This transition project will include changes to systems, processes, risk and valuation models, as well as managing related tax and accounting implications. The Group currently anticipates that the areas of greatest change will be amendments to the contractual terms of IBOR-referenced floating-rate debt and swaps, and updating hedge designations.

Due to the uncertainty regarding these changes, the Group has elected to early adopt the Amendments to IFRS 9, IAS 39 and IFRS 7 *Interest Rate Benchmark Reform* issued in September 2019. In accordance with the transition provisions, the amendments have been adopted retrospectively to hedging relationships that existed at the start of the reporting period or were designated thereafter. The amendments provide temporary relief from applying specific hedge accounting requirements to hedging relationships directly affected by IBOR reform.

The reliefs have the effect that IBOR reform should not generally cause hedge accounting to terminate. However, any hedge ineffectiveness should continue to be recorded in the income statement. Furthermore, the amendments set out triggers for when the reliefs will end, which include the uncertainty arising from interest rate benchmark reform no longer being present.

In summary, the reliefs provided by the amendments that apply to the Group are:

- In assessing whether the hedge is expected to be highly effective on a forward-looking basis, the Group has assumed that the relevant IBOR interest rate on which the cash flows of the interest rate swap that hedges fixed-rate borrowings is not altered by IBOR reform.
- The Group has assessed whether the hedged IBOR risk component is a separately identifiable risk only when it first designates a borrowing as included in a hedging relationship and not on an ongoing basis. Any ineffectiveness relating to fair value hedges is recognised immediately in the income statement.

Business combinations and goodwill

Goodwill recognised represents the excess of the fair value of the purchase consideration over the fair value to the Group of the net of the identifiable assets acquired and the liabilities assumed. On transition to IFRS on 1 January 2004, business combinations were not retrospectively adjusted to comply with Adopted IFRS and goodwill was recognised based on the carrying value under the previous accounting policies. Goodwill in respect of the acquisition of a subsidiary is recognised as an intangible asset. Goodwill arising on the acquisition of joint arrangements and associates is included in the carrying value of the investment.

Customer relationships

The fair value of customer relationships recognised as a result of a business combination relate to the acquired company’s established relationships with its existing customers that result in repeat purchases and customer loyalty.

Amortisation is charged on a straight-line basis over its useful economic life, up to a maximum of 15 years.

Certification costs

Costs incurred in respect of meeting regulatory certification requirements for new Civil Aerospace business aero engine/aircraft combinations including payments made to airframe manufacturers for this are recognised as intangible assets to the extent that they can be recovered out of future sales. They are charged to the income statement over the programme life on a 15-year straight-line basis pro rata over the estimated number of units produced.

Research and development

Expenditure incurred on R&D is distinguished as relating either to a research phase or to a development phase.

All research phase expenditure is charged to the income statement. Development expenditure is recognised as an internally generated intangible asset (programme asset) only if it meets strict criteria, relating in particular to technical feasibility and generation of future economic benefits.

More specifically, development costs are capitalised from the point at which the following conditions have been met:

- the technical feasibility of completing the programme and the intention and ability (availability of technical, financial and other resources) to complete the programme asset and use or sell it;
- the probability that future economic benefits will flow from the programme asset; and
- the ability to measure reliably the expenditure attributable to the programme asset during its development.

Capitalisation continues until the point at which the programme asset meets its originally contracted technical specification (defined internally as the point at which the asset is capable of operating in the manner intended by management).

Subsequent expenditure is capitalised where it enhances the functionality of the programme asset and demonstrably generates an enhanced economic benefit to the Group. All other subsequent expenditure on programme assets is expensed as incurred.

The development costs associated with each engine are amortised on a straight-line basis, over a 15-year period from its delivery. The period of 15 years is an estimate of the period of operation of the engine by its initial operator. In accordance with IAS 38, the basis on which programme assets are amortised is assessed annually.

Software

Software that is not specific to an item of property, plant and equipment is classified as an intangible asset, recognised at its acquisition cost and amortised on a straight-line basis over its useful economic life, up to a maximum of five years. The cost of internally developed software includes direct labour and an appropriate proportion of overheads.

Other intangible assets

These principally include intangible assets arising on acquisition of businesses, such as technology, patents and licences which are amortised on a straight-line basis over a maximum of 15 years and trademarks which are not amortised.

Property, plant and equipment

Property, plant and equipment are stated at acquisition cost less accumulated depreciation and any provision for impairment in value. The cost of self-constructed assets includes the cost of materials, direct labour and an appropriate proportion of overheads and, where appropriate, interest.

Depreciation is provided on a straight-line basis to write off the cost, less the estimated residual value, of property, plant and equipment over their estimated useful lives. No depreciation is recorded on assets in the course of construction. Estimated useful lives are reassessed annually and are as follows:

- Land and buildings, as advised by the Group's professional advisers:
 - freehold buildings – five to 45 years (average 25 years);
 - leasehold buildings – lower of adviser's estimates or period of lease; and
 - no depreciation is provided on freehold land.
- Plant and equipment – five to 25 years (average 12 years).
- Aircraft and engines – five to 20 years (average 14 years).

Leases

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments less any lease incentive receivable;
- variable lease payments that are based on an index or a rate;
- amounts expected to be payable by the Group under residual value guarantees;
- the exercise price of a purchase option if the Group is reasonably certain to exercise that option; and
- payments of penalties for termination of the lease, if the lease term reflects the Group exercising that option.

Where leases commence after the initial transition date, the lease payments are discounted using the interest rate implicit in the lease.

If that rate cannot be determined, the Group's incremental borrowing rate is used, being the rate that the Group would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions. Lease liabilities are revalued at each reporting date using the spot exchange rate.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability or a revaluation of the liability;
- any lease payments made at or before the commencement date less any lease incentives received;
- any initial direct costs; and
- restoration costs.

Each right-of-use asset is depreciated over the shorter of its useful economic life and the lease term on a straight-line basis unless the lease is expected to transfer ownership of the underlying asset to the Group, in which case the asset is depreciated to the end of the useful life of the asset.

Payments associated with the short-term leases are recognised on a straight-line basis as an expense in the income statement. Short-term leases are leases with a lease term of 12 months or less.

Impairment of non-current assets

Impairment of non-current assets is considered in accordance with IAS 36. Where the asset does not generate cash flows that are independent of other assets, impairment is considered for the cash-generating unit to which the asset belongs. Goodwill, indefinite life intangible assets and intangible assets not yet available for use are tested for impairment annually. Other intangible assets (including programme related intangible assets), property, plant and equipment and investments are assessed for any indications of impairment annually. If any indication of impairment is identified, an impairment test is performed to estimate the recoverable amount.

If the recoverable amount of an asset (or cash-generating unit) is estimated to be below the carrying value, the carrying value is reduced to the recoverable amount and the impairment loss is recognised as an expense. The recoverable amount is the higher of value in use or fair value less costs to dispose, if this is readily available. The value in use is the present value of future cash flows using a pre-tax discount rate that reflects the time value of money and the risk specific to the asset.

Inventories

Inventories are valued on a first-in, first-out basis, at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those direct and indirect overheads, including depreciation of property, plant and equipment, that have been incurred in bringing the inventories to their present location and condition. Net realisable value represents the estimated selling prices less all estimated costs of completion and costs to be incurred in marketing, selling and distribution. All inventories are classified as current as it is expected that they will be used in the Group's operating cycle, regardless of whether this is expected to be within 12 months of the balance sheet date.

Cash and cash equivalents

Cash and cash equivalents include cash at bank and in hand, investments in money-market funds and short-term deposits with a maturity of three months or less on inception. The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement. Where the Group operates pooled banking arrangements across multiple accounts, these are presented on a net basis when it has both a legal right and intention to settle the balances on a net basis.

Invoice discounting

The Group on a periodic basis undertakes the sale of certain trade receivables to banks. These trade receivables are factored on a non-recourse basis and therefore are derecognised from the Group's balance sheet at the point of sale to the bank. Further details are disclosed in Note 14 to the Group 2019 Consolidated Financial Statements.

Supply chain financing

The Group offers a supply chain financing ("SCF") programme in partnership with banks to enable suppliers who are on the Group's standard 75-day or more payment terms to receive their payment sooner. As the Group continues to have a contractual obligation to pay its suppliers and it does not retain any ongoing involvement in the SCF, the related payables are retained on the Group's balance sheet and classified as trade payables. Further details are disclosed in Note 18 to the Group 2019 Consolidated Financial Statements.

Provisions

Provisions are recognised when the Group has a present obligation as a result of a past event, and it is probable that the Group will be required to settle that obligation and are discounted to present value where the effect is material.

The principal provisions are recognised as follows:

- Trent 1000 in-service issues – when wastage costs are identified as described in Note 2 to the Group 2019 Consolidated Financial Statements;
- contract losses – based on an assessment of whether the direct costs to fulfil a contract are greater than the expected revenue;
- warranties and guarantees – based on an assessment of future claims with reference to past experience and recognised at the earlier of when the underlying products and services are sold and when the likelihood of a future cost is identified; and
- restructuring – when the Group has approved a detailed and formal restructuring plan, and the restructuring has either commenced or has been publicly announced.

Post-retirement benefits

Pensions and similar benefits (principally healthcare) are accounted for under IAS 19.

For defined benefit plans, obligations are measured at discounted present value, using a discount rate derived from high-quality corporate bonds denominated in the currency of the plan, while plan assets are recorded at fair value.

Surpluses in schemes are recognised as assets only if they represent economic benefits available to the Group in the future.

The service and financing costs of such plans are recognised separately in the income statement:

- current service costs are spread systematically over the lives of employees;
- past-service costs and settlements are recognised immediately; and
- financing costs are recognised in the periods in which they arise.

Actuarial gains and losses are recognised immediately in OCI.

In 2018, following clarification provided by the High Court judgement on the Lloyds Banking Group on 26 October 2018, in the UK, the Group recognised the estimated impact of the obligation to equalise pensions for men and women as a past-service cost – see Note 21 to the Group 2019 Consolidated Financial Statements.

Payments to defined contribution schemes are charged as an expense as they fall due.

Share-based payments

The Group provides share-based payment arrangements to certain employees. These are principally equity-settled arrangements and are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value is expensed on a straight-line basis over the vesting period. The amount recognised as an expense is adjusted to reflect the actual number of shares or options that will vest, except where additional shares vest as a result of the total shareholder return performance condition in the long-term incentive plan (“**LTIP**”).

Cash-settled share options (grants in the International ShareSave plan) are measured at fair value at the balance sheet date. The Group recognises a liability at the balance sheet date based on these fair values, taking into account the estimated number of options that will actually vest and the relative completion of the vesting period. Changes in the value of this liability are recognised in the income statement for the year.

The cost of shares of Rolls-Royce Holdings plc held by the Group for the purpose of fulfilling obligations in respect of employee share plans is deducted from equity in the consolidated balance sheet. See Note 23 to the Group 2019 Consolidated Financial Statements for a further description of the share-based payment plans.

Customer financing support

In connection with the sale of its products, the Group will, on occasion, provide financing support for its customers. These arrangements fall into two categories: credit-based guarantees and asset-value guarantees. In accordance with the requirements of IFRS 9 and IFRS 4 *Insurance Contracts*, credit-based guarantees are treated as insurance contracts. The Group considers asset-value guarantees to be non-financial liabilities and accordingly these are also treated as insurance contracts. As described in Note 20 to the Group 2019 Consolidated Financial Statements, the Directors consider the likelihood of crystallisation in assessing whether provision is required for any contingent liabilities.

The Group’s contingent liabilities relating to financing arrangements are spread over several years and relate to a number of customers and a broad product portfolio, and are reported on a discounted basis.

Post balance sheet events

Non-adjusting post balance sheet events in relation to pensions and mergers and acquisitions activity are disclosed in Notes 21 and 27 to the Group 2019 Consolidated Financial Statements, respectively.

Key areas of judgement

In addition to the key areas of judgement discussed in this section, the Group considers certain sensitivities based on various factors assessed by the Group. These sensitivities are not discussed in this section. Sensitivities for key sources of estimation risk are disclosed in the relevant notes to the financial statements where this is appropriate and practicable. Please see Note 1 to the Group Consolidated Interim Financial Statements, Note 1 to the Group 2019 Consolidated Financial Statements and Note 1 to the Group 2018 Consolidated Financial Statements for further information for the sensitivities relevant to such financial statements.

Revenue recognition

Whether the Civil Aerospace business's original equipment and aftermarket contracts should be combined

In the Civil Aerospace business, original equipment contracts are with the aircraft manufacturers (except for spare engines), while the aftermarket contracts are with the aircraft operators, although there may be interdependencies between them. IFRS 15 includes guidance on the combination of contracts, in particular that contracts with unrelated parties should not be combined.

Notwithstanding the interdependencies, the Directors consider that, as the operators are ultimately purchasing an aircraft from the aircraft manufacturer, of which the engines are part, the engine contract should be considered separately from the aftermarket contract. In making this judgement, they also took account of industry practice.

How performance on long-term aftermarket contracts should be measured

The Group generates a significant proportion of its revenue from aftermarket arrangements. These aftermarket contracts, such as TotalCare and CorporateCare agreements in the Civil Aerospace business, cover a range of services and generally have contractual terms covering more than one year. Under these contracts, the Group's primary obligation is to maintain customers' engines in an operational condition and this is achieved by undertaking various activities, such as maintenance, repair and overhaul, and engine monitoring over the period of the contract. Revenue on these contracts is recognised over the period of the contract and the basis for measuring progress is a matter of judgement. The Directors consider that the stage of completion of the contract is best measured by using the actual costs incurred to date compared to the estimated costs to complete the performance obligations, as this reflects the extent of completion of the activities performed.

Whether any costs should be treated as wastage

In rare circumstances, the Group may incur costs of wasted material, labour or other resources to fulfil a contract where the level of cost was not reflected in the contract price. The identification of such costs is a matter of judgement and would only be expected to arise where there has been a series of abnormal events which give rise to a significant level of cost which is also of a nature that the Group would not expect to incur and hence is not reflected in the contract price. For example: where there are technical issues that require resolution to meet regulatory requirements; have a wide-ranging impact across a product type; and cause significant operational disruption to customers. Similarly, in these rare circumstances, significant disruption costs to support customers resulting from the actual performance of a delivered good or service may be treated as a cost in the period. Any costs identified as wastage are expensed when the obligation to incur them arises – see Note 2 to the Group 2019 Consolidated Financial Statements and the Group 2018 Consolidated Financial Statements.

Whether sales of spare engines to joint ventures are at fair value

The Civil Aerospace business maintains a pool of spare engines to support its customers. Some of these engines are sold to, and held by, joint venture companies. The assessment of whether the sales price reflects fair value is a key judgement. The Group considers that based upon its assessment, and by comparison to the sales price of spare engines to other third parties, the sales made to joint ventures reflect the fair value of the goods sold.

Determination of the time period and profile over which the aerospace industry will recover

The COVID-19 pandemic has resulted in significant uncertainty across the aerospace industry. Estimates of future revenue within the Civil Aerospace business are based upon future engine flying hour forecasts, influenced by assumptions over the time period and profile over which the aerospace industry will recover.

Risk and revenue sharing arrangements

Determination of the nature of entry fees received from RRSAs with key suppliers (workshare partners) are a feature of the Civil Aerospace business

Under these contractual arrangements, the key commercial objectives are that: (i) during the development phase the workshare partner shares in the risks of developing an engine by performing its own development work, providing development parts and paying a non-refundable cash entry fee; and (ii) during the production phase it supplies components in return for a share of the programme cash flows as a ‘life of type’ supplier (i.e. as long as the engine remains in service).

The non-refundable cash entry fee is judged by the Group to be a contribution towards the development expenditure incurred. These receipts are deferred on the balance sheet and recognised against the cost of sales over the estimated number of units to be delivered.

Taxation

Determination of the value of deferred tax assets that should be recognised. The forecast level of taxable profits relevant to recovery of this balance takes into account a 25% probability of there being a severe but plausible downside scenario in relation to the commercial aviation industry.

Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary difference can be utilised, based on management’s assumptions relating to the quantum of future taxable profits.

Business combinations

Identification of acquired assets and liabilities

In allocating the purchase price to the acquired assets and liabilities, such as technology, patents and licences, customer relationships, trademarks and in-process development, judgement is required. The allocations based on the Group’s industry experience and the advice of third party valuers, if required.

Research and development

Determination of the point in time where costs incurred on an internal programme development meet the criteria for capitalisation or ceasing capitalisation

The Group incurs significant R&D expenditure in respect of various development programmes. Determining when capitalisation should commence and cease is a critical judgement, as is the determination of when subsequent expenditure on the programme assets should be capitalised.

Within the Group there is an established Product Introduction and Lifecycle Management process (“PILM”) in place. Within this process, the technical feasibility, the commercial viability and financial assessment of the programme is assessed at certain milestones. When these are met, development expenditure is capitalised. Prior to this, expenditure is expensed as incurred.

Subsequent expenditure after entry into service which enhances the performance of the engine and the economic benefits to the Group is capitalised. This expenditure is referred to as enhanced performance and is governed by the PILM process referred to above. All other development costs are expensed as incurred.

Determination of the basis for amortising capitalised development costs

The economic benefits of the development costs are primarily those cash inflows arising from LTSAs, which are expected to be relatively consistent for each engine. Amortisation of development costs is recognised on a straight-line basis over 15 years on a proportional basis to aircraft delivery.

Impairment of goodwill

Determination of cash-generating units for assessing impairment of goodwill

The Group conducts impairment reviews at the cash generating unit (“CGU”) level. As permitted by IAS 36, impairment reviews for goodwill are performed at the groups of CGUs level, representing the lowest level at

which the Group monitors goodwill for internal management purposes and no higher than the Group's operating segments. The level at which goodwill impairment reviews was performed was at the Rolls-Royce Deutschland Ltd & Co KG and Rolls-Royce Power Systems AG aggregated level.

Impairment of intangible assets (including programme-related intangible assets)

Determination of the time period and profile over which the aerospace industry will recover

The COVID-19 pandemic has resulted in significant uncertainty across the aerospace industry. Estimates of future revenue within the Civil Aerospace business are based upon future engine flying hour forecasts, influenced by assumptions over the time period and profile over which the aerospace industry will recover.

Contract assets and contract liabilities

Determination of the time period and profile over which the aerospace industry will recover

The COVID-19 pandemic has resulted in significant uncertainty across the aerospace industry. Estimates of future revenue within the Civil Aerospace business are based upon future engine flying hour forecasts, influenced by assumptions over the time period and profile over which the aerospace industry will recover. The valuation of contract assets and contract liabilities is dependent on certain key assumptions including future EFHs, foreign exchange rates, discount rates, time on wing and the number of overhauls.

Whether any costs should be treated as wastage

Based upon the stage of completion of all widebody LTSA contracts within Civil Aerospace, a change in the estimate of costs to complete would result in catch-up adjustment being recognised in the period.

Lease liabilities

Determination of the lease term

In determining the lease term, the Group considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated). Certain land and building leases have renewal options with renewal dates for the most significant property leases evenly spread between 2022 and 2028 and in 2041. The Group reviews its judgements on lease terms annually, including the operational significance of the site, especially where utilised for manufacturing activities.

Provisions

Assessment of satisfying the criteria for the recognition and measurement of provisions

Judgement is required to determine whether a valid expectation has been created and what costs are allowable to be provided for (especially when measuring contract loss provisions).

Key sources of estimation uncertainty

Revenue recognition

Estimates of future revenue and costs on long-term contractual arrangements

The Group has long-term contracts that fall into different accounting periods and which can extend over significant periods (generally up to 25 years) – the most significant of these are LTSAs in the Civil Aerospace business. The estimated revenue and costs are inherently imprecise and significant estimates are required to assess: EFHs, time-on-wing and other operating parameters; the pattern of future maintenance activity and the costs to be incurred; lifecycle cost improvements over the term of the contracts; and escalation of revenue and costs. The estimates take account of the inherent uncertainties, constraining the expected level of revenue as appropriate. In addition, much of the revenue and costs are denominated in currencies other than that of the relevant Group undertaking. These are translated at an estimated long-term exchange rates, based on historical trends and economic forecasts.

As previously explained, under IFRS 15 the Group, most significantly in the Civil Aerospace business, experiences volatility in revenue recognition and contract accounting adjustments of £33m have been recognised in 2019 (2018: £(276)m).

The COVID-19 pandemic has resulted in significant uncertainty across the aerospace industry. Airline customers have grounded a significant number of their aircraft in response to the COVID-19 pandemic which has resulted in a reduction to EFHs in the Civil Aerospace business during 2020. Estimates of future revenue within the Civil Aerospace business are based upon future engine flying hour forecasts, influenced by assumptions over the recovery of the aerospace industry.

Taxation

Estimates are necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets

This is largely driven by the Civil Aerospace business and the estimates described above under “—Key sources of estimation uncertainty—Revenue recognition”.

Future taxable profits require significant estimates to be made, including: the pattern of future maintenance activity and the costs to be incurred; lifecycle cost improvements over the term of the contracts; and escalation of revenue and costs. The estimates take account of the inherent uncertainties, constraining the expected level of profit as appropriate. Changes in these estimates will affect future profits and therefore the recoverability of the deferred tax assets. Further details can be found in Note 5 to the Group 2019 Consolidated Financial Statements.

Impairment of intangible assets (including programme-related intangible assets)

In accordance with IAS 36, COVID-19 is considered to be a trigger event to reassess whether an asset is impaired. The carrying value of intangible assets (including programme-related intangible assets) is dependent on the estimates of future cash flows; which are influenced by assumptions over the recovery of the industries in which the Group operates and the discount rates applied. See Note 8 to the Group Consolidated Interim Financial Statements for further details of the review performed.

Contract assets and contract liabilities

COVID-19 has resulted in uncertainty across the aerospace industry. Airline customers have grounded a significant number of their aircraft in response to the COVID-19 pandemic, resulting in uncertainty over future engine flying hour forecasts within Civil Aerospace. The valuation of contract assets and contract liabilities is dependent on certain key assumptions, including future EFHs, foreign exchange rates, discount rates, time on wing and the number of overhauls.

Lease Liabilities

Estimates of the payments required to meet contractual commitments at the end of engine leases

Amounts due can vary depending on the level of utilisation of the engines, overhaul activity prior to the end of the contract, and decisions taken on whether ongoing access to the assets is required at the end of the lease term.

Engine leases in the Civil Aerospace business often include clauses that require the engines to be returned to the lessor with specific levels of useable life remaining or cash payments to the lessor. The costs of meeting these requirements are included in the lease payments. The amounts payable are calculated based upon an estimate of the utilisation of the engines over the lease term, whether the engine is restored to the required condition by performing an overhaul at the Group’s own cost or through the payments of amounts specified in the contract and any new contractual arrangements arising when the current lease contracts end. As at 31 December 2019, the lease liability included £401m relating to the cost of meeting these contractual commitments, with up to £80m in 2020 and £112m due over the following four years. Where estimates of payments change, an adjustment is made to the lease liability and the right-of-use asset.

Provisions

Estimates of the time to resolve the technical issues on the Trent 1000, including the development of the modified HPT blade

A delay in the availability of the modified HPT blade (from the first half of 2021 to the first half of 2022) could lead to a £60m increase in the Trent 1000 exceptional costs provision.

Estimates of the expenditure required to settle the obligation relating to Trent 1000 claims

The Group has provisions at 30 June 2020 of £2,653m (31 December 2019: £2,804m). These represent the Directors' best estimate of the expenditure required to settle the obligations at the balance sheet date. These estimates take account of information available and different possible outcomes.

Estimates of the future revenue and costs to fulfil onerous contracts

As at 30 June 2020, a reduction in Civil Aerospace widebody flying hours of 15% over the remaining term of the contracts and the associated decrease in revenue and cost impact could lead to a £140m – £200m increase in the provision for contract losses.

Post-retirement benefits

Estimates of the assumptions for valuing the defined benefit obligation

The Group's defined benefit pension schemes and similar arrangements are assessed annually in accordance with IAS 19 Employee Benefits. The valuation, which is based on assumptions determined with independent actuarial advice, resulted in a net deficit of £208m before deferred taxation being recognised on the balance sheet as at 31 December 2019 (31 December 2018: surplus of £641m). The size of the net surplus/deficit is sensitive to the actuarial assumptions, which include the discount rate, price inflation, pension and salary increases, transfers, mortality and other demographic assumptions and the levels of contributions.

In H1 2020, the valuation of the Group's defined benefit pension schemes are based on assumptions determined with independent actuarial advice. The size of the net surplus is sensitive to the actuarial assumptions, which include the discount rate used to determine the present value of the future obligation, longevity, and the number of plan members who take the option to transfer their pension to a lump sum on retirement or who choose to take the newly implemented Bridging Pension Option.

DESCRIPTION OF THE GROUP AND ITS BUSINESS

Overview

The Group designs, develops, manufactures and services integrated power systems for use in the air, on land and at sea. It does so by developing world-leading technology, producing highly efficient products and providing through-life services in each of the Group's markets. As at 30 June 2020, the Group had an installed base of approximately 187,000 power systems in service worldwide, including 5,663 large engines, 7,398 business aviation aero engines, approximately 16,000 defence engines, and approximately 157,000 reciprocating engines across a number of land and sea markets. The Group's products are sold in over 150 countries and it employs about 51,700 people worldwide.

The Group operates through the following four core businesses, which comprise its operating segments:

- **Civil Aerospace:** the Civil Aerospace business is a major manufacturer of aero engines for the LCA, regional jet and business aviation markets. The business uses engineering expertise, in-depth knowledge and capabilities to provide through-life support solutions for its customers.
- **Power Systems:** the Power Systems business is a leading provider of high-speed and medium-speed reciprocating engines, and complete propulsion and power generation systems and service offerings. It serves the marine, defence, power generation and industrial markets and includes civil nuclear operations that supply safety-critical systems.
- **Defence:** the Defence business is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and helicopter applications. It has significant scale in the naval market and is the technical authority for through-life support of the nuclear powerplant for the Royal Navy's submarine fleet.
- **ITP Aero:** the ITP Aero business is a global leader in aero-engine subsystem design. Alongside the development, manufacturing, assembly and testing of engine components, it provides MRO services for regional airlines, business aviation, industrial and defence applications.

In 2019, the Civil Aerospace, Power Systems, Defence and ITP Aero businesses contributed 51%, 22%, 20% and 6%, respectively, of the underlying revenue generated by the Group's businesses.

Development of the Group

Key events

Year	Event
1884	Henry Royce partners with Ernest Claremont to make electrical fittings
1904	Royce develops his first motor car and enters partnership with Charles Rolls
1906	The new business is formally incorporated as Rolls-Royce Ltd.
1914	Rolls-Royce enters the design and production of aero engines in response to the UK Government's First World War requirements
1915	First flight of a Rolls-Royce aero engine: the Eagle
1919	The Eagle engine powers the first non-stop transatlantic flight by Alcock and Brown
1933	First run of the Merlin engine, which would go on to power the Spitfire and Hurricane fighters, as well as the Lancaster bomber, during World War Two
1950	Rolls-Royce enters the civil turboprop aviation market for the first time with the Dart gas turbine engine powering the Vickers Viscount
1953	The De Havilland Comet becomes the world's first commercial jet airliner, powered by the Rolls-Royce Avon engine
1987	Successful floating on the London Stock Exchange as Rolls-Royce plc
1990	Aero engine JV formed with BMW of Germany focused on the development of the BR700 family of small aero engines, with full control acquired in 2000
1995	Acquisition of Indianapolis-based Allison Engine Company, gaining a market position in the US defence industry along with the recently-developed AE3007 engine
1995	The Trent family of engines enters service with Trent 700 powering the Airbus A330

Year	Event
2010	The Trent XWB engine, designed to power the Airbus A350, runs for the first time
2011	Rolls-Royce and Daimler jointly take over the reciprocating engine business Tognum, which is run as a 50/50 JV until Daimler's share is acquired in 2014
2012	Sale of Rolls-Royce's 32.5% interest in the International Aero Engine AG joint venture to United Technologies Corporation
2015	The Airbus A350 enters service, powered by the Rolls-Royce Trent XWB
2018	Sale of L'Orange GmbH, a German manufacturer of fuel injectors, to Woodward Inc.
2019	Sale of the Commercial Marine business to Kongsberg Gruppen ASA
2019	Acquisition of the electric and hybrid-electric aerospace propulsion activities of Siemens (eAircraft)

The Impact of the Covid-19 Pandemic

Introduction

The COVID-19 pandemic has resulted in wide-ranging measures being implemented across the world in an attempt to contain the spread of the virus, including travel restrictions and advisories, curfews, quarantines, lockdowns and other restrictions on movement and non-essential services. As of the first week of April 2020, 94% of countries tracked by IATA had instituted significant travel restrictions. Of these, 75% of countries had implemented complete entry bans, halting all inbound and outbound international flights, while the remainder had implemented entry bans for individuals arriving from certain countries or required individuals to undertake compulsory quarantine upon arrival. This has had a significant effect on the Group's business.

The wide-ranging measures implemented in response to the COVID-19 pandemic have particularly affected the commercial aerospace sector in which the Civil Aerospace and ITP Aero businesses operate, as much of the global airline fleet has been temporarily grounded, resulting in a fall in global airline capacity (as measured by RPKs) by 94%, 91%, 87% and 80% in April, May, June and July 2020, respectively, compared to the same period in 2019 (according to IATA). Major global airlines have delayed or cancelled planned deliveries and orders for new aircraft, and a number of airlines have sought emergency funding from their own stakeholders and governments, or entered restructuring, with Airbus and Boeing making resulting significant reductions in production rates of the widebody aircraft for which the Group supplies engines. Specifically, production rates for Airbus's A350 and A330neo aircraft, for which the Group is the primary engine supplier, have been reduced from nine to ten aircraft per month and four aircraft per month, respectively, in 2019, to approximately six aircraft per month and two aircraft per month, respectively, as of 8 April 2020. Similarly, production rates for Boeing's 787 aircraft have been reduced from 14 aircraft per month in 2019 to an expected 10 aircraft per month in 2020 and an anticipated 7 aircraft per month by 2022.

More broadly, the COVID-19 pandemic has led to a significant reduction in global GDP, with global GDP predicted to fall in real terms by 4.9% in 2020, according to the International Monetary Fund, as compared to real terms GDP growth of 2.9% experienced in 2019. Unemployment is also expected to increase significantly in advanced economies from an average rate of 4.8% for 2019 to an expected average rate of 8.3% for 2020.

Prior to the onset of the COVID-19 pandemic, in the period between 2015 and 2019 (inclusive), the Group delivered substantially improved financial performance, while simultaneously investing heavily in new civil aerospace engine programmes and addressing the in-service issues on the Trent 1000 programme. During this period:

- widebody engine deliveries increased by 66%;
- the Civil Aerospace business's installed large engine fleet increased by 29% to 5,000 engines;
- EFHs for the Group's engines increased by 43%;
- the Power Systems business's operating profit margins improved by two percentage points and its underlying revenue compound annual growth rate was 10%;
- combined capital expenditure and gross R&D spending increased from £1.7bn to £2.2bn; and
- FCF increased to £873m (from £179m), despite incurring £405m of in-service cash costs relating to the Trent 1000 programme in 2019 affecting FCF.

Impact of the COVID-19 pandemic on the Group

The COVID-19 pandemic has had a significant impact on the Group's Civil Aerospace business. This business derives the majority of its cash flow from payments based on the number of hours that the Group's engines are powering its customers' aircraft during flights (generating approximately £4bn of gross cash inflow in 2019) and from the delivery of widebody engines (generating approximately £2.7bn of gross cash inflow in 2019).

In the six-month period ended 30 June 2020, as compared to the corresponding period in 2019, the aggregate number of EFHs recorded by customers of the Civil Aerospace business fell by more than 25% and the number of widebody OE engines delivered fell by 47%. Over the same period, the number of business aviation OE engines delivered fell by 8%. In this period, underlying revenue in the Civil Aerospace business fell by 37% to £2.5bn (from £4.0bn in the comparable period in 2019), with an underlying operating loss of £1.8bn. The commercial aerospace activities of the Group's ITP Aero business, which accounted for approximately 77% of the ITP Aero business's underlying revenues in 2019, have experienced a similar deterioration in end market demand.

Although the Group believes there may be early signs of recovery in flying activity and in broader macro-economic conditions, it recognises the uncertainty, in particular regarding the recovery of air travel demand, and has significantly lowered its expectations for demand for both new engines and aftermarket-related activity in the medium term.

Beyond the Group's Civil Aerospace business, the Power Systems business has experienced varying levels of COVID-19-related disruption and utilisation, with the business's customers in industrial markets most affected by lower activity levels. Naval and governmental end market demand has remained robust. As a result, the Power Systems business has seen an 11% reduction in underlying revenue with an underlying operating profit down by 79% and a 27% reduction in orders year-on-year in the six-month period ended 30 June 2020. As economic activity resumes, demand is expected to gradually recover, although the timing and shape of such recovery remains uncertain. In the medium term, some end markets may also experience structurally higher demand as a result of the COVID-19 pandemic, notably in mission-critical power generation.

The Group's Defence business has remained resilient and has not experienced any material operational or financial disruption, with underlying revenue in the six-month period ended 30 June 2020 increasing by 4%, as compared to the corresponding period in 2019, and an order intake to underlying revenue ratio of 0.8x for the same period.

The Group's immediate response to the COVID-19 pandemic

In its initial response to the COVID-19 outbreak, and in order to ensure the safety and wellbeing of its people and minimise operational disruption, the Group has rapidly implemented a number of proactive safety measures, in line with local and national guidelines. These have included remote working, as well as workplace measures, such as social distancing, enhanced hygiene procedures and modified shift patterns in the Group's manufacturing facilities. The Group continues to review and refine these practices in line with ongoing developments and local and national guidelines.

In relation to its financial position, the Group implemented a set of measures intended to conserve cash in March 2020, including:

- a reduction of capital expenditure on non-critical programmes by approximately one third compared to the Group's initial expectations for 2020 and cancellation of capacity expansion projects that are no longer required;
- a significant reduction in spend on consulting, professional fees and subcontractors, together with a material reduction in travel expenditure;
- a review of R&D and engineering expenditure, which led to expenditure reductions reflecting a re-phasing of certain programmes, such as UltraFan, over a longer period of time; and
- an approximately 10% reduction in global salary costs, largely achieved through temporary pay cuts for the Board and senior management, use of government furlough schemes and pay deferrals for staff.

These mitigating actions have already generated total cash savings of approximately £350m in the first half of 2020 and are expected to generate approximately £1bn in pre-tax cash savings in the full year ending 31 December 2020.

The Group has also moved quickly to reduce direct purchase costs, working closely with its suppliers to reduce procurement volumes in line with the changing view of demand across the Group's end markets, particularly in the Civil Aerospace business's engine delivery volumes. The Group's procurement levels remained at pre-COVID-19 level for the first quarter of 2020 before declining from the second quarter of 2020 onwards, with procurement spend expected to be approximately 50% lower in the second half of 2020 when compared to pre-COVID-19 levels. Procurement is then expected to remain stable at reduced levels during 2021. The Board's decision not to make the final 2019 shareholder payment will preserve an additional £137m of cash in 2020.

Alongside these actions, the Group has implemented some early actions to bolster its liquidity position, allowing it time to conduct a more detailed review of its capital structure and funding options, which has resulted in a broader, comprehensive set of actions intended to strengthen the Group's liquidity and balance sheet.

The initial actions taken included:

- entering into an additional £1.9bn Liquidity Facility with a maturity date in October 2021 (which is currently undrawn and will be cancelled on completion of the Rights Issue);
- issuing £300m of commercial paper through the UK government's CCFF with a maturity date of 17 March 2021; and
- entering into a £2bn five year Term Loan Facility, which is supported by an 80% guarantee from UK Export Finance.

On 20 May 2020, the Group announced a major restructuring of the Group to adjust to the new level of anticipated demand from customers in certain of its end markets as a result of the COVID-19 pandemic and to seek to restore its financial performance. Further details of the expected impact of this restructuring are set out in “—The Group's Strengths” and “—The Group's Strategy” below in the context of the Group's ongoing strategy.

The Group's Strengths

The Group's mission is to provide reliable, efficient and sustainable power for the world's critical applications across a range of end markets. Through an intensive focus on technology, the Group has developed leading positions in its chosen end markets across air, land and sea. These leadership positions have been built, in part, through incorporating cutting-edge technologies into complete power solutions that are maintained by the Group through the life of each product.

The Group believes that the following strengths will play an important role as the Group emerges from the effects of the COVID-19 pandemic and implements the longer-term strategy set out below.

The Group's products incorporate cutting-edge technologies. The Group has a track record of developing commercially successful new technology

The Group's products incorporate significant intellectual property, capturing cutting-edge technologies that it has developed over decades to provide safe, reliable and competitive power solutions to its customers across a variety of different applications. The Group has an intensive focus on technology, utilising its substantial in-house research capabilities as well as a broader network of 29 University Technology Centres, seven AMRCs, and 500 supply chain partners through its digital ecosystem. Over the past 15 years, the Group has invested approximately £11bn in aggregate in self-funded R&D. Additionally, the Group has a proven track record of efficiently funding its R&D spend through funding from external partners, including governments. From 2017 to 2019 (inclusive), total R&D spend has averaged 1.3 times the Group's own self-funded investment, as a result of this external collaboration. This significant R&D spend led to 830 new patents approved for filing during 2019.

A focus on advanced technology, engineering and IP content, coupled with the fact that most of the markets in which the Group operates are highly regulated, means that the Group generally benefits from high barriers to

entry. In the Civil Aerospace and ITP Aero businesses, commercial aero engines are extremely complex mechanical engineering products, requiring significant expertise in aerodynamic, thermodynamic and materials technologies. Similarly, in the Defence business, the Group is currently one of only a handful of companies capable of designing, integrating and manufacturing complete military jet engines, mainly for the UK and US governments. The Group's submarines business also has unique capabilities in small-scale nuclear reactors. Finally, the Power Systems business has focused on demanding, high-end applications for its reciprocating engines, in areas such as mission-critical back-up power for hospitals and data centres, where start-up time and reliability are critical. The Power Systems business provides naval applications, and is the sole provider of certain technological solutions to a range of government customers.

The Group also has a long-established track record of developing commercially successful technology and products, which have enabled it to grow its share in key markets. For example, in widebody engines, the Group's unique three shaft engine architecture allows a number of efficiency benefits and has enabled the Trent family of engines to develop a widebody market share of 34% in 2019, up from 13% 20 years ago and 31% five years ago. The Group has launched four new engines since 2010 with its overall widebody market share increasing from 26% in 2010 to 38% as at 31 December 2019 (based on widebody aircraft in service) and deliveries having increased 2.8 times from 2010 to 2019.

The Group focuses on developing integrated power system solutions

The Group integrates individual enabling technologies, integrating these into complete systems and power solutions. This allows the Group's customers to work with a single partner to provide their entire power needs for the chosen application. In the Civil Aerospace and Defence businesses, the Group's capabilities cover end-to-end design, assembly and through-life support of complete gas turbine power solutions. The Power Systems business is increasingly moving into the provision of complete power generation systems such as power 'gensets' and integrated propulsion systems for the rail and marine markets.

Through this end-to-end design capability the Group is able to operate primarily as a systems integrator, allowing a focus on its core competencies and the customer's needs, while also accessing a wide and flexible pool of talent and resources from its global supply chain. In-house manufacturing is focused on critical components, creating a number of tangible benefits including lower capital intensity and a reduced investment burden.

The Group's products provide an attractive aftermarket opportunity

Many of the Group's products have significant aftermarket and maintenance requirements during their operating lives, which typically run for decades. The Group provides complete through-life maintenance and support for its power solutions, including extensive use of "power-by-the-hour" LTSAs, as well as more traditional time and materials business. In 2019, 52% of the Group's underlying revenue was generated from aftermarket services. As a result of significant past investments and market share gains, the Group has built a large installed base which provides the opportunity for a large, captive, visible, and long-term revenue and cash flow stream. As at 30 June 2020, the Group's installed base included:

- over 5,000 large engines in service, with an average age of less than 9 years compared to the average lifespan of approximately 25 years for a commercial aero engine;
- approximately 9,000 small and business aviation engines in service with an average age of 19 years for small civil jets and 13 years (compared to a typical lifespan of up to 40 years) for business jets;
- more economic aircraft types, with 77% being twin-engined aircraft with engines in service post-1990;
- over 16,000 defence engines, where product lifespans can exceed 50 years; and
- approximately 157,000 reciprocating engines in the Power Systems business. The typical aftermarket sales versus original sale price ratio for a commercial marine engine is approximately three times while an engine for mining applications is approximately five times.

The Group expects to continue to derive significant aftermarket revenue and value from this installed base.

The Group enjoys strong customer relationships

The Group's focus on building complete power solutions provides the basis for strong customer relationships, with the Group acting as a single, trusted power provider for its customers. These relationships have allowed the Group to continue winning business during a period of increased macro-economic uncertainty associated with the COVID-19 pandemic, including reaching an agreement worth approximately US\$115m with the US Navy in June 2020 to provide engines and components for a number of its ships. In addition, the LTSA model for through-life support further deepens these relationships, aligning the Group's incentives with those of the customer regarding product reliability, durability and availability and thereby promoting a shared partnership ethos in the Group's interactions with its customers. Through this approach, the Group has built strong, direct relationships across all of its businesses and with its customer base that spans over 150 countries. This includes significant aircraft manufacturers, such as Airbus, Boeing, Gulfstream and Lockheed Martin, and with more than 400 airlines and leasing customers, 160 armed forces, 70 naval forces and more than 5,000 power and nuclear customers. The strength of these relationships can also be seen through the Group's collaboration with key customers, including working with Singapore Airlines to develop an open data and collaboration platform for the airline industry (Yocova) and forming strategic alliances with key customers in the Power Systems business, including the recent alliance signed with Chinese heavy machinery company XCMG.

The Group has a successful track record of partnerships globally

The Group has a long track record of working with a range of external partners such as corporations, governments and universities in order to leverage outside expertise, market access and capital. The Civil Aerospace business has formed three material joint ventures. Two of these, Hong Kong Aero Engine Services Limited and Singapore Aero Engine Services Pte Limited, provide MRO services. The third, Alpha Partners Leasing Limited, is an engine leasing joint venture with GATX Corporation, a global leasing company. The Civil Aerospace business also makes extensive use of RRSPs to outsource components or complete modules to trusted suppliers, forming closer relationships and aligning the incentives for suppliers with the overall ambitions of the Group's programmes. The Defence business has been a major partner on key European defence collaborations including EuroJet (to produce the EJ200 for the Eurofighter) and Europrop International (to produce the TP400 for the A400M) and is now a key member of Team Tempest, the UK-led effort to develop sixth-generation fighter capability in partnership with Sweden and Italy. The Power Systems business has also significantly accelerated partnering efforts in recent years, including launching joint ventures for engine assembly in both India and China, as well as signing partnering agreements to expand the business's capabilities, such as a gas genset supply agreement with 2G Energy AG and a hydrogen pilot project with Mercedes-Benz.

The Group's Strategy

The Group is undertaking a number of transformative actions in light of the COVID-19 pandemic and its adverse impact on the Group, to strengthen the Group's balance sheet, restructure the Group and shift its investment strategy in order to achieve a significantly reduced cost base with lower capital requirements. This is intended to restore the Group's financial performance, allow the Group to drive disciplined, broader growth and maximise value from the Group's existing capabilities, and position the Group to benefit from new technologies with a focus on more sustainable power.

The Board believes that the key end markets for its businesses remain fundamentally attractive and the strengths described above place the Group in a strong position to capitalise on this by implementing its strategy. The Group believes this will ultimately drive a significant improvement in FCF levels and attractive shareholder returns.

The Group's strategy is to:

- restore financial performance in order to improve returns and build a more resilient and more appropriate balance sheet;
- drive broader growth and maximise value from the Group's existing capabilities; and
- position the Group to benefit from new technologies, with a focus on sustainable power.

Restoring financial performance in order to build a more resilient and more appropriate balance sheet

Given the current significant uncertainty, on 1 October 2020, the Group announced the Rights Issue and the intention to conduct a bond offering in US dollars, euros, and/or pound sterling to raise at least £1bn alongside the potential additional terms loans and the disposals that the Group is targeting which, as announced as part of its 2020 Half Year Results Announcement on 27 August 2020, include the ITP Aero business. The Group believes these measures will build a more resilient and more appropriate balance sheet, and provide additional liquidity headroom to navigate through the COVID-19 recovery.

The Group has launched a restructuring programme that will re-size the cost base and capital requirements of the Civil Aerospace business, as well as to increase cost efficiencies. This programme is intended to deliver larger, permanent savings to complement the temporary mitigating actions delivered by the Group in 2020. The Group is also implementing cost optimisation programmes in the Power Systems business and across Group functions. These collective actions will result in increased operating leverage and leave the Group with a smaller central function and a re-sized Civil Aerospace business that is capable of delivering materially improved cash returns, despite a smaller end market.

The Group expects the restructuring programme to result in a proposed headcount reduction of at least 9,000 roles (subject, where applicable, to consultation) from a global workforce of approximately 52,000, with around 8,000 of these proposed headcount reductions in the Civil Aerospace business (approximately one third of the Civil Aerospace business pre-COVID-19 total). Headcount reductions of approximately 4,800 having taken place by the end of August, with at least 5,000 expected by the year-end. The Group anticipates that these actions will deliver total annual pre-tax cash savings of at least £1.3bn by the end of 2022, with proposed headcount reductions delivering approximately £700m of these total savings and the remainder being achieved through lower property costs, capital expenditure, and other indirect costs. These savings are expected to be fully realised in 2022. The restructuring is expected to result in total cash restructuring costs of approximately £800m, including severance and plant closure costs, phased as approximately £400m in 2020, £300m in 2021 and £100m in 2022.

The scope of this restructuring has already been determined, with specific implementation plans formed and subject to consultation currently underway with trade unions.

The Group intends to retain a strong set of capabilities and technologies following completion of the restructuring programme, allowing it to benefit from the strong fundamentals of its business.

The restructuring programme consists of five core elements as summarised below, the first three of which relate to the Civil Aerospace business, with the restructuring in the Civil Aerospace business being the largest in the Group's history.

Re-sizing the manufacturing footprint of the Civil Aerospace business

In response to the lower-demand environment in the civil aerospace market over the medium term, the Group is taking decisive action to significantly reduce the scale and, therefore, the fixed costs of the manufacturing footprint of its Civil Aerospace business. The Group also believes this provides an opportunity to deliver a significant change in the Civil Aerospace business's make-versus-buy strategy, focusing on high value manufacturing and increasing the use of outsourcing for lower value components. This strategic shift is expected to reduce the Civil Aerospace business's footprint, reduce capital intensity and increase the flexibility of the Group's cost base by introducing a higher proportion of variable costs.

The Group expects to undertake a major manufacturing footprint consolidation. This includes proposals to:

- consolidate widebody engine assembly and test from three global sites to one in Derby, UK;
- consolidate advanced Trent fan blade production from two global sites to one in Singapore;
- focus our advanced disc and turbine blade machining in the UK, including the consolidation of advanced turbine blade machining from two global facilities to one in Derby; and
- consolidate blisk production from three sites to two facilities in Derby and Oberursel, Germany.

These actions are expected to result in a proposed reduction in the Civil Aerospace business's headcount by approximately one third (around 8,000 roles) (subject, where applicable, to consultation).

Optimisation of MRO capabilities

Prior to the onset of the COVID-19 pandemic, the level of maintenance required to service the Group's installed base was expected to grow as the Group's engine fleet matures. However, given the impact of the COVID-19 pandemic, the Group has now reduced its expectations for the level of growth in maintenance demand in the coming years as a result of lower engine utilisation in 2020 and the early retirement of some engines. Total maintenance demand is now expected to be up to 10-15% lower in 2022 than previously expected.

The Group has, therefore, reappraised its plans for the expansion of its MRO network. The Group believes value in the aftermarket lies predominantly in the sale of high-value components, rather than in labour and capital-intensive service activity. The number of in-house MRO sites is expected to be reduced, while preserving the Group's core capability to carry out MRO activities as well as surge capacity for the network. To meet MRO demand in the coming years, the Group plans to utilise third-party MRO suppliers from its existing external network, strengthen existing joint ventures, and pursue additional joint ventures as necessary. These changes are expected to significantly reduce the capital resources required to support the Group's large installed base. For example, for the year ended 31 December 2019 the Group's capital expenditure on purchases of property, plant and equipment constituted 5% of its total underlying revenue, whereas for its peers the figure was closer to 3-4% (based on four European or US peers). Improving the Group's capital intensity is expected to help move the Group to a range closer to that of its peers in this area.

Capital-light spare engine strategy

The Group typically spends approximately £100m - £150m per year on spare engines, and has either full ownership or an interest in over 600 large and small engines. These engines are either leased directly to customers or are used to support customers who pay for spare engine coverage under the Group's LTSAs. This approach is considered to be sub-optimal due to the high capital burden and the asymmetry between variable flying hour revenue and the fixed costs associated with providing spare engines. The Group therefore intends to pursue third party partnerships to reduce capital intensity and increase the variability of spare engine costs to match the variable nature of LTSA revenue.

Further improvement in the Power Systems business

Although the Power Systems business benefits from the diversity of its end market exposure, the COVID-19 pandemic is expected to lead to lower revenue in 2020, before the business's end markets return to pre-COVID-19 levels by the end of 2021. As a response to changes in global demand, the Power Systems business is working actively to improve its manufacturing fixed cost base, optimising efficiency and balancing its global footprint and moving capacity from Europe and the US to India and China. These initiatives are expected to deliver in excess of £50m of annual pre-tax cash savings by the end of 2022. Going forward, the Power Systems Business expects to pursue disciplined investment in order to capture growth opportunities in key end markets. In addition, a review of the business's make-versus-buy strategy is currently in progress and has already resulted in actions to consolidate the business's manufacturing footprint. This is expected to improve capital cost efficiency and allow the business to realise significant operating leverage, whilst benefitting from growth in its services offering.

Reducing central functions

Under its existing restructuring programme, launched in 2018, the Group has made good progress in reducing the cost base of central functions. The Group expects to accelerate these efforts in response to COVID-19. By the end of 2021, central functions headcount is proposed to be reduced by approximately 1,000 full-time equivalent employees (subject, where applicable, to consultation) (representing approximately 20% - 25% of central functions headcount). In addition, the Group intends to expand and accelerate its existing plans to increase the outsourcing of certain activities.

Proposed headcount reductions and expected savings from the Group's restructuring announced on 20 May 2020

	2020	2021	2022	Total
Total headcount reduction (subject, where applicable, to consultation)	~5,000	~3,000	~1,000	>9,000
Expected implementation costs	~£400m	~£300m	~£100m	~£800m

Driving growth and maximising value from the Group's existing capabilities

In light of the effects of the COVID-19 pandemic, the Group is implementing a shift in its medium-term strategy. Given the expected market dynamics in each of its businesses, the Group intends to build a more balanced company, pursuing stronger medium-term opportunities. In its Civil Aerospace business, the Group's priority is to drive higher cash returns from its existing installed base, while seeking new approaches to reduce the investment requirements for the development of its next generation gas turbine. The Group is also placing a greater relative focus on investment opportunities in its Defence and Power Systems businesses.

Enhancing value in the Civil Aerospace business: the Group continues to believe there will be a return to long-term structural growth in commercial aerospace, driven by rising GDP and growing propensity to travel in emerging economies. Despite this return to growth, due to the severe impact of the COVID-19 pandemic the medium-term market for the Civil Aerospace business will be significantly smaller than previously anticipated, with air traffic not expected to recover to 2019 levels until at least 2024, according to IATA, and new annual widebody engine deliveries expected to stabilise at a lower level of approximately 250. As a result, the Group's focus is on driving greater value from its existing market positions, as well as deploying more efficient engineering approaches and exploring longer-term options to reduce the upfront investment and risk associated with new engine programmes.

The Group believes that there is significant value embedded in its existing installed base of approximately 5,000 widebody engines and 9,000 small and business aviation engines as at 30 June 2020. The investment required to develop the programmes within this installed base is largely complete and the Group now has an important opportunity to realise that value. Due to recent market share gains, the Group's fleets of installed engines are among the youngest in their respective markets, providing some protection from the risk of premature aircraft retirements and driving higher utilisation than for older fleets.

The table below shows the total-in service percentage of aircraft by aircraft type, as at 22 August 2020, with the first four aircraft together representing approximately 80% of the Group's widebody fleet.

% aircraft in service by aircraft type		
Aircraft type	% in service	% in storage
Airbus A350	80	20
Boeing 787	76	24
Boeing 777	65	35
Airbus A330	53	47
Boeing 767	45	55
Airbus A340	30	70
Boeing 747	17	83
Airbus A380	8	92

As well as realising the value in its widebody installed base, the Group is also seeking to capitalise on its leadership position in the business aviation sector, where it enjoys a 31% market share by value. This sector offers the benefits of low EFH volatility combined with longer engine lives when compared to the widebody market segment. The Group has launched two new flagship business jet engines over the last five years and expects to continue to improve its market penetration with the launch of further new products. The table below shows the Group's business aviation installed base from 2010 to 2019.

Business aviation engine installed base	
Year	Number of engines (‘000s)
2019	7.2
2018	7.1
2017	6.8
2016	6.6
2015	6.4
2014	6.0
2013	5.6
2012	5.2
2011	5.0
2010	4.7

As investment in new product introductions continues to reduce in the coming years, the Group expects to instead focus on driving value through a number of initiatives:

- **Improving time-on-wing:** the Group has a track record of improving time-on-wing for key programmes, including the Trent 700, which now has an average time-on-wing of approximately 5,000 cycles. The Group intends to accelerate the process for its newer engines to reach ‘mature’ profitability margins, with a particular focus on the Trent XWB.
- **Enhance services offering:** the Group plans to capture greater value in the aftermarket through expanding its service offering to cover adjacent, non-Rolls-Royce manufactured components, as well as offering additional pay-per-use and digital services through a single platform (e.g. availability and operational management). As outlined earlier, the Group is also exploring a new spare engine strategy to reduce capital intensity.
- **Drive engineering efficiency gains:** the Group is expecting to accelerate efforts to improve engineering efficiency through technology roll-outs. These efforts have already started to deliver improvements as part of the Group's previous transformation programme by significantly reducing the engineering hours required to complete component design and definition tasks.

Finally, the Group believes that long-term growth in the demand for air travel, combined with the lack of viable technology replacements for gas turbines in LCA for the foreseeable future, means that there is value in progressing its UltraFan programme for next generation gas turbine technology. However, as a result of the COVID-19 pandemic, investment in UltraFan, a scalable jet engine design suitable for widebody or narrowbody aircraft intended to be the successor to the Group's class-leading Trent large jet engine family, will be re-phased to adapt to probable delays in new product introductions by major aircraft manufacturers.

The Group is looking at new ways of working in order to deliver more compelling returns for shareholders. For example, the Group is actively exploring new forms of industrial partnership on the UltraFan programme to optimise investment returns and risk (which the Group considers important to its continued investment in the UltraFan programme), in addition to a re-phasing of its investment to adapt to the likely delay in entry into service of new UltraFan-powered aircraft. More broadly, the Group has explored new and different forms of partnerships and collaborations with industry participants in respect of its wider Civil Aerospace business. The Group intend to continue exploring these to deliver a new approach to investment.

Delivering growth in the Power Systems business: in recent years, the Power Systems business has been pursuing a number of growth opportunities through a focus on R&D as well as bolt-on acquisitions, including its acquisition of a majority stake in Qinous GmbH in January 2020, to enhance its microgrids offering, and of Kinolt Group SA in July 2020, to strengthen its market position in the key growth market of back-up power generation. Many of the Power Systems business's markets are expected to experience only a short-term negative impact from the effects of the COVID-19 pandemic, with some market segments also seeing growth opportunities. As a result, the Group is increasing investment in the Power Systems business and focusing on five key opportunities within the Group's existing core capabilities, as set out below, as well as growth in new technologies such as hybrid systems:

- **China:** the Group believes that China represents an important and under-exploited opportunity for the Group. The Power Systems business's strategy in China includes a distinct regional leadership structure, localising production and sales, and targeting partnerships with strategic customers. This strategy has already started to deliver results, with growth of 40% in the underlying revenue earned by the business in China in 2019 and further growth of 25% expected by the Group in 2020.
- **Power generation:** the Group's diesel technology is particularly relevant to the mission critical back-up power market. The Group believes this market may deliver significant growth in the medium to long term, driven by rising demand from data centres, hospitals, and critical infrastructure. The Group also intends to continue increasing both its market share and its value capture in this market, supported by the recent Kinolt acquisition.
- **Gas offering:** the Group has recently expanded its gas portfolio and expects growth in this market to be driven by a rising focus on reducing carbon emissions. The Group expects to benefit from markets where power density, start-up speed, and upfront cost are less critical.
- **Services:** the Group is investing to enhance the Power Systems business's aftermarket offering, which had historically been a more reactive, spare parts sales focused business, but which has the potential to provide a broader range of services and support. This investment is expected to include: (i) an expansion in the use of LTSAs; (ii) increasing the connectivity of the business's installed base; and (iii) extending the service offering to include certain competitor engines.
- **Renewable Solutions:** finally, the Group intends to develop its integrated power systems solutions, with its focus shifting towards important developing technologies, including hybrid, hydrogen and electric power solutions as well as renewable energy solutions.

Significant medium-term opportunities in the Defence business: defence budgets are expected to be relatively stable in the Defence business's key markets of the UK and US. The Group has invested significantly in recent years in pursuing growth opportunities in the defence market, including in two major opportunities in the US market, being the B-52 re-engine programme and the future vertical lift programme, which the Group believes have the potential for over 650 engines and over 4,000 engines respectively, with a combined estimated lifetime value of approximately £7bn in revenue. In May 2020, the United States Air Force issued a request for proposals in respect of the B-52 re-engine programme. The proposals received are currently being reviewed by the DoD. The Group has agreed to work as the exclusive partner of Bell Textron Inc. on a proposal for the future vertical lift programme to be submitted to the DoD in 2021 and expects that any involvement in the future vertical lift programme would be supported by the substantial completed investment at its Indianapolis site. The Group believes that it is well positioned in respect of these opportunities, which would be important to the Defence business's future growth.

The Group expects this revised approach to capital allocation to result in an overall reduction in R&D and capital expenditure from approximately £1.9bn in 2019 to approximately £1.5bn in 2022. In the medium term, this investment strategy is expected to result in approximately 20% of capital and engineering expenditure directed towards the Group's Power Systems business (compared to 14% in 2017 to 2019), with around 20% focused on its Defence business (compared to 9% in 2017 to 2019).

Positioning to benefit from new technologies, with a focus on sustainable power

The Group believes that the breadth of its engineering expertise and its established access to a range of end markets mean that it is well positioned to play a crucial role in the world's transition to a net-zero carbon

economy. Once the Group's financial returns and a more appropriate balance sheet have been restored, the Group intends to accelerate this aspect of its strategy to deliver substantial growth by 2025.

In line with its strategy, the Group has successfully developed modular low-carbon power solutions and is building the capability to produce world-class, modular and scalable electric power and propulsion systems. As technological capability improves, the Group expects to be able to apply these electrical systems to a growing portion of its end markets in ground-based and marine applications first, then in small, lightweight airborne applications and, finally, in larger airborne applications in the long term, with the aim of developing larger hybrid aircraft in the 2030s. The Group plans to execute a technology roadmap in order to bring revenue-generating products to market quickly, while also building expertise and a track record to support electrification of more challenging aerospace applications over time.

In terms of smaller-scale applications, the Group is developing sub-megawatt products, including both hybrid-electric and all-electric systems, for five priority markets which could create new, disruptive business opportunities for the Group: (i) general aviation; (ii) commuter aircraft (propeller driven with up to 19 seats); (iii) urban air mobility through EVTOL; (iv) auxiliary power units; and (v) directed energy defence products. The Group has conducted a successful ground test of a hybrid M250 engine for the EVTOL market and expects to have brought to market both EVTOL and electric commuter aircraft products by 2025. The Group has also developed an all-electric aircraft through the ACCEL programme, which is designed to break the world electric air speed record. In the defence market, the Group has also successfully tested a hybrid power and thermal management system for a 100kW directed energy system developed by its LibertyWorks team in conjunction with Lockheed Martin. The acquisition of Siemens' eAircraft business in September 2019 expanded the Group's electrical capabilities, including the acquisition of more than 305 applicable electrical patents and 180 engineers with electrical skill-sets. The acquisition also expanded the Group's electrical product offering, as well as its potential routes to market for such products.

Simultaneously, the Group is working to enhance its megawatt scale capability, with a short-term focus on land-and-sea applications where markets are already electrifying. The Power Systems business is already generating revenue in this area, with substantial growth expected by 2025. The current principal route to market in this area is through the Power Systems business. The Group was first-to-market with a hybrid system for the rail sector, which delivers up to a 30% reduction in CO₂ emissions and has developed a proven microgrid product offering with one such unit in operation which powers the Power System business's Friedrichshafen production facility. Longer term, the Group intends to leverage the expertise gained through these megawatt scale land and sea applications, and the domain expertise gained through certifying sub-megawatt scale airborne systems, in order to ready the technologies for the eventual electrification of larger regional aircraft in the 2030s.

In addition to these electric power solutions, the Group is using its expertise in aviation and lower environmental impact power to explore the market for sustainable fuel development.

The Group is also exploring commercial applications for the production of low carbon power through development of SMRs, which leverage the Group's nuclear skills and knowledge from submarine applications. The Group's SMR consortium, comprised of Assystem, Atkins, BAM Nuttall, Laing O'Rourke, National Nuclear Laboratory, Nuclear AMRC, Jacobs and TWI, seeks to use nuclear skills and knowledge from submarine applications as the basis for off-site construction of smaller, modular components using advanced manufacturing techniques. This is expected to reduce the cost of nuclear power while also adding certainty to the build-time and energy cost. In 2019, the project received initial match funding of £18m from the UK Government to progress this new type of compact smart nuclear power station and it has the potential to receive a further £200m of follow-on funding from the UK Government matched by £200m from private sector investment. The Group believes that its expertise provides a favourable positioning in the SMR market, which is set to reduce the cost of low carbon grid power and provide an energy source for sustainable fuels such as hydrogen and sustainable aviation fuel, the latter being compatible with the Group's existing gas turbine technology and facilitating lower net carbon long haul flights. Such fuel technology may ultimately result in zero carbon flights where the fuels are produced using green power. The Group expects its first SMR to be connected to the national grid and to generate electricity by 2029 and estimates that the SMR market could ultimately be worth over £100bn in 2030 to 2050.

In line with the market more generally, the Group is increasing its focus on hybrid, hydrogen and electric power solutions as well as renewable energy solutions. Approximately 4% of the Group's investment spending related to low net carbon capabilities in 2019. This is expected to increase to approximately 20% by 2023.

Financial Outlook

As outlined above, the COVID-19 pandemic has had, and continues to have, a significant effect on the Group's business. Despite rapid actions to conserve cash, the impact of COVID-19 on EFHs and other aftermarket activity in the Civil Aerospace business, the decision to cease invoice discounting (£1.1bn at FY19), and a large working capital outflow due to lower activity levels together means that it anticipates a free cash outflow during 2020 of approximately £4bn (with underlying revenue of approximately 25-30% lower than 2019). The majority of this impact occurred in the first half of 2020, with a free cash outflow of £2.8bn. A reduced free cash outflow of approximately £1bn is expected in the second half of 2020, including as a result of a modest recovery in EFHs expected in the fourth quarter of 2020. In 2021 the Group expects a significantly reduced free cash outflow relative to 2020, as EFHs continue to recover and savings from its restructuring programme are realised, with positive cash flows targeted during the second half of 2021.

Over the long term the Board believes that the key markets for the Group's businesses remain fundamentally attractive. In the Civil Aerospace business, the Group expects aftermarket activity to gradually recover, with large engine EFHs reaching 2019 levels by 2024-2025, though remaining below the pre-COVID-19 pandemic trajectory. New widebody engine deliveries are expected to remain lower at around 250 per year in 2020 to 2022, but still to exceed retirements of 100 to 150 per year during the same period (excluding the one-off impact of retirements in 2020, particularly on older Trent 900 and Trent 500 fleets). In a "reasonable worst case" scenario we expect approximately 130 widebody engine deliveries in 2022. The widebody engine delivery outlook also drives a large portion of the ITP Aero business's expected demand, though the Group expects some growth in its non-widebody activities in narrowbody and business aviation. In the Power Systems business, the Group anticipates a recovery in most key end markets by 2021, with particularly strong growth in mission critical power generation and strong regional growth from China. The key markets for the Group's Defence business, the US and UK, are expected to remain resilient.

Supported by this recovery of the Group's end markets, as well as the decisive actions the Group has taken to significantly restructure its cost base, the Group is targeting a return to annual FCF of at least £750m (excluding disposals) as early as 2022. This expected improvement of approximately £4.75bn in FCF performance from 2020 to 2022 (excluding disposals) is expected to be driven by four main factors:

- **No repetition of one-off working capital outflows:** comprising the approximately £1.1bn of one-off cessation of invoice-factoring and approximately £1bn expected working capital movement driven by lower activity levels described above.
- **Recovery in our Civil Aerospace business:** the Group expects widebody EFHs to decline by approximately 55% in 2020, compared to 2019, recovering to approximately 70% of 2019 levels in 2021 and approximately 90% of 2019 levels by 2022, before returning to GDP-driven growth. This anticipated recovery to 90% of 2019 levels in 2022 is expected to drive more than £1.5bn of additional cash receipts (as compared to 2020), with further growth expected thereafter. Additionally, an FCF improvement of over £300m is expected to be driven predominantly by improved time and materials revenues and lower widebody OE losses. The Group also expects an ongoing reduction of Trent 1000 in-service costs of approximately £200m to £300m. In a "reasonable worst case" scenario, the Group expects widebody EFHs to recover to approximately 80% of 2019 levels by 2022.
- **Operating cost reduction:** the Group's restructuring is expected to deliver Group-wide pre-tax cash savings of at least £1.3bn per annum by the end of 2022 (including remaining savings of approximately £100m from the restructuring programme announced in 2018). This will replace and expand the expected £1bn of temporary cost saving measures implemented by the Group during 2020. The reorganisation is focused on reducing the fixed cost footprint in the Civil Aerospace business, with a significant reduction in headcount and facility footprint to match the new demand outlook. This lower fixed cost base supports a continued reduction in the average losses on widebody OE engines.
- **Power Systems business recovery and Defence business resilience:** improved performance in the Power Systems business and continued resilience in the Defence business, along with receipts from the ITP Aero business, is expected to drive approximately £200m of additional FCF compared to 2020. The Group expects this improvement in the Power Systems business to be driven by a cyclical recovery in key end markets as well as the Group's continued strategy to boost growth through a focus on power generation systems, aftermarket growth, and market-share gains in China.

The targeted return of FCF of at least £750m (excluding disposals) as early as 2022 includes the expected impact of temporary outflows in that year, including approximately £300m of foreign exchange cash costs relating to the Group's decision to reduce the size of its hedge book.

Where the Group is able to restore financial performance as early as 2022, the Group believes that, thereafter, it has an attractive medium-term outlook. The Group expects its target FCF of at least £750m (excluding disposals) described above to continue to grow in the future, as the temporary negative outflows relating to the reduction in the Group's hedge book and ongoing Trent 1000 costs unwind over time. This expected FCF growth after 2022 is expected to lead to continued deleveraging. In addition, the Group's underlying businesses are expected to deliver growth. The Civil Aerospace business is expected to return to a growing installed base and the Group expects to deliver additional growth in FCF as it improves cash returns from its current installed base. The Group's Defence business is expected to continue delivering resilient performance, with important growth opportunities over time as major projects are awarded. The Power Systems business is expected to return to 2019 underlying revenue levels by 2022 and to deliver growth in excess of GDP given the tailwinds the business benefits from, including low carbon opportunities over time.

For further details about the Group's financial performance see "*Operating and Financial Review*". This document contains forward-looking statements. See "*Forward-Looking Statements*".

Business Segments Overview

Civil Aerospace

Overview and competitive positioning

- The Group's Civil Aerospace business is a major manufacturer of commercial aero engines.
- In 2019, Civil Aerospace underlying revenue of £8.1bn comprised 51% of the underlying revenue generated by the Group's businesses.
- #1 by market share in widebody aircraft engines (55% of widebody order backlog) and #1 by market share in business aviation engines (approximately 40% of market by value).
- 40% of 2019 underlying revenue in the Civil Aerospace business was generated through OE sales and the remaining 60% through aftermarket services.

The Civil Aerospace business is a major manufacturer of aero engines for the LCA, business aviation, and regional jet markets. The Civil Aerospace business acts as an original equipment manufacturer ("OEM"), responsible for designing, certifying and assembling complete engines, as well as manufacturing critical components. Additionally, the business provides through-life support solutions for its customers. Due to the high maintenance requirements of aero engines, the significant majority of revenue and profit on an engine is made in the aftermarket, with new deliveries often made at a loss or modest profit. As a result, the Civil Aerospace business has been at the forefront of developing comprehensive service packages to maximise aftermarket value. The Group's LTSAs charge customers a US dollar rate per EFH, thereby aligning the interests of the Group with the customers' focus on durability and reliability. In large engines, the business's LTSA contracts are offered under the TotalCare brand, while in business aviation the Group offers similar CorporateCare solutions.

In the large engine commercial aircraft market, the Civil Aerospace business's customers consist of the two major LCA manufacturers, Airbus and Boeing, as well as established global airlines, including Singapore Airlines, Delta Air Lines, All Nippon Airways, Cathay Pacific, British Airways, Emirates, and China Eastern Airlines, which together provide a favourable geographic mix. Within this market, the Civil Aerospace business primarily serves the widebody – or twin-aisle – segment, where its successful Trent family of engines competes principally with those of General Electric. The business holds strong positions across most of the current in-production widebody aircraft, including sole-source positions on both the Airbus A330neo and Airbus A350. As a result, the Civil Aerospace business held approximately 55% of the order backlog of widebody aircraft, totalling 2,072 engines as at 31 December 2019.

Trent engine family market share (2019) ⁽¹⁾				
Engine	Aircraft Type	Market share	In Service	On Order
Trent 7000	Airbus A330neo	Sole-source	80	576
Trent XWB	Airbus A350	Sole-source	660	1,133
Trent 1000	Boeing 787	34%	658	246
Trent 900	Airbus A380	48%	428	13
Trent 800	Boeing 777	40%	320	0
Trent 700	Airbus A330	61%	1,606	10
Trent 500	Airbus A340-500 and -600	Sole-source	240	0
Total	—	—	3,992	1,978

(1) Figures as at 31 December 2019.

Source: Cirium and internal Rolls-Royce data.

In business aviation, the Civil Aerospace business's customers include the aircraft manufacturers Gulfstream and Bombardier. The Civil Aerospace business has a leading position with approximately 31% of the business aviation engine market by value, driven by the high value large cabin, very long range segment. Nevertheless, Gulfstream and Bombardier have both reduced near-term production rates and the number of new engines the Group needs to produce has dropped by 25-30%.

Finally, the Group holds legacy positions in both regional aircraft engines, with the AE3007 powering the Embraer ERJ 145/140/135 aircraft, and in narrowbody through the V2500, which is one of two engine options on the Airbus A320ceo alongside the CFM International CFM56. The Group was previously a member of the International Aero Engine consortium, which produced the V2500, until the sale of its stake in 2012. The Group continues to provide parts for the programme, and also receives an annual payment from the consortium based on EFHs that will run until 2027.

End market conditions

Introduction

Of the market segments outlined above, the Civil Aerospace business's largest end market exposure is to large engines for widebody aircraft, with a substantial business jet exposure and modest legacy exposure in the narrowbody and regional markets. These markets generated 71%, 14%, 11% and 4%, respectively, of the business's revenue in 2019 and they are all driven by shared long-term trends of global economic growth and a rising demand for air travel, alongside a growing environmental focus on reduced emissions that will drive demand for more efficient engines. In the short term, the COVID-19 pandemic and global travel restrictions have also had a significant impact across all of the Civil Aerospace business's end markets.

The civil aerospace market prior to COVID-19

Global demand for air travel is closely linked to changes in global GDP, with rising wealth and economic activity creating growing demand for both passenger travel and freight transport. While air travel is highly correlated with GDP, it has historically grown faster than the global economy as measured on a GDP basis. According to the International Civil Aviation Organization, the compound annual growth rate in RPKs for the period from 2000 to 2018 (inclusive) was 5.4%. Over the same period, global nominal GDP grew at a compound annual growth rate of 2.9% (based on constant 2010 US dollar values), according to the World Bank. In 2019, global passenger volumes (measured in RPKs) grew 4.2%, with growth of 4.8% in the Asia-Pacific region, 4.5% in Africa, 4.3% in Europe, 4.1% in Latin America, 3.9% in North America, and 2.3% in the Middle East, according to the International Civil Aviation Organization. Growth in the global demand for air travel creates increased demand for new aircraft as commercial airlines expand and/or renew their fleets. Increased demand for new aircraft serves, in turn, to generate increased demand for aircraft engines, including those offered by the Group's Civil Aerospace business. In addition, increasing demand for air travel is likely to result in higher utilisation of the Group's existing installed base of aircraft engines where, in the majority of cases, the Group charges customers on a per-flying-hour basis.

In addition, improving living standards across the world, and particularly in the developing world, have historically been associated with an increased propensity to fly. Air travel penetration remains relatively low in many areas of the world, with approximately 80% of the world's population having never taken a flight.

Developing economies in particular are expected to contribute substantially to future increases in demand for air travel as improved living standards and rising disposable incomes increase the propensity to travel. In addition, the availability of affordable flight has also driven growth in air travel by increasing the affordability of air travel for those with lower disposable incomes. For instance, the unit cost of air transport has fallen by a factor of four since 1950, according to IATA. As a result, ticket prices for flights have fallen significantly in the past decades, contributing to the above-GDP growth in passenger volumes.

The civil aviation market has also experienced a change over the past few years in the way aircraft are used. Historically, the industry operated primarily on a ‘hub-and-spoke’ model, with widebody long-haul flights travelling primarily to large ‘hub’ airports before passengers caught connecting narrowbody flights to their final destination. In recent years there has been an increasing shift towards ‘point-to-point’ travel, facilitated both by the rise in low-cost carriers as well as the increasing range of modern aircraft allowing new routes between cities. Improvements in fuel efficiency and range mean that narrowbody aircraft have become more economically viable on longer routes, a trend which can be seen in the growth in average flight times for narrowbody aircraft from approximately 1.9 hours in 2000 to approximately 2.3 hours in 2018. This trend poses a risk to some widebody demand, particularly on long-haul routes with limited business travel or freight demand (both of which are more difficult to serve using narrowbody aircraft). At the same time, there has been an increase in demand for widebody aircraft on some short-haul routes, particularly in emerging economies, as infrastructure bottlenecks in respect of available pilots and airport slots have resulted in airlines utilising larger aircraft to serve growing passenger demand.

The civil aerospace OE market experiences some seasonality, with higher levels of activity (including spare engine sales) typically seen later in the year, driving stronger expected OE cash flows in the second half of the year than are normally experienced in the first half of the year.

The impact of COVID-19 on the Civil Aerospace business

There has been a significant negative impact on the Civil Aerospace business’s widebody business as a result of the COVID-19 pandemic and government restrictions imposed in response, which have caused unprecedented disruption to the entire global aerospace industry. The widebody market segment has experienced the most significant declines due to its long-haul, international focus with the Group’s widebody EFHs declining approximately 25% in the first quarter of 2020 and approximately 75% in the second quarter of 2020, resulting in an overall decline of approximately 50% in the first six months of 2020, in each case as compared to the corresponding periods in 2019. In the months of April, May and June, when the impact of the COVID-19 pandemic was most significant, the Group’s large engine EFHs were 82%, 74% and 75% lower, respectively, improving slightly to 73% lower for July, in each case as compared to the corresponding periods in 2019. As an example of the financial impact of EFHs changes, a 1% change in large engine EFHs versus 2019 results in an approximately £30m impact to flying hour cash receipts. The table below sets out the Group’s widebody EFHs from 2012 to the first six months of 2020 (inclusive).

Group widebody EFHs – 2012 to HY2020 (inclusive)	
Year	Total EFHs (m)
2012	9.4
2013	9.8
2014	10.6
2015	10.7
2016	11.2
2017	12.6
2018	14.3
2019	15.3
HY 2020	4.0

The table below sets out the percentage decline in international RPKs as compared to the same months in 2019.

2020 International RPKs	
Month	% change compared to 2019
April	(98.4)
May	(98.3)
June	(96.8)
July	(91.9)

The table below sets out the percentage decline in international available seat kilometres (“ASKs”) as compared to the same months in 2019.

2020 International ASKs	
Month	% change compared to 2019
April	(95.1)
May	(95.3)
June	(93.2)
July	(85.2)

The table below shows the Group’s EFHs split by region (based on airlines schedules for March 2020 as at 20 January 2020).

2020 EFHs by scheduled departures from each region	
Region	% of EFHs
Asia Pacific	28
Europe	25
Americas	21
Greater China	16
ME&A	10

The civil aviation industry as a whole has been materially adversely affected by the COVID-19 pandemic and government restrictions adopted in response. In particular, airlines in Asia, Europe and the United States have been forced to suspend most, if not all, of their operations. Airlines have also found it necessary to adopt various operational mitigating measures, including placing staff on furlough and/or terminating employment contracts, reducing investment in new aircraft and requesting extensions on rent payments for leased aircraft. The ability of airlines to fund the acquisition of new aircraft and/or invest in their current fleets has been significantly restricted by the effects of the COVID-19 pandemic. This significant fall in demand has resulted in a material reduction in aircraft production, with both Boeing and Airbus having reduced the production rates for their commercial aircraft as a result of the crisis. As a result of reductions in aircraft production, the Civil Aerospace business delivered 137 large engines in the first six months of 2020, compared to 257 large engines in the corresponding period in 2019.

Business aviation has also seen a significant reduction in activity as a result of the COVID-19 pandemic, with travel restrictions leading to a reduction in business jet utilisation, though the impact has been less severe than that seen in the widebody market, with business jet and regional EFHs in the six month period ended 30 June 2020 approximately 30% lower than during the corresponding period in 2019. Alongside reduced utilisation of aircraft, demand for new aircraft has also been negatively affected and the Civil Aerospace business’s aircraft manufacturer customers have indicated that they anticipate a reduction in delivery volumes during 2020 as a result. In the longer-term, the Group expects a recovery in business aviation demand as economic activity recovers, with long-term demand driven by economic growth as well as growth in the number of ultra-high net worth individuals (“UHNWI”). In recent years, the growth in the number of UHNWIs has significantly outpaced both population growth and GDP, with the number of billionaires almost tripling in the last decade.

The future of the civil aerospace market

Historically, prior crises have been followed by sustained recoveries in air traffic levels. For example, commercial air traffic levels recovered to pre-crisis levels within two years following the global financial crisis of 2008-2009 and recovered within six months following the SARS outbreak of 2003. The rates of recovery of air traffic levels following these crises cannot be taken as reliable indicators of the rate of recovery following the onset of the COVID-19 pandemic. However, the Group expects that the underlying structural trends driving growth in air travel will result in a sustained recovery in the medium term as the ongoing impact of the COVID-19 pandemic diminishes.

Global travel restrictions have started to ease in some jurisdictions and the market has shown some limited signs of recovery. In June 2020, the year-on-year decline in RPKs was 87%, which represented a significant improvement from the 94% year-on-year decline seen in April 2020. The trajectory of this recovery remains uncertain, with continuing risks from any future increase in COVID-19 infection rates and the reintroduction of more restrictive travel restrictions in response. The Group currently expects that levels of global air traffic will experience a sustained recovery during the second half of 2020 and the first half 2021, followed by a continuing but more gradual recovery and growth trajectory after 2021, with recovery in global air traffic not expected to reach 2019 levels until at least 2024, according to IATA.

In the longer-term, the Group expects the civil aerospace market to continue to be an important market that will continue to be driven by the same market trends witnessed prior to the onset of the COVID-19 pandemic. These trends are expected to include: (i) global economic growth in both the developed and the developing world; (ii) increasing use of air travel in many areas of the developing world that currently display very low market penetration; and (iii) growth in business jet travel supported by further increases in the number and wealth of UHNWIs. At the same time, the need to move to a lower net carbon economy is driving structural demand for newer, more efficient aircraft with reduced greenhouse gas emissions.

Production and manufacturing

As at 30 June 2020, the Civil Aerospace business employed approximately 23,000 people across 169 sites, with a divisional headquarters in Derby, UK. The Civil Aerospace business's manufacturing footprint consisted of 33 sites around the world, with key facilities located in the United Kingdom, Germany, Singapore, and the United States. The majority of its sites cover the production of engine components, including turbine blades, fan blades, compressor blades, disks, and shafts. Three locations are engaged in the assembly and test of engines: Derby (UK), Dahlewitz (Germany), and Seletar (Singapore). Additionally, six sites are focused on MRO activities.

As at 30 June 2020, the Civil Aerospace business's five largest locations by total headcount were as follows:

- **Derby, UK:** approximately 9,100 employees across design, assembly and testing and component manufacture of large engines including the Trent XWB;
- **Dahlewitz, Germany:** approximately 2,600 employees primarily engaged in business aviation design, assembly and testing, as well as large engine assembly and test for the Trent XWB;
- **Inchinnan, UK:** approximately 1,200 employees manufacturing compressor blades and performing MRO activity;
- **Solihull, UK:** approximately 1,100 employees producing Engine Control Systems; and
- **Seletar, Singapore:** approximately 800 employees engaged in the production of fan blades and the assembly and test of large engines, including the Trent 700 and the Trent 1000.

The Civil Aerospace business delivered 510 large engines in 2019 compared with fewer than 200 in 2010. Simultaneously, the Civil Aerospace business has been working to reduce the cost of its components and to increase the efficiency of engine assembly as it seeks to improve the profitability of new engine deliveries. This involves altering the design and production process of components, as well as investing in advanced manufacturing techniques including additive manufacturing, advanced modelling, and automation.

As discussed under “—Power System—End market conditions”, the COVID-19 pandemic has had a significant impact on the aviation industry and, as a result, the Group lowered its expectations for demand for

both new engines and components in the medium-term. Consequently, the Group is implementing a material restructuring of its Civil Aerospace business to match the revised demand outlook, with further detail provided under “—The Group’s Strategy—Restoring financial performance in order to build a more resilient and more appropriate balance sheet”.

Aftermarket

Aftermarket activities are the principal driver of revenue for the Civil Aerospace business at 60% of 2019 revenue. Due to substantially more attractive margins than those achieved on OE sales, aftermarket activities contribute an even larger proportion of the business’s profit and cash flows. Through the large installed base of 5,663 Rolls-Royce engines as at 30 June 2020, the Group has a visible and recurring long-term revenue stream through providing aftermarket services. In particular, the Civil Aerospace business’s large engine fleet is currently at an early stage of maturity, with an average age of less than 9 years compared to the typical in-service life of up to 25 years for a widebody aircraft, providing an attractive long-term revenue opportunity. The Civil Aerospace business’s aftermarket activities take two principal forms:

- **LTSA (representing 65% of the Civil Aerospace business’s 2019 aftermarket revenue):** providing comprehensive maintenance services to the customer in exchange for a fixed hourly fee to utilise the engines (‘power-by-the-hour’). The Civil Aerospace business’s LTSA comprise its TotalCare and CorporateCare products; and
- **T&M Contracts and others (representing 35% of the Civil Aerospace business’s 2019 aftermarket revenue):** where no LTSA agreement exists, customers pay for the labour and component costs of maintenance at the point of consumption.

In both the LTSA and T&M Contract aftermarket models, demand is ultimately driven by utilisation of the installed base, either directly through EFHs payments for LTSA engines or indirectly by the need for overhauls and spare parts sales for engines covered by T&M Contracts. In recent years, the Civil Aerospace business has seen a significant expansion of its installed base, which in turn has led to significant growth in widebody EFHs (with a compound annual growth rate of approximately 8% in the period 2013 to 2019). The table below provides a breakdown of the Civil Aerospace business’s installed fleet, showing the growth of the installed fleet and invoiced EFHs over recent years:

Cumulative installed base of engines ⁽¹⁾							
Installed base by engine	2013	2014	2015	2016	2017	2018	2019
RB211 22B	3	3	3	3	3	3	3
RB211 524	455	352	302	278	266	242	210
RB211 535	1,026	1,012	908	868	826	850	824
RB211 Total	1,484	1,367	1,213	1,149	1,095	1,095	1,037
Trent 500	440	388	352	336	280	284	240
Trent 700	1,114	1,288	1,388	1,460	1,590	1,636	1,606
Trent 800	436	422	362	352	330	334	320
Trent 900	244	280	304	332	360	400	428
Trent 1000	84	164	260	384	476	546	658
Trent XWB-84	0	2	30	124	278	432	590
Trent XWB-97	0	0	0	0	0	28	70
Trent 7000	0	0	0	0	0	2	80
Trent Total	2,318	2,544	2,696	2,988	3,314	3,662	3,992
Civil Large Engines	3,802	3,911	3,909	4,137	4,409	4,757	5,029
Spey	580	506	460	430	404	360	284
Tay	2,019	2,011	2,035	2,027	1,993	2,009	1,946
AE3007	2,598	2,534	2,468	2,326	2,302	2,448	2,472
BR700	2,696	2,964	3,388	3,642	3,858	4,098	4,322
Civil Small Engines	7,893	8,015	8,351	8,425	8,557	8,915	9,024
Civil Total	11,695	11,926	12,260	12,562	12,966	13,672	14,053
Large engine invoiced							
EFHs (million)	9.8	10.6	10.7	11.2	12.6	14.3	15.3

(1) The installed base figures included in this table are cumulative and show the total number of engines comprising the Group’s installed base of engines in each year.

Alongside net fleet growth, the Civil Aerospace business's focus is on maximising its aftermarket cash flows through two mechanisms:

- **increase time-on-wing:** time-on-wing refers to the period of time an engine can be utilised in-between major overhauls. A longer average time-on-wing results in fewer service visits for an engine over its lifetime and so higher returns under LTSA contracts. The Group has a track record of iterative improvements to the design of its products to maximise time-on-wing, including the Trent 700 engine, which has achieved a 6-7 year average interval; and
- **increase service visit cost efficiency:** the Group's efforts to reduce the manufacturing cost of components through redesign and improved manufacturing processes not only benefit new engines, but also reduce the cost of components consumed in service visits.

Engine leasing

The Group leases engines to customers of the Civil Aerospace business, predominantly airlines, when they require additional engines to support their fleets. The engines are leased by airlines from various engine leasing joint ventures the Group has entered into with GATX Corporation. Lease agreements entered into by the Group's joint ventures with lessees generally include provisions intended to protect the leased engine assets owned or leased by the Group, including redelivery conditions and a requirement for cash compensation if leased engines do not comply with those conditions when returned. Damage caused to engines while on lease is addressed by a requirement to either repair or to pay an agreed value in respect of the repair required. The Group's normal practice is to only lease engines once it has confirmed that appropriate insurance coverage has been put in place by the lessee covering a pre-agreed minimum insured value in respect of each leased engine.

Trent 1000 programme

In respect of the Trent 1000 engine, which powers the Boeing 787, the Group has been dealing with three significant technical issues, which have affected each of the three variants of the engine (Package B, Package C and TEN). These issues are unprecedented in scale and have caused disruption to the Group's customers and significant financial cost to the Group, in the form of both technical costs to implement the technical fixes to the programme and also in the form of significant customer disruption-related compensation. Substantial progress has been made in resolving the issues, which remain a key priority of management and the Board. Of the nine technical fixes required, the Group has so far designed eight and certified seven and these are now being incorporated into the fleet.

The Group has successfully delivered its plan to reduce customer disruption, bringing the number of customer aircraft on the ground as a result of these issues down to zero as at 30 June 2020. The Group continues to make good progress rolling out the required fixes to the fleet, as well as designing the final fix (the high-pressure turbine blade for the TEN variant) with the key certification processes having been successfully completed in July 2020 and further examinations planned for the third quarter of 2020. The Civil Aerospace business remains on track to have the final fix ready to begin incorporation into the fleet by the end of H1 2021. Reflecting the progress made, the provision for Trent 1000 in-service issues has been reduced by about £0.5bn in the Group Consolidated Interim Financial Statements as compared to the Group 2019 Consolidated Financial Statements. The Group incurred £578m of additional in-service costs in respect of the Trent 1000 engine issues in 2019 and expects to reduce this to £200m - £300m in 2022, before reducing such costs to less than £20m beyond 2023.

Trent XWB-84

During routine inspections as part of the first scheduled Shop Visits for older Trent XWB-84 engines, the Group has identified indications of wear in the intermediate pressure compressor of a small number of engines that have been in service for four to five years and are approaching their first overhauls. None of these engines has experienced any abnormal in-flight operation; however, the Group will inspect all other Trent XWB-84 engines of a similar service life.

There are currently just over 100 Trent XWB-84 engines that have been in service for at least four years. The Group has already inspected the majority of those engines and has found signs of wear in a minority of those inspected. The Group has also taken the precaution of sampling a number of younger Trent XWB-84 engines and has found no unexpected wear.

Given the limited scale of additional work which the Group anticipates will be required at already planned Shop Visits to address this wear, together with the availability of replacement parts and spare engines, the Group does not currently expect this issue to create significant customer disruption or material annual cost. The EU Aviation Safety Agency issued a notification of a proposal to issue an Airworthiness Directive in respect of Trent XWB engines on 12 August 2020.

Power Systems

Overview and competitive positioning

- The Power Systems business is a provider of high-speed and medium-speed reciprocating diesel and gas engines as well as complete propulsion and power generation systems.
- Strong positions across mission-critical power generation, marine, and industrial markets.
- In 2019, Power Systems underlying revenue of £3.5bn comprised 22% of the underlying revenue generated by the Group's businesses.
- 67% of 2019 underlying revenue in the Power Systems business was generated through OE sales and the remaining 33% through aftermarket services.

The Power Systems business produces high-speed and medium-speed diesel and gas engines and complete systems to serve the marine, power generation, industrial, and defence markets. The business also includes the Group's civil nuclear operations that supply safety-critical systems for the nuclear market. Additionally, the business is working to become a complete systems provider, expand its aftermarket offerings, and to build its expertise in gas engines and hybrid and electrical systems in order to drive future growth as key markets transition towards low net carbon power.

The Power Systems business's core existing capability consists of a range of diesel reciprocating engine families ranging from 150kW up to 10,000kW. Within this portfolio, the S2000 and S4000 series engines, offer power ranges above 1,000kW and are sold across all of the Power Systems business's key end markets of power generation, marine, and industrial. As well as this core diesel portfolio, the Power Systems business has been investing to expand its liquefied natural gas ("LNG") offering, with LNG engines offering up to a 25% improvement in CO2 emissions versus a diesel equivalent. Over the last decade, the Power Systems business has entered the market for gas continuous power generation as well as launching a mobile gas marine engine that meets the IMO III emissions standards. In 2019, the business entered a strategic partnership with 2G Energy to further enhance its gas power generation offerings.

In recent years, the Power Systems business has also significantly expanded its product offering of complete system solutions as well as selling 'loose' engines. This includes rail propulsion systems like the MTU PowerPack in addition to marine propulsion and complete power generation systems, including gensets, controls, and structures. This shift has resulted in greater value capture and closer customer relationships.

Finally, the Power Systems business is also moving significantly into new technologies, most notably hybrid-electric systems, microgrids, and hydrogen, which provide significant growth opportunities as the business's markets transition towards low net carbon power. In 2019, the business reached several important strategic milestones on this journey, including the signing of customer contracts and framework agreements to develop and supply hybrid power solutions for the rail sector, where the Power Systems business is the first-to-market with such a product. In addition, the Group entered into similar agreements covering hybrid power for the yacht market. The Group also received the first orders for its new battery container and microgrid solutions in 2019, helping to deliver cleaner and decentralised energy. These developments help to make the Power Systems business an industry front-runner in the development of sustainable solutions.

The Group expects that its strategy for the Power Systems business, including as described in "*—End market conditions*" and "*—Production and manufacturing*" below, will drive an underlying revenue compound annual growth rate of approximately 5%-10% from 2021.

End market conditions

The Power Systems business's portfolio of diesel, gas, and now hybrid electric systems, described above, addresses a variety of diversified end markets, offering common system and value propositions in each segment and focusing on higher-end, more demanding applications where product quality and in-service reliability are critical. The Power Systems business's largest exposures are in the power generation, marine and industrial market segments, representing 35%, 28% and 25% of 2019 revenue, respectively. The Power Systems business also has smaller exposures to the defence and civil nuclear market segments, representing 9% and 3% of 2019 revenue, respectively.

The power generation component of the Power Systems business is predominantly exposed to mission-critical back-up power for data centres, hospitals and other key infrastructure sites, with a more modest exposure to continuous power generation, largely for industrial applications. The marine component of the Power Systems business predominantly supplies the naval and coastguard market, with more modest exposure to yachts and commercial vessels (e.g. ferries). The industrial component of the Power Systems business includes construction and agriculture, rail, oil & gas, and mining.

These diversified end markets are driven by different factors, though many are closely linked to overall growth in GDP and economic activity, which raises the demand for power, as well as the increasing push for more sustainable and environmentally-friendly solutions. The Group believes that this trend presents a significant opportunity for the Group to gain further market share through its position in LNG and hybrid products, as well as through further improvements to its core diesel portfolio.

The market for power generation has been impacted by COVID-19, with construction project delays having a negative impact on mission-critical power generation and lower economic activity reducing the demand for continuous power. In the first six months of 2020, the Power Systems business's OE revenue was down by 11% and its services revenue was down by 12% when compared to the same period in 2019. However, medium and long-term demand in power generation is expected to experience sustained growth, driven by the expected global economic recovery, rising data usage driving demand for data centres, and an increasing trend towards decentralised power grids around the world. The Group expects the power generation market to be a significant driver of growth for the business over the coming years. Additionally, changing working patterns as a result of the COVID-19 pandemic may support further growth in some key markets such as data centres, as a rise in remote working and digital telecommunications increases data centre demand.

As many customers in the naval and coastguard market are national governments or government agencies, demand has remained robust, despite the wider economic impact of the COVID-19 pandemic. However, both the yacht and commercial vessel markets have been affected by lower economic activity and disruption, including as a result of closures at major yacht production facilities in the US and Italy. The Group expects these markets to recover as economic activity improves, with long-term demand in the yacht market driven by the growth in the number of UHNWIs, while the commercial vessel market is driven by global trade and travel demand. In both of these commercial markets, the Group expects continuing regulatory and social pressure focused on reducing emissions and improving water quality in and around harbours, which, the Group believes, provides further growth opportunities for the Group's portfolio that is positioned to satisfy marine emissions regulations.

Across the construction and agriculture, rail, oil & gas and mining markets, which together comprise the Group's exposure to industrial markets, the Group has seen a significant slowdown as a result of the COVID-19 pandemic, driven by reduced economic activity, disruption to construction projects, as well as lower commodity prices impacting oil & gas and mining. This slowdown has resulted in lower margins for the Power Systems business due to order volume reductions, inventory write-downs and reduced factory utilisation, as well as reductions in demand for the services provided by the Power Systems business in respect of its in-service products, driven by lower utilisation of those products. The Group believes that the recovery of these markets will be linked to improving economic conditions, with potential growth opportunities over the medium term through a focus on efficient, lower net carbon solutions such as the Group's hybrid rail PowerPack, as well as driving higher growth in the agriculture, mining, and oil & gas markets in China.

Production and manufacturing

As at 30 June 2020, the Power Systems business employed approximately 10,388 people globally. The business's manufacturing footprint includes key facilities located in Germany, the United States, India and

China. As at 30 June 2020, the business's largest facility was its headquarters in Friedrichshafen, Germany, with approximately 5,900 employees, which carries out engine design, manufacturing, assembly, and sales. Additionally, the Power Systems business employs approximately 850 employees elsewhere in Germany. Outside of Germany the business's largest headcount is located in the United States (approximately 800 employees), followed by Norway (approximately 700 employees in the Bergen business), and China and Hong Kong (approximately 300 employees).

The Power Systems business has at least one engine and one system manufacturing facility in each of the Americas, EMEA and APAC regions. These facilities primarily serve their respective local markets and help to reduce the Group's exposure to geopolitical tensions and any tightening of export controls across those regions. Additionally, in recent years the Group has expanded its use of strategic joint ventures in China and India in order to provide greater access to APAC markets and also to reduce manufacturing and assembly cost on certain engine products. In India, the Group established a Force MTU Power Systems joint venture, which has now started local assembly of Series 1600 engines, while in China the MTU Yuchai joint venture is engaged in S4000 assembly for the oil & gas and power generation markets. Both of these ventures not only move the Power Systems business closer to local customers, but also provide lower cost labour and allow easier access to the local, low-cost supply chain for commoditised engine components.

Aftermarket

As at 30 June 2020, the Power Systems business had an installed base of approximately 157,000 engines in service around the world, excluding smaller off-highway engines (i.e. engines intended to power vehicles used primarily in off-highway settings, including in mining and construction). This installed base drives significant revenue opportunities for the Power Systems business; in 2019, aftermarket revenue comprised 33% of total revenue generated by the Power Systems business. As at 31 December 2019, this revenue was generated primarily through time and materials activities, with 4% of total revenue coming from LTSAs and 29% through T&M Contracts.

The Group has a clear strategy to drive aftermarket value in the Power Systems business, and over the coming years, it expects to continue to drive both an increase in total services revenue as well as an increase in the penetration of LTSAs. For T&M Contract revenue, this strategy focuses on increasing connectivity and implementing an integrated sales and services approach. As at 31 December 2019, connectivity hardware to allow data collection, customer support and proactive maintenance sales has been fitted to over 4,500 engines. For LTSA revenue, the Group continues to promote the new ValueCare offerings in key markets including rail, as well as expansion of the Group's fleet monitoring and data analytics capabilities. In 2019, the Power Systems business expanded its digital solutions team and established a data and analytics competence centre in Munich, Germany. These actions have helped to drive a steady increase in LTSAs, including in 2019 the signing of a ten-year agreement with Svitzer, a global towage and marine services operator.

Defence

Overview and competitive positioning

- The Group's Defence business is a leading provider of military aero engines and services, as well as supplying the naval market and providing the powerplant for the UK submarine fleet.
- #1 provider of transport engines and #2 provider of military aero engines globally.
- In 2019, Defence underlying revenue of £3.3bn comprised 20% of the underlying revenue generated by the Group's businesses.
- 45% of 2019 underlying revenue in the Defence business was generated through OE sales and the remaining 55% through aftermarket services.
- Increase of 21% in underlying operating profit during the first half of 2020, as compared to the same period in 2019.

The Defence business is the second largest provider of military aero engine products and services globally, including engines for transport and combat aircraft as well as helicopters, trainer aircraft, and tactical and surveillance aircraft. The Defence business also provides aero-derivative gas turbines, propulsion systems and

other auxiliary systems for naval applications, and is the sole provider of nuclear powerplants for the UK's submarine fleet. The Defence business has enjoyed an average ratio of orders received to deliveries made of 1.2x across the period 2015 to 2019 (inclusive), as well as strong cash conversion.

Across these markets the business has more than 16,000 defence engines in service with 160 customers in over 100 countries as at 30 June 2020. The Defence business works closely with governments in its key US and UK markets to understand the needs of the customer and to develop leading technology, benefitting from government funding and support through product development. Due to the long product lives of Defence programmes, which can be 30-50 years or more, the Group derives significant value from its aftermarket activities, including LTSAs with its MissionCare brand.

In the transport segment, the Defence business has a leading position globally as a result of positions on a number of large US transport aircraft programmes, including the C-130J (powered by the AE2100), the C-130 (powered by the T56), and the V-22 (powered by the AE1107). Additionally, in Europe the Defence business powers the Airbus A330 multi-role tanker transport ("MRTT") with the Trent 700 engine, and is a member of the Europrop International consortium, which brought to market the TP400 engine to power the Airbus A400M aircraft. Key competitors in the transport market are primarily other global aero engine OEMs such as General Electric, Pratt & Whitney, and Safran S.A..

In combat, the Defence business has a strong position in the UK, Europe, and the Middle East through the Eurofighter Typhoon (powered by the EuroJet consortium EJ200 engine) and the Panavia Tornado (powered by the Turbo-Union RB199). Competitors in combat are predominantly the global aero engine OEMs that compete in the transport segment.

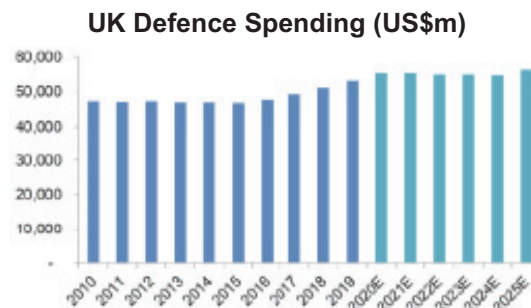
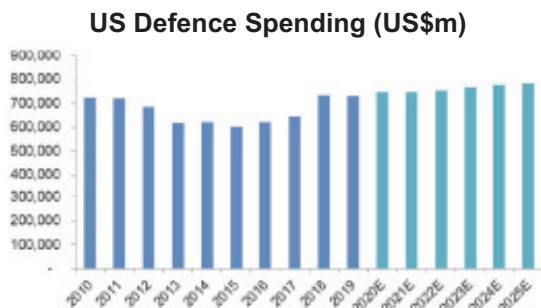
The Defence business is also the sole provider of powerplants for the UK's nuclear submarine fleet, with the PWR2 powerplant (pressurised water reactor), as well as providing through-life support to the Royal Navy. The Group is currently the only private enterprise in the world capable of self-sufficient manufacture of small-scale nuclear reactors.

In naval, the Group is a leading provider of aero-derivative gas turbines as well as systems for propulsion, naval handling, power generation and distribution, and electrical automation and control. The key product offering is the MT30 gas turbine, a derivative of the Trent 800 commercial aerospace engine.

End market conditions

Demand for the Defence business's transport, combat, submarine and naval products is driven primarily by government defence spending in the Group's key geographies of the US and the UK, as well as key export markets. In 2019, the DoD and MoD accounted for approximately 50% and 25% of the Defence business's revenue respectively (including purchases from third parties of equipment that incorporates the Group's products). In the same year, the Group's export markets made up approximately 25% of the business's revenue, with key markets by revenue being the Middle East, Korea, Japan, Canada and India. The Defence business's largest exposures are in the transport, combat and submarine market segments, representing 36%, 23% and 19% of 2019 revenue, respectively. The business also has a smaller exposure to the naval market segment, representing 10% of 2019 revenue.

Over the long term, government defence spending levels are determined by the level of global geopolitical tension, as well as GDP growth in key markets. Defence spending in the US has recently returned to growth as tensions with China, Russia, Iran and North Korea have put upward pressure on spending following a significant period of decline during the 2010s. During the years 2010-2020, US defence spending grew at a compound annual growth rate of 0.3%. During the same period, UK defence spending grew at a compound annual growth rate of 1.6%. During the years 2020-2025, third party sources forecast US defence spending and UK defence spending to grow at a compound annual growth rates of 1.0% and 0.4%, respectively.



Source: Jane's Defence Budgets (JDB) defence spending summary spreadsheet, 2020

The COVID-19 pandemic has had a very limited impact on short-term demand in the defence market, and in the coming years the Group anticipates relatively stable conditions in its key markets, albeit with continued customer focus on cost-reduction and the risk of broader fiscal pressure on government budgets.

In the US market, overall conditions are expected to show modest growth, however, the Group believes there are a number of attractive growth opportunities in the coming years. Most notably, the US Air Force and US Army are expected to make decisions on large new programmes (including the B-52 re-engine competition and the future vertical lift competition) in the early 2020s. The Group believes these opportunities, if achieved, could drive long-term growth above the overall US market rate.

The UK market is expected to be relatively stable in the short term, with modest growth in overall MoD spending but a continued focus on cost reduction. The UK Government has demonstrated its commitment to maintaining fighter capability through Project Tempest, the UK-led next-generation fighter programme in partnership with Sweden and Italy, in respect of which the MoD has committed £2bn of initial investment spending. The Group's role in Team Tempest, a consortium that also includes BAE Systems, Leonardo S.p.A. and MBDA, provides the opportunity to secure long-term UK combat revenue, as well as to develop key capabilities with an increased focus on electrical systems as part of this project. The Group ultimately expects the project to mature into a broader combat power systems programme.

Outside the critical US and UK markets, the Group expects continued growth in export markets, driven largely by local geopolitical tensions. In particular, the Group believes that there will be particular export opportunities for naval products, transport aero engines and upgrade packages for products currently in service, along with Eurofighter Typhoon export opportunities in certain geographic markets.

Production and manufacturing

The Defence business's manufacturing sites are predominantly divided between the US and the UK, with major sites in Indianapolis, Bristol, and Derby. As at 30 June 2020, the Defence business employed approximately 9,000 people worldwide, and its three largest locations by total headcount were as follows:

- **Indianapolis, US:** approximately 2,700 employees engaged in the design, manufacture and servicing of US military transport engines, as well as the F-35B LiftSystem;
- **Derby, UK:** approximately 2,650 employees engaged in the Group's nuclear submarines activity; and
- **Bristol, UK:** approximately 2,200 employees engaged in UK defence aerospace and marine activity.

The Group is undertaking a programme to improve its manufacturing facilities in the Defence business, particularly in North America, in order to improve its manufacturing efficiency, deliver cost savings, and enhance the Group's competitiveness to win future business by delivering cost-effective solutions for customers. As at 31 December 2019, the major revitalisation of the Group's Indianapolis site was nearing completion, following a total investment of approximately US\$600m, while a new 24,000 square feet facility in Walpole, Massachusetts is due to be commissioned in late-2020.

Aftermarket

Power solutions for the defence market typically have longer lifespans than commercial equivalents, with some key programmes seeing over half a century in service. As a result, the Defence business generates

substantial value from its aftermarket activities to service the Group's installed base of approximately 16,000 defence engines, as at 30 June 2020. Similar to the Group's Civil Aerospace business, the Defence business offers aftermarket services both through conventional time and materials activity (representing 38% of the business's 2019 revenue) and through LTSAs with its MissionCare product (representing 17% of the business's 2019 revenue). Under MissionCare agreements, customers contract for the availability of products supplied to them and the Group provides the required maintenance for those products, as well as access to operations centre support, field service support and programme management.

In order to maximise the aftermarket potential of its product portfolio, the Defence business seeks to drive aftermarket value through expanding the provision of its service and support offerings. The Defence business has had considerable success in developing through-life upgrades for its existing products, most notably with the Series 3.5 upgrade kit for the T56 engine, which secured further orders from the US Air Force in 2019. Fewer than 5% of the C-130 aircraft in service with the US Air Force currently have the Series 3.5 upgrade kit fitted and the Group sees this as presenting a significant opportunity for future orders. Finally, the business continues to expand and promote its MissionCare offering, including signing a new US\$1bn, 5-year contract with the US Marine Corps for the maintenance of the AE1107 engine.

Through this strategy the Group has delivered growth in services over recent years, including in 2019 when aftermarket revenue increased by 4% on an organic basis over the previous year to £1,789m.

ITP Aero

Overview and competitive positioning

- The ITP Aero business is a tier one supplier to a wide range of civil aerospace and defence programmes.
- Strong RRSP positions across Rolls-Royce, Pratt & Whitney programmes, membership of key European defence engine consortia.
- In 2019, ITP Aero underlying revenue of £936m comprised 6% of the underlying revenue generated by the Group's businesses.
- 84% of 2019 underlying revenue in the ITP Aero business was generated through OE sales and the remaining 16% through aftermarket services.

Industria de Turbo Propulsores (ITP Aero) is a global tier one supplier to the aerospace industry, serving large commercial engine OEMs (Rolls-Royce, Pratt & Whitney), business aviation engine OEMs (Honeywell, Pratt & Whitney Canada), and government defence customers. The ITP Aero business has design and manufacturing capabilities, with expertise in low pressure turbine modules, radial structures, externals (e.g. pipes and tubes), nozzles, and compressor parts. The division's headquarters are in Zamudio, Spain.

The ITP Aero business supplies its components into a wide range of both civil aerospace and defence programmes. In 2019, approximately 77% of the ITP Aero business's revenue was derived from the civil aerospace market, while 13% was derived from the defence market. In the civil aerospace market, the ITP Aero business supplies low-pressure turbines and other components for Rolls-Royce widebody engine programmes, and has secured module design and manufacture responsibility for the next generation UltraFan programme. The ITP Aero business also supplies structures, compressor parts and externals for the Pratt & Whitney Geared Turbofan ("PW1000G") engines for the narrowbody and regional market, the Pratt & Whitney PW800 engines for the business jet market, and low pressure turbine components for the Honeywell HTF7000. Due to the business's engineering expertise and scale, on many engine programmes the ITP Aero business operates as a RRSP. RRSPs are supplier relationships whereby the supplier not only provides modules or components for an engine programme but also invests in the programme's development and in return takes a share of future aftermarket revenue (as well as a proportional share of the programme's risk).

Additionally, the ITP Aero business works as a subcontractor, providing engineering services and component manufacturing, and provides MRO services under licence from engine OEMs. Finally, the business is a member of three European Defence consortia: (i) Eurojet (producing the EJ200 for the Eurofighter Typhoon); (ii) Europrop (producing the TP400 for the A400M); and (iii) MTRI (producing the MTR 390-E for the Tiger helicopter). The ITP Aero business also provides maintenance services for defence engines, including to European defence consortia and the Spanish Air Force.

The Group is currently seeking to deliver a number of potential disposals, including the ITP Aero business. As part of a potential disposal, the Group is exploring options to increase the scope of the ITP Aero business's supply chain and manufacturing activities.

End market conditions

A majority of the ITP Aero business's revenue relates to commercial aerospace markets, with the largest exposure being the Group's widebody engine programmes, alongside smaller exposures to narrowbody, business aviation and regional aviation engine programmes. The trends driving structural growth in the Civil Aerospace business are also expected to benefit the ITP Aero business's commercial activities; principally growing global GDP and a rising propensity to travel in developing economies, as described in more detail in "*The Group's Strategy—Driving growth and maximising value from the Group's existing capabilities*".

Outside of the Group's widebody engine programmes, the remainder of the ITP Aero business's commercial aerospace revenue relates to narrowbody aircraft, business aviation, and regional aviation. In the short term, smaller reductions in demand are expected in the business's business aviation programmes than in respect of its widebody engine programmes. This is largely due to the fact that demand for long-haul travel, which relies primarily on widebody aircraft, is expected to experience a slower recovery from the effects of the COVID-19 pandemic and government restrictions imposed in response. This is illustrated by the fact that average passenger flight lengths are not forecast to return to 2019 levels before 2025, according to IATA. The ITP Aero business also anticipates a decline in RRSP cash flows in the aftermarket part of its business as a result of reduced flying activity, as well as a reduction in commercial MRO demand during 2020.

Despite the short-term impact of the COVID-19 pandemic, overall delivery volumes for the ITP Aero business are expected to return to growth from 2021, albeit at a lower level as production rates for some new aircraft have been reduced. This is driven by the Group's exposure to narrowbody programmes where volumes are expected to stabilise and return to growth, combined with the ramp up of new business jet programmes.

In the defence market, COVID-19 has had a limited impact, with modest reductions in customer demand. Longer-term, the ITP Aero business is exposed to government defence budget growth, particularly in Spain. The Group believes that mid-life enhancements of existing aircraft programmes and new European aircraft programmes provide an environment for long-term growth in the business's defence activities. This is highlighted by the announcement in early 2020 that the ITP Aero business will lead the engine technology pillar of the FCAS programme in Spain.

Production and manufacturing

As of 30 June 2020, the ITP Aero business employed approximately 4,000 people across 17 locations globally, with key facilities in Spain, Mexico, the UK, and India. The business's headquarters is in Zamudio, Spain, which engages in engineering and manufacturing activities. Outside of Spain, key sites include an engineering and manufacturing facility in Queretaro, Mexico, as well as manufacturing sites in Hyderabad, India, and Lincoln, UK.

The ITP Aero business's manufacturing strategy incorporates a focused 'make-versus-buy' model with significant outsourcing, investment in state-of-the-art manufacturing techniques, use of low-cost manufacturing sites, and selective vertical integration. Only critical components are made in-house, allowing a lean footprint and efficient capital deployment, with production shared between state-of-the-art manufacturing facilities in Spain and low-cost manufacturing in Mexico and India. The business employs a disciplined procurement strategy, promoting competition between suppliers of more commoditised components and leveraging long-term partnerships with more strategic suppliers of complex parts. Additionally, the ITP Aero business has vertically-integrated capability in casting metal parts. The business's casting capability unlocks substantial value and is used for a range of components, including turbine vanes.

In line with the actions taken in the Civil Aerospace business, and as highlighted in May 2020, the ITP Aero business is currently developing, negotiating and executing extensive measures to respond to COVID-19. Alongside temporary measures such as employee furloughs, capital expenditure reductions, and indirect expenditure reductions, these measures will include a re-examination of the ITP Aero business's manufacturing capacity, as described above, in order to ensure an appropriate cost base for the demand environment post-COVID.

Aftermarket

The ITP Aero business generated aftermarket service revenue of £154m in 2019, an increase of 36% from £113m in 2018. The ITP Aero business's aftermarket exposure is through two primary routes:

- **RRSPs:** the business is an RRSP on a number of engine programmes, including eight Rolls-Royce engines, two Pratt & Whitney engines, and two Honeywell engines. On some of these programmes, the business takes a share of all future revenue and provides an equal share towards the programme's costs; and
- **MRO services:** the business provides MRO services both for commercial aircraft engine OEMs, regional aircraft engine OEMs, and helicopter engine OEMs (under licence) and for defence customers (primarily the Spanish Air Force).

The ITP Aero business has won RRSP shares on relatively new programmes such as the Rolls-Royce Trent XWB, 1000, and 7000, as well as the Pratt & Whitney PW1000G and PW800. This compares to older engine programmes where the ITP Aero business either holds a small RRSP share or acts as a conventional supplier. As a result, while the COVID-19 pandemic has impacted delivery forecasts for the business's key programmes and may lead to retirements of older engines in the market, the Group continues to expect significant growth in the installed base of engines where the ITP Aero business holds a RRSP share. This growing installed base drives higher aftermarket cash generation for the programme, with the ITP Aero business entitled to a share of these cash flows.

In the MRO market, the ITP Aero business has more than seven licences in place, allowing the servicing of engines across both the commercial and defence markets. Licences are acquired for a fee and typically last for a number of years.

Sustainability of the Group's products, services and operations

The Group believes that it has an important role to play in the transition towards a low net carbon economy. The Group expects that a successful transition will require technological solutions that it has the R&D expertise and advanced manufacturing capabilities to contribute to. The Group has a three part approach to reducing its environmental impacts embedded within its business strategy: (i) continuing to pursue incremental improvements of existing products and services; (ii) developing novel low net carbon technologies, including electrification; and (iii) minimising the impacts of its operations and facilities.

Incremental improvements of existing products and services

Understanding how the Group's business may be impacted by climate change is a key component of mitigating longer-term risk. The Group has used scenario planning techniques to explore the resilience of its business model and strategy in the context of future climate change and the transition to a low net carbon global economy. Three scenarios were developed based on varying global temperature increases and societal responses, one of which was aligned with the temperature rise limit of 1.5°C set out by the Intergovernmental Panel on Climate Change (IPCC). The outputs from this have been used to inform strategic decision making and risk management.

During 2019, the Group made significant progress towards its long-term net zero carbon operations target, entering into a green power purchase agreement for all UK-purchased electricity, decreasing the Group's scope 1 and 2 emissions by 21%. At the same time, the Group has continued to invest in energy efficiency opportunities to reduce its overall power demand, including upgrading lighting and heating systems.

Developing novel low net carbon technologies

The Group believes that decarbonising aviation, in particular, will require cross-sector collaboration since the Group's technologies operate as part of a wider system. During 2019, the Group's Chief Technology Officer brought together counterparts from seven major aerospace companies and made a joint statement on the future sustainability of aviation, including a commitment to work together pre-competitively to meet industry-level targets for reducing the sector's CO₂ impacts and support the commercialisation of sustainable alternative fuels. In the same year, the Group also started designing and constructing a high-speed, fully electric aircraft. Scheduled to fly in 2020, the aircraft has been designed to reach speeds of over 300mph, which would make it

the fastest all-electric plane in history. This project is intended to pioneer a third era of aviation and support the Group's wider electrification strategy.

Minimising the impacts of its operations and facilities

The Group has taken steps to strengthen its understanding of materials consumption across its operations, identifying opportunities to optimise use and avoid wastage. Half of the Group's top 20 waste-producing sites have completed waste mapping reviews, including identifying and prioritising areas for improvement. The emissions associated with the Group's operations were reduced by 40% between 2014 and 2019. This was achieved through continued decarbonising of the Group's energy systems and increased use of generated or purchased renewable energy. The Group's energy consumption was also reduced by 26% in the same period and the Group continues to invest in improving the energy efficiency of its offices and manufacturing facilities.

“—*The Group's Strategy*” outlines the Group's other efforts both to improve its existing technology and unlock new technologies to pioneer the transition to low net carbon power in the Group's markets.

Research and development

The Group's aim is to become one of the world's leading technology companies. In pursuing this aim, the Group places R&D at the heart of its business as it seeks to develop innovative technologies to provide reliable, efficient and sustainable power to its customers. These efforts are central to the Group's ability to compete successfully in its markets, which are characterised by high levels of complexity and extensive R&D costs requiring significant investments.

In 2019, the Group invested £1.46bn in gross R&D expenditure, supported by governments around the world, enabling its engineers to generate cutting edge technologies, vital intellectual property and 830 new patents approved for filing. The Group's approach to R&D integrates the breadth and depth of expertise present in its global engineering population and combines this with external experience to help drive further insights. The Group draws upon the skills and experience of a global network of 29 University Technology Centres and seven AMRCs that continue to develop advanced research that can be applied in its technology portfolio and across its manufacturing operations. The Group also utilises the expertise of supply chain partners within its digital ecosystem.

As well as developing new products, the Group's services strategy and associated technology development plans seek to deliver value through the application of digital, inspection and repair technologies so as to reduce costs and increase efficiency across the Group's services offering.

By focusing its research in areas that it believes to have significant growth potential, while also seeking continuous improvement of its existing products and services offering, the Group aims to drive innovation across its chosen markets and to enter new markets with disruptive new technologies when the opportunity arises.

In 2019, 4% of the Group's R&D spending related to low carbon technologies, with 26% directed towards next-generation aero engines and 70% spent on delivering or enhancing the Group's current product portfolio. The Group's medium-term ambition is to adjust its R&D spending so that these percentages are closer to approximately 20%, 55% and 25%, respectively.

Order backlog

The Group has a large order backlog which provides a degree of visibility on future revenue. Under IFRS 15 this order backlog is disclosed as unrecognised revenue, being the amount of anticipated revenue from the Group's customer contracts in respect of performance obligations that have not yet been satisfied. In respect of new orders for OE, IFRS 15 permits the inclusion of firm, non-cancellable purchase orders and pricing, net of any discounts. The IFRS 15 disclosure also includes the entirety of any contracted aftermarket revenue but does not include any extension options exercisable by the customer.

The Civil Aviation business's order backlog reflects firm orders for new widebody and business aviation engines, as well as all contracted future aftermarket revenue including under the Group's TotalCare and CorporateCare LTSAs for through-life support. Typically, the Civil Aerospace business receives firm purchase orders for new engines approximately seven to nine months ahead of delivery, while aftermarket contracts last approximately 12 years. Customer orders are included in the Group's IFRS 15 disclosure only when there is an

agreement with a customer that creates enforceable rights and obligations. The Group's OE agreements and LTSAs typically contain price escalation clauses based on a variety of indices and orders are recorded on an escalated price basis, using appropriate estimates.

For OE purchase orders, the Group collects non-refundable deposits, which are intended to reduce the likelihood of customer cancellations, while in the aftermarket, the Group's contracts often contain compensation clauses to protect against the risk of early contract termination, as well as minimum usage clauses to provide greater certainty as to minimum future contractual revenue. In the Power Systems business, the lead time for orders varies significantly by end market but with, on average, a shorter overall duration of order backlog than is experienced in the Civil Aerospace business. This is driven, in part, by the fact that services provided by the Power Systems business are less commonly covered by LTSAs. In the Defence business, the order backlog also varies by end market, with multi-year contracts common for both OE and aftermarket services (e.g. MissionCare LTSAs).

See "*Selected Financial Information—Other Financial Data—Order backlog*" for more information on the Group's order backlog.

Inventory

The Group undertook a sustained build-up in its inventory in the period from 2010 to 2019 (inclusive), in order to support delivery growth, resulting in an increase of approximately £2bn during that period. In the same period, large engine OE deliveries grew at a compound annual growth rate of greater than 10%. The Group then experienced a further increase in its inventory of £498m during the first six months of 2020 as a result of a sudden fall in demand for its products caused by the COVID-19 pandemic and government restrictions imposed in response, coupled with the lead time for actions taken to reduce procurement to have an effect. This resulted in a total inventory of £4.8bn as at 30 June 2020. The Group intends to gradually unwind this inventory build-up from the second half of 2020 onwards through the actions already taken to reduce procurement. The Group's inventory is predominantly driven by its Civil Aerospace business.

Receivables and payables

The Civil Aerospace business operates as a negative working capital business as a result of a combination of high payable balances resulting from: (i) the business receiving gross OE and aftermarket cash receipts from its customers, before sharing these with suppliers acting as RRSPs, as contractually required to pay for production components or otherwise share agreed-upon revenues; (ii) cash deposits being received by the business from customers ahead of OE deliveries; and (iii) the timing of payments to external MRO providers, in respect of MRO services provided, and from external MRO providers, in respect of components purchased from the Group. As a result, the reduced level of activity in the civil aerospace market during the first half of 2020 as a consequence of the COVID-19 pandemic and government restrictions imposed in response has caused a significant cash outflow from the Civil Aerospace business.

	Six months ended 30 June / as at 30 June	
	2020	2019
	(£m)	
Group revenue growth and movement in net receivables/payables/contract balances (excluding Civil LTSAs)⁽¹⁾		
Group revenue organic growth	(1,613)	313
Movement in net receivables/payables/contract balances (excluding Civil LTSAs)	(1,521) ⁽²⁾	391

(1) The Group reports Civil Aerospace business LTSA cash flows separately in both its full year and half year financial statements and so excludes them from the movement in net receivables/payables/contract balances line item. Civil Aerospace business LTSA cash flows are reported separately due to the size and significance of those cash flows for the Group.

(2) The change in receivables/payables of £(1,521)m in the six months to 30 June 2020 reflected a £(1.1)bn cash outflow from an increase in trade receivables driven by cessation of receivables discounting during the period with the remaining £(0.4)bn cash outflow driven primarily by a reduction in trade payables in Civil Aerospace, including a reduction in the amounts owed to joint ventures and RRSPs, largely due to significant reduction in manufacturing volumes as a result of COVID-19. In addition, there was a modest impact from lower OE deposits due to the reduction in large engine delivery levels.

A further cash outflow is expected in the second half of 2020 due to lower activity levels but with no repeat of the impact from the cessation of invoice discounting.

The Group experienced a cash outflow of £1.8bn in the first six months of 2020 as a result of a combination of the cessation of invoice discounting, the sharp reduction in activity as a result of the COVID-19 pandemic and the increased inventory referred to above under “—Inventory”.

Regulatory environment

Overview of the Group’s regulatory environment

The Group’s businesses and operations are heavily regulated and the Group is subject to various laws and regulations in the jurisdictions in which it operates and where its products are manufactured and operated, including, but not limited to, the UK, the US, Germany, Norway and Canada. The Group is regulated by government agencies and entities, including, but not limited to, the UK Civil Aviation Authority (“CAA”), the Luftfahrt Bundesamt (“LBA”), the European Aviation Safety Agency (“EASA”), the US Federal Aviation Administration (“FAA”), the DoD, the MoD, marine classification societies, flag states and the Office for Nuclear Regulation. The Group is also subject to health and safety and environmental laws and regulations in each of the countries in which it operates.

The Group’s civil aircraft engines are required to comply with CAA, LBA, EASA and FAA regulations governing design and manufacturing, airworthiness and installation approvals, repair procedures and continuing operational safety (among others). Similar requirements exist in other jurisdictions.

The Group’s defence aircraft engines are required to comply with MoD and DoD regulations governing design and maintenance (among others) as well as with specifications determined by the Group’s government or government entity customers in other jurisdictions. As a defence company, the Group is required to comply with the national security requirements of a number of jurisdictions, including the UK and the US.

In the Power Systems business, the Group’s marine engines and propulsion systems are required to comply with the rules and regulations set out by classification societies, flag states and countries of operation. The Group’s off-highway, power generation and rail engines are required to comply with national rules and regulations relating to emissions and product certification (among others).

The Group’s sites and operations are required to comply with national regulations, national security requirements and licensing requirements. In addition, the Group is subject to regulations relating to the export and sharing of technology and other matters of national security and, where the Group contracts with national governments or other public authorities, to government procurement regulations and regimes.

Product safety

The Group aims to go beyond compliance with regulatory product safety standards, setting a goal of continuous product safety improvement, in common with industry best practice in the markets in which it operates. This is regarded as fundamental to the Group’s licence to operate and to the sustainability of its business. Product safety encompasses the design, manufacture, assembly, installation, in-service operation, maintenance and repair of products, across all of the Group’s businesses and the regions where it operates. The Group believes that it is critical that product safety processes develop continuously to underpin the science and technological innovation that enables product designs to evolve and extend operational boundaries.

The Group continued to maintain a focus throughout 2019 on how safety risk was being managed through the Group’s transformation programme. In particular, the electrical business progressed at pace in 2019 with the acquisition of Siemens’ eAircraft business. This included a focus on product safety to ensure consistency with the standards across other parts of the Group.

A new classroom-based awareness training was launched in February 2019 with the aim of helping the Group’s engineers to understand how their contribution can prevent unsafe products through a series of case studies and discussions. Over 5,000 engineers completed this training in 2019 and the feedback from delegates was positive. In addition, the approach to the Group’s all-employee online training has been refreshed and now provides a clearer, more impactful reminder of the importance of product safety. In all aspects of the training, which formed part of the 2019 mandatory requirement, the Group has focused on giving its people the confidence to speak up if they have any concerns regarding safety in any area of the business.

Throughout the ongoing restructuring of the Group’s operations, as announced on 20 May 2020, the safety and integrity of its products and services will continue to be a critical priority for the Group.

UK DPA and Brazilian Leniency Agreement

In January 2017, the Group concluded negotiations on agreements with the SFO, the DoJ and the MPF in relation to allegations of bribery and corruption. Of these agreements, the Group is subject to continuing obligations under the UK DPA and the Brazilian Leniency Agreement.

The UK DPA is in force until the earlier of 17 January 2022 or a date after 17 January 2021 on which the SFO confirms in writing to the Relevant Group Entities that the UK DPA has concluded.

The Relevant Group Entities are subject to ongoing obligations under the UK DPA, including: (i) a payment of £148m to the SFO due by 31 January 2021; (ii) an obligation to cooperate fully and honestly with the SFO in relation to any prosecution brought by the SFO in respect of any conduct under investigation or pre-investigation by the SFO at any time during the term of the UK DPA; (iii) an obligation to cooperate at the request of the SFO with other UK and foreign law enforcement and regulatory agencies in any investigation or prosecution of any of its present or former officers, directors, employees, agents and consultants, or any other third party, in any matters relating to the conduct which is the subject of the statement of facts admitted by the Relevant Group Entities under the UK DPA; and (iv) an obligation to review internal control policies and procedures.

Rolls-Royce plc is not subject to any continuing pecuniary obligations under the Brazilian Leniency Agreement. However, Rolls-Royce plc is obliged to: (i) assist the MPF in any other proceedings it brings against third parties concerning the facts subject to the Brazilian Leniency Agreement until a final non-appealable decision in any civil and criminal actions by the MPF has been reached; and (ii) implement improvements to its integrity programme. If Rolls-Royce plc were to breach these obligations, the MPF could reinstate civil proceedings against it. The Comptroller General of the Union (“CG”) in Brazil is investigating whether it should impose administrative sanctions on certain members of the Group following the Brazilian Leniency Agreement entered into with the MPF in January 2017. The Group is cooperating with the CG in its enquiries.

The Group’s Code of Conduct and associated policies clearly set out its commitment not to tolerate bribery or corruption of any form. In 2019, the Group’s ongoing anti-corruption programme focused particularly on managing conflicts of interest and confidential information. This has targeted training for higher-risk teams and individuals. In addition, the Group has continued to strengthen its anti-bribery due diligence approach. The level of due diligence activity carried out is dependent on the level of risk that a particular third party provides and may include in-person interviews and site visits, as well as external due diligence reports from specialist corporate intelligence providers. The Group also conducts extensive due diligence into potential joint ventures as well as supporting existing joint ventures in their ethics and compliance programmes.

In August 2019, Lord Gold presented his final report to the SFO, in which he noted the exemplary progress made in improving the Company’s approach to ethics and anti-bribery and corruption compliance. The Group is committed to continuing its communication with and training of employees as well as its monitoring and assurance work.

Employees

As at 30 June 2020, the Group employed approximately 51,700 people worldwide, with approximately 23,000 of those employed in the UK. The average monthly number of employees employed worldwide by the Group for the three years ended 31 December 2019, 31 December 2018 and 31 December 2017 was 51,700, 54,500 and 50,000 respectively, with the 31 December 2017 figure restated to reflect the Group’s restructuring.

In light of the significant impact of the COVID-19 pandemic on the Group’s operations, in early April 2020 the Group communicated enterprise-wide actions to reduce salary costs for the rest of 2020. For the Board, Executive Team and Enterprise Leadership Group, this represented a 10% reduction together with a 10% deferral to 2021. A 10% pay deferral was applied to employees in the UK and in other countries in which the Group operates where such a deferral is permitted under the applicable local legislation, including Singapore and India. Elsewhere alternative equivalent solutions were pursued.

In early April 2020, the Group sought support from the UK Government’s Job Retention Scheme with almost 5,000 UK employees assigned to furlough status at that time. The scheme provides 80% of the salary costs for furloughed employees up to £2,500 per month. This is estimated to cover approximately £28m of the Group’s wage bill in the UK for the three-month period April to June 2020. Where available, the Group is

receiving similar government support across its global operations, including in Canada, France, Norway, Spain and the US. In Germany, the Group has drawn support from the Kurzarbeit, or short-time working, scheme.

In addition, a reduced-hours framework was introduced for approximately 770 UK employees. These employees were asked to reduce their working hours by 20% for a period, during which they received 90% of their normal pay. This was in addition to the 10% deferred pay referred to above.

The Group expects to commence a consultation with shareholders regarding executive remuneration in the near term, with the potential to propose a revised executive remuneration policy to be voted on at the its 2021 annual general meeting.

Insurance

The Group maintains insurance coverage which is mostly negotiated on a Group-wide basis, and is partly self-insured through a captive insurance company, Nightingale Insurance Limited, with operating businesses having limited discretion to take out certain additional cover according to practice in their jurisdictions.

The Group maintains a number of insurance policies each year, which it believes are appropriate to cover risks in the operation of its businesses. A number of these insurance policies are specific to the nature of the Group's business, including: (i) aviation products liability insurance; (ii) pilots' personal accident and loss of licence insurance; (iii) excess war liability insurance; (iv) hull excess liability insurance; (v) property damage and consequential loss insurance in respect of nuclear activities; and (vi) third party death or injury cover in relation to licensed nuclear sites.

The Group also maintains a number of insurance policies that are similar to those commonly put in place by a variety of businesses, including: (i) property damage and business interruption insurance; (ii) public and product liability insurance; (iii) UK employers' liability insurance; (iv) directors' and officers' liability insurance; and (v) professional indemnity insurance.

In 2019, the Group received one-off insurance receipts of £173m relating to the Trent 1000 in-service issues.

Hedge book

The Group utilises forward foreign exchange contracts in order to manage transactional foreign currency risks. The significant majority of this exposure is concentrated in the Civil Aerospace business, where transactions are typically carried out in US dollars but where the business has a substantial non-US dollar cost base due to its manufacturing footprint in the UK and Germany. This creates a large net exposure to pound sterling to US dollar exchange rates and a smaller exposure to euro to US dollar exchange rates, which the Group seeks to manage using derivatives to insulate against sudden movements in the relevant exchange rates. As a result, the Group holds a substantial pound sterling to US dollar hedge book, which at 31 December 2019 totalled US\$36.5bn spread across 8 years with an average rate of £/US\$1.53. Additionally, the Group holds a smaller euro to US dollar hedge book of US\$5.4bn, as at 31 December 2019, with an average rate of €/US\$1.25.

The COVID-19 pandemic has had a significant impact on the Group's Civil Aerospace business, as outlined in "*—Business Segments Overview—Civil Aerospace—End market conditions*". This impact is expected to lead to a significant reduction in the net US dollar exposure of the business in the next few years, leaving the Group at risk of being in an 'over-hedged' position with a higher value of forward contracts than expected US dollar net inflows. As at 30 June 2020, the Group had therefore reduced its hedge book from US\$36.5bn to US\$26.2bn. This will result in cash settlement costs totalling approximately £1.46bn comprising £88m of cash costs in 2020 (incurred in the first half), approximately £300m in each of 2021 and 2022 and £718m spread over 2023 to 2026. The related underlying financing charge was recognised in the Group's underlying income statement for the six months ended 30 June 2020. If the Group's forecasts change, it is possible that the Group may need to settle further unutilised forward contracts by purchasing US dollars, although where possible, the Group will seek to mitigate this effect by moving forward contracts into future periods.

Pensions

The Group operates a number of defined benefit and defined contribution pension schemes for certain of its employees. Defined benefit plans in the UK are funded, with the assets held in separate trustee administered funds. The Group's defined benefit plans outside the UK are comprised of a mixture of funded and unfunded

plans. The next triennial valuation of the Group's UK pensions arrangements, showing the position as at 31 March 2020, has already been concluded and the results of that valuation are expected to be available to the Group by the end of 2020. The 31 March 2020 triennial valuation of the Group's UK pensions arrangements is expected to show a technical provisions surplus and is not expected to trigger any deficit funding requirement.

In addition, in the US and, to a lesser extent, in some other countries, the Group's employment practices include the provision of healthcare and life insurance benefits for retired employees under plans that are unfunded.

The Group carries significant post-retirement liabilities on its balance sheet. To help reduce the risks associated with these obligations, during 2019 the Group supported the Trustee of the UK pension plan to fully insure liabilities for approximately 33,000 former employees with Legal & General Assurance Society. This transaction was not completed until the first quarter of 2020 and so is not reflected in the total defined benefit liabilities shown in the Group 2019 Consolidated Financial Statements. The transaction removes future risk over the delivery of the benefits of those former employees. The insured liabilities have been fully transferred to Legal & General Assurance Society with no further liability for the Group.

On 31 July 2020 the Group commenced a statutory consultation on a proposal to close the UK defined benefit pension plan to future accrual from 31 December 2020. Subject to that consultation, the Group anticipates the mechanism for implementing closure of the UK defined benefit pension plan will be via a rule amendment, which would be subject to the consent of the trustee of the plan.

Certain Recent Acquisition Agreements

eAircraft Asset Purchase Agreement

On 1 October 2019, the Group completed the acquisition of Siemens' eAircraft business, pursuant to the terms and conditions specified in an asset purchase agreement between Rolls-Royce plc and Siemens Aktiengesellschaft dated 18 June 2019 and as amended on 20 September 2019. The consideration payable under the agreement was €48.5m, subject to certain adjustments in relation to the transfer of employees. The agreement is governed by German law.

Kinolt Sale and Purchase Agreement

On 1 July 2020, the Group completed the acquisition of the entire issued share capital of Kinolt Group SA from 3i Group, pursuant to the terms and conditions specified in a sale and purchase agreement between Rolls-Royce Power Systems AG and Fuel Midco SARL dated 7 March 2020. The consideration payable under the agreement was €137.5m, subject to certain adjustments made at completion. The agreement is governed by Belgian law.

Litigation

In the ordinary course of business, the Group is subject to various claims, litigations and arbitrations relating to matters such as debt recoveries, customer insolvencies, tax disputes, product defects and similar matters, the outcome of which cannot be predicted.

Save as disclosed below, there are no governmental, legal or arbitration proceedings (including any such proceedings which are pending or threatened of which the Company is aware), during the 12 months preceding the date of this Offering Memorandum which may have, or have had in the recent past, significant effects on the Company's and/or the Group's financial position or profitability.

V2500

A member of the Group is currently party to litigation brought by an airline operator in 2012 in respect of alleged fleet disruption resulting from technical issues on the V2500 engine. The value of the claim is in the region of US\$250m. The Group is expected to be responsible for 33.5% of any successful claim, due to the contractual arrangements entered into at the time the Group disposed of the entity which is the co-defendant in the litigation. Proceedings are currently stayed, pending the resolution of a contested winding-up petition on the claimant. No accounting provisions have been made in respect of this litigation.

Investigations by Indian Authorities

The Central Bureau of Investigations is investigating certain members of the Group in relation to allegations of historical bribery within the Group's former Energy business. The relevant Group companies have been cooperating, and will continue to cooperate, with the CBI's investigation. The ED is also carrying out an investigation into a member of the Group in relation to historical matters that are similar to those being investigated by the CBI. As with the CBI's investigation, the relevant Group entities are cooperating with the ED in its inquiries. The investigations are at an early stage and it is not possible to comment on the likely outcome. No accounting provisions have been made in respect of these investigations.

Comptroller General of the Union, Brazil

The CG in Brazil is investigating whether it should impose administrative sanctions on certain members of the Group following the Brazilian Leniency Agreement entered into with the MPF in January 2017. The Group is cooperating with the CG in its enquiries. The investigation is at an early stage, and it is not possible to comment on the likely findings or consequences of the investigation, or any potential liability (noting that the investigation does not involve a claim for an amount of money). The Group's expected outcome of the investigation is held within the relevant provisions in the Group Consolidated Interim Financial Statements.

MPF, Brazil

The MPF in Brazil is investigating allegations of historical bribery by certain members of the Group, which are unrelated to the Brazilian Leniency Agreement. The Group is cooperating with the MPF in its enquiries. The investigation is at an early stage and it is not possible to comment on the likely outcome. No accounting provisions have been made in respect of this investigation.

Garuda

Garuda has issued proceedings in Indonesia against Rolls-Royce plc and Rolls-Royce Total Care Services Limited regarding allegations of bribery in Indonesia described in the statement of facts accompanying the UK DPA. Garuda is claiming US\$43,204,996. The proceedings are at a very early stage and it is not possible to comment on the likely outcome. No accounting provisions have been made in respect of these proceedings.

Indian Tax Authorities

The Group is disputing a number of tax assessments received from the Indian tax authorities. The Group has recorded proper provisions in the Group Consolidated Interim Financial Statements for the most likely amount the Group estimated that it would be required to pay. The disputed tax assessments are at various stages in the local appeal process. The total amount claimed by the Indian tax authorities is £78m, including estimated interest. The Group's expected outcome of the disputed tax assessments is held within the relevant provisions in the Group Consolidated Interim Financial Statements.

Aftermarket business dispute

The Company is in dispute with a third party regarding the aftermarket business owned by the third party. No legal proceedings have to date been commenced. The Company sent a letter before action to the third party in respect of the exercise by the Company of a call option allowing the Company to purchase the business. In its response, the third party threatened a counterclaim against various Group entities regarding an alleged breach of exclusivity provisions agreed between these Group entities and the third party. The third party estimated that it has suffered losses of up to US\$120m as a result of the alleged breach but did not provide any details of the basis on which this estimate has been prepared. The dispute is at an early stage and it is not possible to comment on the likely outcome. The Group's expected outcome of the dispute is held within the relevant provisions in the Group Consolidated Interim Financial Statements.

DIRECTORS AND SENIOR MANAGEMENT

The following table shows the Board of Directors and senior management of the Company as at the date hereof.

Board of Directors	Title	Date of Appointment
Sir Ian Davis	Chairman	2013
Warren East CBE	Chief Executive	2014
Stephen Daintith*	Chief Financial Officer	2017
Sir Kevin Smith	Senior Independent Director	2015
Lewis Booth CBE	Independent Non-Executive Director	2011
Sir Frank Chapman	Independent Non-Executive Director	2011
George Culmer	Independent Non-Executive Director	2020
Irene Dorner	Independent Non-Executive Director	2015
Beverly Goulet	Independent Non-Executive Director	2017
Lee Hsien Yang	Independent Non-Executive Director	2014
Nick Luff	Independent Non-Executive Director	2018
Jasmin Staiblin	Independent Non-Executive Director	2012
Dame Angela Strank	Independent Non-Executive Director	2020

* On August 27, 2020, Stephen Daintith resigned as Chief Financial Officer (CFO) and Executive Director. The Board has begun a process to identify and appoint a successor.

The senior managers, in addition to the Executive Directors listed above, are as follows:

Senior Management	Title	Date of Appointment
Tom Bell	President – Defence; President and Chief Executive Officer of Rolls-Royce North America	2018
Chris Cholerton	President – Civil Aerospace	2018
Pamela Coles	Chief Governance Officer & Company Secretary	2014
Mark Gregory	General Counsel	2015
Harry Holt	Chief People Officer	2018
Andreas Schell	Chief Executive Officer of Rolls-Royce Power Systems AG	2017
Paul Stein	Chief Technology Officer	2017
Ben Story	Strategic Marketing Director	2016

The business address of each of the directors and members of senior management is Kings Place, 90 York Way, London, N1 9FX, United Kingdom.

There are no existing or potential conflicts of interest between any duties to the Company of the directors and senior management and/or their respective private interests and other duties, other than as described under “Description of the Issuer” and this “Directors and Senior Management.”

Board of Directors

Sir Ian Davis. Sir Ian was appointed to the Board in March 2013 and as Chairman in May 2013. Sir Ian was a partner at McKinsey for 31 years and, during his time, served as chairman and worldwide managing director. Sir Ian was knighted in 2019 for services to business.

Warren East CBE. Warren was appointed to the Board in January 2014 and as Chief Executive in July 2015. Warren is an engineer and joined ARM Holdings plc in 1994 where he was CEO from 2001 until 2013. He is a fellow of the Institute of Engineering and Technology, the Royal Academy of Engineering, the Royal Society and the Royal Aeronautical Society. He was awarded a CBE in 2014 for services to the technology industry.

Stephen Daintith. Stephen was appointed to the Board in April 2017. Stephen is a chartered accountant. His previous roles include CFO of Daily Mail and General Trust plc from 2011 to 2017. He was CFO and COO of Dow Jones in New York and CFO of News International in London, which are both part of News Corporation. Prior to this, he held executive positions at British American Tobacco plc.

Sir Kevin Smith CBE. Sir Kevin was appointed to the Board in November 2015 and to the position of Senior Independent Non-Executive Director in April 2016. Sir Kevin was group chief executive of GKN plc for nine years. Before GKN, he spent nearly 20 years with BAE Systems in a number of senior executive positions. After GKN, he was a Partner at Unitas Capital for four years. He has an Honorary Doctorate from Cranfield University and is an honorary fellow of the University of Central Lancashire. He was awarded a CBE in 1997 and knighted in 2006 for services to industry.

Lewis Booth CBE. Lewis was appointed to the Board in May 2011. After gaining a bachelor of engineering degree with honours in mechanical engineering, Lewis began his career with British Leyland. He spent 34 years at Ford Motor Company including as executive vice president and CFO. He was awarded a CBE in 2012 for services to the UK automotive and manufacturing industries.

Sir Frank Chapman. Sir Frank was appointed to the Board in November 2011. Sir Frank is a chartered engineer. With more than 40 years spent in the oil & gas sector, he was CEO of BG Group plc for 12 years and Chairman of Golar LNG Limited. In addition to his Non-Executive role at Rolls-Royce, he is a Non-Executive Director of NextDecade Corporation and Zap Energy, Inc. and a Trustee of the cancer charity Myeloma UK. He is a fellow of the Royal Academy of Engineering, the Institute of Mechanical Engineers and the Energy Institute. He was knighted in 2011 for services to the oil & gas industry.

George Culmer. George was appointed to the Board in January 2020. George is a chartered accountant. Having started his career with Coopers & Lybrand, he has held senior financial positions with Prudential, Zurich Financial Services and RSA Insurance Group where he was CFO. Until August 2019, George was CFO of Lloyds Banking Group plc, a position he held for seven years. Since May 2020, George has held the position of chairman of Aviva plc.

Irene Dorner. Irene was appointed to the Board in July 2015. Irene was CEO and president of HSBC, US, until retiring in 2014. During her 30-year career with HSBC, she held a number of international roles including CEO of HSBC in Malaysia. Irene is an honorary fellow of St Anne's College, Oxford. She qualified as a barrister-at-law in London and, from 2015 to 2016, was a consultant at PwC. Since February 2020, Irene has held the position of chairman of Taylor Wimpey plc.

Beverly Goulet. Beverly was appointed to the Board in July 2017. Beverly, a US national, started her career as a securities and M&A lawyer and has spent a considerable amount of her career in the airline industry. From 1993, Beverly was a key member of the executive team of American Airlines, where she served in a number of senior roles.

Lee Hsien Yang. Hsien Yang was appointed to the Board in January 2014. A Singaporean, Hsien Yang was chief executive of Singapore Telecommunications Limited for 12 years. He was a former member of the Rolls-Royce International Advisory Board, he served as chairman and non-executive director of Fraser and Neave Limited from 2007 to 2013 and chairman of the Civil Aviation Authority of Singapore.

Nick Luff. Nick was appointed to the Board in May 2018. Nick is a chartered accountant. He is CFO of RELX plc, playing a key role in driving shareholder returns as the company has transformed its business and simplified its corporate structure. Nick was previously CFO of Centrica plc for seven years and, prior to that, P&O Group. Nick has formerly been audit committee chairman and a non-executive director of both Lloyds Banking Group plc and QinetiQ Group plc.

Jasmin Staiblin. Jasmin was appointed to the Board in May 2012. A German national, Jasmin was CEO of Alpiq Holding AG from 2013 to 2018. Prior to this, she held a number of senior positions in the ABB Group, working in Switzerland, Sweden and Australia, becoming CEO of ABB Switzerland from 2006 until 2012.

Dame Angela Strank. Dame Angela was appointed to the Board in May 2020. Dame Angela is a chartered engineer and, until July 2020, was chief scientist and head of downstream technology at BP. She joined BP in 1982 and held a number of senior executive roles. She is a fellow of the UK Energy Institute, the Institute of Chemical Engineers, the Royal Academy of Engineers and the Royal Society. Dame Angela received a DBE in 2017 for services to the oil & gas industry and for encouraging women into STEM careers.

Company Secretary

Pamela Coles. Pamela was appointed in October 2014. Pamela is a fellow of The Chartered Governance Institute. She joined the Company from Centrica plc, where she was head of secretariat. Pamela's previous roles also include group company secretary and a member of the executive committee at The Rank Group plc and Company Secretary and Head of Legal at RAC plc.

Senior Management

Tom Bell. Tom was appointed as President – Defence in February 2018. In addition, he was confirmed as Chairman and CEO of Rolls-Royce North America in July 2018. Prior to this he was senior vice president of global sales & marketing for defense, space & security at The Boeing Company. Before re-joining Boeing in 2015, Tom was President of Rolls-Royce Defence Aerospace having joined as President, Customer Business, North America in mid-2012. Previously he had spent over two decades with Boeing in a variety of leadership positions. He began his career with Lockheed Martin in human space flight. He currently serves on the board of governors for the Aerospace Industries Association in the United States.

Chris Cholerton. Chris was appointed as President – Civil Aerospace in February 2018. Prior to this role, Chris was President of the Group's Defence business from 2015. He has held engineering, programme and operational leadership positions in both the Civil Aerospace and Defence businesses. He has worked closely with key airframe partners, airline customers and governments. Chris joined Rolls-Royce as an undergraduate in 1981 and graduated with a degree in Engineering Science from Oxford University. He is a Chartered Mechanical Engineer, a Fellow of the Royal Aeronautical Society and a Fellow of the Association of Project Management.

Mark Gregory. Mark was appointed General Counsel in October 2015. Prior to this role, he held various positions in the Group, most recently as Head of Legal and Commercial. In February 2016, Mark was appointed as a member of the Rolls-Royce Power Systems AG Supervisory Board, and sits on its Audit Committee. Before joining Rolls-Royce in 2005, Mark trained and practised at Lovells (now Hogan Lovells) in London and Hong Kong. He studied English and German law and is a practising solicitor (England and Wales).

Harry Holt. Harry was appointed Group Director of Human Resources in January 2018, becoming Chief People Officer in June 2018. Previously Harry was President – Nuclear, leading the entirety of the Group's nuclear activities in support of the Royal Navy's Submarine Programme and also the Civil Nuclear power markets worldwide. Prior to joining Rolls-Royce, Harry had a distinguished career in the British Army, fulfilling some of the defence establishment's most demanding appointments, both as a commander on combat operations and as a strategic planner in the UK's Ministry of Defence.

Andreas Schell. Andreas was appointed Chief Executive Officer of Rolls-Royce Power Systems AG, Chairman of the Board of Directors of its subsidiary, MTU, and President of the Group's Power Systems business unit in January 2017. Andreas is also responsible for the Technology division, Operations and Sales. Before joining Rolls-Royce, Andreas worked for United Technologies Corporation (UTC) Aerospace Systems in the United States, where he was vice president of digital strategy. Andreas has a master's degree in mechanical engineering from the Clausthal University of Technology in Germany and an executive MBA from Michigan State University in the United States. Andreas is a member of the Association of German Engineers (VDI) and the Society of Automotive Engineers (SAE).

Paul Stein. Paul was appointed Chief Technology Officer in April 2017. Prior to this role, Paul was Director of Research & Technology, accountable for the Company's global investment in R&T, as well as fostering innovation and promoting and sustaining specialist engineering talent. Paul was director general of science and technology at the UK Ministry of Defence immediately prior to joining Rolls-Royce. Paul holds an Electrical and Electronic Engineering degree from King's College, London. He is a Fellow of the Royal Academy of Engineering, the Royal Aeronautical Society and the Institution of Engineering and Technology.

Ben Story. Ben was appointed Strategic Marketing Director in October 2016. Ben has over 25 years of investment banking experience, working with clients around the world on privatisations, M&A, restructurings, equity raisings and financings. Throughout most of his career, Ben has focused on the industrials sector, including aerospace & defence and transportation. Prior to joining Rolls-Royce, Ben was head of UK investment banking & broking at Citi from 2013. Previously, he worked at Deutsche Bank from 2005 to 2012, where he was head of industrials EMEA & Asia Pacific, and at Morgan Stanley from 1997, where he led the transportation & business services EMEA & Asia-Pacific team. Ben has a BSc in Management Sciences from the University of Warwick.

Board Practices

The Board of Directors is ultimately responsible to shareholders for the direction, management, performance and long-term sustainable success of the Company. It sets the Group's strategy and objectives and oversees and monitors internal controls, risk management, principal risks, governance and viability of the Company. In doing so, the Directors comply with their duties under section 172 of the UK Companies Act 2006 to act, individually and together, in the way they consider, in good faith, would be most likely to promote the success of the Company for the benefit of its members as a whole, having regard to certain matters including the likely consequences of any decision in the long term, the interests of the Company's employees, the need to foster the Company's business relationships with suppliers, customers and others, the impact of the Company's operations on the community and the environment, the desirability of the Company maintaining a reputation for high standards of business conduct and the need to act fairly as between members of the Company.

The Board of Directors has overall responsibility for managing risk and reviewing and assessing the Group's internal control and risk management frameworks. Although as part of this responsibility the Board of Directors keeps overall risk under review, it has delegated responsibility for the in-depth review and oversight of particular risks to certain committees of the Board of Directors. Those committees then report back to the Board of Directors on such risks and how they are being managed and controlled.

The Board of Directors will receive reports and recommendations from time to time on any matter which it considers significant to the Group.

Composition

The Board of Directors determines the numbers of executive and non-executive directors. The majority of the Board of Directors, excluding the Chairman, must be non-executive directors determined by the Board of Directors to be independent, who are chosen for their ability to contribute to Rolls-Royce's governance and strategic development. In accordance with the Articles, at least half of the Board of Directors must be British citizens. The Articles of Association set out nationality requirements for the Chairman and Chief Executive Officer, either of which must be a British Citizen at any given time.

Meetings

The Chairman of the Board of Directors decides when Board of Directors meetings take place. There should be a minimum of eight meetings throughout the calendar year. The Board of Directors may call additional meetings to discuss strategic issues and any other matters that arise. The Board of Directors may adopt written resolutions to approve matters at other times.

Resolutions by the Board of Directors are passed by a majority of votes. Each member of the Board of Directors has one vote.

Committees of the Board of Directors

Subject to those matters reserved for its decision, the Board of Directors has established certain principal Committees to assist it in fulfilling its oversight responsibilities, providing dedicated focus on particular areas. Each Committee chairman reports to the Board on the Committee's activities after each Committee meeting, making recommendations where the Committee believes action or improvement is needed. The Committees of the Board are: the Audit, Remuneration, the Nominations & Governance, the Safety, Ethics and Sustainability and the Science & Technology Committees.

The Board of Directors judges the 'independence' of members of the Board in accordance with the requirements of applicable legislation and regulation and in the light of relevant codes of practice.

Audit Committee

The primary role of the Audit Committee is to assist the Board of Directors monitoring the integrity of its financial statements and any formal announcements relating to financial performance, reviewing the internal financial controls and the risk management and internal control systems, monitoring and reviewing the effectiveness of the internal audit function and overseeing relations with the external auditor.

The Audit Committee comprises a minimum of three independent non-executive directors. At least one member of the Audit Committee must have recent and relevant financial experience. The Chairman of the Board shall not be a member. The Committee as a whole will have competence relevant to the sector in which the Company operates, as determined by the Board. The Audit Committee presently consists of Lewis Booth CBE (Chairman), George Culmer, Beverly Goulet, Lee Hsien Yang and Nick Luff, all of whom are independent non-executive directors.

Remuneration Committee

The Remuneration Committee is responsible for determining a policy for executive director remuneration capable of attracting and retaining individuals necessary for business success. It sets the remuneration for the Chairman of the Board, Executive Directors and Senior Management. Furthermore, the Committee reviews workforce remuneration and related policy and the alignment of incentives and rewards with culture, taking these into account when setting the policy for executive director remuneration.

The Remuneration Committee comprises a minimum of three independent non-executive directors (other than the Chairman who may be appointed as an additional member if he or she was considered independent on appointment as Chairman). The Chairman of the Remuneration Committee must be an independent non-executive director. The Chairman of the Company must not be Chairman of the Remuneration Committee. The Remuneration Committee presently consists of Lewis Booth CBE, Irene Dorner (Chairman), Beverly Goulet, all of whom are independent non-executive directors, and Sir Kevin Smith CBE, who is senior independent director.

Nominations & Governance Committee

The role of the Nominations and Governance Committee is to lead the process for appointments to the Rolls-Royce Board and ensure plans are in place for orderly succession for the Board and Senior Management positions and, in so doing, oversee the development of a diverse pipeline for succession. It also keeps the Board's corporate governance arrangements under review and ensures arrangements are consistent with best corporate governance standards.

The Committee comprises the Chairman and all independent non-executive directors. The Chairman of the Committee is the Chairman of the Company. The Nominations & Governance Committee presently consists of Sir Ian Davis (Chairman), Lewis Booth CBE, Sir Frank Chapman, George Culmer, Irene Dorner, Beverly Goulet, Lee Hsien Yang, Nick Luff, Jasmin Staiblin and Dame Angela Strank, all of whom are independent non-executive directors, and Sir Kevin Smith CBE, who is senior independent director.

Safety, Ethics & Sustainability Committee

The role of the Safety, Ethics & Sustainability Committee is to assist the Board of Directors in fulfilling its oversight responsibilities in respect of product safety, health, safety and environment (occupational health and safety, process safety, maintenance of facilities, asset integrity, personal security, the environment and sustainability), ethics and compliance.

The Safety, Ethics & Sustainability Committee comprises a minimum of two independent non-executive directors. The Safety, Ethics & Sustainability Committee presently consists of Sir Frank Chapman (Chairman), George Culmer, Irene Dorner, Lee Hsien Yang, Nick Luff, and Dame Angela Strank, all of whom are independent non-executive directors.

Science & Technology Committee

The Science & Technology Committee provides oversight and assurance of the Company's scientific and technology strategy, processes and investments.

The Science & Technology Committee comprises a minimum of three independent non-executive directors. The Science & Technology Committee presently consists of Sir Frank Chapman, Jasmin Staiblin and Dame Angela Strank, who are independent non-executive directors, and Sir Kevin Smith CBE (Chairman), who is senior independent director.

Executive Team

The Executive Team (“**ET**”) is an executive-level forum of the Group’s business and function leaders, collectively accountable for the delivery of commitments for the performance of the Group both against financial and non-financial targets and stated aspirations. Each member of the Executive Team is accountable and responsible to the Chief Executive for their particular business or function(s). Its members are Warren East (Chief Executive and Chairman of the ET), Stephen Daintith, Tom Bell, Chris Cholerton, Mark Gregory, Harry Holt, Andreas Schell, Paul Stein and Ben Story.

Directors’ Indemnities and Insurance

In accordance with the Articles, and to the extent permitted by law, the Company has entered into separate deeds of indemnity with its directors, which were in force during the financial year and remain in force at the date of this Offering Memorandum. The Company also maintains directors’ and officers’ liability insurance cover for its directors and officers. This cover also extends to directors of subsidiary companies.

RELATED-PARTY TRANSACTIONS

We have related-party relationships with our subsidiaries, joint ventures and associates. In the ordinary course of business, we enter into various sale, purchase and service transactions with joint ventures and associates and others in which we have a material interest. These transactions are under terms that are no less favourable than those arranged with third parties and have been contracted on an arm's-length basis.

For the years ended 31 December 2019, 2018 and 2017, transactions with related parties were as follows:

	Year ended 31 December		
	2019	2018	2017
		(£m)	
Sales of goods and services to joint ventures and associates	3,776	3,237	2,469
Purchases of goods and services from joint ventures and associates	(3,685)	(2,957)	(2,224)
Lease payments to joint ventures and associates	(210)	(189)	(127)
Guarantees of joint ventures' and associates' borrowings	1	—	5
Guarantees of non-wholly owned subsidiaries' borrowings	3	3	—
Dividends received from joint ventures and associates	92	105	79
Other income received from joint ventures and associates	1	2	2

For the years ended 31 December 2019, 2018 and 2017, transactions with directors and members of the ET were as follows:

	Year ended 31 December		
	2019	2018	2017
		(£m)	
Salaries and short-term benefits	9	19	16
Post-retirement schemes	—	—	—
Share-based payments	5	5	7
	14	24	23

Related Party Transactions with Key Management

Information relating to remuneration and benefits of key management personnel is given in Note 26 to the Group 2019 Consolidated Financial Statements. Information relating to share-based payments is given in Note 23 to the Group 2019 Consolidated Financial Statements. Information relating to pension fund arrangements is disclosed in Note 21 to the 2019 Group Consolidated Financial Statements.

At 29 September 2020, the directors of the Group and their immediate relatives controlled 0.035% of the voting shares of the Company.

MAJOR SHAREHOLDERS

As of the date of this Offering Memorandum, in so far as it is known to the Group, the name of each person who, directly or indirectly, has notifiable interest in 3% or more of the Company's ordinary share capital, and the amount of such person's interest, is as follows:

	<u>% of share capital of the Company</u>
Causeway Capital Management LLC	7.14
The Capital Group Companies, Inc.	5.07
Blackrock, Inc.	5.03
Harris Associates, L.P.	5.01

There are no differences between the voting rights enjoyed by the shareholders described above and those enjoyed by any other holder of ordinary shares of the same class.

So far as the Group is aware, no person or persons, directly or indirectly, jointly or severally, exercise or could exercise control over the Company. There are no known arrangements under which financial rights carried by any of the shares in the Company are held by a person other than the holder of the shares and no known agreements between the holders of shares with restrictions on the transfer of shares or exercise of voting rights.

Certain rights attach to the special rights non-voting share of £1 (the "**Special Share**") issued to a nominee of the UK Secretary of State for Business, Energy and Industrial Strategy (the "**Special Shareholder**"). Subject to the provisions of the Companies Act 2006, the Special Shareholder may redeem the Special Share at par at any time. The Special Share confers no rights to dividends but in the event of a winding-up it shall be repaid at its nominal value in priority to any other shares. Certain Articles (in particular those relating to the foreign shareholding limit, disposals and the nationality of directors) that relate to the rights attached to the Special Share may only be altered with the consent of the Special Shareholder. The Special Shareholder is not entitled to vote at any general meeting or any other meeting of any class of shareholders, but is entitled to receive notice of, and to attend and speak at, such meeting.

No disposal may be made to a non-Group member which, alone or when aggregated with the same or a connected transaction, constitutes a disposal of the whole or a material part of either the Nuclear business or the assets of the Group as a whole, without the consent of the Special Shareholder.

The Company has announced it will conduct the Rights Issue, and as a result of that offering the holdings of its shareholders, including those above, may change.

DESCRIPTION OF THE NOTES AND THE GUARANTEE

The following is a summary of the material provisions of the Indenture, the Notes and the Guarantee. Copies of the Indenture, the Notes and the Guarantee will be available for inspection during normal business hours at any time after the closing date of the Offering of the Notes at the offices of the Trustee, which are currently located at Citigroup Centre, 25 Canada Square, Canary Wharf, London, E14 5LB, United Kingdom. Any capitalized term used herein but not defined shall have the meaning assigned to such term in the Indenture.

General

The US\$1,000,000,000 5.750% Notes due 2027 (the “**Notes**”) will be issued on or about 21 October 2020 (the “**Issue Date**”) and treated as a series of debt securities under an indenture dated as of the same date (the “**Indenture**”), among Rolls-Royce plc (the “**Issuer**”), Rolls-Royce Holdings plc (the “**Guarantor**”) and Citibank, N.A., London Branch, as trustee (the “**Trustee**”), registrar (the “**Registrar**”), transfer agent (the “**Transfer Agent**”) and London paying agent (the “**Paying Agent**”).

The Indenture is not required to be, nor will it be, qualified under the U.S. Trust Indenture Act of 1939, as amended (the “**Trust Indenture Act**”), and will not incorporate by reference any of the provisions of the Trust Indenture Act. Consequently, the Holders of Notes generally will not be entitled to the protections provided under the Trust Indenture Act to holders of debt securities issued under a qualified indenture, including those requiring the Trustee to resign in the event of certain conflicts of interest and to inform the Holders of Notes of certain relationships between it and the Issuer or the Guarantor. In this “*Description of the Notes and the Guarantee*”, the terms “**Holder**”, “**Noteholder**” and other similar terms refer to a “registered holder” of Notes, and not to a beneficial owner of a book-entry interest in any Notes, unless the context otherwise clearly requires.

Citigroup Global Markets Inc., BNP Paribas Securities Corp., Goldman Sachs & Co. LLC, Barclays Capital Inc., Bayerische Landesbank, BofA Securities, Inc., Credit Agricole Securities (USA) Inc., HSBC Bank plc, Lloyds Securities Inc., Mizuho Securities USA LLC, MUFG Securities EMEA plc, NatWest Markets Securities Inc., Santander Investment Securities Inc., Skandinaviska Enskilda Banken AB (publ), SMBC Nikko Securities America, Inc., Société Générale, Standard Chartered Bank, Commerz Markets LLC, TD Securities (USA) LLC and UniCredit Capital Markets LLC (together, the “**Initial Purchasers**”), propose to resell Notes represented by the Rule 144A Global Notes in registered form to certain institutions in the United States in reliance upon Rule 144A under the U.S. Securities Act of 1933, as amended (the “**Securities Act**”). The Rule 144A Global Notes may not be sold or otherwise transferred except pursuant to registration under the Securities Act or in accordance with Rule 144A or pursuant to Rule 904 of Regulation S thereunder or in a resale transaction that is otherwise exempt from such registration requirements, and will bear a legend to this effect. Interests in the Rule 144A Global Notes will remain subject to transfer restrictions for so long as such Notes remain outstanding. The Registrar and the Transfer Agent for the Notes will not be required to accept for registration or transfer any Rule 144A Global Notes, except upon presentation of satisfactory evidence (which may include legal opinions) that the restrictions on transfer have been complied with, all in accordance with such reasonable regulations as the Issuer and the Guarantor may from time to time agree with the Registrar and the Transfer Agent. The Regulation S Global Notes will be resold by the Initial Purchasers only to non-U.S. persons located outside the United States in offshore transactions in reliance on Regulation S under the Securities Act.

Pending the consummation of the Rights Issue and the satisfaction of certain other conditions as described below, the Issuer will, concurrently with the closing of the offering of the Notes on the Issue Date, deposit or cause to be deposited the gross proceeds of the offering of the Notes into an escrow account (the “**Escrow Account**”) pursuant to the terms of an escrow agreement (the “**Escrow Agreement**”) dated on or about the Issue Date among the Issuer, Citibank, N.A., London Branch, as escrow agent (the “**Escrow Agent**”) and the Trustee. If the Rights Issue is not consummated, any of the other conditions to the release of the Escrowed Property (as defined below), as more fully described below under the caption “—*Escrow of Proceeds; Special Mandatory Redemption*,” have not been satisfied on or prior to the date that is 60 calendar days after the Issue Date (the “**Escrow Longstop Date**”), or upon the occurrence of certain other events, the Notes will be redeemed at a price equal to 100% of the initial issue price of the Notes plus accrued and unpaid interest from, but excluding, the Issue Date to, and including, the Special Mandatory Redemption Date (as defined below) and Additional Amounts, if any. See “—*Escrow of Proceeds; Special Mandatory Redemption*.”

Principal, Maturity and Interest

The Notes will be direct, unsubordinated and unsecured senior obligations of the Issuer and will be irrevocably and unconditionally guaranteed on a direct, unsubordinated and unsecured senior basis by the

Guarantor pursuant to the Indenture. The Notes are initially being issued in an aggregate principal amount of US\$1,000 million and will mature on 15 October 2027 (the “**Maturity Date**”). The Notes will bear interest at 5.750% per annum from the Issue Date or from the most recent Interest Payment Date to which interest has been paid or provided for.

The Notes are payable semi-annually in arrears in U.S. dollars on each 15 April and 15 October, commencing 15 April 2021 to the person in whose name any Note is registered at the close of business in New York City on the 1 April or 1 October (whether or not a business day in New York City) immediately preceding such Interest Payment Date (each, a “**record date**”), notwithstanding any transfer or exchange of such Notes subsequent to the record date and prior to such Interest Payment Date. If and to the extent the Issuer defaults in the payment of the interest due on such Interest Payment Date and the applicable grace period has expired, such defaulted interest may, at the option of the Issuer, be paid to the persons in whose names Notes are registered at the close of business on a subsequent record date (which shall not be less than five days which are business days in New York City prior to the date of payment of such defaulted interest) established by notice given by mail by or on behalf of the Issuer to the Holders (which term means registered holders) of the Notes not less than fifteen calendar days preceding such subsequent record date.

Interest will be computed on the basis of a 360-day year consisting of twelve 30-day months. If the date on which any interest payment or principal payment is to be made is not a business day, such payment will be made on the next day which is a business day without any further interest or other amounts being paid or payable in connection therewith.

Form and Denomination

The Notes will be issued in fully registered form and only in denominations of US\$200,000 and integral multiples of US\$1,000 in excess thereof. The Notes will be issued initially as Global Notes registered in the name of the nominee of DTC. If at any time payments are made other than to DTC or if the Issuer so directs, a paying agent with offices in the Borough of Manhattan in the City of New York shall be appointed.

Further Issues

The Issuer may, from time to time, without notice to or the consent of the Holders of the Notes, issue additional series of debt securities under the Indenture as permitted therein. It may also from time to time, without notice to or the consent of the Holders of the Notes, “reopen” the Notes and issue additional notes having identical terms and conditions as the Notes, except for the issue date, issue price, payment of interest accruing prior to the issue date of such additional notes and/or except for the first payment of interest following the issue date of such additional notes, so that the additional notes may be consolidated and form a single series of notes with the Notes (a “**Further Issue**”); *provided that* any additional notes that are not fungible with the outstanding Notes for U.S. federal income tax purposes will not have the same CUSIP, ISIN or other identifying number as the outstanding Notes.

Status of the Notes and the Guarantee

The Notes constitute direct, unsubordinated and unsecured senior obligations of the Issuer and rank *pari passu* and ratably without any preference or priority among themselves and equally with all other existing and future unsecured (subject to certain obligations required to be preferred by law) and unsubordinated obligations of the Issuer from time to time outstanding (subject to certain obligations required to be preferred by law).

Upon issue, the Guarantor will irrevocably and unconditionally guarantee on a direct, unsubordinated and unsecured senior basis, the due and punctual payment (and not collectability) of the principal of and interest on the Notes (and the payment of additional amounts described under “—*Payment of Additional Amounts*”) when and as the same shall become due and payable, whether at stated maturity, by declaration of acceleration, call for redemption or otherwise. The obligations of the Guarantor under the Guarantee are direct, unsubordinated and unsecured senior obligations of the Guarantor and rank equally with all other existing and future unsecured and unsubordinated obligations of the Guarantor from time to time outstanding (subject to certain obligations required to be preferred by law).

Payment of Additional Amounts

The Issuer or, if applicable, the Guarantor (pursuant to the terms of the Guarantee), and any other person through whom payments are made by or at the direction of the Issuer or the Guarantor, will make payments of, or in respect of, principal, any premium and interest on the Notes or any payment pursuant to the Guarantee, as the

case may be, to the Holder without withholding or deduction for or on account of any and all present or future tax, levy, impost or other governmental charge whatsoever imposed, assessed, levied or collected (“**Taxes**”) by or for the account of a Relevant Jurisdiction (as defined below) or any jurisdiction through which payments are made by or at the direction of the Issuer, the Guarantor or any successor thereto (together with any Relevant Jurisdiction, each a “**Tax Jurisdiction**”), unless such withholding or deduction is required by law.

If the Issuer or, if applicable, the Guarantor is required by a Tax Jurisdiction to deduct or withhold Taxes, the Issuer or, if applicable, the Guarantor will pay to a Holder of a Note such additional amounts (“**Additional Amounts**”) as may be necessary so that the net amount received by such Holder will not be less than the amount which otherwise would have been receivable if such Taxes had not been withheld or deducted; *provided, however*, that the Issuer or, if applicable, the Guarantor shall not be required to pay any Additional Amounts for or on account of:

- (i) any Taxes that (A) would not have been so imposed, assessed, levied or collected but for the fact that the Holder of the applicable Note or Guarantee is or has been a domiciliary, national or resident of, or engaging or having been engaged in a trade or business or maintaining or having maintained a permanent establishment or being or having been physically present in the jurisdiction in which such Taxes have been imposed, assessed, levied or collected or otherwise having or having had some connection with such jurisdiction, other than the mere holding or ownership of, or the collection of principal of, and interest on, a Note or the enforcement of a Guarantee, as the case may be, or (B) would have been avoided by the Holder making a declaration of non-residence to the Issuer or the relevant Tax authority or complying with any certificate, identification or other reporting requirements concerning the nationality, residence or identity of such Holder or its connection with a Tax Jurisdiction, but such Holder fails to do so;
- (ii) any Taxes that would not have been so imposed, assessed, levied or collected but for the fact that, where presentation is required in order to receive payment, the applicable Note or Guarantee was presented more than 30 days after the date on which such payment became due and payable or was provided for, whichever is later, except to the extent that the Holder thereof would have been entitled to Additional Amounts had the applicable Note or Guarantee been presented for payment on any day during such 30-day period;
- (iii) any estate, inheritance, gift, sales, transfer, excise, personal property or similar Taxes;
- (iv) any Taxes that are payable otherwise than by deduction or withholding from payments on or in respect of the applicable Note or Guarantee;
- (v) any tax, assessment, withholding or deduction required by Sections 1471-1474 of the U.S. Internal Revenue Code of 1986, as amended, (“**FATCA**”), any current or future Treasury regulations or ruling promulgated thereunder, any intergovernmental agreement between the United States and any other jurisdictions implementing FATCA, any law, regulations or official guidance issued in any jurisdiction implementing FATCA or an intergovernmental agreement, or any agreements with the U.S. Internal Revenue Service under FATCA; or
- (vi) any combination of the Taxes described in (i) through (v) above.

In addition, for any Notes held in definitive form, Additional Amounts will not be paid in respect of any payment in respect of the applicable Notes or Guarantee to any Holder that is a fiduciary, a partnership, a limited liability company or any person other than the sole beneficial owner of such payment to the extent such payment would be required by the laws of a Tax Jurisdiction to be included in the income for tax purposes of a beneficiary or settlor with respect to such fiduciary, a member of such partnership, an interest holder in such limited liability company or a beneficial owner that would not have been entitled to such amounts had such beneficiary, settlor, member, interest holder or beneficial owner been the Holder of such Notes or Guarantee.

Whenever this Offering Memorandum refers to the payment of the principal of, any premium, any interest or other amounts to which a Holder is entitled, if any, on or in respect of the Notes or the Guarantee, unless the context otherwise requires, it shall include the payment of Additional Amounts to the extent that Additional Amounts are, were or would be payable.

Redemption

Optional Redemption

The Issuer may redeem the Notes in whole or in part, at the Issuer's option:

- (1) at any time prior to 15 July 2027 (three months prior to the Maturity Date), from time to time, at a redemption price equal to the greater of (i) 100% of the principal amount of the Notes to be redeemed, and (ii) as determined by the Independent Investment Banker, the sum of the present values of the applicable Remaining Scheduled Payments discounted to the date fixed for redemption (the **"Redemption Date"**) on a semi-annual basis (assuming a 360 day year consisting of twelve 30 day months) at the Treasury Rate plus 50 basis points, together with any accrued and unpaid interest (including Additional Amounts, if any) on the principal amount of the Notes to be redeemed to (but excluding) the Redemption Date; and
- (2) at any time on or after 15 July 2027 (three months prior to the Maturity Date), at a redemption price equal to 100% of the principal amount of the Notes being redeemed plus accrued and unpaid interest (including Additional Amounts, if any) on the principal amount being redeemed to (but excluding) the date of redemption.

In connection with such optional redemption, the following defined terms apply:

"Comparable Treasury Issue" means the United States Treasury security or securities selected by the Independent Investment Banker as having an actual or interpolated maturity comparable to 15 July 2027 (three months prior to the Maturity Date (the **"Par Call Date"**)) that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of a comparable maturity to the Par Call Date.

"Comparable Treasury Price" means, with respect to any Redemption Date, (A) the average of the Reference Treasury Dealer Quotations for that Redemption Date, after excluding the highest and lowest of such Reference Treasury Dealer Quotations, or (B) if the Independent Investment Banker for the Notes obtains fewer than four such Reference Treasury Dealer Quotations, the average of all such quotations.

"Independent Investment Banker" means one of the Reference Treasury Dealers appointed by the Issuer to act as the "Independent Investment Banker".

"Reference Treasury Dealer" means each of Citigroup Global Markets Inc., BNP Paribas Securities Corp. and Goldman Sachs & Co. LLC or their affiliates, which are primary U.S. Government securities dealers, and their respective successors and one other nationally recognised investment banking firm that is a Primary Treasury Dealer specified by the Issuer; *provided, however, that* if any of the foregoing or their affiliates shall cease to be a primary U.S. Government securities dealer in The City of New York (a **"Primary Treasury Dealer"**), the Issuer shall substitute therefor another Primary Treasury Dealer.

"Reference Treasury Dealer Quotation" means, with respect to each Reference Treasury Dealer and any Redemption Date, the average, as determined by the Independent Investment Banker, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Independent Investment Banker by such Reference Treasury Dealer at 3:30 p.m., New York City time, on the third business day in New York City preceding that Redemption Date.

"Remaining Scheduled Payments" means, with respect to each Note to be redeemed, the remaining scheduled payments of the principal thereof and interest thereon that would be due after the relevant Redemption Date but for such redemption as if the Notes were redeemed on the Par Call Date; *provided, however, that* if that Redemption Date is not an Interest Payment Date with respect to such Notes, the amount of the next succeeding scheduled interest payment thereon will be reduced by the amount of interest accrued thereon to that Redemption Date.

"Treasury Rate" means, with respect to any Redemption Date, the rate per annum equal to the semi-annual equivalent yield to the Maturity Date (computed as at the third business day immediately preceding that Redemption Date or interpolated on a day count basis) of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for that Redemption Date.

Notice of any optional redemption will be given in accordance with the provisions set forth in “*Notices*” below at least 10 days but not more than 60 days before the Redemption Date to each Holder of the Notes to be redeemed. Unless the Issuer defaults in payment of the redemption price, on and after any Redemption Date, interest will cease to accrue on the Notes or any portion thereof called for redemption.

Upon presentation of any Note redeemed in part only, the Issuer will execute and instruct the Trustee to authenticate and deliver to or on the order of the Holder thereof, at the expense of the Issuer, a new Note or Notes, of authorized denominations, in principal amount equal to the unredeemed portion of the Note so presented.

On or before any Redemption Date, the Issuer must irrevocably deposit with the Trustee or one or more paying agents money sufficient to pay the redemption price of and accrued interest (including Additional Amounts, if any) on the Notes to be redeemed on such date. If less than all the Notes are to be redeemed, the Notes to be redeemed shall be redeemed on a pro rata pass-through distribution of principal basis and, to the extent applicable, in accordance with the rules of any stock exchange on which the Notes are listed or admitted to trading, and, for so long as the Notes are in global form, the procedures of DTC. The redemption price shall be calculated by the Independent Investment Banker and the Issuer, and the Trustee or Registrar and Paying Agent for the Notes shall be entitled to rely on such calculation.

Final Maturity

Unless previously purchased or redeemed by the Issuer or the Guarantor or any of their respective Subsidiaries (as defined below), and cancelled, the principal amount of the Notes will mature and become due and payable on 15 October 2027, in an amount equal to their principal amount, with accrued and unpaid interest (including Additional Amounts, if any) to such date.

Reacquisition

There is no restriction on the ability of the Issuer or the Guarantor or any of their respective Subsidiaries, or any holding company of the Guarantor or any Subsidiary to purchase or repurchase Notes, *provided that* the Notes which are from time to time held by or on behalf of the Issuer, the Guarantor, or any of their respective Subsidiaries thereof, or any holding company of the Guarantor or any Subsidiary shall (unless and until ceasing to be so held) be disregarded and deemed not to remain outstanding for purposes of voting.

Redemption for Tax Reasons

The Notes are redeemable by the Issuer, in whole but not in part, at the Issuer’s option at any time prior to their maturity at 100% of the principal amount of the Notes to be redeemed plus accrued and unpaid interest to the applicable Redemption Date and any Additional Amounts payable with respect thereto if due to a Change in Tax Law (as defined below) (i) the Issuer or, if applicable, the Guarantor, respectively, has, or would, become obligated to pay any Additional Amounts with respect to such Notes; (ii) in the case of the Guarantor, (A) the Guarantor would be unable, for reasons outside its control, to procure payment by the Issuer or (B) the procuring of such payment by the Issuer would be subject to withholding taxes imposed by a Relevant Jurisdiction; and (iii) the obligation to pay such Additional Amounts described in (i) cannot otherwise be avoided by the Issuer or, if applicable, the Guarantor taking reasonable measures available to it. In such case, the Issuer may redeem the Notes in whole, but not in part, upon not less than 30 nor more than 60 days’ notice as provided in “*—Notices*” below; *provided that* (a) no such notice of redemption shall be given earlier than 90 days prior to the earliest date on which the Issuer or, if applicable, the Guarantor would be obligated to pay any such Additional Amounts were a payment in respect of the Notes or the Guarantee, as applicable, then due and (b) at the time such notice is given, such obligation to pay such Additional Amounts remains in effect. The Issuer’s right to redeem the Notes shall continue as long as the Issuer or the Guarantor, as the case may be, is obligated to pay such Additional Amounts, notwithstanding that the Issuer or the Guarantor shall have made payments of Additional Amounts. Prior to the giving of any such notice of redemption, the Issuer must deliver to the Trustee (1) an officer’s certificate stating that the Issuer is entitled to effect such redemption and setting forth a statement of facts showing that the conditions precedent to the right of the Issuer so to redeem have occurred and (2) an opinion of independent counsel of recognised standing with respect to tax matters of the Relevant Jurisdiction to the effect that the Issuer or the Guarantor has, or would, become obligated to pay such Additional Amounts as a result of such Change in Tax Law.

For purposes hereof, “**Change in Tax Law**” shall mean (i) any changes in, or amendment to, any law of a Relevant Jurisdiction (including any regulations or rulings promulgated thereunder) or any amendment to or change in the application or official interpretation (including judicial or administrative interpretation) of such law, which change or amendment becomes effective or in the case of a change in the application or official interpretation is announced, on or after the Issue Date or (ii) if the Issuer or the Guarantor consolidates or merges with, or transfers or leases its assets substantially as an entirety to, any person that is incorporated or tax resident under the laws of any jurisdiction other than a Relevant Jurisdiction, as defined immediately prior to such consolidation, merger or other transaction, and as a consequence thereof such person becomes the successor obligor to the Issuer or the Guarantor in respect of Additional Amounts that may become payable (in which case, for purposes of this redemption provision, all references to the Issuer, or the Guarantor hereunder, as applicable, shall be deemed to be and include references to such person), any change in, or amendment to, any law of the jurisdiction of incorporation or residence for tax purposes of such successor obligor, or any political subdivision or taxing authority thereof or therein for purposes of taxation (including any regulations or rulings promulgated thereunder) or any amendment to or change in the application or official interpretation (including judicial or administrative interpretation) of such law, which change or amendment becomes effective or in the case of a change in the application or official interpretation is announced on or after the date of such consolidation, merger or other transaction.

Change of Control Repurchase Event

If a Change of Control Repurchase Event occurs in respect of the Notes, unless either the Issuer or the Guarantor has exercised its right to redeem such Notes as described under “—*Redemption—Optional Redemption*” or “—*Redemption—Redemption for Tax Reasons*” above, the Issuer or the Guarantor will be required to make an offer to each Holder of such Notes to repurchase all or any part (in minimal denominations of US\$1,000 and integral multiples of US\$1,000 in excess thereof) of such Notes of such Holders at a repurchase price in cash equal to 101% of the aggregate principal amount of the Notes repurchased, plus any accrued and unpaid interest on the Notes repurchased to, but not including, the date of repurchase.

Within 30 days following any Change of Control Repurchase Event or, at the Issuer’s option, prior to the date on which any Change of Control occurs, but after the public announcement of the proposed Change of Control, the Issuer will mail a notice to each relevant Holder, with a copy to the Trustee, offering to repurchase such Notes on the payment date specified in the notice, which date will be no earlier than 10 days and no later than 60 days from the date such notice is mailed, other than as may be required by law. The notice shall, if mailed prior to the date of consummation of the Change of Control, state that the offer to purchase is conditioned on a Change of Control Repurchase Event occurring on or prior to the payment date specified in the notice.

Holders of such Notes electing to have their Notes purchased pursuant to a Change of Control Repurchase Event offer will be required to surrender their Notes, with the form entitled “*Option of Holder to Elect Purchase*” on the reverse of the Note completed, to the Paying Agent at the address specified in the notice, or transfer their Notes to the Paying Agent by book-entry transfer pursuant to the applicable procedures of the Paying Agent, prior to the close of business on the third Business Day prior to the repurchase payment date.

The Issuer and the Guarantor will comply with the requirements of Rule 14e-1 under the Exchange Act and any other securities laws and regulations thereunder to the extent those laws and regulations are applicable in connection with the repurchase of Notes as a result of a Change of Control Repurchase Event. To the extent that the provisions of any applicable securities or corporate laws or regulations conflict with the Change of Control Repurchase Event provisions of the Notes, the Issuer and the Guarantor will comply with the applicable securities or corporate laws and regulations and will not be deemed to have breached its obligations under the Change of Control Repurchase Event provisions of the Notes by virtue of such conflict.

On the repurchase date following a Change of Control Repurchase Event, the Issuer or Guarantor will, to the extent lawful:

- (1) accept for payment all Notes or portions of the Notes properly tendered pursuant to the Issuer’s or the Guarantor’s offer;
- (2) deposit with the Paying Agent an amount equal to the aggregate purchase price in respect of all the Notes or portions of the Notes properly tendered; and

(3) deliver or cause to be delivered to the Trustee the Notes properly accepted, together with an officers' certificate stating the aggregate principal amount of Notes being purchased by the Issuer or the Guarantor.

The Paying Agent will promptly mail to each Holder of Notes properly tendered the purchase price for the Notes (or make payment through the depository), and the Trustee, at the written request of the Issuer, will promptly authenticate and mail (or cause to be transferred by book-entry) to each Holder a new Note equal in principal amount to any unpurchased portion of any Notes surrendered; provided, however, that each new Note will be in a minimum principal amount of US\$200,000 and integral multiples of US\$1,000 in excess thereof.

The Issuer or the Guarantor will not be required to make an offer to repurchase any Notes issued by it upon a Change of Control Repurchase Event if a third party makes such an offer in the manner, at the times and otherwise in compliance with the requirements for an offer made by the Issuer or the Guarantor and such third party purchases all Notes properly tendered and not withdrawn under its offer.

Provisions under the Notes relating to the Issuer and Guarantor's obligation to make an offer to repurchase Notes as a result of a Change of Control may be waived or modified with the written consent of the Holders of a majority in principal amount of the Notes.

For purposes of the foregoing discussion of a repurchase at the option of Holders, the following definitions are applicable:

"Change of Control" means the occurrence of any of the following:

(1) the direct or indirect sale, lease, transfer, conveyance or other disposition (other than by way of merger, scheme of arrangement, amalgamation or consolidation), in one or a series of related transactions, of all or substantially all of the assets of the Guarantor and its Subsidiaries taken as a whole to any "person" (as that term is used in Section 13(d)(3) of the Exchange Act) other than to the Guarantor or one of its Subsidiaries;

(2) the consummation of any transaction (including, without limitation, any merger, scheme of arrangement, amalgamation or consolidation) the result of which is that any "person" (as that term is used in Section 13(d)(3) of the Exchange Act) (other than a Subsidiary of the Guarantor) becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 under the Exchange Act), directly or indirectly, of more than 50% of the combined voting power of the Guarantor's Voting Stock or other Voting Stock into which the Guarantor's Voting Stock is reclassified, consolidated, exchanged or changed measured by voting power rather than number of shares; or

(3) the adoption of a plan relating to the liquidation or dissolution of the Guarantor.

Notwithstanding the foregoing, a transaction will not be deemed to involve a Change of Control if (1) the Guarantor becomes a direct or indirect wholly owned Subsidiary of a holding company and (2)(A) the direct or indirect holders of the Voting Stock of such holding company immediately following that transaction are substantially the same as the holders of the Guarantor's Voting Stock immediately prior to that transaction or (B) immediately following that transaction, no "person" (as that term is used in Section 13(d)(3) of the Exchange Act) (other than a holding company satisfying the requirements of this sentence) is the beneficial owner, directly or indirectly, of more than 50% of the Voting Stock of such holding company.

"Change of Control Repurchase Event" means the occurrence of both a Change of Control and a Rating Event.

"Investment Grade" means a rating of Baa3 or better by Moody's (or its equivalent under any successor rating categories of Moody's), a rating of BBB- or better by S&P (or its equivalent under any successor rating categories of S&P) or a rating of BBB- or better by Fitch (or its equivalent under any successor rating categories of Fitch); or the equivalent investment grade credit rating from any additional Rating Agency or Rating Agencies selected by the Guarantor.

"Fitch" means Fitch Ratings Ltd, and its successors.

"Moody's" means Moody's Investors Service Ltd., and its successors.

“Rating Agency” means each of Moody’s, S&P and Fitch; *provided, however*, that if Moody’s, S&P or Fitch ceases to rate the Notes or fails to make a rating of the Notes publicly available for reasons outside of the Guarantor’s control, the Guarantor may select (as certified by the Guarantor’s chief financial officer, treasurer or general counsel) a “nationally recognized statistical rating organization” within the meaning of Section 3(a)(62) under the Exchange Act, as a replacement agency for Moody’s or S&P, or both of them, as the case may be.

“Rating Event” means the occurrence of the events in (a) or (b) of this definition on any date during the period commencing on the earlier of (1) the occurrence of a Change of Control; or (2) the first public notice by the Guarantor of the occurrence of a Change of Control or the intention of the Guarantor to effect a Change of Control (provided that, in the case of a public notice of the intention of the Guarantor to effect a Change of Control, a Change of Control actually occurs), and ending 60 days after the occurrence of a Change of Control (which 60-day period will be extended following the occurrence of a Change of Control so long as the rating of the Notes is under publicly announced consideration for a possible downgrade by any Rating Agency, such consideration having been publicly announced within the period ended 60 days following the Change of Control), (a) if the Notes are rated on the Ratings Date by at least one Rating Agency as Investment Grade, the rating of the Notes shall be reduced so that the Notes are no longer rated Investment Grade by any Rating Agency, or (b) if the Notes are rated on the Ratings Date by none of the Rating Agencies as Investment Grade, the rating of the Notes by at least one Rating Agency shall be reduced by one or more gradations (including gradations within rating categories, as well as between rating categories). Notwithstanding the foregoing, a Rating Event otherwise arising by virtue of a particular reduction in rating shall not be deemed to have occurred in respect of a particular Change of Control (and thus shall not be deemed a Rating Event for purposes of the definition of Change of Control Repurchase Event hereunder) if (i) the Rating Agency making the reduction in rating to which this definition would otherwise apply do not announce or publicly confirm or inform the Trustee or the Guarantor in writing at its request that the reduction was the result, in whole or in part, of the applicable Change of Control (whether or not the applicable Change of Control shall have occurred at the time of the Rating Event) or (ii) the rating of the Notes by the Rating Agencies making the reduction in rating to which this definition would otherwise apply is within the period subsequently upgraded to a rating that is the same or higher than the rating provided by such Rating Agencies on the Ratings Date. Any change in the outlook of a rating will not constitute a change in gradation.

“Ratings Date” means the earlier of (1) the occurrence of a Change of Control; or (2) the first public notice by the Guarantor of the occurrence of such Change of Control or the intention of the Guarantor to effect such Change of Control.

“S&P” means S&P Global Ratings Europe Limited, and its successors.

“Voting Stock” of any specified “person” (as that term is used in Section 13(d)(3) of the Exchange Act) as of any date means the capital stock of such person that is at the time entitled to vote generally in the election of the board of directors of such person.

The Change of Control Repurchase Event provisions may in certain circumstances make more difficult or discourage a sale or takeover of the Guarantor and, thus, the removal of incumbent management. Subject to the limitations discussed below, the Guarantor could, in the future, enter into certain transactions, including acquisitions, refinancings or other recapitalizations, that would not constitute a Change of Control Repurchase Event for purposes of the Notes, but that could increase the amount of indebtedness outstanding at such time or otherwise affect the Guarantor’s capital structure or credit ratings on the Notes. Restrictions on the Guarantor’s ability to incur liens are contained in the covenants as described under “*—Covenants of the Issuer and the Guarantor—Negative Pledge*” below.

The Issuer or the Guarantor may not have sufficient funds to repurchase all the Notes upon a Change of Control Repurchase Event. See “*Risk Factors—Risks relating to the Notes—The Issuer and the Company may not be able to repurchase the Notes if it experiences a change of control*”.

Escrow of Proceeds; Special Mandatory Redemption

Concurrently with, or prior to, the closing of this offering of Notes, the Issuer will enter into the Escrow Agreement with the Trustee and the Escrow Agent, pursuant to which the Issuer will deposit or cause to be deposited with the Escrow Agent an amount equal to the gross proceeds of this offering of the Notes into the Escrow Account. The initial funds deposited in the Escrow Account, and all other funds, securities, interest,

dividends, distributions and other property and payments credited to the Escrow Account (less any property and/or funds released in accordance with the Escrow Agreement) are referred to, collectively, as the “**Escrowed Property.**”

In order to cause the Escrow Agent to release the Escrowed Property to the Issuer (the “**Release**”), the Escrow Agent and the Trustee shall have received from the Issuer, at a time that is on or before the Escrow Longstop Date, an officer’s certificate signed by the chief financial officer, treasurer or director, corporate finance, of the Guarantor (the “**Release Officer’s Certificate**”), upon which both the Escrow Agent and the Trustee shall rely, without further investigation, to the effect that the Rights Issue has been consummated and the Guarantor has received or will receive gross proceeds of approximately £2 billion therefrom (it being recognised that certain costs and expenses in connection with the Rights Issue may be deducted from the actual cash proceeds received or to be received by the Guarantor).

The Escrowed Property shall be released by the Escrow Agent on the date specified for the Release in the Release Officer’s Certificate which shall not be less than two Business Days nor more than five Business Days after the date of such Release Officer’s Certificate. Upon the Release, the Escrowed Property shall be released in accordance with the Escrow Agreement.

In the event that (1) the Release Officer’s Certificate is not delivered on or prior to the Escrow Longstop Date, (2) there occurs a repudiation by the Issuer of any of its obligations under the Escrow Agreement or the unenforceability of the Escrow Agreement against the Issuer for any reason; (3) in the good faith judgment of the Issuer, the Rights Issue is not expected to be consummated by the Escrow Longstop Date; or (4) any of the conditions set forth under the second paragraph under this caption “—*Escrow of Proceeds; Special Mandatory Redemption*” become incapable of being satisfied on or prior to the Escrow Longstop Date (the date of any such event being the “**Special Termination Date**”), the Escrow Agent and the Trustee shall have received from the Issuer, an officer’s certificate signed by the chief financial officer, treasurer or director, corporate finance, of the Guarantor, upon which both the Escrow Agent and the Trustee shall rely, to this effect and the Issuer will redeem all of the Notes (the “**Special Mandatory Redemption**”) at a price (the “**Special Mandatory Redemption Price**”) equal to 100% of the issue price of the Notes, plus accrued but unpaid interest from, but excluding, the Issue Date to, and including, the Special Mandatory Redemption Date (as defined below) (subject to the right of holders of record on the relevant record date to receive interest due on the relevant Interest Payment Date) and Additional Amounts, if any.

Notice of the Special Mandatory Redemption will be delivered by or on behalf of the Issuer, no later than two Business Days following the Special Termination Date, to the Trustee and the Escrow Agent, and will provide that the Notes shall be redeemed on a date that is no later than the fifth Business Day after such notice is given by the Issuer in accordance with the terms of the Escrow Agreement (the “**Special Mandatory Redemption Date**”). On the Special Mandatory Redemption Date, the Escrow Agent shall pay to the Paying Agent for payment to each Holder the Special Mandatory Redemption Price for such Holder’s Notes and, concurrently with the payment to such Holders, deliver any excess Escrowed Property to the Issuer.

In the event that the Special Mandatory Redemption Price payable upon such Special Mandatory Redemption exceeds the amount of the Escrowed Property, the Issuer will be required to fund the accrued and unpaid interest, and Additional Amounts, if any, owing to the holders of the Notes. See “*Risk Factors—Risks Relating to the Notes—If the conditions to the escrow are not satisfied, the Issuer will be required to redeem the Notes, which means that you may not obtain the return you expect on the Notes.*”

If at the time of such Special Mandatory Redemption, the Notes are listed on the Official List of the London Stock Exchange and the rules of the London Stock Exchange so require, the Issuer will notify the London Stock Exchange that the Special Mandatory Redemption has occurred and any relevant details relating to such special mandatory redemption.

Covenants of the Issuer and the Guarantor

Negative Pledge

Each of the Issuer and the Guarantor will covenant under the Indenture that for so long as any of the Notes are outstanding under the Indenture, and subject to the provisions of the Indenture, the Issuer will not, and the Guarantor will not, create or permit to subsist, and the Guarantor shall procure that no other member of the Group shall create or permit to subsist, any Lien (as defined below) upon, or with respect to, any of its present or future revenues or assets to secure any of the Issuer’s or the Guarantor’s Relevant Indebtedness or any Relevant

Indebtedness of any other member of the Group, unless the Issuer, the Guarantor or such other member of the Group, as the case may be, shall simultaneously with, or prior to, the creation of any such Lien, take any and all action necessary to procure that all amounts payable by the Issuer in respect of the Notes and by the Guarantor under the Guarantee are secured equally and ratably for so long as any such Lien securing Relevant Indebtedness subsists; *provided, however*, such negative pledge will not apply to or operate to prevent or restrict the following permitted encumbrances with respect to the Issuer, the Guarantor or any member of the Group:

- (i) any Lien arising by operation of law or any right of set-off;
- (ii) a Lien which exists on, or with respect to, any present or future revenues or assets to secure any of the Issuer's or the Guarantor's Relevant Indebtedness or any Relevant Indebtedness of any other member of the Group existing as at the Issue Date; or any Lien which exists on any asset which secures any loan or other indebtedness where such asset is acquired after the Issue Date; *provided that* such Lien existed as at the date of such acquisition and was not granted in contemplation of the acquisition and any Lien over the same asset(s) which is given for the purpose of, and to the extent of, the refinancing of any such loan or other indebtedness;
- (iii) any Lien on any asset securing any loan or other indebtedness or any guarantee of any loan or other indebtedness if the liability for the repayment of the principal of and interest on such loan or indebtedness is restricted to, or by reference to, funds available from a particular source or sources (including, in particular, any project, projects or assets) for the undertaking or acquisition or development, as the case may be, of which the loan or indebtedness has been incurred; and
- (iv) a Lien over any assets or revenue streams directly connected with or directly arising from projects which are supported by loan funding to a member of the Group from the European Investment Bank, the European Bank of Reconstruction and Development, the International Bank for Reconstruction and Development, the Asian Development Bank or the Inter-American Development Bank (or such other similar supranational organization approved by the Trustee) and in respect of which the European Investment Bank, the European Bank of Reconstruction and Development, the International Bank for Reconstruction and Development, the Asian Development Bank or the Inter-American Development Bank (or such other similar supranational organization approved by the Trustee) is required by its statutes and/or any rule or regulation to which it is subject and with which it is accustomed to comply to obtain security.

Limitation on Mergers and Consolidations

The Indenture will provide that for so long as the Notes are outstanding under the Indenture, each of the Issuer and the Guarantor may not consolidate or amalgamate with or merge (including by way of a scheme of arrangement) into or with any other Person or, directly or indirectly, sell, convey, transfer or lease its properties and assets as an entirety or substantially as an entirety to any Person (other than a Person satisfying the condition set forth in clause (i), below, that is directly or indirectly wholly owned by the Guarantor), unless:

- (i) the Person formed by or continuing from such consolidation or amalgamation or into which the Issuer or the Guarantor is merged or the Person which acquires or leases the Issuer's or the Guarantor's properties and assets as an entirety or substantially as an entirety is organized and existing under the laws of the United States, the United Kingdom or any other country that is a member of the Organization for Economic Cooperation and Development;
- (ii) if the Issuer or Guarantor, as applicable, is not the continuing entity, the successor Person expressly assumes, or assumes by operation of law, all of the Issuer's or the Guarantor's obligations under the Notes, the Guarantee and the Indenture to pay Additional Amounts;
- (iii) if the Issuer or Guarantor, as applicable, is not the continuing entity, the successor Person expressly assumes or assumes by operation of law all of the Issuer's or the Guarantor's obligations under the Notes, the Guarantee and under the Indenture;
- (iv) immediately before and after giving effect to such transaction, no Event of Default (as defined below) and no event which, after notice or lapse of time or both, would become an Event of Default, will have

happened and be continuing which has not otherwise been waived or remedied in compliance with the terms of the Indenture; and

- (v) certain other conditions are met (as set out in the Indenture).

If, as a result of any such transaction, any of the Issuer's or the Guarantor's present or future revenues or assets become subject to a Lien to secure the Issuer's or the Guarantor's Relevant Indebtedness or any Relevant Indebtedness of any other member of the Group, then, unless such Lien could be created pursuant to the Indenture provisions described under the section headed "*Negative Pledge*" without equally and ratably securing the Notes, the Issuer or the Guarantor, simultaneously with or prior to such transaction, will cause the Notes to be secured equally and ratably with or prior to the Relevant Indebtedness secured by such Lien.

The Notes will not contain covenants or other provisions to afford protection to Holders in the event of a highly leveraged transaction or a change in control of the Issuer or the Guarantor except as provided herein.

Upon any amalgamations, mergers or consolidations between the Issuer or the Guarantor, as the case may be, and any Person or upon certain sales, conveyances, transfers or leases of the respective properties and assets of the Issuer or the Guarantor as an entirety or substantially as an entirety to any Person, the obligations of the Issuer or the Guarantor, as the case may be, under the Notes or the Guarantee, as the case may be, shall be assumed by the Person formed by such merger or consolidation or which shall have acquired such property or assets (other than in the case of an acquisition of such property, for any Person satisfying the condition set forth in clause (i), above, that is directly or indirectly wholly owned by the Guarantor) and upon such assumptions such Person shall succeed to and be substituted for the Issuer or the Guarantor, as the case may be, and then the Issuer or the Guarantor, as the case may be, will be relieved from all obligations under the Notes or the Guarantee, as the case may be. The terms "**Issuer**" and "**Guarantor**", as used in the Notes, the Guarantee and the Indenture, shall refer to any such successors or assigns so substituted.

Provision of Financial Information

For so long as any Notes are outstanding, each of the Issuer and the Guarantor shall deliver to the Trustee, or post on its website, copies of any annual reports or periodic results announcements it files with each of the U.K. Financial Conduct Authority and the London Stock Exchange within 30 days after it files such documents with the U.K. Financial Conduct Authority or London Stock Exchange, as the case may be; *provided, however*, that this covenant shall not create any obligation under the Indenture to make any such filings or to make such filings in a timely manner.

For so long as any Notes remain outstanding and are "restricted securities" within the meaning of Rule 144(a)(3) under the Securities Act, the Guarantor will, during any period in which it is neither subject to Section 13 or 15(d) of the Exchange Act, nor exempt from reporting pursuant to Rule 12g3-2(b) under the Exchange Act, make available to any registered Holder of Notes (or any holder of a book-entry interest in such Notes designated by the registered Holder thereof) in connection with any sale thereof and to any prospective purchaser of Notes or a book-entry interest in Notes designated by such registered Holder, in each case upon request of such registered Holder, the information specified in, and meeting the requirements of, Rule 144A(d)(4) under the Securities Act. As of the date of this Offering Memorandum, the Guarantor is exempt from reporting pursuant to Rule 12g3-2(b) under the Exchange Act.

Events of Default

The following will be Events of Default (each an "**Event of Default**") with respect to the Notes:

- (i) default in the payment of any instalment of interest (excluding Additional Amounts) upon any Note as and when the same shall become due and payable, and continuance of such default for 10 days; or
- (ii) default in the payment of the Additional Amounts as and when the same shall become due and payable, and continuance of such default for 10 days; or
- (iii) default in the payment of all or any part of the principal of or premium on any Note as and when the same shall become due and payable either at maturity, upon any redemption, by declaration or otherwise, and continuance of such default for a period of one business day; or

- (iv) default in the performance or breach of any covenant of the Issuer or the Guarantor in respect of the Notes or the Indenture (other than those described in paragraphs (i), (ii) and (iii) above), and continuance of such default or breach for a period of 60 days after there has been given a written notice, by registered or certified mail, to the Issuer and the Guarantor by the Trustee or to the Issuer, the Guarantor and the Trustee by the Holders of at least 25% in principal amount of the outstanding Notes affected thereby, specifying such default or breach and requiring it to be remedied and stating that such notice is a “Notice of Default” under the Indenture; or
- (v) if any other indebtedness for borrowed moneys (as defined below) of the Issuer or the Guarantor other than indebtedness for borrowed moneys which is of a limited recourse nature (being indebtedness for borrowed moneys of the Issuer or Guarantor the liability for repayment of which is restricted to a particular source as referred to in clause (iii) above under “—*Covenants of the Issuer and the Guarantor—Negative Pledge*”) is not paid when due or within any applicable grace period relating thereto, or any indebtedness for borrowed moneys of the Issuer or the Guarantor is declared to be or otherwise becomes due and payable prior to its specified maturity by reason of default; *provided that* any such event shall only be capable of being an Event of Default if the aggregate amount of all such indebtedness for borrowed moneys exceeds the greater of £150,000,000 (or its equivalent in other currencies) or 2% of Consolidated Net Worth; or
- (vi) if:
 - (a) any order shall be made by any competent court or resolution passed for the winding up or dissolution of the Issuer or the Guarantor or a Principal Subsidiary, or an administration order is made in relation to the Issuer or the Guarantor or a Principal Subsidiary, or if the Issuer or the Guarantor or a Principal Subsidiary ceases to carry on all or the majority of its business other than (i) (in each such case) for the purpose of a reconstruction or amalgamation that is either permitted under the covenants described above in “—*Covenants of the Issuer and the Guarantor—Limitation on Mergers and Consolidations*” or the terms of which have previously been approved in writing by a resolution of the Holders of the Notes representing not less than 75% in aggregate principal amount of the Notes at the time outstanding, or (ii) in the case of a Principal Subsidiary, whereby all or the majority of the undertaking and assets of the Principal Subsidiary are transferred to or otherwise vested in the Issuer or the Guarantor or another of the Issuer’s or Guarantor’s Subsidiaries; or
 - (b) an encumbrancer takes possession or an administrative or other receiver is appointed of the Issuer or the Guarantor or a Principal Subsidiary or of the whole or any material part of the assets of the Issuer or the Guarantor or a Principal Subsidiary, or if a distress or execution is levied or enforced upon or sued out against any material part of the assets of the Issuer or the Guarantor or a Principal Subsidiary and is not removed, discharged or paid out within 90 days; or
 - (c) the Issuer or the Guarantor or a Principal Subsidiary is unable to pay its debts within the meaning of section 123(1)(e) or section 123(2) of the Insolvency Act 1986 of the United Kingdom or if the Issuer or the Guarantor or a Principal Subsidiary makes a general assignment for the benefit of or enters into a composition with its creditors; an administrator is appointed in respect of, or an administration order is made in relation to, the Issuer or the Guarantor; or
- (vii) the Guarantee ceases to be valid and legally binding for any reason other than a termination in accordance with its terms or the Guarantor denies or disaffirms its obligations under the Guarantee in writing.

The Issuer and/or the Guarantor shall promptly notify the Trustee in writing upon becoming aware of the occurrence of an Event of Default.

The Indenture will provide that if an Event of Default with respect to the Notes occurs and is continuing, then and in each and every such case (other than an Event of Default specified in paragraph (vi) above with respect to the Issuer or the Guarantor or a Principal Subsidiary), unless the principal of the Notes shall have already become due and payable, either the Trustee (at the direction of the Holders of not less than 25% in aggregate principal amount of the Notes then outstanding) or the Holders of not less than 25% in aggregate principal amount of the Notes then outstanding, by notice in writing to the Issuer and the Guarantor (and to the

Trustee if given by the Holders), may declare the entire principal amount of all outstanding Notes issued pursuant to the Indenture and interest accrued and unpaid thereon, if any, to be due and payable immediately, and upon any such declaration the same shall become immediately due and payable, without any further declaration or other act on the part of the Trustee or any Holder. If any Events of Default described in paragraph (vi) above occur with respect to the Issuer or the Guarantor and are continuing, the entire principal amount of and accrued and unpaid interest on all outstanding Notes issued pursuant to the Indenture shall become immediately due and payable, without any declaration or other act on the part of the Trustee or any Holder. Under certain circumstances, the Holders of a majority in aggregate principal amount of the Notes then outstanding, by written notice to the Issuer, the Guarantor and the Trustee, may waive defaults and rescind and annul declarations of acceleration and its consequences, but no such waiver or rescission and annulment shall extend to or shall affect any subsequent default or shall impair any right consequent thereon.

The Indenture will provide that no Holder of any Note may institute any action or proceeding at law or in equity or in bankruptcy or otherwise upon or under or with respect to the Indenture, or for the appointment of a trustee, receiver, liquidator, custodian or other similar official or for any other remedy under the Indenture (except suits for the enforcement of payment of overdue principal or interest) unless such Holder previously shall have given to the Trustee written notice of an Event of Default and continuance thereof and unless the Holders of not less than 25% in aggregate principal amount of the Notes then outstanding shall have made written request upon the Trustee to institute such action or proceedings in its own name as Trustee and shall have offered the Trustee reasonable indemnity, the Trustee shall not have instituted any such action or proceeding within 90 days of its receipt of such notice, request and offer of indemnity and the Trustee shall not have received direction inconsistent with such written request by the Holders of a majority in aggregate principal amount of the Notes at the time outstanding.

The Holders of a majority in aggregate principal amount of the Notes then outstanding will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred on the Trustee, subject to certain limitations to be specified in the Indenture.

An Event of Default with respect to the Notes would not necessarily constitute an event of default with respect to the securities of any other series issued in the future under the Indenture.

The Indenture will provide that each of the Issuer and the Guarantor will furnish to the Trustee on or before 30 June in each year (commencing on 30 June 2021), if any Notes are then outstanding, a certificate from an officer as to his or her knowledge of the Issuer's or the Guarantor's, as the case may be, compliance with all conditions and covenants under the Indenture.

Defeasance

The Indenture will provide that the Issuer will have the option either (a) to be deemed (together with the Guarantor) to have paid and discharged the entire indebtedness represented by, and obligations under, the Notes and the Guarantee and to have satisfied all the obligations under the Indenture relating to the Notes and the Guarantee (except for certain obligations, including those relating to the defeasance trust and obligations to register the transfer or exchange of Notes, to replace mutilated, destroyed, lost or stolen Notes, to pay Additional Amounts and to maintain paying agencies) on the day after the applicable conditions described below have been satisfied or (b) to cease (together with the Guarantor) to be under any obligation to comply with the covenants described under “—*Covenants of the Issuer and the Guarantor—Negative Pledge*”, and “—*Covenants of the Issuer and the Guarantor—Provision of Financial Information*” and the condition relating to the absence of any events of default under “—*Covenants of the Issuer and the Guarantor—Limitation on Mergers and Consolidations*” under the Notes, and non-compliance with such covenants and the occurrence of certain events described above under “—*Events of Default*” will not give rise to any Event of Default under the Notes, in each case at any time after the applicable conditions described below have been satisfied.

In order to exercise either defeasance option set out in (a) and (b) above, (i) the Issuer must deposit with the Trustee (or another entity designated by the Trustee for such purpose), irrevocably in trust, money and/or Government Obligations for the payment of principal of and interest on the outstanding Notes to and including the Redemption Date irrevocably designated by the Issuer on or prior to the date of deposit of such money and/or Government Obligations (ii) the Issuer must comply with certain other conditions, including delivering to the Trustee an opinion of U.S. counsel, or a ruling received from or published by the U.S. Internal Revenue Service,

to the effect that beneficial owners of the Notes will not recognize income, gain or loss for United States federal income tax purposes as a result of the exercise of such option and will be subject to U.S. federal income tax on the same amount and in the same manner and at the same time as would have been the case if such option had not been exercised and, in the case of (a) above, such opinion must state that it is based on a change of law or ruling received from or published by the U.S. Internal Revenue Service after the Issue Date (iii) no Event of Default or event which with notice or lapse of time would become an Event of Default shall have occurred and be continuing on the date of such deposit after having given effect thereto and (iv) the Issuer shall have paid in full all other amounts due and owing under the Indenture.

Modification and Waiver

Without Consent of Holders of the Notes

The Indenture will contain provisions permitting the Issuer, the Guarantor and the Trustee, without the consent of the Holders of any of the Notes at any time outstanding, from time to time and at any time, to enter into an indenture or indentures supplemental to the Indenture or to otherwise amend the Indenture:

- to convey, transfer, assign, mortgage or pledge to the Trustee or a security agent on behalf of the Holders of the Notes as security for the Notes any property or assets;
- to evidence the succession of another Person to the Issuer or the Guarantor, as the case may be, or successive successions, and the assumption by the successor Person of the covenants, agreements and obligations of the Issuer or the Guarantor, as the case may be, pursuant to the Indenture;
- to evidence and provide for the acceptance of appointment of a successor trustee, paying agent, registrar or transfer agent, as the case may be;
- to add to the covenants of the Issuer and the Guarantor, as the case may be, such further covenants, restrictions, conditions or provisions as the Issuer and the Guarantor, as the case may be, and to make the occurrence, or the occurrence and continuance, of a default in any such additional covenants, restrictions, conditions or provisions an Event of Default under the Indenture permitting the enforcement of all or any of the several remedies provided in the Indenture, Notes or Guarantee; *provided that*, in respect of any such additional covenant, restriction, condition or provision, such supplemental indenture or amendments to the indenture may provide for a particular period of grace after default (which period may be shorter or longer than that allowed in the case of other defaults) or may limit the remedies available to the Trustee upon such an Event of Default or may limit the right of the Holders of a majority in aggregate principal amount of the Notes to waive such an Event of Default;
- to modify the restrictions on, and procedures for, resale and other transfers of the Notes pursuant to law, regulation or practice relating to the resale or transfer of restricted securities generally;
- to cure any ambiguity or to correct or supplement any provision contained in the Indenture which may be defective or inconsistent with any other provision contained therein or to make such other provision in regard to matters or questions arising under the Indenture as the Issuer or the Guarantor may deem necessary or desirable and which will not adversely affect the interests of the Holders of the Notes in any material respect (*provided that* any modification or amendment to conform language in the Indenture to that appearing in this description shall be deemed not to adversely affect the interests of the Holders of the Notes in any material respect); or
- to issue as many distinct series of debt securities under the Indenture as the Issuer wishes or to “reopen” the Notes and create and issue additional notes having identical terms and conditions as the Notes (or in all respects except for the issue date, issue price, payment of interest accruing prior to the issue date of such additional notes and/or except for the first payment of interest following the issue date of such additional notes) so that the additional notes are consolidated and form a single series with the Notes.

With Consent of Holders of the Notes

The Indenture will contain provisions permitting the Issuer, the Guarantor and the Trustee, with the consent of the Holders of not less than a majority in aggregate principal amount of the Notes at the time outstanding (including consents obtained in connection with a tender offer or exchange offer for the Notes), from time to time

and at any time, to enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of the Indenture or any indenture supplemental to the Indenture or of modifying in any manner the rights of the Holders of the Notes or the Guarantee; *provided that* no such indenture may, without the consent of the Holder of the Notes so affected:

- change the stated maturity of the principal of or the date for payment of any instalment of interest on any Note;
- reduce the principal amount of or interest on any Note or Additional Amounts payable with respect thereto or reduce the amount payable thereon in the event of redemption or default;
- change the currency of payment of principal of or interest on any Note or Additional Amounts payable with respect thereto;
- change the required place at which payment with respect to principal of or interest on any Note or Additional Amounts is payable to a place other than as contemplated by the Indenture on the Issue Date;
- change the obligation of the Issuer or the Guarantor, as the case may be, to pay Additional Amounts;
- impair the contractual right to institute suit for the enforcement of any such payment on or with respect to any Note;
- reduce the percentage in principal amount of the outstanding Notes, the consent of whose Holders is required for any such supplemental indenture; or
- reduce the aggregate principal amount of any Notes outstanding necessary to modify or amend the Indenture or any such Notes or to waive any future compliance or past default or reduce the percentage of aggregate principal amount of any Notes outstanding required for any written consent or reduce the percentage of the aggregate principal amount of such Notes outstanding necessary to rescind or annul any declaration of the principal of and all accrued and unpaid interest on any Notes to be due and payable;

provided that no consent of any Holder of any Note shall be necessary to permit the Trustee, the Issuer and the Guarantor to execute supplemental indentures described under “—*Without Consent of Holders of the Notes*” above.

Any modifications, amendments or waivers to the Indenture or to the conditions of the Notes will be conclusive and binding on all Holders of Notes, whether or not they have consented to such action or were present at the meeting at which such action was taken, and on all future Holders of such Notes, whether or not notation of such modifications, amendments or waivers is made upon such Notes. Any instrument given by or on behalf of any Holder of such a Note in connection with any consent to any such modification, amendment or waiver will be irrevocable once given and will be conclusive and binding on all subsequent registered Holders of such Note.

Prescription

Under New York’s statute of limitations, any legal action upon the Notes in respect of interest or principal must be commenced within six years after the payment thereof is due. Thereafter the Notes and the Guarantee will become generally unenforceable.

Listing

The Issuer expects to make an application for Admission of the Notes to listing on the Official List of the FCA and to trading on the London Stock Exchange’s Regulated Market, a regulated market for the purposes of MIFID II.

The Issuer and the Guarantor will use their reasonable best efforts to have such (i) Admission of the Notes to trading on the regulated market of the London Stock Exchange and (ii) listing of such Notes on the Official List of the FCA become effective and then maintain such listing for so long as any of the Notes remain outstanding, *provided, however*, that if in the opinion of the Issuer or the Guarantor, the continuation of such listing shall

become unduly onerous, then the Issuer may delist the Notes from the regulated market of the London Stock Exchange; *provided, further*, that the Issuer and the Guarantor will use their best efforts to obtain the admission to listing, trading and/or quotation of the Notes by another listing authority, securities exchange and/or quotation system reasonably acceptable to the Initial Purchasers and the Issuer and the Guarantor prior to the delisting of the Notes from the London Stock Exchange.

Notices

Notices to Holders of Notes will be mailed by first-class mail (or equivalent) postage or internationally recognised courier service prepaid to Holders of Notes at their last registered addresses as they appear in the Notes register. The Issuer and the Guarantor will consider any mailed notice to have been given two business days in New York City after it has been sent.

For so long as the Notes are represented by the Global Notes and the Global Notes are held on behalf of any one or more of DTC, Euroclear, Clearstream or any alternative clearing system, notices required to be given to Holders of the Notes shall be given by their being delivered to the relevant clearing system for communication by it to entitled accountholders in substitution for notification as required by the foregoing.

In addition, for so long as the Notes are listed on the Official List of the FCA and admitted to trading on the London Stock Exchange's Regulated Market or any other stock exchange or listing authority, the Issuer and the Guarantor will publish notices to the Holders of the Notes in accordance with the rules of such stock exchange or listing authority.

Consent to Service, Submission to Jurisdiction; Enforceability of Judgments

Each of the Issuer and the Guarantor will appoint Corporation Service Company, as its authorized agent for service of process for any action brought by a Holder based on the Indenture or the Notes or Guarantee, as applicable, instituted in the federal courts of the United States of America located in the City and County of New York on the courts of the State of New York in each case located in the City and County of New York.

Each of the Issuer and the Guarantor will irrevocably submit to the non-exclusive jurisdiction of the federal courts of the United States of America located in the City and County of New York on the courts of the State of New York in each case located in the City and County of New York in respect of any action brought by a Holder based on the Notes, the Guarantee or the Indenture. Each of the Issuer and the Guarantor will also irrevocably waive, to the extent permitted by applicable law, any objection to the venue of any of these courts in an action of that type. Holders of the Notes may, however, be precluded from initiating actions based on the Notes, the Guarantee or the Indenture in courts other than those mentioned above.

Each of the Issuer and the Guarantor will, to the fullest extent permitted by law, irrevocably waive and agree not to plead any immunity from the jurisdiction of any of the above courts in any action based upon the Notes, the Guarantee or the Indenture.

Since a substantial portion of the assets of each of the Issuer and the Guarantor is outside the United States, any judgment obtained in the United States against the Issuer or the Guarantor, including judgments with respect to the payment of principal, premium, interest and any redemption price and any purchase price with respect to the Notes or payments due under the Guarantee, may not be collectable within the United States.

Governing Law

The Indenture, the Notes and the Guarantee shall be governed by and construed in accordance with the laws of the State of New York, without regard to principles of conflicts of laws thereof.

Book-Entry System; Delivery and Form

Upon issuance, the Notes will be represented by beneficial interests in Global Notes. Each Global Note will be deposited with Citibank, N.A., London Branch, as custodian for DTC and registered in the name of Cede & Co., as nominee of DTC. Except under the circumstances described below, Global Notes will not be exchangeable at the option of the Holder for certificated notes and Global Notes will not otherwise be issuable in definitive form.

Upon issuance of the Global Notes, DTC will credit the respective principal amounts of the Notes represented by the Global Notes to the accounts of institutions that have accounts with DTC or its nominee (called participants of DTC), including Euroclear and Clearstream. The accounts to be credited shall be designated by the Initial Purchasers. Ownership of beneficial interests in the Global Notes will be limited to participants or persons that may hold interests through participants. Ownership of beneficial interest in the Global Notes will be shown on, and the transfer of that ownership will be effected only through, records maintained by DTC or its nominee (with respect to participants' interests) or by participants or persons that hold through participants. Such beneficial interest shall be in denominations of US\$200,000 and in multiples of US\$1,000 in excess thereof.

So long as DTC, or its nominee, is the registered owner or Holder of the Global Notes, DTC or its nominee, as the case may be, will be considered the sole owner and Holder of the Global Notes for all purposes under the Indenture.

Except as set forth below, owners of beneficial interests in the Global Notes:

- will not be entitled to have the Notes represented by the Global Notes registered in their names, and
- will not receive or be entitled to receive physical delivery of Notes in definitive form and will not be considered the owners or Holders thereof under the Indenture.

Accordingly, each person owning a beneficial interest in the Global Notes must rely on the procedures of DTC, and indirectly Euroclear and Clearstream, and, if such person is not a participant, on the procedures of the participant through which such person owns its interest, to exercise any rights of a Holder under the Indenture.

Principal and interest payments on Global Notes registered in the name of or held by DTC or its nominee will be made to DTC or its nominee, as the case may be, as the registered owner or Holder of the Global Note. None of the Issuer, the Guarantor, the Trustee, the Transfer Agent, the Registrar, or any Paying Agent for such Global Notes will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in Global Notes or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

The Issuer expects that DTC, upon receipt of any payments of principal or interest in respect of the Global Notes, will credit the accounts of the related participants (including Euroclear and Clearstream), with payments in amounts proportionate to their respective beneficial interests in the principal amount of the Global Notes as shown on the records of DTC. Payments by participants to owners of beneficial interest in the Global Notes held through such participants will be the responsibility of the participants, as is now the case with securities held for the accounts of customers in bearer form or registered in "street name".

Unless and until it is exchanged in whole or in part for Notes in definitive form in accordance with the terms of the Indenture, a Global Note may not be transferred except as a whole by the depositary to a nominee of the depositary or by a nominee of DTC to DTC or another nominee of DTC.

If any note, including a Global Note, is mutilated, defaced, stolen, destroyed or lost, such note may be replaced with a replacement note at the office of the Registrar or any successor registrar or transfer agent, on payment by the Holders of the Notes of such costs and expenses as may be incurred in connection with the replacement, and on such terms as to evidence any indemnity or security as the Issuer, the Guarantor, the Trustee or the Agents (or any of their agents) may require. Mutilated or defaced Notes must be surrendered before replacement Notes will be issued.

Exchanges of Global Notes for Definitive Notes

Global Notes shall be exchangeable for definitive notes registered in the names of persons other than DTC or its nominee for such Global Notes only if:

- DTC has notified the Issuer that it is unwilling or unable to continue as depositary or has ceased to be a clearing agency registered under the Exchange Act, and in either case, the Issuer has failed to appoint a successor depositary within 90 days of such notice;
- the Trustee has instituted or has been directed to institute any judicial proceeding in a court to enforce the rights of the Holders of the Notes under the Notes or the Guarantee and has been advised by counsel

that in connection with such proceedings it is necessary for the Trustee to obtain possession of the Notes;
or

- the Issuer shall have determined in its sole discretion that the Notes shall no longer be represented by the applicable Global Notes.

Any Global Note that is exchangeable for definitive notes pursuant to the preceding sentence shall be exchangeable for Notes issuable in denominations of US\$200,000 and in multiples of US\$1,000 in excess thereof and registered in such names as DTC shall direct. Subject to the foregoing, a Global Note shall not be exchangeable, except for a Global Note of like denomination to be registered in the name of DTC or its nominee. Bearer notes will not be issued.

Exchanges Between and Among Global Notes

The “distribution compliance period”, as defined in Regulation S under the Securities Act, will begin on the closing date and end 40 days after the closing date of the Offering.

Beneficial interests in one Global Note may generally be exchanged for interests in another Global Note. Depending on whether the transfer is being made during or after the distribution compliance period, and to which Global Note the transfer is being made, the Trustee may require the seller to provide certain written certifications in the form provided in the Indenture.

A beneficial interest in a Global Note that is transferred to a person who takes delivery through another Global Note will, upon transfer, become subject to any transfer restrictions and other procedures applicable to beneficial interests in the other Global Note.

Certain Definitions

Set forth below are certain of the defined terms used in the Notes and the Indenture. You should refer to the Notes and the Indenture for the full set of definitions.

“**business day**” means, unless stated otherwise, any day which is not, in London, New York City, or the place of payment of interest or principal a Saturday, Sunday, a legal holiday or a day on which banking institutions in such places are authorized or obligated by law to close.

“**Consolidated Net Worth**” means the aggregate of the amounts paid up, credited as paid up or deemed to be paid up on the issued share capital of the Guarantor and the aggregate amount of capital and revenue reserves of the Group including but not limited to:

- (i) any amount credited to the share premium account;
- (ii) any capital redemption reserves;
- (iii) any cash flow hedging reserves;
- (iv) any other reserves; and
- (v) any balance standing to the credit of the consolidated retained earnings of the Guarantor and its Subsidiaries,

all as determined from the latest published audited consolidated balance sheet of the Group, but adjusted as follows:

- (vi) by deducting any debit balance on the consolidated retained earnings of the Group;
- (vii) by deducting any amounts shown in respect of the book values of goodwill;
- (viii) in respect of any variation in interests in Subsidiaries and to take account of any Subsidiary which shall have become or ceased to be a Subsidiary since the date as at which such financial statements were prepared;
- (ix) excluding all sums set aside for deferred taxation;

- (x) excluding any distribution declared, recommended or made to members of the Guarantor and outside shareholders in Subsidiaries out of profits accrued prior to the date such financial statements were drawn up and not provided for therein;
- (xi) by adding any pension liability back or by deducting any pension surplus balance;
- (xii) by deducting “Other financial assets”, being the amounts arising from the revaluations and reclassifications required by IFRS 9;
- (xiii) by adding back “Other financial liabilities”, being the amounts arising from the revaluations and reclassifications required by IFRS 9; and
- (xiv) deducting the amount paid up or credited as paid up on, and the amount of any premium payable on the redemption of, any preference share capital of the Guarantor which is repayable on or prior to the final maturity date of the Notes,

and so that no amount shall be included or excluded more than once.

“**Exchange Act**” means the U.S. Securities Exchange Act of 1934, as amended.

“**Government Obligations**” means any security which is (i) a direct obligation of the United States of America for the payment of which the full faith and credit of the United States of America is pledged or (ii) an obligation of a person controlled or supervised by and acting as an agency or instrumentality of the United States of America the payment of which is directly and fully guaranteed or insured as a full faith and credit obligation by the United States of America, which, in either case (i) or (ii), is not callable or redeemable at the option of the issuer thereof.

“**Group**” means, at any time, the Guarantor and its Subsidiaries including the Issuer and “**member of the Group**” shall be construed accordingly.

“**Guarantor Jurisdiction**” means any of the jurisdictions of incorporation or residence for tax purposes of the Guarantor or any successor entity, or any political subdivision or taxing authority thereof or therein.

“**indebtedness for borrowed moneys**” means any present or future indebtedness (whether being principal, premium, interest or other amounts and whether actual or contingent) for or in respect of (i) money borrowed, (ii) liabilities under or in respect of any guarantee, indemnity, acceptance or acceptance credit or (iii) any notes, bonds, debentures, debenture stock, loan stock or other securities offered, issued or distributed whether by way of public offer, private placing, acquisition consideration or otherwise and whether issued for cash or in whole or in part for a consideration other than cash.

“**Issuer Jurisdiction**” means any of the jurisdictions of incorporation or residence for tax purposes of the Issuer or any successor entity, or any political subdivision or taxing authority thereof or therein.

“**Lien**” means any mortgage, lien, pledge or other security interest.

“**Person**” means any individual, corporation, partnership, joint venture, association, limited liability company, joint stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“**Principal Subsidiary**” means any Subsidiary of the Guarantor from time to time whose turnover, as shown in its latest audited income statement, exceeds 25% of the consolidated turnover of the Group as shown by the latest published audited consolidated income statement of the Group and either (i) whose profits or (in the case of a Subsidiary which has Subsidiaries) consolidated profits, before taxation and extraordinary items, as shown by its latest audited income statement, exceed 25% of the consolidated profits, before taxation and extraordinary items, of the Group as shown by the latest published audited consolidated income statement of the Group or (ii) whose total assets or (in the case of a Subsidiary of the Guarantor which has Subsidiaries) total consolidated assets, as shown by its latest audited balance sheet, are at least 25% of the total consolidated assets of the Group as shown by the latest published audited consolidated balance sheet of the Group. For the purpose of calculating the profits or (in the case of a Subsidiary which has Subsidiaries) consolidated profits or (in the case of a Subsidiary which has Subsidiaries) total consolidated assets of any Subsidiary which is not a wholly- owned

Subsidiary pursuant to (i) or (ii) above, only such proportion of the above-mentioned profits or total assets shall be taken into account as the relevant holding, either direct or indirect, of issued equity share capital in such Subsidiary bears to that Subsidiary's total issued equity share capital. A report by the Auditors that in their opinion a Subsidiary is or is not or was or was not at a specified date a Principal Subsidiary shall, in the absence of manifest error, be conclusive and binding on all concerned. References herein to the audited income statement and balance sheet and audited accounts of a Subsidiary which has Subsidiaries shall be construed as references to the audited consolidated income statement, consolidated balance sheet and consolidated accounts of such Subsidiary and its Subsidiaries, if such are required to be produced and audited, or, if no such accounts or balance sheet are produced, to pro forma accounts and balance sheet, prepared for the purpose of such reports. If the latest published audited consolidated income statement of the Group shows a loss before taxation and extraordinary items, then every Subsidiary whose turnover exceeds 25% of the consolidated turnover of the Group as aforesaid and whose latest audited income statement (consolidated if appropriate) shows a profit before taxation and extraordinary items shall be a Principal Subsidiary.

“Relevant Indebtedness” means any loan or other indebtedness which is in the form of or represented by any bonds, notes or other securities which have a final maturity of more than one year from the date of their creation and which are for the time being quoted, listed or dealt in, at the request or with the concurrence of the Issuer or the Guarantor, as the case may be, on any stock exchange or recognised securities market.

“Relevant Jurisdiction” means an Issuer Jurisdiction and/or a Guarantor Jurisdiction.

“Subsidiary” means any company which is for the time being a subsidiary (within the meaning of Section 1159 of the Companies Act 2006).

DESCRIPTION OF CERTAIN OTHER INDEBTEDNESS

The following section summarizes certain material provisions of the Issuer's and the Company's material debt (other than the Notes offered hereby). The following description is only a summary of the material provisions of the Issuer's and the Company's material debt and does not purport to be complete and is qualified in its entirety by reference to the documents governing such indebtedness.

Financing arrangements

Revolving Credit Facility

Rolls-Royce plc entered into the Revolving Credit Facility Agreement between, among others, Rolls-Royce plc (as borrower), the Company and Rolls-Royce plc (each as original guarantors), certain financial institutions (as lenders) and J.P. Morgan Europe Limited (as agent), dated 3 October 2011, as amended and/or restated from time to time, including by way of an amendment and restatement agreement dated 3 April 2018.

Under the terms of the Revolving Credit Facility Agreement, the lenders have made available to Rolls-Royce plc a multicurrency revolving loan facility in an aggregate amount of £2,500m (or its equivalent in optional currencies), with a maturity date of 3 April 2025. The Revolving Credit Facility was put in place to provide the Group with access to funding for general corporate purposes.

The Revolving Credit Facility is unsecured but is guaranteed by Rolls-Royce plc and the Company.

Rolls-Royce plc has the right to voluntarily prepay any part of a loan under the Revolving Credit Facility prior to the termination date, subject to a *de minimis* amount.

The interest rate under the Revolving Credit Facility Agreement is equal to the aggregate of the applicable margin plus LIBOR or EURIBOR (as applicable). The applicable margin is subject to a ratchet depending on the credit rating of the Borrower as determined by Standard & Poor's and Moody's and is increased if an event of default is outstanding.

The Revolving Credit Facility Agreement contains certain events of default customary for facilities of this nature, including non-payment, breach of other obligations, misrepresentation, cross-acceleration, insolvency, insolvency proceedings, creditors' process, change of control, unlawfulness and repudiation.

Liquidity Facility

On 29 April 2020, Rolls-Royce plc entered into the Liquidity Facility Agreement between Rolls-Royce plc (as borrower), the Company and Rolls-Royce plc (each as original guarantors), Barclays Bank PLC; Bank of America, N.A., London Branch; BNP Paribas, London Branch; Bayerische Landesbank; Citibank, N.A., London Branch; Citicorp North America, Inc.; Commerzbank Aktiengesellschaft, London Branch; Crédit Agricole Corporate and Investment Bank; Lloyds Bank plc; Mizuho Bank, Ltd.; MUFG Bank, Ltd.; National Westminster Bank Plc; Santander UK plc; Skandinaviska Enskilda Banken AB (publ); Societe Generale, London Branch; Standard Chartered Bank; Sumitomo Mitsui Banking Corporation, London Branch; The Toronto-Dominion Bank; and UniCredit Bank AG, London Branch (as lenders) and J.P. Morgan Europe Limited (as agent).

Under the terms of the Liquidity Facility Agreement, the lenders have made available to Rolls-Royce plc a pound sterling revolving loan facility in an aggregate amount of £1,900m, with a maturity date of 29 October 2021. The Liquidity Facility Agreement was put in place to provide the Group with access to funding for general corporate purposes. The Liquidity Facility is currently undrawn.

The Liquidity Facility is unsecured but is guaranteed by Rolls-Royce plc and the Company.

Rolls-Royce plc has the right to voluntarily prepay any part of a loan under the Liquidity Facility prior to the termination date, subject to a *de minimis* amount. The Liquidity Facility Agreement contains certain mandatory prepayment events including a mandatory prepayment event, under which the proceeds of any equity or debt capital markets issuances (excluding in connection with the CCFF) shall be applied in prepayment and/or cancellation of any loans outstanding under the Liquidity Facility Agreement. This mandatory prepayment event will apply in relation to the Rights Issue and the Offering.

The interest rate under the Liquidity Facility Agreement is equal to the aggregate of the applicable margin plus LIBOR. The applicable margin is subject to a ratchet depending on the credit rating of the Borrower as determined by Standard & Poor's and Moody's and is increased if an event of default is outstanding. The interest rate payable on any amounts drawn under the Liquidity Facility based on the Borrower's credit rating as at the Latest Practicable Date is LIBOR plus 2.75%. This cannot increase further as a result of any further downgrade in the Borrower's credit rating.

The Liquidity Facility contains certain events of default customary for facilities of this nature, including non-payment, breach of other obligations, misrepresentation, cross-acceleration, insolvency, insolvency proceedings, creditors' process, change of control, unlawfulness and repudiation.

Participation in the Bank of England's Covid Corporate Financing Facility

The Group has been confirmed as an eligible issuer under the CCFF, with an issuer limit of £300m. As at the date of this document, the Group had issued £300m of commercial paper under the CCFF, with an applicable interest rate of 0.6868471% and a maturity date of 17 March 2021.

Term Loan Facility

On 20 August 2020, Rolls-Royce plc entered into the Term Loan Facility Agreement between, among others, Rolls-Royce plc (as borrower), the Company (as guarantor), Banco Santander, S.A.; Bayerische Landesbank; BNP Paribas, London Branch; Citibank, N.A., London Branch; Crédit Agricole Corporate and Investment Bank; Deutsche Bank Luxembourg S.A.; HSBC Bank plc; JPMorgan Chase Bank N.A., London Branch; Lloyds Bank plc; Mizuho Bank, Ltd.; Skandinaviska Enskilda Banken AB (publ); Societe Generale, London Branch and Standard Chartered Bank (each as original lenders) and J.P. Morgan Europe Limited (as agent).

Under the terms of the Term Loan Facility Agreement, the lenders have made available to Rolls-Royce plc a pound sterling term facility in an aggregate amount of £2,000m consisting of a £1,600m term facility guaranteed by UK Export Finance and a £400m commercial term facility, with a repayment date of 20 August 2025. Both the term facility guaranteed by UK Export Finance and the commercial term facility have been provided to Rolls-Royce plc on the same terms and conditions.

The Term Loan Facility Agreement was put in place to provide the borrower with access to funding for general corporate purposes. The interest rate payable by Rolls-Royce plc on any amounts drawn under the Term Loan Facility is LIBOR plus 4.00%. The Term Loan Facility is currently undrawn and has an availability period expiring on 15 December 2020.

The Term Loan Facility is unsecured but is guaranteed by the Company and £1,600m of the facility is guaranteed by UK Export Finance.

Rolls-Royce plc has the right to voluntarily prepay any part of a loan under the Term Loan Facility prior to the termination date, subject to a de minimis amount and the expiry of the availability period. Any voluntary prepayment by the borrower would need to ensure that the 80:20 ratio between the £1,600m term facility guaranteed by UK Export Finance and the £400m commercial term facility is maintained. The Term Loan Facility Agreement does not contain any financial covenants.

Under the terms of the Term Loan Facility Agreement, the Company is prevented from declaring, making or paying distributions to Shareholders up to and including 31 December 2022. From 1 January 2023, the Company may declare, make or pay distributions to Shareholders, provided certain conditions are satisfied. The Company is also permitted, at any time, to declare, make or pay a distribution to Shareholders if it simultaneously repays any outstanding balance under the Term Loan Facility Agreement in an amount equal to the value of the distribution (or, where no utilisation has occurred, cancel an amount of the available commitment equal to the value of the distribution). The restrictions on distributions to Shareholders under the Term Loan Facility Agreement do not prevent Shareholders from redeeming C Shares in issue prior to the date of the Term Loan Facility Agreement (20 August 2020).

The Term Loan Facility contains certain representations and undertakings typically included in facilities guaranteed by export credit agencies and a mandatory prepayment event on a change of control. It also contains customary events of default, including non-payment, breach of other obligations, misrepresentation, cross-

acceleration, insolvency, insolvency proceedings, creditors' process, unlawfulness and repudiation, as well as an additional event of default for breach by Rolls-Royce plc of the Exporter Agreement between Rolls-Royce plc and UK Export Finance (a customary provision in facilities guaranteed by an export credit agency).

In addition, UK Export Finance has indicated that it would, in principle, support an extension of its 80% guarantee of the Group's existing £2bn five year Term Loan Facility to support an increase in the loan amount of up to £1bn. This is subject to completion of the Rights Issue, agreement of terms with lenders and approval of those terms by UK Export Finance and HM Treasury, and there is therefore no guarantee that this increase will take place. As the aggregate gross proceeds from this Offering and the concurrent offering of the Eurobonds exceed the Guarantor's initial minimum target size of £1bn, the Guarantor may decide not to seek to utilise all of the potential £1bn increase in the Term Loan Facility.

Bridge Facility Mandate Letter

On 29 September 2020, Rolls-Royce plc entered into a mandate letter in relation to a proposed term loan facility agreement between, among others, Rolls-Royce plc (as borrower), the Company (as guarantor), BNP Paribas, London Branch; Citibank, N.A., London Branch and HSBC Bank plc (each as co-ordinating mandated lead arrangers, bookrunners and underwriters (the "**Bridge Underwriters**")).

The Bridge Facility Mandate Letter provides that, subject to certain customary conditions and the execution of the Bridge Facility Agreement, the Bridge Underwriters will make available to Rolls-Royce plc a pound sterling term loan facility of up to £1bn, with a maturity date 24 months from the date of the Bridge Facility Agreement. The Bridge Facility Agreement is intended to be put in place to provide the Group with access to funding for general corporate purposes and will be conditional upon: (i) the Rights Issue; and (ii) the cancellation in full of the Liquidity Facility.

The Bridge Facility is intended to be unsecured but guaranteed by Rolls-Royce plc and the Company.

The interest rate under the Bridge Facility Agreement is proposed to be equal to the aggregate of the applicable margin plus LIBOR. The applicable margin is proposed to be subject to a ratchet depending on the credit rating of Rolls-Royce plc as determined by Standard & Poor's and Moody's and increased if an event of default is outstanding. The proposed opening interest rate per annum payable on any amounts drawn under the Bridge Facility is LIBOR plus 3.50%, with a maximum possible interest rate of LIBOR plus 4.50%.

The Bridge Facility Mandate Letter further provides that Rolls-Royce plc will have the right to voluntarily prepay any part of a loan under the Bridge Facility prior to the termination date, subject to a de minimis amount and that the Bridge Facility Agreement will contain certain mandatory prepayment events including a mandatory prepayment event, under which the proceeds of any equity or debt capital markets issuances (excluding in connection with the CCFF) on or after 1 January 2021 shall be applied in prepayment and/or cancellation of any loans outstanding under the Bridge Facility Agreement. This mandatory prepayment event will not apply in relation to the Rights Issue and the Bond Offering.

The Bridge Facility Mandate Letter provides that the Bridge Facility Agreement will contain the same restrictions on the Company from declaring, making or paying distributions to Shareholders as those set out in the Term Loan Facility Agreement described above, as well as events of default on the same terms as those included in the Revolving Credit Facility and/or the Term Loan Facility Agreement.

Notes issued under Euro Medium Term Note Programme

Rolls-Royce plc has issued the following notes under its Euro Medium Term Note Programme:

- (i) on 14 June 2013, €750m 2.125% notes due 18 June 2021;
- (ii) on 14 June 2013, £375m 3.375% notes due 18 June 2026;
- (iii) on 3 May 2018, €550m 0.875% notes due 9 May 2024; and
- (iv) on 3 May 2018, €550m 1.625% notes due 9 May 2028.

Interest is paid on an annual basis at the fixed rate. The terms and conditions of these notes contain a negative pledge and events of default which are customary for euro medium term notes.

The notes referred to in (i) above are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of pound sterling interest, which form a fair value hedge.

The notes referred to in (ii) are the subject of interest rate swap agreements under which the Group has undertaken to pay floating rates of interest, which form a fair value hedge. They are also subject to interest rate swap agreements under which the Group has undertaken to pay fixed rates of interest, which are classified as fair value through profit and loss.

The notes referred to in (iii) and (iv) above are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of pound sterling interest, which form a fair value hedge. They are also subject to interest rate swap agreements under which the Group has undertaken to pay fixed rates of interest, which are classified as fair value through profit and loss.

2015 US Notes

On 8 October 2015, Rolls-Royce plc issued US\$500m 2.375% notes due 14 October 2020, which are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of pound sterling interest, which form a fair value hedge. On the same day, Rolls-Royce plc also issued US\$1bn 3.625% notes due 14 October 2025, which are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of pound sterling interest, which form a fair value hedge. They are also subject to interest rate swap agreements under which the Group has undertaken to pay fixed rates of interest, which are classified as fair value through profit and loss.

Interest is paid on an annual basis at the fixed rate. The terms and conditions of these notes contain a negative pledge and events of default which are substantially similar to the Notes being offered hereby. These notes, however, do not contain a change of control repurchase offer requirement.

BOOK-ENTRY SETTLEMENT AND CLEARANCE

The Global Notes

The Notes will be issued in the form of several registered notes in global form, without interest coupons, which are referred to as the Global Notes, as follows:

- Notes sold to QIBs under Rule 144A will be represented by one or more Rule 144A Global Notes; and
- Notes sold in offshore transactions to non-U.S. persons in reliance on Regulation S will be represented by one or more Regulation S Global Notes.

Upon issuance, each of the Global Notes will be deposited with Citibank, N.A., London Branch, as custodian for DTC and registered in the name of Cede & Co., as nominee of DTC.

Ownership of beneficial interests in each Global Note will be limited to persons who have accounts with DTC, or DTC participants, or persons who hold interests through DTC participants. Under procedures established by DTC it is expected that:

- upon deposit of each Global Note with DTC's custodian, DTC will credit portions of the principal amount of the Global Note to the accounts of the DTC participants designated by the Initial Purchasers; and
- ownership of beneficial interests in each Global Note will be shown on, and transfer of ownership of those interests will be effected only through, records maintained by DTC (with respect to interests of DTC participants) and the records of DTC participants (with respect to other owners of beneficial interests in the Global Note).

Each Global Note and beneficial interests in each Global Note will be subject to restrictions on transfer as described under “*Transfer Restrictions*”.

See “*Description of the Notes and the Guarantee—Book-Entry System; Delivery and Form*”.

Book-Entry Procedures for the Global Notes

All interests in the Global Notes will be subject to the operations and procedures of DTC and, indirectly, Euroclear and Clearstream. The following summaries of those operations and procedures are provided solely for the convenience of investors. The information in this section concerning DTC, Euroclear and Clearstream and their book-entry systems has been obtained from sources that the Issuer and the Guarantor believe to be reliable, but neither we nor the Initial Purchasers take any responsibility for or make any representation or warranty with respect to the accuracy of this information. DTC, Euroclear and Clearstream are under no obligation to follow the procedures described herein to facilitate the transfer of interest in Global Notes among participants and account holders of DTC, Euroclear and Clearstream, and such procedures may be discontinued or modified at any time. Neither the Issuer, the Company, the Trustee nor any paying agent will have any responsibility for the performance of DTC, Euroclear and Clearstream or their respective participants or indirect participants of their respective obligations under the rules and procedures governing their operations.

DTC has advised the Issuer and the Guarantor that it is:

- a limited purpose trust company organized under the laws of the State of New York;
- a “banking organization” within the meaning of the New York State Banking Law;
- a member of the Federal Reserve System;
- a “clearing corporation” within the meaning of the Uniform Commercial Code; and
- a “clearing agency” registered under Section 17A of the Securities Exchange Act of 1934.

DTC was created to hold securities for its participants and to facilitate the clearance and settlement of securities transactions between its participants through electronic book-entry changes to the accounts of its

participants. DTC's participants include securities brokers and dealers, including the Initial Purchasers, banks and trust companies, clearing corporations, and other organizations. Indirect access to DTC's system is also available to others such as banks, brokers, dealers and trust companies; these indirect participants clear through or maintain a custodial relationship with a DTC participant, either directly or indirectly. Investors who are not DTC participants may beneficially own securities held by or on behalf of DTC only through DTC participants or indirect participants in DTC.

So long as DTC's nominee is the registered owner of a Global Note, that nominee will be considered the sole owner or Holder of the Notes represented by that Global Note for all purposes under the Indenture.

As a result, each investor who owns a beneficial interest in a Global Note must rely on the procedures of DTC to exercise any rights of a Holder of Notes under the Indenture (and, if the investor is not a participant or an indirect participant in DTC, on the procedures of the DTC participant through which the investor owns its interest).

Payments of principal, premium (if any) and interest with respect to the Notes represented by a Global Note will be made by the Trustee to DTC's nominee as the registered Holder of the Global Note. Neither the Issuer, the Guarantor nor the Trustee will have any responsibility or liability for the payment of amounts to owners of beneficial interests in a Global Note, for any aspect of the records relating to or payments made on account of those interests by DTC, or for maintaining, supervising or reviewing any records of DTC relating to those interests.

Payments by participants and indirect participants in DTC to the owners of beneficial interests in a Global Note will be governed by standing instructions and customary industry practice and will be the responsibility of those participants or indirect participants and DTC.

Transfers between participants in DTC will be effected under DTC's procedures and will be settled in same-day funds. Transfers between participants in Euroclear or Clearstream will be effected in the ordinary way under the rules and operating procedures of those systems.

Cross-market transfers between DTC participants, on the one hand, and Euroclear or Clearstream participants, on the other hand, will be effected within DTC through the DTC participants that are acting as depositaries for Euroclear and Clearstream. To deliver or receive an interest in a Global Note held in a Euroclear or Clearstream account, an investor must send transfer instructions to Euroclear or Clearstream, as the case may be, under the rules and procedures of that system and within the established deadlines of that system. If the transaction meets its settlement requirements, Euroclear or Clearstream, as the case may be, will send instructions to its DTC depositary to take action to effect final settlement by delivering or receiving interests in the relevant Global Notes in DTC and making or receiving payment under normal procedures for same-day funds settlement applicable to DTC. Euroclear and Clearstream participants may not deliver instructions directly to the DTC depositaries that are acting for Euroclear or Clearstream.

Because of time-zone differences, the securities account of a Euroclear or Clearstream participant that purchases an interest in a Global Note from a DTC participant will be credited on the business day for Euroclear or Clearstream immediately following the DTC settlement date. Cash received in Euroclear or Clearstream from the sale of an interest in a Global Note to a DTC participant will be received with value on the DTC settlement date but will be available in the relevant Euroclear or Clearstream cash account as of the business day for Euroclear or Clearstream following the DTC settlement date.

DTC, Euroclear and Clearstream have agreed to the above procedures to facilitate transfers of interests in the Global Notes among participants in those settlement systems. However, the settlement systems are not obligated to perform these procedures and may discontinue or change these procedures at any time. None of the Issuer, the Guarantor, the Trustee, the Paying Agent, the Registrar or the Transfer Agent will have any responsibility for the performance by DTC, Euroclear or Clearstream or their participants or indirect participants of their obligations under the rules and procedures governing their operations.

CERTAIN UNITED KINGDOM TAX CONSIDERATIONS

The comments below are of a general nature and are based on the Issuer's understanding of current United Kingdom tax law as applied in England and Wales and HM Revenue & Customs ("HMRC") generally published practice (which may not be binding on HMRC) as of the date of this Offering Memorandum. They are not exhaustive. Such law and practice is subject to change, possibly with retrospective effect. The following paragraphs only apply to persons who hold the Notes as absolute beneficial owners and do not address the tax consequences which may be relevant to certain categories of holders, for example, dealers in securities, financial institutions, banks, insurance companies, collective investment schemes or persons connected with us or clearance services, intermediaries or persons who benefit from special exemptions or rules. The comments below are not intended to be, nor should they be considered as, legal or tax advice. The United Kingdom tax treatment of prospective Holders of the Notes depends on their individual circumstances and may be subject to change in the future.

Holders of the Notes and prospective investors who are in any doubt as to their tax position, should consult their own independent professional adviser immediately.

Interest Payments

Payments of interest on the Notes may be made without withholding or deduction for or on account of United Kingdom tax provided that the Notes carry a right to interest and are and continue to be "listed on a recognised stock exchange" within the meaning of section 1005 of the Income Tax Act 2007 or admitted to trading on a "multilateral trading facility" operated by a European Economic Area or United Kingdom regulated recognised stock exchange within the meaning of sections 987 and 1005 of the Income Tax Act 2007. Section 1005 of the Income Tax Act 2007 provides that securities will be treated as "listed on a recognised stock exchange" if (and only if) they are admitted to trading on that exchange, and either they are included in the United Kingdom Official List (within the meaning of Part 6 of the Financial Services and Markets Act 2000) or they are officially listed, in accordance with provisions corresponding to those generally applicable in European Economic Area states, in a country outside the United Kingdom in which there is a "recognised stock exchange." The London Stock Exchange is a "recognised stock exchange" for these purposes. Provided, therefore, that the Notes are and remain so listed and admitted to trading, interest on the Notes will be payable without withholding or deduction for or on account of United Kingdom income tax.

In other cases, an amount must generally be withheld from payments of interest on the Notes on account of United Kingdom income tax at the basic rate (currently 20%) subject (i) to any direction to the contrary from HMRC in respect of such relief as may be available pursuant to the provisions of an applicable double taxation treaty or (ii) any other available exemptions and reliefs.

If the Guarantor is required to make a payment under the guarantees then, depending on the correct legal analysis of such a payment, it may have to be paid under deduction of United Kingdom income tax (currently at the rate of 20%), subject to the availability of exemptions or reliefs including a direction to the Issuer by HMRC pursuant to the provisions of an applicable double taxation treaty. Such payments by the Guarantor may not be eligible for the exemption in respect of securities listed on a "recognised stock exchange" described above in relation to payments of interest by the Issuer.

Interest on Notes issued by the Issuer that has a United Kingdom source for United Kingdom tax purposes, as such, may be subject to United Kingdom tax by direct assessment (including self-assessment) even where paid without withholding or deduction for or on account of United Kingdom income tax. However, interest with a United Kingdom source received without withholding or deduction for or on account of United Kingdom income tax will not be chargeable to United Kingdom tax in the hands of a person (other than certain trustees) who is not resident for tax purposes in the United Kingdom unless that person carries on a trade, profession or vocation in the United Kingdom through a branch or agency (or, for Holders who are companies, carries on a trade through a permanent establishment) in the United Kingdom in connection with which the interest is received or to which the Notes are attributable, in which case (subject to exemptions for interest received by certain categories of agent) tax may be levied on the United Kingdom branch, agency or permanent establishment. The provisions of an applicable double taxation treaty may also be relevant for such Holders of the Notes.

The references to "interest" above are to "interest" as understood for the purposes of United Kingdom tax law. They do not take into account any different definition of "interest" that may prevail under any other law or that may apply under the terms and conditions of the Notes or any related document.

United Kingdom Corporation Taxpayers

In general, Holders within the charge to United Kingdom corporation tax will be charged to tax as income on all returns, profits or gains on, and fluctuations in value of, the Notes (whether attributable to currency fluctuations or otherwise) broadly in accordance with their IFRS or UK GAAP accounting treatment.

Other United Kingdom Taxpayers

An individual Holder of Notes who is resident in the United Kingdom, or who carries on a trade, profession or vocation in the United Kingdom through a branch or agency to which the Notes are attributable, may have to account for capital gains tax in respect of any gains arising on a disposal of the Notes. Any capital gains would be calculated by comparing the sterling values at the time of acquisition and disposal.

On the disposal of Notes by a Holder (if they do not constitute “deeply discounted securities”), any interest which has accrued since the last Interest Payment Date may be chargeable to tax on income under the rules relating to accrued income profits as set out in Chapter 2 of Part 12 of Income Tax Act 2007 (the “**accrued income scheme**”) if that Holder is resident for tax purposes in the United Kingdom or carries on a trade, profession or vocation in the United Kingdom through a branch or agency to which the Notes are attributable. On a transfer of securities with accrued interest, the accrued income scheme usually applies to deem the transferor to receive an amount of income equal to the accrued interest and to treat the deemed or actual interest subsequently received by the transferee as reduced by a corresponding amount.

Depending on, among other matters, the discount (if any) at which the Notes are issued, the Notes may constitute “deeply discounted securities” for the purposes of Chapter 8 of Part 4 of the Income Tax (Trading and Other Income) Act 2005. If the Notes are “deeply discounted securities”, individual Holders of Notes who are resident for tax purposes in the United Kingdom or who carry on a trade, profession or vocation in the United Kingdom through a branch or agency to which the Notes are attributable will generally be liable to UK income tax on any gain made on the sale or other disposal (including redemption) of the Notes. Holders of Notes are advised to consult their own professional advisers if they require any advice or further information relating to “deeply discounted securities”.

Non-United Kingdom Taxpayers

Holders of the Notes who are resident in a jurisdiction outside the United Kingdom and who are neither resident in the United Kingdom nor carrying on a trade, profession or vocation in the United Kingdom through a branch or agency (or, for Holders who are companies, through a permanent establishment in the United Kingdom) to which the Notes are attributable should not generally be liable to United Kingdom taxation in respect of a disposal (including redemption) of a Note.

Special rules may apply to individual Holders who have ceased to be resident for United Kingdom tax purposes in the United Kingdom and once again become resident for United Kingdom tax purposes in the United Kingdom after a period of non-residence. Such Holders should consult their own tax advisers.

Stamp Duty and Stamp Duty Reserve Tax

On the basis that, as is expected to be the case, the Notes constitute “exempt loan capital” (that is, that section 79(4) of the Finance Act 1986 applies to the Notes), no United Kingdom stamp duty or stamp duty reserve tax should be payable on the issue or transfer of the Notes.

CERTAIN U.S. FEDERAL TAX CONSIDERATIONS

The following is a description of certain U.S. federal income tax consequences to the U.S. Holders described below of owning and disposing of Notes, but it does not purport to be a comprehensive description of all tax considerations that may be relevant to a particular person's decision to acquire the Notes. This discussion applies only to U.S. Holders that (i) purchase Notes in this Offering at the "issue price", which will equal the first price to the public (not including bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers) at which a substantial amount of the Notes is sold for money and (ii) hold the Notes as capital assets for U.S. federal income tax purposes.

This discussion does not describe all of the tax consequences that may be relevant in light of a U.S. Holder's particular circumstances, including alternative minimum tax and Medicare contribution tax consequences, any special tax accounting rules under Section 451 of the Internal Revenue Code of 1986, as amended (the "**Code**") and tax consequences applicable to U.S. Holders subject to special rules, such as:

- certain financial institutions;
- regulated investment companies;
- dealers or traders in securities that use a mark-to-market method of tax accounting;
- persons holding Notes as part of a straddle or other integrated transaction;
- persons whose functional currency for U.S. federal income tax purposes is not the U.S. dollar;
- entities classified as partnerships for U.S. federal income tax purposes;
- tax-exempt entities, "individual retirement accounts" or "Roth IRAs";
- partnerships or other entities classified as partnerships for U.S. federal income tax purposes; or
- persons holding Notes in connection with a trade or business conducted outside of the United States.

If an entity that is classified as a partnership for U.S. federal income tax purposes owns Notes, the U.S. federal income tax treatment of a partner in such a partnership will generally depend on the status of the partner and the activities of the partnership. Partnerships owning Notes and partners in such partnerships should consult their tax advisers as to the particular U.S. federal income tax consequences of owning and disposing of the Notes.

This discussion is based on the Code, administrative pronouncements, judicial decisions, and Treasury Regulations, all as of the date hereof, any of which is subject to change, possibly with retroactive effect. This discussion does not address any aspect of state, local or non-U.S. taxation, or any taxes other than income taxes.

U.S. Holders should consult their tax advisers with regard to the application of the U.S. federal tax laws to their particular situation, as well as any tax consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction.

As used herein, a "**U.S. Holder**" is a person that for U.S. federal income tax purposes is a beneficial owner of a Note and is:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity taxable as a corporation, created or organized in or under the laws of the United States, any state therein or the District of Columbia; or
- an estate or trust the income of which is subject to U.S. federal income taxation regardless of its source.

Payments of Interest. It is expected, and therefore this discussion assumes, that the Notes will be issued without original issue discount for U.S. federal income tax purposes. Interest payable in respect of the Notes (including any amounts withheld in respect of U.K. taxes and, without duplication, any Additional Amounts paid with respect thereto) will be taxable to a U.S. Holder as ordinary interest income at the time it accrues or is

received, in accordance with the U.S. Holder's method of accounting for U.S. federal income tax purposes. The interest income will constitute foreign-source income, which may be relevant to a U.S. Holder in calculating the U.S. Holder's foreign tax credit limitation. The rules governing foreign tax credits are complex, and U.S. Holders should consult their tax advisers regarding the creditability of any U.K. taxes in their particular circumstances.

Sale, Retirement or Other Taxable Disposition of the Notes. Upon the sale, retirement or other taxable disposition of a Note, a U.S. Holder will recognize taxable gain or loss in an amount equal to the difference between the amount realized on the sale, retirement or other taxable disposition and the U.S. Holder's tax basis in the Note. For these purposes, the amount realized does not include any amount attributable to accrued interest, which will be taxable as interest income, as described under "*Payments of Interest*" above. A U.S. Holder's tax basis in a Note will generally equal the cost of such Note to the U.S. Holder. Any gain or loss realized on the sale, retirement or other taxable disposition of a Note will generally be U.S.-source capital gain or loss and will be long-term capital gain or loss if at the time of the sale, retirement or disposition the U.S. Holder has owned the Note for more than one year. Long-term capital gains recognised by non-corporate U.S. Holders are subject to reduced tax rates. The deductibility of capital losses may be subject to limitations.

Information Reporting and Backup Withholding. Payments of interest and proceeds from the sale of a Note that are made within the United States or through one of certain U.S.-related financial intermediaries may be subject to information reporting and backup withholding, unless (i) the U.S. Holder is an exempt recipient and, if required, establishes its status as such, or (ii) in the case of backup withholding, the U.S. Holder provides a correct taxpayer identification number and certifies that it is not subject to backup withholding. Amounts withheld under the backup withholding rules are not additional taxes and may be refunded or credited against the U.S. Holder's U.S. federal income tax liability and may entitle it to a refund, provided that the required information is timely furnished to the Internal Revenue Service.

Certain U.S. Holders who are individuals (and certain specified entities) may be required to report information relating to non-U.S. accounts through which such persons hold their Notes (or information regarding the Notes if the Notes are not held through any financial institution). U.S. Holders should consult their own tax advisers regarding their reporting obligations with respect to the Notes.

PLAN OF DISTRIBUTION

Subject to the terms and conditions set forth in a purchase agreement among the Issuer, the Guarantor and the Initial Purchasers, the Issuer has agreed to sell to the Initial Purchasers, and each of the Initial Purchasers has agreed, severally and not jointly, to purchase from the Issuer, the principal amount of Notes set forth opposite its name in the table below.

<u>Initial Purchaser</u>	<u>Principal Amount of Notes</u>
Citigroup Global Markets Inc.	US\$ 118,059,000
BNP Paribas Securities Corp.	US\$ 118,059,000
Goldman Sachs & Co. LLC	US\$ 118,059,000
Barclays Capital Inc.	US\$ 41,666,000
Bayerische Landesbank	US\$ 41,666,000
BofA Securities, Inc.	US\$ 41,666,000
Credit Agricole Securities (USA) Inc.	US\$ 41,666,000
HSBC Bank plc	US\$ 41,666,000
Lloyds Securities Inc.	US\$ 41,666,000
Mizuho Securities USA LLC	US\$ 41,666,000
MUFG Securities EMEA plc	US\$ 41,666,000
NatWest Markets Securities Inc.	US\$ 41,666,000
Santander Investment Securities Inc.	US\$ 41,666,000
Skandinaviska Enskilda Banken AB (publ)	US\$ 41,666,000
SMBC Nikko Securities America, Inc.	US\$ 41,666,000
Société Générale	US\$ 41,666,000
Standard Chartered Bank	US\$ 41,666,000
Commerz Markets LLC	US\$ 20,833,000
TD Securities (USA) LLC	US\$ 20,833,000
UniCredit Capital Markets LLC	US\$ 20,833,000
Total	US\$1,000,000,000

Subject to the terms and conditions set forth in the purchase agreement, the Initial Purchasers have agreed, severally and not jointly, to purchase all of the Notes sold under the purchase agreement. If an Initial Purchaser defaults, the purchase agreement provides that the purchase commitments of the non-defaulting Initial Purchasers may be increased or, in certain cases, the purchase agreement may be terminated.

The Issuer and the Guarantor have agreed to indemnify the several Initial Purchasers against certain liabilities in connection with this Offering, including liabilities under the Securities Act, or to contribute to payments the Initial Purchasers may be required to make in respect of those liabilities.

The Initial Purchasers are offering the Notes, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the Notes, and other conditions contained in the purchase agreement, such as the receipt by the Initial Purchasers of officer's certificates and legal opinions. The Initial Purchasers reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

No action has been or will be taken in any jurisdiction that would permit a public offering of the Notes or the possession, circulation or distribution of any material relating to the Offering in any jurisdiction where action for such purpose is required. Accordingly, the Notes may not be offered or sold, directly or indirectly, nor may any offering material or advertisement in connection with the Notes (including this document and any amendment or supplement hereto) be distributed or published, in or from any country or jurisdiction, except under circumstances that will result in compliance with any applicable rules and regulations of any such country or jurisdiction.

Commissions and Discounts

The representatives have advised the Issuer and the Guarantor that the Initial Purchasers propose initially to offer the Notes at the offering price set forth on the cover page of this Offering Memorandum. After the initial offering, the offering price or any other term of the offering may be changed.

Notes Are Not Being Registered

The Notes have not been, and will not be, registered under the Securities Act or any state securities laws and may not be offered, sold or delivered within the United States or to, or for the account or benefit of U.S. persons except in certain transactions exempt from the registration requirements of the Securities Act. The Initial Purchasers propose to offer the Notes for resale in transactions not requiring registration under the Securities Act or applicable state securities laws, including sales pursuant to Rule 144A and Regulation S under the Securities Act. The Initial Purchasers will not offer or sell the Notes except to persons they reasonably believe to be QIBs or pursuant to offers and sales to non-U.S. persons that occur outside of the United States within the meaning of Regulation S. In addition, until the end of the 40th day following the commencement of this Offering, an offer or sale of Notes within the United States by a dealer (whether or not participating in the Offering) may violate the registration requirements of the Securities Act unless the dealer makes the offer or sale in compliance with Rule 144A or another exemption from registration under the Securities Act. Each purchaser of the Notes will be deemed to have made acknowledgments, representations and agreements as described under “*Plan of Distribution—Selling Restrictions*” and “*Transfer Restrictions*”.

New Issue of Notes

The Notes are a new issue of securities with no established trading market. The Issuer has made an application to the FCA for the Notes to be admitted to its Official List and to the London Stock Exchange for the Notes to be admitted to trading on the London Stock Exchange’s Regulated Market. However, there is no assurance that a liquid trading market in the Notes will develop. The Issuer has been advised by certain of the Initial Purchasers that they presently intend to make a market in the Notes after completion of the Offering.

However, they are under no obligation to do so and may discontinue any market-making activities at any time without any notice. The Issuer cannot assure the liquidity of the trading market for the Notes. If an active trading market for the Notes does not develop, the market price and liquidity of the Notes may be adversely affected. If the Notes are traded, they may trade at a discount from their initial offering price, depending on prevailing interest rates, the market for similar securities, the operating performance and financial condition of the Group, general economic conditions and other factors. See “*Risk Factors—Risks Relating to the Notes—There is no established trading market for the Notes and one may not develop.*”

Settlement

The Issuer expects that delivery of the Notes will be made to investors on or about 21 October 2020, which will be the fifth business day following the date of this Offering Memorandum (such settlement being referred to as “**T+5**”). Under Rule 15c6-1 under the Exchange Act, trades in the secondary market are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade Notes prior to the delivery of the Notes hereunder may be required, by virtue of the fact that the Notes initially settle in T+5, to specify an alternate settlement arrangement at the time of any such trade to prevent a failed settlement. Purchasers of the Notes who wish to trade the Notes prior to their date of delivery hereunder should consult their advisors.

Price Stabilization, Short Positions

In connection with the Offering, the Initial Purchasers may purchase and sell the Notes in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilization transactions. Short sales involve the sale by the Initial Purchasers of a greater principal amount of Notes than they are required to purchase in the Offering. The Initial Purchasers must close out any short position by purchasing Notes in the open market. See also “*Stabilization*”.

Similar to other purchase transactions, the Initial Purchasers’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of the Notes or preventing or retarding a decline in the market price of the Notes. As a result, the price of the Notes may be higher than the price that might otherwise exist in the open market.

None of the Issuer, the Guarantor or any of the Initial Purchasers makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the Notes. In addition, none of the Issuer, the Guarantor or any of the Initial Purchasers makes any representation that the Initial Purchasers will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Other Relationships

The Initial Purchasers and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with the Issuer, the Guarantor or their respective affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions. In particular, BNP Paribas, Citigroup Global Markets Limited, Goldman Sachs International, HSBC Bank plc, Jefferies International Limited, Morgan Stanley & Co. International plc, Crédit Agricole Corporate and Investment Bank, Banco Santander, S.A., SMBC Nikko Capital Markets Limited and Société Générale have entered into the Rights Issue Underwriting Agreement between the Company and the Rights Issue Underwriters and are acting as underwriters, joint global co-ordinators and joint bookrunners in connection with the Rights Issue. In addition, BNP Paribas, Goldman Sachs & Co. LLC, Citigroup Global Markets Limited, Banco Santander, S.A., Barclays Bank PLC, Bayerische Landesbank, Crédit Agricole Corporate and Investment Bank, HSBC Bank plc, Lloyds Bank Corporate Markets plc, Merrill Lynch International, Mizuho International plc, MUFG Securities EMEA plc, NatWest Markets Plc, Skandinaviska Enskilda Banken AB (publ), SMBC Nikko Capital Markets Limited, Société Générale, Standard Chartered Bank, Commerzbank Aktiengesellschaft, TD Securities (USA) LLC and UniCredit Bank AG, together with the Issuer and the Company have entered into the purchase agreement dated 14 October 2020 between the Issuer, the Company and the initial purchasers named therein in connection with the concurrent offering of the Eurobonds. Barclays Bank PLC, Bank of America, N.A., London Branch, BNP Paribas, London Branch, Bayerische Landesbank, Citibank, N.A., London Branch, Citicorp North America, Inc., Commerzbank Aktiengesellschaft, London Branch, Crédit Agricole Corporate and Investment Bank, Lloyds Bank plc, Mizuho Bank, Ltd., MUFG Bank, Ltd., National Westminster Bank Plc, Santander UK plc, Skandinaviska Enskilda Banken AB (publ), Societe Generale, London Branch, Standard Chartered Bank, Sumitomo Mitsui Banking Corporation, London Branch, The Toronto-Dominion Bank and UniCredit Bank AG, London Branch are acting as lenders under the Liquidity Facility Agreement. Also, Bank of America Merrill Lynch International DAC, MUFG Bank, Ltd., Barclays Bank PLC, BNP Paribas London Branch, Citibank, N.A., London Branch, Crédit Agricole Corporate and Investment Bank, Goldman Sachs Bank USA, HSBC Bank plc, Lloyds Bank plc, Societe Generale, London Branch, Sumitomo Mitsui Banking Corporation, Brussels Branch, Mizuho Bank, Ltd., Skandinaviska Enskilda Banken AB (publ), TD Bank Europe Limited, UniCredit Bank Aktiengesellschaft, London Branch, Commerzbank Aktiengesellschaft, London Branch, Bayerische Landesbank, Santander UK PLC, The Royal Bank of Scotland plc and Standard Chartered Bank are acting as lenders under the Revolving Credit Facility Agreement. Banco Santander, S.A., Bayerische Landesbank, BNP Paribas, London Branch, Citibank, N.A., London Branch, Crédit Agricole Corporate and Investment Bank, HSBC Bank plc, Lloyds Bank plc, Mizuho Bank, Ltd., Skandinaviska Enskilda Banken AB (publ), Societe Generale, London Branch and Standard Chartered Bank are acting as lenders under the Term Loan Facility Agreement.

The Initial Purchasers and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities.

In the ordinary course of their business activities, the Initial Purchasers and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of the Issuer, the Guarantor or their respective affiliates. Certain of the Initial Purchasers or their affiliates that have a lending relationship with the Issuer or the Guarantor routinely hedge their credit exposure to the Issuer or the Guarantor consistent with their customary risk management policies. Typically, such Initial Purchasers and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in the Issuer's or the Guarantor's securities, including potentially the Notes offered hereby. Any such short positions could adversely affect the future trading prices of the Notes offered hereby.

The Initial Purchasers and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

If a jurisdiction requires that the Offering be made by a licensed broker or dealer and any Initial Purchasers or any affiliate of an Initial Purchaser is a licensed broker or dealer in that jurisdiction, the Offering shall be deemed to be made by that Initial Purchaser or affiliate on behalf of the Issuer in such jurisdiction.

Selling Restrictions

Notice to Prospective Investors in the United States

The Notes and the Guarantee have not been registered, and we do not intend to register the Notes or the Guarantee, under the Securities Act, or any securities laws of any other jurisdiction. Accordingly, the Notes are being offered and sold (1) in the United States only to QIBs in accordance with Rule 144A and (2) outside the United States to certain non-U.S. persons in accordance with Regulation S.

The Notes have not been offered or sold, and will not be offered or sold, except (A) to those persons reasonably believed to be “qualified institutional buyers” (“**QIBs**”) (as defined in Rule 144A under the Securities Act) or (B) to non-U.S. persons outside the United States to whom the offer or seller reasonably believes offers and sales of the Notes may be made in reliance upon Regulation S.

In addition, until the end of the 40th day after the commencement of the Offering of the Notes, an offer or sale of Securities within the United States by any dealer (whether or not participating in the Offering of the Notes) may violate the registration requirements of the Securities Act if such offer or sale is made otherwise than in accordance with Rule 144A.

Prohibition of Sales to European Economic Area and United Kingdom Retail Investors

Each Initial Purchaser has represented and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Notes to any retail investor in the European Economic Area or in the United Kingdom. For the purposes of this provision the expression “**retail investor**” means a person who is one (or more) of the following:

- (a) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, “**MiFID II**”); or
- (b) a customer within the meaning of Directive 2016/97/EU, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II.

For the purposes of this provision, the expression “**Offer**” includes the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe for the Notes.

United Kingdom

In relation to the United Kingdom, each Initial Purchaser has represented and agreed that: (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of FSMA) received by it in connection with the issue or sale of the Notes in circumstances in which Section 21(1) of the FSMA does not apply to the Issuer or the Guarantor; and (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Notice to Prospective Investors in Canada

Notes may be sold in Canada only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3 (1) of the *Securities Act* (Ontario), and that are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations* and are not individuals. Any resale of the Notes must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws in Canada.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this Offering Memorandum (including any amendment hereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (“**NI 33-105**”), the Initial Purchasers are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this Offering.

Hong Kong

Each Initial Purchaser has represented and agreed that:

- it has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Notes, except for Notes which are a “structured product” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (the “**SFO**”), other than: (i) to “professional investors” as defined in the SFO) and any rules made under the SFO; or (ii) in other circumstances which do not result in the document being a “Prospectus” as defined in the Companies Ordinance (Cap. 32) of Hong Kong (the “**Companies Ordinance**”) or which do not constitute an offer to the public within the meaning of the Companies Ordinance; and
- it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Notes, which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to the Notes which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the SFO and any rules made under the SFO.

Japan

The Notes have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended) (the “**Financial Instruments and Exchange Law**”) and each Initial Purchaser has agreed that it has not, directly or indirectly, offered or sold and will not directly or indirectly, offer or sell any Notes, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other relevant laws and regulations of Japan.

Singapore

Each of the Initial Purchasers has acknowledged that this Offering Memorandum has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each Initial Purchaser has represented and agreed that it has not offered or sold any Notes or caused the Notes to be made the subject of an invitation for subscription or purchase and will not offer or sell any Notes or cause the Notes to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this Offering Memorandum or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Notes, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time (the “**SFA**”)) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Notes are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Notes pursuant to an offer made under Section 275 of the SFA except:

- (a) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- (b) where no consideration is or will be given for the transfer;
- (c) where the transfer is by operation of law;
- (d) as specified in Section 276(7) of the SFA; and
- (e) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Solely for the purposes of its obligations pursuant to sections 309B(1)(a) and 309B(1)(c) of the SFA, the Issuer has determined, and hereby notifies all relevant persons (as defined in section 309A(1) of the SFA) that the Notes are “prescribed capital markets products” (as defined in the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Other Jurisdictions

Each Initial Purchaser has represented and agreed with the Issuer that it will comply with all relevant securities laws, regulations and directives in each jurisdiction in which it purchases, offers, sells or delivers Notes or has in its possession or distributes this Offering Memorandum or any amendment or supplement thereto, in so far as such laws, regulations and directives relate to the purchase, offer, sale or delivery of the Notes or the possession or distribution of this Offering Memorandum or any amendment or supplement thereto.

TRANSFER RESTRICTIONS

The Notes and the Guarantee have not been, and will not be, registered under the Securities Act or any state securities laws and, unless so registered, may not be offered, sold or delivered except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and in compliance with applicable state securities laws. Accordingly, the Notes offered hereby are being offered and sold only (i) within the United States to QIBs in reliance on Rule 144A under the Securities Act and (ii) outside of the United States in reliance on Regulation S under the Securities Act.

Each purchaser of Notes, by its acceptance thereof, will be deemed to have acknowledged, represented to and agreed with the Issuer and the Initial Purchasers as follows:

1. It understands and acknowledges that the Notes and the Guarantee; (i) have not been, and will not be, registered under the Securities Act or any other applicable securities law; (ii) are being offered for resale in transactions not requiring registration under the Securities Act or any other securities law, including sales pursuant to Rule 144A under the Securities Act, and (iii) may not be offered, sold or otherwise transferred within the United States except in compliance with the registration requirements of the Securities Act or any other applicable securities law, pursuant to an exemption therefrom or in any transaction not subject thereto, and in each case in compliance with, the conditions for transfer set forth in paragraphs (4) and (5) below.
2. It is not an “affiliate” (as defined in Rule 144 under the Securities Act) of the Issuer or the Guarantor, nor acting on behalf of the Issuer or the Guarantor, and it is either:
 - a QIB and is aware that any sale of Notes to it will be made in reliance on Rule 144A under the Securities Act, of which the purchase will be for its own account or for the account of another QIB; or
 - a non-U.S. person purchasing the Notes outside of the United States in accordance with Regulation S under the Securities Act.
3. It acknowledges that none of the Issuer, the Guarantor, or the Initial Purchasers, nor any person representing the Issuer, the Guarantor, their respective subsidiaries or the Initial Purchasers, has made any representation to it with respect to the Offering or sale of any Notes and related Guarantee, other than the information contained in this Offering Memorandum, which has been delivered to it and upon which it is relying in making its investment decision with respect to the Notes or related Guarantee. It has had access to such financial and other information concerning the Issuer, the Guarantor and the Notes and related Guarantee as it has deemed necessary in connection with its decision to purchase any of the Notes.
4. It is purchasing the Notes for its own account, or for one or more investor accounts for which it is acting as a fiduciary or agent, in each case for investment, and not with a view to, or for offer or sale in connection with, any distribution thereof in violation of the Securities Act or any state securities laws, subject to any requirement of law that the disposition of its property or the property of such investor account or accounts be at all times within its or their control and subject to its or their ability to resell such Notes and related Guarantee pursuant to Rule 144A, Regulation S or any other exemption from registration available under the Securities Act.
5. If such a purchaser is a purchaser of Notes issued in reliance on Rule 144A, it agrees on its own behalf and on behalf of any investor account for which it is purchasing the Notes, and each subsequent Holder of the Notes by its acceptance thereof will be deemed to agree not to offer, sell or otherwise transfer such Notes and related Guarantee except (i) to the Issuer, the Guarantor and any subsidiary or affiliate thereof, (ii) pursuant to a registration statement that has been declared effective under the Securities Act, (iii) for so long as the Notes and related Guarantee are eligible for resale pursuant to Rule 144A under the Securities Act, to a person it reasonably believes is a QIB that purchases for its own account or for the account of a QIB to whom notice is given that the transfer is being made in reliance on Rule 144A under the Securities Act, (iv) pursuant to offers and sales that occur outside the U.S. in compliance with Regulation S under the Securities Act or (v) pursuant to any other available exemption from the registration requirements of the Securities Act, subject in each of the foregoing cases to any requirement

of law that the disposition of its property or the property of such investor account or accounts be at all times within its or their control and in compliance with any applicable state securities laws, and any applicable local laws and regulations, and further subject to the Issuer's, the Trustee's and the Transfer Agent's rights prior to any such offer, sale or transfer (A) pursuant to clause (v) to require the delivery of an opinion of counsel, certification and/or other information satisfactory to each of them and (B) in each of the foregoing cases, to require that a transfer notice in the form attached as a schedule to the Indenture is completed and delivered by the transferor to the Transfer Agent.

6. It understands that the Notes and related Guarantee being sold pursuant to Rule 144A will bear a legend to the following effect:

THIS NOTE IS A GLOBAL NOTE WITHIN THE MEANING OF THE INDENTURE HEREINAFTER REFERRED TO AND IS REGISTERED IN THE NAME OF A DEPOSITARY OR A NOMINEE THEREOF OR A SUCCESSOR DEPOSITARY. NEITHER THIS NOTE, THE RELATED GUARANTEE, NOR ANY BENEFICIAL INTEREST HEREIN OR THEREIN HAS BEEN OR WILL BE REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR ANY STATE SECURITIES LAWS. NEITHER THIS NOTE, THE RELATED GUARANTEE NOR ANY INTEREST OR PARTICIPATION HEREIN OR THEREIN MAY BE REOFFERED, SOLD, ASSIGNED, TRANSFERRED, PLEDGED, ENCUMBERED OR OTHERWISE DISPOSED OF IN THE UNITED STATES IN THE ABSENCE OF SUCH REGISTRATION OR UNLESS SUCH TRANSACTION IS EXEMPT FROM, OR NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT.

THE HOLDER OF THIS NOTE AND RELATED GUARANTEE BY ITS ACCEPTANCE HEREOF AND THEREOF AGREES TO OFFER, SELL OR OTHERWISE TRANSFER SUCH NOTE AND RELATED GUARANTEE ONLY (A) TO THE ISSUER, AND THE GUARANTOR AND ANY SUBSIDIARY OR ANY AFFILIATE THEREOF (B) PURSUANT TO A REGISTRATION STATEMENT WHICH HAS BEEN DECLARED EFFECTIVE UNDER THE SECURITIES ACT, (C) FOR SO LONG AS THE NOTE OR RELATED GUARANTEE ARE ELIGIBLE FOR RESALE PURSUANT TO RULE 144A UNDER THE SECURITIES ACT ("RULE 144A"), TO A PERSON IT REASONABLY BELIEVES IS A "QUALIFIED INSTITUTIONAL BUYER" AS DEFINED IN RULE 144A THAT PURCHASES FOR ITS OWN ACCOUNT OR FOR THE ACCOUNT OF A QUALIFIED INSTITUTIONAL BUYER TO WHOM NOTICE IS GIVEN THAT THE TRANSFER IS BEING MADE IN RELIANCE ON RULE 144A, (D) PURSUANT TO OFFERS AND SALES THAT OCCUR OUTSIDE THE UNITED STATES IN COMPLIANCE WITH REGULATIONS UNDER THE SECURITIES ACT OR (E) PURSUANT TO ANY OTHER AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT, SUBJECT IN EACH OF THE FOREGOING CASES TO ANY REQUIREMENT OF LAW THAT THE DISPOSITION OF ITS PROPERTY OR THE PROPERTY OF SUCH INVESTOR ACCOUNT OR ACCOUNTS BE AT ALL TIMES WITHIN ITS OR THEIR CONTROL AND IN COMPLIANCE WITH ANY APPLICABLE STATE SECURITIES LAWS, AND ANY APPLICABLE LOCAL LAWS AND REGULATIONS AND FURTHER SUBJECT TO THE ISSUER'S, THE GUARANTOR'S, THE TRUSTEE'S AND/OR THE TRANSFER AGENT'S RIGHTS PRIOR TO ANY SUCH OFFER, SALE OR TRANSFER (I) PURSUANT TO CLAUSE (E) TO REQUIRE THE DELIVERY OF AN OPINION OF COUNSEL, CERTIFICATION AND/OR OTHER INFORMATION SATISFACTORY TO EACH OF THEM AND (II) IN EACH OF THE FOREGOING CASES, TO REQUIRE THAT A CERTIFICATE OF TRANSFER ATTACHED HERETO IS COMPLETED AND DELIVERED BY THE TRANSFEROR TO THE TRANSFER AGENT. THIS LEGEND MAY ONLY BE REMOVED AT THE OPTION OF THE ISSUER.

7. It understands that the Notes and related Guarantee being sold in reliance on Regulation S will bear a legend to the following effect:

**THIS NOTE IS A GLOBAL NOTE WITHIN THE MEANING OF THE INDENTURE
HEREINAFTER REFERRED TO AND IS REGISTERED IN THE NAME OF A
DEPOSITARY OR A NOMINEE THEREOF OR A SUCCESSOR DEPOSITARY.
NEITHER THIS NOTE, THE RELATED GUARANTEE, NOR ANY BENEFICIAL**

**INTEREST HEREIN OR THEREIN HAS BEEN REGISTERED UNDER THE UNITED
STATES SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"),
AND MAY NOT BE OFFERED, SOLD OR DELIVERED IN THE UNITED STATES
OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, ANY U.S. PERSON, UNLESS
SUCH NOTES AND RELATED GUARANTEE ARE REGISTERED UNDER THE
SECURITIES ACT OR AN EXEMPTION FROM THE REGISTRATION
REQUIREMENTS THEREOF IS AVAILABLE. THIS LEGEND WILL BE REMOVED
AFTER THE EXPIRATION OF FORTY DAYS FROM THE LATER OF (i) THE DATE
ON WHICH THESE NOTES ARE FIRST OFFERED AND (ii) THE DATE OF ISSUE
OF THESE NOTES.**

8. It agrees that it will give to each person to whom it transfers the Notes notice of any restrictions on transfer of such Notes and related Guarantee.
9. It acknowledges that until 40 days after the commencement of the Offering, any offer or sale of the Notes and related Guarantee within the United States by a dealer (whether or not participating in the Offering) may violate the registration requirements of the Securities Act if such offer or sale is made otherwise than in accordance with Rule 144A under the Securities Act.
10. (i) It is neither an employee benefit plan subject to Title I of ERISA or Section 4975 of the Code or any entity whose underlying assets include Plans nor a plan subject to similar laws and it is not purchasing or holding Notes and related Guarantee on behalf of or with the assets of any Plan or plan subject to similar laws; or (ii) its purchase, holding and subsequent disposition of such Notes and related Guarantee shall not constitute or result in a non-exempt prohibited transaction under Section 406 of ERISA, Section 4975 of the Code or any similar law.
11. It acknowledges that the Trustee and/or Transfer Agent will not be required to accept for registration of transfer any Notes and related Guarantee except upon presentation of evidence satisfactory to the Issuer and the Guarantor, the Trustee and/or the Transfer Agent that the restrictions set forth therein have been complied with.
12. It acknowledges that the Issuer, the Company, the Initial Purchasers and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations, warranties and agreements and agrees that if any of the acknowledgements, representations, warranties and agreements deemed to have been made by its purchase of the Notes and related Guarantee are no longer accurate, it shall promptly notify the Initial Purchasers. If it is acquiring any Notes as a fiduciary or agent for one or more investor accounts, it represents that it has sole investment discretion with respect to each such investor account and that it has full power to make the foregoing acknowledgements, representations and agreements on behalf of each such investor account.

DESCRIPTION OF THE ISSUER

Incorporation, Registered Office and Purpose

Rolls-Royce plc, a wholly owned subsidiary of Rolls-Royce Holdings plc, was incorporated and registered in England and Wales under the registered number 01003142 on 23 February 1971 and operates under the Companies Act 2006 as a public limited company. Its registered office is at Kings Place, 90 York Way, London, N1 9FX, United Kingdom. It is registered with the Registrar of Companies in England and Wales with company number 01003142.

The authorized share capital of Rolls-Royce plc is £400,000,000. All of the issued shares in Rolls-Royce plc are directly or indirectly owned by Rolls-Royce Holdings plc.

Board of Directors

All directors of Rolls-Royce Holdings plc are also directors of Rolls-Royce plc and also hold directorships at various other entities of the Group. The functions and principal directorships of any of the directors outside the Group are as follows:

Name	Title	Principal directorships outside Rolls-Royce plc
Sir Ian Davis	Chairman and non-executive director	BP plc, Johnson & Johnson Inc, Majid Al Futtaim Holding LLC
Warren East CBE	Chief Executive and director	ASML Holding N.V.
Stephen Daintith*	Chief Financial Officer	3i Group plc
Lewis Booth	Senior Independent non-executive director	Mondelez International Inc.
Sir Frank Chapman	Non-executive director	NextDecade Corporation
George Culmer	Non-executive director	Aviva plc
Lee Hsien Yang	Non-executive director	None
Irene Dorner	Non-executive director	AXA SA
Beverly Goulet	Non-executive director	Xenia Hotels and Resorts Inc.
Nick Luff	Non-executive director	None
Sir Kevin Smith	Senior Independent Director	None
Jasmin Staiblin	Non-executive director	Zurich Insurance Group, NXP Semiconductors N.V.
Dame Angela Strank	Non-executive director	Severn Trent plc, SSE plc
Pamela Coles	Company Secretary	E-Act

* On August 27, 2020, Stephen Daintith resigned as Chief Financial Officer (CFO) and Executive Director. The Board has begun a process to identify and appoint a successor.

The business address of each of the above is Kings Place, 90 York Way, London, N1 9FX, United Kingdom and the telephone number of Rolls-Royce plc's registered office is +44 (0)1332 242424.

There are no existing or potential conflicts of interest between any duties to the Issuer of the directors and/or their private interests and other duties.

Financial Statements

PricewaterhouseCoopers LLP audited the consolidated financial statements of the Issuer and the notes thereto prepared in accordance with IFRS as at and for each of the years ended 31 December 2019 and 2018 in accordance with International Standards on Auditing (U.K. & Ireland). PricewaterhouseCoopers LLP is registered to carry out audit work in the United Kingdom and Ireland by the Institute of Chartered Accountants in England and Wales.

GENERAL INFORMATION

1. Authorization

The Issuer and the Company have obtained all necessary consents, waivers, approvals and authorizations in connection with the issue of the Notes and the Guarantee. The Notes were issued pursuant to a resolution adopted by the Board of Directors of the Issuer on 28 September 2020 and of a committee having received delegated authority from the Board of Directors on 12 October 2020. The giving of the Guarantee by the Company was authorized by a resolution adopted by the Board of Directors on 29 September 2020 and of a committee having received delegated authority from the Board of Directors on 12 October 2020.

2. Listing

Application is expected to be made to the FCA for the Notes to be admitted to the Official List and to the London Stock Exchange for the Notes to be admitted to trading on the London Stock Exchange's Regulated Market and is expected to be effective as of 21 October 2020, subject only to the issuance of the Global Notes. Prior to official listing and Admission, dealings will be permitted by the London Stock Exchange in accordance with its rules.

The Issuer's and the Company's out-of-pocket expenses in relation to Admission of the Notes on the London Stock Exchange's Regulated Market are expected to amount to approximately £5,515.

3. Clearing

The Notes are expected to be accepted for clearance through DTC's book-entry settlement system (which is the entity in charge of keeping the records) and through the facilities of Clearstream and Euroclear (as indirect participants in DTC).

The CUSIP and ISIN numbers for the Notes are as follows:

Notes distributed pursuant to Rule 144A: CUSIP 77578J AC2, ISIN US77578JAC27, Common Code 224771584.

Notes distributed pursuant to Regulation S: CUSIP G76237 AC3, ISIN USG76237AC37, Common Code 224771622.

The address of DTC is 55 Water Street, New York, New York 10041, United States, the address of Clearstream is Clearstream Banking S.A., 42 Avenue JF Kennedy, L-1855 Luxembourg, and the address of Euroclear is Euroclear Bank SA/NV, 1 Boulevard du Roi Albert II, B-1210 Brussels, Belgium.

4. Significant or Material Adverse Change

Other than as set out below, there has been no significant change in the financial performance or financial position of the Company or the Group since 30 June 2020, the date of the last published interim unaudited financial statements of the Group.

As expected, the Group's revenue and underlying operating profit for July and August were materially below the prior year and were significantly affected by the COVID-19 pandemic. Consistent with the trends in the first half, our Civil Aerospace and ITP Aero businesses continued to see the largest impact from COVID-19; performance in the Group's Defence business remained resilient; and its Power Systems business experienced disruption in some end markets. The Group continued to experience free cash outflows in July and August, albeit at a reduced level compared to the first half of 2020 and modestly better than its expectations. This reflected the ongoing management actions to control costs, large engine EFHs slightly ahead of the Group's "base case" forecast and some cash flow timing benefits.

Other than as disclosed in the following sections of this Offering Memorandum, there has been no significant change in the financial performance or financial position of the Issuer or the Issuer Group since 31 December 2019, the date of the last published audited financial statements of the Issuer Group.

- "Overview—The Impact of the COVID-19 Pandemic" (page 25) and "Description of the Group and its Business—The Impact of the COVID-19 Pandemic" (page 191)
- "Operating and Financial Review—Key factors affecting the Group's results of operations" (page 114)

- “*Operating and Financial Review—Group results of operations for H1 2020 and H1 2019*” (page 124) and “*Operating and Financial Review—Segment results of operations for H1 2020 and H1 2019*” (page 130)

Other than as disclosed in the following sections of this Offering Memorandum, there has been no material adverse change in the prospects of the Issuer or the Company since 31 December 2019, the date of the last published consolidated audited financial statements of the Company and the Issuer.

- “*Overview—The Impact of the COVID-19 Pandemic*” (page 25) and “*Description of the Group and its Business—The Impact of the COVID-19 Pandemic*” (page 191)
- “*Overview—Financial Outlook*” (page 30) and “*Description of the Group and its Business—Financial Outlook*” (page 202)
- “*Operating and Financial Review—Key factors affecting the Group’s results of operations*” (page 114)
- “*Operating and Financial Review—Group results of operations for H1 2020 and H1 2019*” (page 124) and “*Operating and Financial Review—Segment results of operations for H1 2020 and H1 2019*” (page 130)

5. Litigation

Except as disclosed in “*Description of the Group and Its Business—Litigation*” in this Offering Memorandum, there have been no governmental, legal or arbitration proceedings (including any such proceedings which are pending or threatened) of which the Issuer or the Company are aware during the 12 months preceding the date of this Offering Memorandum which may have or have had in the recent past significant effects on the financial position or profitability of the Group or the Issuer Group.

6. Material Contracts

Save as disclosed in this Offering Memorandum under “*Operating and Financial Review*”, “*Description of the Group and Its Business*”, and “*Description of Certain Other Indebtedness*”, we have not entered into any material contract outside the ordinary course of its business, which could result in the Group being under an obligation or entitlement that is material to its ability to meet its obligations in respect of the Notes.

7. Indication of Yield

The initial yield on the Notes will be 5.750% per annum, calculated on an annual basis. The yield is calculated on the Issue Date on the basis of the price of the Notes. It is not an indication of actual future returns for investors.

8. Interests of Natural and Legal Persons Involved in the Issue

Save for any fees payable to the Initial Purchasers, so far as the Issuer is aware, no person involved in the issue of Notes has an interest material to the Offering.

9. Credit Rating

As of the date of this Offering Memorandum, the Issuer has a credit rating of BB+ (outlook negative) by Fitch, Ba3 (outlook negative) by Moody’s and BB- (outlook CreditWatch negative) by S&P. It is expected that the Notes will be rated BB+ by Fitch, Ba3 by Moody’s, and BB- by S&P, subject to confirmation on the Settlement Date.

10. Nature of Financial Information and Auditors

PricewaterhouseCoopers LLP (as at and for each of the years ended 31 December 2019 and 31 December 2018) have issued independent auditors’ reports under Chapter 3 of Part 16 of the Companies Act 2006 on the consolidated financial statements of the Company and the Issuer prepared in accordance with IFRS (each incorporated by reference in this Offering Memorandum), which were unqualified.

Any financial information included or incorporated by reference in this Offering Memorandum (other than the Group Consolidated Financial Statements, Issuer Consolidated Financial Statements and Group Consolidated

Interim Financial Statements incorporated by reference in this Offering Memorandum) does not constitute the statutory accounts of the Company or the Issuer within the meaning of Sections 435(1) and (2) of the Companies Act 2006 for any period presented. Statutory accounts of the Company and the Issuer have been delivered to the Registrar of Companies in England and Wales for the years ended 31 December 2019 and 2018 in accordance with, and as required by, U.K. law.

The auditors of the Company and the Issuer are PricewaterhouseCoopers LLP, which are independent auditors and are registered with the Institute of Chartered Accountants in England and Wales (“**ICAEW**”). The registered address of PricewaterhouseCoopers LLP is 1 Embankment Place, London WC2N 6RH, United Kingdom, as stated in their reports incorporated by reference into this document.

11. Documents on Display

For the period of 12 months following the date of this Offering Memorandum, copies of the following documents will be available from <https://www.rolls-royce.com/investors/debt-securities.aspx>:

- (a) the final prospectus in respect of this Offering;
- (b) the Memorandum and Articles of Association of the Issuer and the Company;
- (c) the Indenture; and
- (d) the Escrow Agreement.

LEGAL MATTERS

Certain legal matters in connection with this Offering will be passed upon for the Issuer and the Company by Davis Polk & Wardwell London LLP, as to matters of United States federal, New York State law and English law. Certain legal matters in connection with this Offering will be passed upon for the Initial Purchasers by Allen & Overy LLP, as to matters of United States federal, New York State law and English law.

INDEPENDENT AUDITORS

The Group 2019 Consolidated Financial Statements, Group 2018 Consolidated Financial Statements, the Issuer 2019 Consolidated Financial Statements and Issuer 2018 Consolidated Financial Statements incorporated by reference in this Offering Memorandum have been audited by PricewaterhouseCoopers LLP. The Group Consolidated Interim Financial Statements incorporated by reference in this Offering Memorandum are unaudited. PricewaterhouseCoopers LLP are independent auditors and are registered with the ICAEW. The registered address of PricewaterhouseCoopers LLP is 1 Embankment Place, London WC2N 6RH, United Kingdom, as stated in their reports incorporated by reference into this document.

In accordance with guidance issued by the ICAEW, the audit report on the Group 2019 Consolidated Financial Statements states that: *“This report, including the opinions, has been prepared for and only for the Company’s members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.”* and the audit reports on the Group 2018 Consolidated Financial Statements and Issuer Consolidated Financial Statements each state that: *“This report, including the opinions, has been prepared for and only for the parent Company’s members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.”* The SEC would not permit such limiting language to be included in a registration statement or a prospectus used in connection with an offering of securities registered under the Securities Act, or in a report filed under the Exchange Act. If a U.S. court (or any other court) were to give effect to this limiting language, the recourse that investors in the Notes may have against the Auditors based on their reports or the financial statements to which they relate could be limited.

DEFINITIONS

“2020 Half Year Results Announcement”	means the announcement of the Company’s results for the six months ended 30 June 2020 made on 27 August 2020;
“Airbus”	means Airbus SE;
“AMRC”	means advanced manufacturing research centre;
“Articles of Association”	means the articles of association of the Company from time to time;
“Auditor” or “PwC”	means PricewaterhouseCoopers LLP;
“BMW”	means Bayerische Motoren Werke AG;
“Board”	means the board of directors of the Company from time to time;
“Boeing”	means The Boeing Company;
“Brazilian Leniency Agreement”	has the meaning given to it in <i>“Risk Factors—Risks Relating to Regulation and Legislation”</i> ;
“Bridge Facility”	means a term loan facility to be made available pursuant to the Bridge Facility Agreement;
“Bridge Facility Agreement”	means a facility agreement to be entered into between Rolls-Royce plc (as borrower), the Company (as guarantor) and certain banks pursuant to, and on the terms set out in, the Bridge Facility Mandate Letter;
“Bridge Facility Mandate Letter”	means the mandate letter dated 29 September 2020 for a £1bn term facility entered into between Rolls-Royce plc and the Bridge Underwriters;
“Bridge Underwriters”	means BNP Paribas, London Branch; Citibank N.A., London Branch and HSBC Bank plc;
“Business Day”	means any day on which banks are generally open in London for the transaction of business other than a Saturday or Sunday or public holiday;
“C Shares”	means the non-cumulative redeemable preference shares of 0.1 pence each in the share capital of the Company;
“CAA”	means UK Civil Aviation Authority;
“CBI”	means the Central Bureau of Investigation of India;
“CCFF”	means the joint Bank of England and HM Treasury lending facility, named Covid Corporate Financing Facility;
“certificated”	refers to a share or other security which is not in uncertificated form (that is, not in CREST);
“Chairman”	means the chairman of the Company;
“CG”	has the meaning given to it in <i>“Description of the Group and Its Business—Litigation—Comptroller General of the Union, Brazil”</i> ;
“CGU”	means cash generating unit;
“Code”	means the US Internal Revenue Code of 1986, as amended;
“COMAH”	means the Control of Major Accident Hazards Regulations 2015 (SI 2015 No. 483);
“Commercial Marine”	means the commercial marine business previously operated by the Group and purchased by Kongsberg Gruppen ASA in 2019;

“Companies Act”	means the Companies Act 2006 of England and Wales, as amended, modified or re-enacted from time to time;
“Company”, “Guarantor” or “Rolls-Royce”	means Rolls-Royce Holdings plc, a public limited company incorporated in England and Wales with registered number 07524813;
“Directors”	means the directors of the Company as at the date of this document, and “Director” means any one of them;
“DoD”	means the US Department of Defense;
“DoJ”	means the US Department of Justice;
“ECLs”	means expected credit losses;
“ED”	means the Indian Directorate of Enforcement;
“EEA”	means the European Economic Area first established by the agreement signed at Oporto on 2 May 1992;
“EFH”	means engine flying hour;
“EU” or “European Union”	means the European Union first established by the treaty made at Maastricht on 7 February 1992;
“Euro Medium Term Note Programme”	means Rolls-Royce plc’s €4,000,000,000 euro medium term note programme;
“EVTOL”	means electric vertical take-off and landing;
“Executive Directors”	means the executive directors of the Company as at the date of this document and “Executive Director” means any one of them;
“Exporter Agreement”	means the exporter agreement entered into between Rolls-Royce plc and UK Export Finance as a condition precedent to the Term Loan Facility Agreement, dated 21 August 2020;
“FAA”	means the US Federal Aviation Administration;
“FCA”	means the Financial Conduct Authority;
“FCF”	means free cash flow, as described in <i>“Presentation of Financial, Market and Other Information—Presentation of financial information—Non-IFRS measures—Other non-IFRS measures”</i> ;
“FVOCI”	means fair value through other comprehensive income;
“FVPL”	means fair value through profit and loss;
“FSMA”	means the Financial Services and Markets Act 2000, as amended from time to time;
“Garuda”	means PT Garuda Indonesia Tbk;
“GDP”	means gross domestic product;
“General Meeting”	means the general meeting of the Company to be convened (including any adjournment thereof) to approve the Rights Issue;
“Group” or “Rolls-Royce Group”	means the Company and each of its direct and indirect subsidiaries from time to time (where “subsidiary” shall have the meaning ascribed to it in the Companies Act);

“Group 2018 Consolidated Financial Statements”	means the consolidated financial statements of the Company and the notes prepared in accordance with IFRS as at and for the year ended 31 December 2018 (which include unaudited comparative financial information as at and for the year ended 31 December 2017);
“Group 2019 Consolidated Financial Statements”	means the consolidated financial statements of the Company and the notes prepared in accordance with IFRS as at and for the year ended 31 December 2019 (which include unaudited comparative financial information as at and for the year ended 31 December 2018);
“Group Consolidated Financial Statements”	means the Group 2019 Consolidated Financial Statements together with the Group 2018 Consolidated Financial Statements;
“Group Consolidated Interim Financial Statements”	means the unaudited condensed consolidated financial statements of the Group, and the notes prepared in accordance with IFRS, as at and for the six months ended 30 June 2020 (and comparative financial information for the six months ended 30 June 2019);
“HMRC”	means HM Revenue and Customs;
“IAS”	means International Accounting Standards issued by the International Accounting Standards Council IASB;
“IASB”	means the International Accounting Standards Board;
“IATA”	means the International Air Transport Association;
“IBOR”	means interbank offered rate;
“ICAEW”	means the Institute of Chartered Accountants in England and Wales;
“IFRIC”	means the International Financial Reporting Interpretations Committee;
“IFRS”	means the International Financial Reporting Standards issued by IASB, as adopted for use in the EU;
“Initial Purchasers”	means Citigroup Global Markets Inc., BNP Paribas Securities Corp., Goldman Sachs & Co. LLC, Barclays Capital Inc., Bayerische Landesbank, BofA Securities, Inc., Credit Agricole Securities (USA) Inc., HSBC Bank plc, Lloyds Securities Inc., Mizuho Securities USA LLC, MUFG Securities EMEA plc, NatWest Markets Securities Inc., Santander Investment Securities Inc., Skandinaviska Enskilda Banken AB (publ), SMBC Nikko Securities America, Inc., Société Générale, Standard Chartered Bank, Commerz Markets LLC, TD Securities (USA) LLC and UniCredit Capital Markets LLC;
“ISIN”	means the International Securities Identification Number;
“Issuer”	means Rolls-Royce plc;
“Issuer Group”	means the Issuer and its subsidiaries;
“Liquidity Facility”	means the revolving credit facility made available pursuant to the Liquidity Facility Agreement;
“Liquidity Facility Agreement”	means the £1,900m revolving credit facility between, among others, Rolls-Royce plc (as borrower), the Company and Rolls-Royce plc (each as original guarantors), certain financial institutions (as lenders) and J.P. Morgan Europe Limited (as agent), dated 29 April 2020;
“LNG”	means liquefied natural gas;
“L’Orange”	means L’Orange GmbH, now named Woodward L’Orange GmbH;
“London Stock Exchange”	means London Stock Exchange Group plc or its successor(s);

“LTIP”	means the Rolls-Royce Long Term Incentive Plan (as amended);
“LTSAs”	means long-term servicing agreements;
“MAS”	means the Monetary Authority of Singapore;
“Member State”	means a member state of the EEA;
“MoD”	means the UK Ministry of Defence;
“MPF”	means the Brazilian Office of Federal Prosecution;
“MRO”	means maintenance, repair and overhaul;
“MRTT”	means multi-role tanker transport;
“New Ordinary Share”	means the Ordinary Shares to be issued by the Company pursuant to the Rights Issue;
“OE”	means original equipment;
“Offering”	means the offering contemplated hereby;
“Official List”	means the official list maintained by the FCA pursuant to FSMA;
“Ordinary Resolution”	means the ordinary resolution to be proposed at the General Meeting, as set out in the Notice of General Meeting;
“Ordinary Shares”	means the ordinary shares of 20 pence each in the share capital of the Company;
“PILM”	means Product Introduction and Lifecycle Management process;
“Prospectus Regulation”	means the Prospectus Regulation (EU) 2017/1129, as amended from time to time;
“PW1000G”	means the Pratt & Whitney Geared Turbofan engine;
“QIB”	means a “qualified institutional buyer” within the meaning of Rule 144A;
“R&D”	means research and development;
“Regulation S”	means Regulation S under the US Securities Act;
“Registrar”	means Computershare Investor Services PLC;
“Relevant Group Entities”	has the meaning given to it in “ <i>Risk Factors</i> ”;
“Retained Energy”	has the meaning given to it in “ <i>Presentation of Financial Market and Other Information—Presentation of financial information—Segments</i> ”;
“Revolving Credit Facility” or “RCF”	means the revolving credit facility made available pursuant to the Revolving Credit Facility Agreement;
“Revolving Credit Facility Agreement”	means the revolving credit facility agreement between, among others, Rolls-Royce plc (as borrower), the Company and Rolls-Royce plc (each as original guarantors), certain financial institutions (as lenders) and J.P. Morgan Europe Limited (as agent), dated 3 October 2011, as amended and/or restated from time to time including by way of an amendment and restatement agreement dated 3 April 2018;
“Rights Issue”	means the offer by way of rights to certain Shareholders to subscribe for New Ordinary Shares, on the terms and conditions set out in a prospectus related to the Rights Issue;
“Rights Issue Underwriters”	means BNP Paribas, Citigroup Global Markets Limited, Goldman Sachs International, HSBC Bank plc, Jefferies International Limited, Morgan Stanley & Co. International plc, Crédit Agricole Corporate and Investment Bank, Banco Santander, S.A., SMBC Nikko Capital Markets Limited and Société Générale;

“Rights Issue Underwriting Agreement”	means the underwriting agreement dated 1 October 2020 among Rolls-Royce Holdings plc, BNP Paribas, Citigroup Global Markets Limited, Goldman Sachs International, HSBC Bank plc, Jefferies International Limited, Morgan Stanley & Co. International plc, Crédit Agricole Corporate and Investment Bank, Banco Santander, S.A., SMBC Nikko Capital Markets Limited and Société Générale in connection with the Rights Issue;
“Risk Factors”	means risk factors set out in “ <i>Risk Factors</i> ” of this document;
“RPKs”	means revenue passenger kilometres;
“RRPD”	means Rolls-Royce Power Development Limited;
“RRSAs”	means financial risk and revenue sharing arrangements;
“RRSP”	means a risk and revenue sharing partner;
“Rule 144A”	means Rule 144A under the US Securities Act;
“SCF”	means supply chain financing;
“SEC”	means the United States Securities and Exchange Commission;
“SECRET”	means: <ul style="list-style-type: none"> (i) in the context of UK Government information, very sensitive information that justifies heightened protective measures to defend against determined and highly capable threat actors; or (ii) in the context of US Government information, information, the unauthorized disclosure of which reasonably could be expected to cause serious damage to the national security that the original classification authority is able to identify or describe;
“SFA”	means the Securities and Futures Act, Chapter 289 of Singapore;
“SFO”	means the UK Serious Fraud Office;
“Shareholders”	means the holder(s) of Ordinary Shares from time to time and “ Shareholder ” means any one of them;
“Shop Visits”	means a refurbishment of an engine by the Group at an overhaul base or vendor intended to return the engine (and related parts) to a serviceable condition in accordance with the recommendations of the accountable manufacturer manuals;
“Siemens”	means Siemens AG;
“SMRs”	means small modular nuclear reactors;
“T&M Contracts”	means contracts that charge customers on a time and materials basis;
“Term Loan Facility”	means the term loan facility made available pursuant to the Term Loan Facility Agreement;
“Term Loan Facility Agreement”	means the £2,000m term facility consisting of a £1,600m term facility guaranteed by UK Export Finance and a £400m commercial term facility entered into between Rolls-Royce plc (as borrower), the Company (as guarantor), Banco Santander, S.A.; Bayerische Landesbank; BNP Paribas, London Branch; Citibank, N.A., London Branch; Crédit Agricole Corporate and Investment Bank; Deutsche Bank Luxembourg S.A.; HSBC Bank plc; JPMorgan Chase Bank N.A., London Branch; Lloyds Bank plc; Mizuho Bank, Ltd.; Skandinaviska Enskilda Banken AB (publ); Societe Generale, London Branch and Standard Chartered Bank (each as original lenders) and J.P. Morgan Europe Limited (as agent), dated on 20 August 2020;

“TOP SECRET”

means:

- (i) in the context of UK Government information, the UK Government’s most sensitive information requiring the highest levels of protection from the most serious threats; or
- (ii) in the context of US Government information, information, the unauthorized disclosure of which reasonably could be expected to cause exceptionally grave damage to the national security that the original classification authority is able to identify or describe;

“UK DPA”

has the meaning given to it in *“Risk Factors—Risks Relating to Regulation and Legislation—The Group’s business is subject to ongoing obligations under agreements concluded with the UK and Brazilian authorities that could increase the risks associated with bribery and corruption, including increased compliance costs and potential regulatory enforcement actions that could result in civil and/or criminal liability”*;

“UK Export Finance”

means UK Export Finance, the operating name of the Export Credits Guarantee Department, the UK’s export credit agency and a ministerial department of the UK Government;

**“United Kingdom”,
“UK” or “U.K.”**

means the United Kingdom of Great Britain and Northern Ireland;

**“United States”, “US”
or “U.S.”**

means the United States of America, its territories and possessions, any state of the United States and the District of Columbia;

“US Securities Act”

means the US Securities Act of 1933, as amended.



Rolls-Royce plc

US\$1,000,000,000 5.750% Notes due 2027

Guaranteed by Rolls-Royce Holdings plc

OFFERING MEMORANDUM

Global Coordinators and Joint Bookrunners

Citigroup

BNP PARIBAS

Goldman Sachs & Co. LLC

Joint Bookrunners

Barclays

Bayerische Landesbank

BofA Securities

Credit Agricole CIB

HSBC

Lloyds Securities

Mizuho Securities

MUFG

NatWest Markets

Santander

SEB

SMBC Nikko

**Société Générale
Corporate & Investment Banking**

Standard Chartered Bank

Co-Managers

Commerzbank

TD Securities

UniCredit Capital Markets

16 October 2020
