News Release

28 February 2020

ROLLS-ROYCE HOLDINGS PLC - 2019 Full Year Results

Strong 2019 underlying operating profit driving FCF; reinforcing our confidence for 2020

Warren East, Chief Executive commented: "After a challenging first half, we had a good end to 2019, delivering 25% growth in full year underlying operating profit and an encouraging level of free cash flow. Our restructuring efforts gained momentum, with run-rate cost savings of £269m. Civil Aerospace improved its underlying profit significantly, with record engine deliveries, good aftermarket performance and improved OE unit losses. We made further progress on the Trent 1000; cash costs are in line with guidance. We remain on target to reduce aircraft on ground to single digits by the end of Q2 2020.

We continued to invest significantly in R&D and took important steps towards becoming a leader in low carbon technologies. We grew our electrical capabilities with the acquisitions of Siemens' eAircraft business and a majority stake in Qinous, as well as developing new in-house hybrid-electric solutions."

- **Good end to 2019: strong Civil Aerospace aftermarket; better Power Systems trading in Q4**
- **Underlying core operating profit up 25% to £810m; reported group operating loss £(852)m**
- **Core FCF £911m led by higher profit and reflecting £173m Trent 1000 insurance receipts**
- **£0.5bn improvement in net cash* position to £1.4bn; gross debt reduced by £1.1bn**
- **Trent 1000 in-service cash costs £578m; £1.4bn exceptional charge in 2019 results**
- **Trent 1000 guidance unchanged from November trading update**
- **Record widebody engine deliveries; 14% lower OE unit loss; 64% share of new orders**
- **Defence: record £5.3bn order intake driving 26% order book growth and healthy cash flow**
- **Power Systems: revenue up 4% & operating margin +90bps despite market challenges**
- **2020: underlying operating profit up ~15%; at least £1bn FCF; excl. any material COVID-19 impact**
- **Remain confident in mid-term target of at least £1 per share of FCF (>£1.9bn FCF)**

	Underlying Group[1]			**Underlying Core[1,2]**		
Year to 31 December	**2019**	**2018**	**Organic Change[4]**	**2019**	2018[3]	**Organic Change[4]**
Revenue (£m)	**15,450**	15,067	+7%	**15,261**	14,286	+6%
Operating profit (£m)	**808**	616	+25%	**810**	631	+25%
Earnings per share	**15.9p****	16.0p	-2.2p	**15.9p**	17.3p	-2.4p
Free cash flow (£m)[5]	**873**	568	305	**911**	648	263

Reported Group

	2019	**2018**	**Change**
Revenue (£m)	**16,587**	15,729	+5%
Operating (loss) (£m)	**(852)**	(1,161)	27%
Earnings per share	**(69.1)p**	(129.1)p	60.0p
Net Cash (£m)	**1,361**	840	+521
Payment per share	**11.7p**	11.7p	n/a

**Net cash is presented excluding lease liabilities **2019 underlying EPS ~18p before the impact of IFRS 16*
Footnotes to the tables can be found with the Financial Highlights

2019 Full Year Group Highlights

Financial:

- Both Group and core underlying operating profit increased 25% to £808m and £810m respectively; led by a £195m organic improvement in Civil Aerospace underlying operating profit to £44m and underlying profit growth in Power Systems of 15% following better Q4 trading
- Strong Group free cash flow (FCF) of £873m (2018: £568m) and core FCF £911m (2018: £648m), driven by improved underlying operating profit and Civil aftermarket cash margin; £578m Trent 1000 in-service cash costs partly offset by £173m insurance receipt
- FCF before working capital movement (inventory, receivables & payables), insurance receipts and Trent 1000 costs was £747m, 79% higher than the prior year (2018: £418m)
- Trent 1000 exceptional programme charge of £1,361m consistent with our November trading statement, driving reported operating loss of £(852)m (2018: £(1,161)m)
- Core R&D cash spend increased modestly to £1,108m; good progress on electrical strategy including acquisition of Siemens' eAircraft business and strengthening of hybrid capabilities in Power Systems; small modular reactor (SMR) development progressing following UK Government matched funding; investment in future opportunities in Defence (Tempest, Future Vertical Lift, B-52)
- Net cash excluding lease liabilities improved to £1,361m (2018: £840m); gross debt £1.1bn lower

Operational:

- Civil Aerospace: record 510 widebody engines delivered; further progress in reducing average widebody OE loss, down 14% to £1.2m; 6% growth in large engine installed fleet to 5,029 with engine flying hour growth of 7%. Widebody market share of 64% achieved on new orders in 2019
- Power Systems: revenues up 4%; strong power generation growth and market share gains in Asia; increased services penetration; underlying operating profit margin up 90bps to 10.1%
- Defence: excellent performance in 2019 on both orders and cash flow; record order intake of £5.3bn and book-to-bill ratio of 1.6x driving healthy cash flow; 499 aero engines delivered
- ITP Aero: good underlying revenue growth of 21% and strong profit growth to £111m
- Restructuring plan on track; 2,900 cumulative headcount reduction with run rate cost savings of £269m achieved since the programme commenced in June 2018

Civil Aerospace in-service performance:

- Trent XWB now our second largest installed fleet; leading engines now in their fifth year in service. Fleet leader has flown over 22,000 hours without a shop visit; Trent XWB-84 OE deficit reduced by over 20% in 2019 and remains on track to reach breakeven by the end of 2020
- Trent 1000: roll-out of technical fixes progressing well, further actions underway to reduce customer disruption; in-service cash costs unchanged at £2.4bn across 2017-23. AOG reduction to single-digit by end of Q2 2020, unchanged since November update
- Design progressing on track for the improved Trent 1000 TEN high pressure turbine (HPT) blade, the last major issue to resolve; certification of this component still expected in the first half of 2021

Market environment: mid-term ambition of £1 FCF per share remains supported

- Updated widebody engine delivery expectations of 450 in 2020 and 400-450 per year over the mid-term, following previously announced airframer build rate reductions
- Despite challenges in certain Power Systems end markets, growth expected to continue led by mission-critical power generation, rising services penetration and further geographical expansion
- Defence targeting a number of attractive mid-term growth opportunities, particularly in the US where we are well positioned
- The outbreak of COVID-19 represents a macro risk and is likely to have an impact on air traffic growth in the near term; however long term growth trends remain intact

2019 Full Year Results: Financial Highlights

Percentage or absolute change figures in this document are on an organic basis[4] unless otherwise stated.

	Underlying revenue (£m)[1]	Organic Change[3,4]	Underlying op. profit (£m)[1]	Organic Change[3,4]
Civil Aerospace	8,107	+10%	44	+195
Power Systems	3,545	+4%	357	+15%
Defence	3,250	+1%	415	-7%
ITP Aero	936	+21%	111	+67%
Corporate / eliminations	(577)	-	(117)	-
Core[2] operating business	**15,261**	**+6%**	**810**	**+25%**
Non-core[2] business	**189**	**-**	**(2)**	**-**
Total Group	**15,450**	**+7%**	**808**	**+25%**

Civil Aerospace metrics:	**2019**	**2018**	**Core underlying: £m**	**2019**	**2018**
Widebody engine deliveries	510	469	Net R&D cash spend	1,108	1,105
Average loss per widebody OE (£m)	1.2	1.4	R&D capitalised	468	498
Large engine in-service fleet	5,029	4,757	R&D P&L charge	688	650
Large engine invoiced flying hours	15.3m	14.3m	C&A	938	977
Large engine LTSA major refurbs	306	286	Hedge book $/£ average	1.53	1.54
Large engine LTSA check & repair	660	569	Hedge book (US$bn)	$37	$37

[1] Underlying: for definition see Note 2
[2] Core includes Civil Aerospace, Power Systems, Defence and ITP Aero. Non-core includes Commercial Marine sold on 1 April 2019, Rolls-Royce Power Development sold on 15 April 2019, Civil Nuclear North America Service business and other smaller non-core businesses.
[3] The prior period has been restated to reflect the treatment of our Civil Nuclear North America Services business as non-core (disposal announced in September 2019). See Note 1 for details
[4] Organic change at constant translational currency ('constant currency') by applying FY 2018 average rates to 2019 and 2018 numbers excluding M&A. All commentary is provided on an organic basis unless otherwise stated
[5] Free cash flow is defined as operating cash after capital expenditure, pensions and taxes, before payments to shareholders, payments to investigating authorities and M&A. Excludes cash costs of 2018 restructuring plan. The derivation of free cash flow is shown in Note 24

2020 Outlook

Commenting on the outlook for 2020, Warren East added: *"The changes we have been implementing over the past two years are creating a tangible and sustainable cultural and performance shift. The momentum we gained in 2019 underpins our confidence for the year ahead. We will continue to make progress against our key drivers of improving OE losses, growing aftermarket cash flow, and controlling our indirect costs, while investing significantly in R&D to enable our future growth.*

There are macro risks to navigate in 2020, notably the outbreak of COVID-19. The situation is still evolving, and as such our guidance for 2020 excludes any material impact. We are monitoring developments, taking mitigating actions, and will update the market as appropriate. Core operating profit growth is expected to be around 15%, with at least £1bn of FCF in 2020, as we drive towards our ambition to exceed £1 per share of FCF – or at least £1.9bn – in the mid-term.

We see a significant opportunity in the years ahead to lead the transition to providing low carbon power and we made significant progress on this strategy in 2019. We will continue to invest in developing increasingly efficient engines, exploiting new technologies, and innovating to become a disruptor in new areas. We are increasingly well placed to realise our long-term aspiration to be the world's leading industrial technology company."

Detailed 2020 guidance

£m	2019^	2020 Outlook
Underlying revenue[1]		
Civil Aerospace	8,107	Stable to low single-digit growth
Power Systems^	3,306	Low single-digit growth
Defence	3,250	Stable to low single-digit growth
ITP Aero	936	Stable
Corporate / eliminations	(577)	Stable
Core[2] revenues	**15,022**	**Stable to low single-digit growth**
Non-core (including Bergen)^	428	
Group revenues	**15,450**	
Underlying operating profit[1]		
Civil Aerospace	44	50-100bps margin improvement*
Power Systems^	375	0-100bps margin improvement
Defence	415	Stable
ITP Aero	111	50-100bps margin improvement
Corporate / eliminations	(117)	£(60)-(80)m
Core[2] underlying operating profit	**828**	**Around 15% growth**
Non-core (including Bergen)^	(20)	
Group underlying operating profit	**808**	

*Civil Aerospace profit improvement despite headwind from £100-150m lower capitalisation of R&D in 2020
^For 2020 guidance purposes Power Systems 2019 is shown excluding Bergen, which is included in non-core to reflect treatment from 2020

[1] Underlying: for definition see Note 2
[2] Core includes Civil Aerospace, Power Systems, Defence and ITP Aero. Non-core includes Commercial Marine sold on 1 April 2019, Rolls-Royce Power Development sold on 15 April 2019, Bergen (for 2020 guidance purposes only), Civil Nuclear North America Service business and other smaller non-core businesses.
[3] The prior year has been restated to reflect the treatment of our Civil Nuclear North America Services business as non-core (disposal announced in September 2019). See Note 1 for details
[4] Organic change at constant translational currency ('constant currency') by applying FY 2018 average rates to 2019 and 2018 numbers excluding M&A. All commentary is provided on an organic basis unless otherwise stated

- Net R&D cash spend is expected to be broadly stable at ~£1.1bn
- Capitalised R&D should reduce by £100m-£150m reflecting lower capitalisation in Civil Aerospace
- Capex (PPE) is expected to be £100m-£150m higher reflecting higher investment in Trent 1000 spare engines as we take further pro-active steps to reduce customer disruption in 2020
- Trent 1000 in service cash costs expected to be £450m-£550m
- P&L finance costs are expected to be broadly stable (2019: £223m); cash flow finance costs modestly lower reflecting gross debt reduction in 2019 (2019: £73m)
- P&L underlying tax rate is expected to be in the low-to-mid 30s in 2020 (2019: 47.9%); Cash tax paid expected to increase to £260m-£290m (2019: £175m), mainly due to the timing of payments in the US and Germany
- As part of our ongoing portfolio evaluation to create a simpler, more focused group, we are announcing today that we are carrying out a strategic review of our Bergen medium speed gas and diesel engine business. Bergen will be reported within non-core businesses in 2020 results. For guidance purposes 2019 results are shown on this basis with our 2020 divisional guidance above
- All guidance presented for 2020 excludes any material impact from COVID-19

This announcement has been determined to contain inside information.
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Photographs and broadcast-standard video are available at www.rolls-royce.com.
A PDF copy of this report can be downloaded from www.rolls-royce.com/investors.

This Full Year Results announcement contains forward-looking statements. Any statements that express forecasts, expectations and projections are not guarantees of future performance and will not be updated. By their nature, these statements involve risk and uncertainty, and a number of factors could cause material differences to the actual results or developments. This report is intended to provide information to shareholders, is not designed to be relied upon by any other party, or for any other purpose and the Company and its directors accept no liability to any other person other than under English law.

Results presentation

A presentation will be held at 09:00 (GMT) today. Details of how to join the event online are provided below. Downloadable materials will be available on the Investor Relations section of the Rolls-Royce website from the start of the event.

Online webcast registration details:

To register for the live webcast, including Q&A participation, please visit the following link:

https://edge.media-server.com/mmc/p/724ns9b4

Please use this same link to access the webcast replay which will be made available shortly after the event concludes.

Chief Executive Review

In 2019, how we got to our destination – strong progress across the Group – gives me increased confidence that the changes we have been implementing over the past two years are creating a tangible and sustainable cultural and performance shift within our business.

We had a good end to the year including strong Civil Aerospace aftermarket performance, record widebody engine deliveries, and better trading in Power Systems despite tough market conditions. Defence performed well throughout the year with a record order intake and healthy cash performance. As a result, we delivered improved financial results including a 25% increase in underlying operating profit and further strong improvement in Civil Aerospace. This contributed to strong Group free cash flow of £873m, another significant step towards achieving at least £1bn in 2020. We also continued to invest in the new technologies which are so vital to remaining competitive. This was all achieved despite the in-service challenges with the Trent 1000, which could have derailed our progress. The fact that they did not, is thanks to the focus of our people on their roles in delivering for the business.

I spoke last year of needing to build beyond the breakthrough we could see occurring as we launched our restructuring and adopted our new operating structure. We have generated real momentum during 2019, not least in respect to costs, as we scrutinised our spending with intense rigour and really challenged ourselves to act differently. There is, however, no denying the fact that the durability issues with the Trent 1000 weighed heavily on 2019, in terms of the financial cost of returning the fleet to the levels of service our customers expect and dealing with the unacceptable disruption we have caused them. As a result of the Trent 1000 and as announced in November, we are recognising a net exceptional charge of £1,361m within our financials, contributing to a reported loss of £(852)m.

We have fixes designed for all but one of the issues identified and are well advanced on certification and rolling them out into the fleet. As the year drew to a close, we carried out a detailed technical re-evaluation of our progress on the final fix, a new high pressure turbine blade for the Trent 1000 TEN. Based upon that work and test activity, we reset our financial and operational expectations for the engine in November, based on a revised estimate of final blade durability, in order to provide certainty for customers and greater clarity for investors. Since then, we have made good progress on the design of this blade, and continue to expect certification of this component in the first half of 2021.

We believe in the positive transforming potential of technology and have a passion for solving difficult problems. Today, one of our society's greatest technological challenges is the need for lower carbon power and we have a crucial role to play in decarbonising the sectors in which we operate. Firstly, we are committed to further reducing the environmental impacts of our products and services. We are following up our success as the developer of the world's most efficient civil large engine in service today, the Trent XWB, with our next generation UltraFan. We are also heavily involved in the drive for alternative sustainable fuels. Secondly, we are committed to developing new low emission technologies. During 2019, we made significant progress, including the acquisition of Siemens' eAircraft business and ground tests of our megawatt generator for the E-Fan X demonstrator with Airbus. Thirdly, we are working to reduce the greenhouse gas emissions from our own operations and facilities to zero by 2030.

Our ability to pioneer the decarbonisation of aviation builds upon the experience of our Power Systems business in hybrid and electrical power across a range of sectors. During the year, we signed customer contracts and framework agreements for hybrid solutions for the rail and yacht markets. In early 2020, we further enhanced our capabilities with the acquisition of a majority holding in power storage specialist Qinous, which will enhance our microgrid development activities.

I believe the coming year will mark another important step towards generating significant returns from the market positions Rolls-Royce has spent many years securing. The value embedded within our business, most obviously within our installed base of widebody engines and order book, must be fully unlocked. Our sights are firmly set upon a mid-term ambition to exceed £1 of free cash flow per share, which translates to at least £1.9bn of free cash flow. To secure this in a sustainable way means reinforcing behavioural change across our business, driving pace and simplicity, developing a thirst for continuous improvement and ensuring disciplined investment in the new technologies we require to exploit the opportunities that we can see across all our markets. We will push harder and further in 2020, towards becoming the world's leading industrial technology company.

Trading Summary

Core[2] Trading Summary
The income statement table below and all commentary relate to the underlying performance of our core business and percentage or absolute change figures in this document are on an organic basis, unless otherwise stated.

Summary income statement

£m	2019[1]	2018[1,3]	Change	Organic[4] change
Underlying revenue	**15,261**	**14,286**	**+7%**	**+6%**
Underlying OE revenue	7,373	7,172	+3%	+3%
Underlying services revenue	7,888	7,114	+11%	+10%
Underlying gross profit	**2,342**	**2,240**	**+5%**	**+4%**
Gross margin %	15.3%	15.7%	-40bps	-40bps
Commercial and administration costs	(938)	(977)	-4%	-4%
Restructuring	(15)	(14)	+7%	+7%
Research and development charge	(688)	(650)	+6%	+5%
Joint ventures and associates	109	32	+241%	+222%
Underlying operating profit	**810**	**631**	**+28%**	**+25%**
Underlying operating margin	**5.3%**	**4.4%**	**+90bps**	**+80bps**
Financing costs	(223)	(148)	+51%	+49%
Underlying profit before tax	**587**	**483**	**+22%**	**+17%**
Tax	(281)	(153)	+84%	-
Underlying effective tax rate	47.9%	31.7%	-	-
Underlying (loss)/profit	**306**	**330**	**-7%**	**-12%**
Underlying earnings per share	**15.9**	**17.3**	**-1.4p**	**-2.4p**

[1] Underlying: for definition see Note 2
[2] Core includes Civil Aerospace, Power Systems, Defence and ITP Aero.
[3] The financial information for the prior period has been restated to reflect the treatment of our Civil Nuclear North America Services business as non-core. See note 1 for more details
[4] Organic change at constant translational currency ('constant currency') by applying FY 2018 average rates to 2019 and 2018 numbers excluding M&A. All commentary is provided on an organic basis unless otherwise stated

Revenue up 6%
Revenue increased by 6% to £15,261m reflecting growth in both OE and services, led by Civil Aerospace and Power Systems. Civil Aerospace delivered OE revenue growth of 4% reflecting higher widebody engine volumes. Services revenue in Civil Aerospace rose 14% with increased shop visit volumes and higher sales of spare parts. Power Systems achieved 4% OE revenue growth due to strength in power generation markets, notably for data centres, and 4% services growth including increased long-term service agreement (LTSA) penetration. Defence revenue was 1% higher led by 4% growth in services driven by increased activity in transport and combat. ITP Aero revenue increased 21% reflecting volume growth largely across its civil programmes.

Gross profit up 4%
Gross profit was £2,342m, up 4%. Civil Aerospace gross profit improved by 25% reflecting several key factors:
- increased sales of spare parts and higher LTSA servicing activity
- a material improvement in the net impact of contract catch-ups to LTSA profits at £33m in 2019 (2018: £(276)m), driven primarily by lower servicing costs in business aviation; and
- modestly lower LTSA underlying gross margins, reflecting shop visit mix, and around ~£70m of FX related headwind principally reflecting the revaluation of USD creditors and deposits

Power Systems generated a 6% gross profit improvement with a gross margin of 26% driven by volume growth and improvements in product mix. As expected, Defence gross profit reduced by 6% with margins 160bps lower, reflecting product mix. ITP Aero gross profit increased by 33% with margin improvement of 200bps, driven by higher OE volumes, improved pricing and a ~£25m benefit from the impact of a change made to simplify ITP Aero's trading relationship and contractual terms with Civil Aerospace. This was net neutral at the Group level, with a corresponding increase in eliminations.

C&A costs down 4%
C&A costs reduced by 4% to £938m. This reduction was driven by restructuring programme headcount savings and management actions to reduce discretionary spend, partly offset by cost escalation and higher sales-related activities in Power Systems.

Self-funded R&D cash spend up modestly; charge to profit 5% higher
Gross R&D spend was up £70m. After funding from customers and other third parties, core self-funded cash spend was £3m higher at £1,108m. Investment in Civil Aerospace widebody and new business aviation programmes was lower following the recent entry into service of several new engine programmes. New technology investment increased by 9%, to develop technologies that underpin UltraFan in Civil Aerospace, a range of new programmes in Defence and electrification in Power Systems. R&D capitalisation of £468m was £28m lower. Capitalisation remains at a significant level due to the current development stage of several Civil Aerospace programmes but is expected to reduce in 2020 and over the coming years. The net charge to profit increased by £35m reflecting higher spend and the reduction in capitalisation.

Profit from joint ventures and associates
Our share of results from joint ventures was £109m, £71m higher than the prior year. This was driven by increased servicing activity in overhaul bases and higher profit on disposal of engines in Rolls-Royce & Partners Finance (our engine financing joint venture).

Operating profit up 25%
Operating profit improved by £157m on the prior year to £810m, led by the £85m increase in gross profit, higher JV profit and a £37m reduction in C&A costs, partially offset by the higher R&D charge outlined above.

Financing costs
Financing costs increased from £(148)m in 2018 to £(223)m in 2019. Within financing costs, net interest payable of £(132)m increased by £60m largely due to the adoption of IFRS16. Other financing costs were £(91)m in 2019, modestly higher than the previous year (2018: £(76)m). Other financing costs include charges relating to the factoring of receivables and the discounting of prior year provisions.

Taxation
The core underlying tax charge was £281m (2018: £153m), an underlying tax rate of 47.9% compared with 31.7% in 2018. This increase in rate was primarily driven by the non-recognition of a deferred tax asset on UK losses arising in 2019.

Trent 1000
The Trent 1000 is 13% of our widebody engine fleet. We made good progress on resolving the technical issues in 2019; we have now designed eight of the nine component fixes required, seven of which have been certified. The intermediate pressure turbine fix is now fitted to almost 100% of the in-service fleet across all engine variants. The revised intermediate compressor has now been fitted to over 50% of package C engine variants and has now been certified for the TEN variant with the package B planned for the second half of 2020. Roll-out of the revised high pressure turbine blade has been embodied into almost 50% of package B and C engine variants and design work for the TEN high pressure turbine blade continues to progress well with certification expected in the first half of 2021.

We continue to regret the disruption caused to our customers from these issues. We are taking further positive steps in 2020 to increase availability of spare engines and further expand maintenance capacity to reduce the number of aircraft on the ground (AOG) to below ten by the end of Q2 2020. We have seen positive results from our actions in the first two months of 2020 with aircraft on the ground reduced to the mid-30s from the elevated level of 42 in the second half of 2019, which had resulted from the proactive actions taken in autumn to retrofit the small number of remaining Package B intermediate pressure turbine modules.

In November we announced the outcome of recent testing and a thorough technical and financial review of the Trent 1000 TEN programme following the issues identified during 2019. This resulted in a revised timeline and durability estimate for the improved TEN HP turbine blade. As a result we expect total in-service cash costs across all Trent 1000 variants of around £2.4bn across 2017-2023, consistent with the trading update in November. In 2019, £578m of cash costs were incurred, partly offset by a £173m insurance receipt. We continue to expect cash costs of £450-£550m in 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.

Outside of these in-service costs, we are also investing in our engineering function, further expansion of our MRO capacity and our pool of Trent 1000 spare engines. Additionally, the increased costs associated with our revised estimate for HP turbine blade durability on the TEN has impacted the future margins on our Trent 1000 contracts, including a small number of contracts now becoming loss making (see below).

As guided in November, an exceptional charge of £1,361m at underlying FX rates was recorded in 2019 on the Trent 1000 (net of £173m insurance receipts). Within this charge, £703m is due to the additional cash costs associated with customer disruption and remediation shop visits. The remaining £658m relates to the margin impact of our updated HP turbine durability expectations on the TEN, primarily the up-front recognition of future losses on the small number of contracts which are now loss making, as well as related contract accounting adjustments.

Exceptional restructuring programme
Progress was made in 2019 on our restructuring plan. To date we have achieved a net headcount reduction of around 2,900 with run-rate savings of £269m. Cash costs of £216m were incurred during the year to deliver this plan, which are reported outside of free cash flow. We continue to expect run-rate savings of ~£400m by the end of 2020 and a net headcount reduction of 4,600.

Strategic review of Bergen
As part of our ongoing efforts to evaluate our portfolio and create a simpler, more efficient Group, today we announce the decision to carry out a strategic review of Bergen, our medium speed gas and diesel engine business. Bergen formed part of Power Systems during 2019, but from 2020 (as a result of this review) it will be reclassified as non-core. Additionally, following a reassessment of the order book, an impairment review has been completed in the second half of the year and a charge of £58m has been recorded outside underlying results in 2019. In 2019 Bergen generated sales of £239m and an underlying operating loss of £(18)m.

A380 cessation costs
In our full year 2018 results we took a preliminary view of costs relating to Airbus' decision to close the A380 production line. During the first half of 2019 we had the opportunity to update our impact assessment and as a result recorded an additional exceptional charge of £59m. This charge has been reduced to £48m at the year-end following the release of £11m relating to supplier amounts recorded in 2018.

IFRS 16
IFRS 16 is effective for the year beginning 1 January 2019. Commitments for operating as well as finance leases are now recognised on the balance sheet. The impact of the standard is as follows:
- on January 1st 2019 an additional lease liability of £2,248m and lease assets of £2,213m were recorded on the balance sheet
- in the income statement rental payments (previously included within operating costs) are now replaced with a depreciation charge on the leased assets. Underlying financing costs on lease liabilities increased from £5m in 2018 to £77m in 2019 due to the new liability
- there is no impact on free cash flow resulting from the implementation of IFRS 16; and
- we estimate the overall impact of the adoption of IFRS 16 in 2019 was approximately a 2p reduction in underlying EPS

Group Trading Summary

Group results include core and non-core businesses. Group underlying revenues rose 7% to £15,450m, primarily driven by growth in Civil Aerospace, offsetting a (76)% decline in non-core revenue. Group underlying operating profit improved by 25% to £808m as a result of improved gross profit, lower C&A costs and higher profit from joint ventures offsetting an increased R&D charge.

Group Funds Flow

Free cash flow

Group free cash flow of £873m improved materially from £568m in 2018. This was driven by strong profit growth across most of our core businesses, increased engine flying hour receipts and spare parts sales in Civil Aerospace, as well as reduced capital expenditure on several capacity and facility modernisation projects which had neared completion in 2018. Trent 1000 in-service cash costs were £578m (2018: £431m), partially offset by receipt of £173m of related insurance proceeds. R&D investments increased modestly.

In 2019 there was an inflow of £574m (2018: £1,197m) from the movement in receivables and payables, reflecting higher trade payables due to increased trading activity, actions taken to improve overdue debt collection, together with a number of customer deposits notably in Defence. This was partly offset by a £(43)m increase in inventory (2018: £(616)m).

We continue to strive to increase transparency around our financial performance and reported results. As part of this effort, additional information is now provided in note 14 on the sale of trade receivables. For many years, the Group has undertaken the sale of trade receivables, without recourse, to help normalise Group cash flows in line with physical delivery volumes. This practice is commonplace in the aerospace industry. Over the last three years this has averaged around £1,037m at the year-end. At 31 December 2019 £1,117m had been drawn under factoring facilities, £95m higher than December 2018, which is reflected within working capital.

Given the one-off nature of the restructuring announced in 2018, the £(216)m cash costs relating to this restructuring programme (2018: £(70)m) are reported outside of Group free cash flow.

Summary funds flow statement [1] £m	2019	2018	Change
Underlying operating profit	**808**	616	192
Depreciation and amortisation	**1,068**	756	312
Lease payments (capital plus interest)	**(319)**	-	(319)
Expenditure on intangible assets	**(591)**	(680)	89
Capital expenditure (Property, Plant and Equipment)	**(747)**	(905)	158
Change in inventory	**(43)**	(616)	573
Change in receivables/payables	**574**	1,197	(623)
Civil Aerospace net LTSA balance change	**754**	679	75
Of which: underlying change	***654***	*376*	*278*
Of which: impact of contract catch-ups	***100***	*303*	*(203)*
Movement on provisions	**(506)**	(242)	(264)
Net interest received and paid	**(73)**	(70)	(3)
Trent 1000 insurance receipt	**173**	-	173
Other	**(41)**	22	(63)
Trading cash flow	**1,057**	757	300
Contributions to defined benefit pensions in excess of underlying PBT charge	(9)	59	(68)
Taxation paid	(175)	(248)	73
Group free cash flow	**873**	568	305
Of which: Disposed entities[2]	***(41)***	*(78)*	*37*
Group free cash flow (pre disposed entities)	**914**	646	268
Of which: Non-core businesses[3]	**3**	(2)	5
Core free cash flow	**911**	648	263
Shareholder payments	**(224)**	(219)	(5)
Disposals and acquisitions	**410**	573	(163)
Exceptional group restructuring	**(216)**	(70)	(146)
Payment of financial penalties	**(102)**	-	(102)
Foreign exchange	**(98)**	54	(152)
Pension fund contribution	**(35)**	-	(35)
Other	**(87)**	10	(97)
Change in net funds/(debt) excluding lease liabilities	**521**	916	(395)

[1] The derivation of the summary funds flow statement above from the reported cash flow statement is included on note 24
[2] Disposed entities include Commercial Marine and Power Development 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 Civil Nuclear North America Services business

Depreciation and amortisation
The £312m increase in depreciation and amortisation to £1,068m was largely due to an additional ~£340m charge relating to right of use assets following the adoption of IFRS 16 from 1 January 2019.

Lease payments
Lease payments of £(319)m 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 IFRS16 the depreciation charge is recorded in underlying operating profit.

Expenditure on intangible assets
Intangible asset expenditure of £(591)m was incurred in 2019. This included £(481)m of R&D capitalisation (2018: £498m) largely reflecting ongoing investment in Civil Aerospace programmes including the Trent 7000, Trent XWB and Pearl engine programmes.

Capital expenditure on property, plant and equipment
Investment of £(747)m in 2019 reduced by £158m (2018 (£905m)) due to several capacity and modernisation programmes nearing completion in 2018. Spend in 2019 reflects our ongoing investment in manufacturing capability, projects to modernise our facilities, and spare engines to support our growing in-service fleet in Civil Aerospace.

Change in inventory
Inventory increased by £(43)m (2018: £(616)m) in 2019 due to volume growth in Civil Aerospace and Power Systems, with a significant improvement in the second half following a £(433)m increase in H1. This H1 inventory position was driven by a high level of assembled engines and aftermarket parts held in Civil Aerospace, as well as growth in Power Systems 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 Civil Aerospace in particular.

Change in receivables/payables
The change in receivables/payables of £574m in 2019 was significantly reduced year-on-year, and reflected:

- higher trade and other payables due to increased trading activity led by Civil Aerospace
- a number of customer deposits, notably in Defence 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

Movement in underlying Civil Aerospace net LTSA balance
The net LTSA balance represents deferred revenue and is a core part of our business model where we receive payments from our customers in respect of our long-term service and overhaul agreements. In 2019 the LTSA net balance increased by £754m. This movement included a £100m increase driven by negative contract catch-ups to revenues (2018: £303m). The underlying change net of these catch-ups was £654m. This reflected invoiced engine flying hour receipts in excess of revenue traded together with customer deposits received in the year.

Movement in provisions
The movement in provisions of £(506)m in 2019 largely included utilisation of the Trent 1000 exceptional provision. The remainder primarily covered cash costs from onerous contracts and restructuring activity.

Pensions
Cash contributions were in line with the profit and loss charge in 2019. There was a £(68)m year-on-year movement, reflecting the non-recurrence of a 2018 benefit from changing to quarterly payments.

Taxation
The decrease in cash tax in 2019 from £248m to £(175)m reflected lower payments in Germany compared to 2018, largely due to timing.

Shareholder payments
Payments to shareholders of £224m in 2019 remained in line with the prior year.

Acquisitions and disposals
In 2019 we completed the disposals of Commercial Marine and Rolls-Royce Power Development with combined net proceeds of £453m. The £573m cash inflow in 2018 related to the disposal of the L'Orange business, previously within Power Systems. Costs of £43m were incurred in 2019 relating to the acquisition of Siemens' eAircraft business.

Payment of financial penalties
Following the agreements reached with investigating authorities in January 2017, a payment schedule was established. No payments were due in 2018 and a £102m payment was made in 2019. In 2020 and 2021, £130m and £148m (plus interest) are due respectively. Consistent with prior years this payment is reported outside of free cash flow.

Balance sheet

Summary balance sheet £m	31 Dec 2019	31 Dec 2018 Excluding Civil Nuclear	Civil Nuclear	Total	Change excluding Civil Nuclear
Intangible assets	**5,442**	5,278	17	5,295	164
Property, plant and equipment	**4,803**	4,919	10	4,929	(116)
Right of use assets	**2,009**	-	-	-	2,009
Joint ventures and associates	**402**	412	-	412	(10)
Contract assets and liabilities	**(8,745)**	(7,074)	1	(7,073)	(1,671)
Working capital [1]	**(1,136)**	(1,263)	8	(1,255)	127
Provisions	**(2,804)**	(1,916)	(1)	(1,917)	(888)
Net funds [2]	**(993)**	631	(20)	611	(1,624)
Net financial assets and liabilities [2]	**(3,277)**	(4,117)	-	(4,117)	840
Net post-retirement scheme (deficit)/ surplus	**(208)**	641	-	641	(849)
Tax	**1,136**	1,024	2	1,026	112
Held for sale	**3**	391	(17)	374	(388)
Other net assets and liabilities	**14**	22	-	22	(8)
Net liabilities	**(3,354)**	(1,052)	-	(1,052)	(2,302)
Other items					
US$ hedge book (US$bn)	**37**	37		37	-
Civil Aerospace LTSA asset	**1,086**	1,097		1,097	(11)
Civil Aerospace LTSA liability	**(6,784)**	(5,584)		(5,584)	(1,200)
Civil Aerospace net LTSA liability	**(5,698)**	(4,487)		(4,487)	(1,211)

[1] Net working capital includes inventory, trade receivables and payables and similar assets and liabilities.
[2] Net funds includes £243m (2018: £293m) of the fair value of financial instruments which are held to hedge the fair value of borrowings.

Key drivers of balance sheet movements were:

Intangible assets
The net increase of £164m includes R&D additions of £481m, primarily related to engine programmes in Civil Aerospace £(426)m, together with further investment in software applications of £101m. These were offset by impairment charges of £54m following the announcement of the strategic review of the Bergen business and the sale of the Civil Nuclear North America Services business in Power Systems. Amortisation for the period was £(318)m.

Property, plant and equipment
Following the adoption of IFRS 16, finance leased assets previously held in PPE have been transferred to right of use assets. Capital additions of £767m related to investments in maintenance, repair and overhaul (MRO) capacity in Civil Aerospace and the modernisation of facilities including our Defence facility in Indianapolis. We also expanded our spare engine lease pool to support our growing in-service widebody engine fleet. These were offset by depreciation of £(491)m.

Right of use assets
IFRS 16 was adopted effective 1 January 2019 resulting in the recognition of leased assets with a value of £2.2bn. See notes 1 and 25 in the consolidated financial statements for more information.

Investments in joint ventures and associates
There was no material change in our investment in joint ventures and associates year-on-year.

Contract assets and liabilities
This represents deferred revenue and is a core part of our business model where we receive payments from our customers in respect of our long-term service and overhaul agreements. In 2019 this increased by £(1,671)m, of which £(1,211)m related to the Civil Aerospace LTSA balance. The remainder largely covered advance payments in several businesses. The movement in the Civil Aerospace LTSA balance of £(1,211)m included non-cash items of £557m, primarily related to foreign exchange and the

cumulative negative impact of contract catch-ups to LTSA revenue. The change, net of these items, of £(654m) reflected invoiced engine flying hour receipts and customer deposits in excess of underlying revenue traded in the income statement.

Working capital
Working capital increased by £127m. This reflected a financial penalty payment of £102m related to agreements reached with investigating authorities in January 2017, and a £245m reduction in working capital from the settlement of deferred consideration for the acquisition of ITP Aero. These factors offset the reduction in working capital seen in the funds flow.

Provisions
Provisions increased by £888m largely driven by the incremental exceptional charge related to Trent 1000 disruption and related onerous contract losses, partly offset by utilisation.

Net funds
Net funds have moved from a net cash position of £611m in FY 2018 to a net debt position of £(993)m. This was driven by the adoption of IFRS 16 *Leases*, which increased lease liabilities by £(2,248)m. Excluding lease liabilities, net cash stood at £1,361m at FY 2019. For other movements see funds flow commentary in note 24.

Net financial assets and liabilities
These items principally relate to the fair value of foreign exchange, commodity and interest rate contracts. The reduction in the net liability of £840m largely reflected settlement of derivative contracts in 2019.

Net post-retirement scheme deficits
The £(849)m movement was primarily driven by the buy-in agreement with Legal & General Assurance Society Limited, which resulted in a decrease in the surplus of the UK pension plan of around £(600)m. There were also changes in financial and demographic assumptions.

US$ hedge book
The US hedge book at 31 December 2019 was $37bn. It extends to 2028 on a declining basis and remains sufficient to cover our medium-term requirements.

Group Reported Results

The changes resulting from underlying trading are described in the trading summary below.

Consistent with past practice, we provide both reported and underlying figures. As the Group does not generally hedge account for forecast transactions in accordance with IFRS 9 *Financial Instruments*, we believe underlying figures are more representative of the trading performance by excluding the impact of period-end mark-to-market adjustments. In particular, the USD:GBP hedge book has a significant impact on the reported results. In 2019, the GBP:USD rate rose from 1.28 to 1.32 while the GBP:EUR rose from 1.12 to 1.18. The adjustments between the underlying income statement and the reported income statement are set out in Note 2 to the Condensed Consolidated Financial Statements. This basis of presentation has been applied consistently.

	£m	**Revenue**		**Profit before financing**		**Financing**		**Profit/(loss) before tax**	
		2019	2018	**2019**	2018	**2019**	2018	**2019**	2018
	Underlying	15,450	15,067	808	616	(225)	(150)	583	466
1	Foreign exchange and derivatives	1,137	781	144	(24)	75	(1,984)	219	(2,008)
2	Exceptional programme charges	-	(119)	(1,409)	(976)	-	(15)	(1,409)	(991)
3	Impact of discount rate charges	-	-	-	-	(40)	-	(40)	-
4	Exceptional restructuring charges	-	-	(136)	(317)	-	-	(136)	(317)
5	M&A gains & effects of acquisition accounting	-	-	(24)	28	(8)	(8)	(32)	20
6	Impairments and asset write-offs	-	-	(84)	-	-	-	(84)	-
7	Net post-retirement scheme financing, pension equalisation & other	-	-	(12)	(130)	20	13	8	(117)
	Reported	16,587	15,729	(713)	(803)	(178)	(2,144)	(891)	(2,947)

See Note 2 to the Condensed Consolidated Financial Statements for further details

The most significant items included in the reported income statement, but not in underlying are summarised below.

1 Foreign exchange and derivatives included the impact of the following:
- the impact of measuring revenue and profit before financing at spot rates rather than achieved hedge rates
- mark-to-market adjustments on the Group's net hedge book of £(7)m (2018: £(2,145)m). At each period end, our foreign exchange hedge book is included in the balance sheet at fair value ('mark-to-market') and the movement in the year included in reported financing costs; and
- losses on derivatives settled during the period and the impact of valuation of assets and liabilities using the spot exchange rate rather than the exchange rate that is expected to be achieved by the use of the hedge book

2 Exceptional programme charges relating to the Trent 1000 of £1,361m and Trent 900 £48m are excluded from the underlying results. These have been explained in note 2.
3 Included in discount rate changes is £30m relating to Trent 900 and £10m relating to Trent 1000
4 Exceptional restructuring costs of £136m (2018: £317m). These are costs associated with the substantial closure or exit of a site, facility or activity related to the significant transformation project that the business is currently undertaking. A number of the projects within the transformation programme are for multiple years. Of the 2019 costs, £88m (2018: £223m) relate to the Group restructuring programme announced in June 2018.
5 The loss before tax of £(32)m (2018: £20m profit) relates to the effects of acquisition accounting £171m (2018: £183m) that principally relate to the amortisation of intangible assets arising on the acquisition of Power Systems in 2013 and ITP Aero in 2017. The Group completed the sale of the Commercial Marine business to KONGSBERG on 1 April 2019 and recognised a profit of £106m in 2019. Rolls Royce Power Development Limited was sold on 15 April 2019 with a gain arising on disposal of £33m. In our 2018 financial statements, we reported an impairment charge of £155m in

relation to the Commercial Marine business being disclosed as held for sale and recognised a gain on the sale of L'Orange of £358m. Together with the £183m acquisition accounting effect relating to ITP Aero this resulted in the £20m profit before tax in 2018. Further details can be found in note 23.

6 On 26 September 2019 the Group announced the sale of the Civil Nuclear North America Services business and recognised an impairment charge and asset write offs of £26m. Following a reassessment of the Bergen order book and subsequent impairment review we have recorded a charge of £58m in 2019. Further details can be found in note 2.

7 Following a High Court judgement in October 2018, the estimated costs of equalising UK pension benefits for men and women was recognised as a past-service charge. There is no equivalent charge in 2019.

Tax affecting these adjustments resulted in a tax charge of £143m (2018: tax credit of £715m). The charge in 2019 is due to the non-recognition of deferred tax in respect of UK losses in the year. The 2019 charge also includes £86m relating to the derecognition of UK deferred tax assets on foreign exchange and commodity financial assets and liabilities. In 2018 deferred tax was recognised on UK losses resulting in an overall credit in that year.

Civil Aerospace

Overview
Civil Aerospace delivered a record 510 widebody engines in 2019. We have continued to make progress reducing widebody average OE losses, down by 14% year-on-year to £1.2m. Our large engine installed fleet increased to over 5,000 engines in service, driving a 7% growth in widebody engine flying hours and a £0.3bn increase in aftermarket cash margin. 2019 saw strong revenue growth of 10% and further significant improvement in underlying operating profit for the business.

Financial overview

£m	2019	2018	Change	Organic change
Engine deliveries	**729**	**686**	**+6%**	**+6%**
Underlying revenue	**8,107**	**7,378**	**+10%**	**+10%**
Underlying OE revenue	3,246	3,119	+4%	+4%
Underlying services revenue	4,861	4,259	+14%	+14%
Underlying gross profit	**622**	**493**	**+26%**	**+25%**
Gross margin %	7.7%	6.7%	+100bps	+90bps
Commercial and administrative	(299)	(336)	-11%	-11%
Restructuring	(7)	(8)	-13%	-13%
Research and development cost	(374)	(332)	+13%	+13%
Joint ventures and associates	102	21	+81	+78
Underlying operating result	44	(162)	+206	+195
Underlying operating margin %	**0.5%**	**-2.2%**	**+270bps**	**+260bps**

Underlying revenue

£m	2019	2018	Change	Organic change
Original Equipment	**3,246**	**3,119**	**+4%**	**+4%**
Large engine	2,568	2,373	+8%	+8%
Business aviation	643	620	+4%	+5%
V2500	35	126	-72%	-72%
Services	**4,861**	**4,259**	**+14%**	**+14%**
Large engine	3,205	2,666	+20%	+20%
Business aviation	477	464	+3%	+2%
Regional	355	292	+22%	+19%
V2500	824	837	-2%	-2%

Underlying revenue
Underlying revenue increased 10%, reflecting good growth in OE, up 4% to £3,246m and strong growth in services, up 14% to £4,861m. Large engine OE growth of 8% was driven by an increase of 41 in widebody engine delivery volumes to 510. This reflected strong growth in Trent 7000 engines for the A330neo production ramp-up.

Large engine service revenue increased 20% to £3,205m (2018: £2,666m) driven by higher servicing volumes. Major long-term service agreement (LTSA) shop visits rose 7% to 306 and check and repair visits, led by Trent 1000 activity, increased 16% to 660. Sales of spare parts not covered by LTSAs increased year-on-year. There was also a material reduction in negative contract catch-ups to revenues.

In business aviation, OE sales were 5% higher with deliveries broadly stable at 219 engines (2018: 217 engines) reflecting improved mix, while service revenue increased 2%. Regional aviation service revenue increased 19% driven by the AE3007 and Tay-powered fleets. V2500 OE revenue was down 72% due to end-of-life production on the Airbus A320ceo. The 2% reduction in V2500 service revenue reflected a modest reduction in spare parts sales, with the payment from Pratt & Whitney Aero Engines International (PWAEI) relating to engine flying hours remaining stable.

Underlying operating profit
The underlying operating profit of £44m was an improvement of £195m reflecting higher gross profit, increased profit from joint ventures and lower C&A costs more than offsetting 13% higher R&D charge.

Gross profit improved by £121m and gross margin by 90bps. This was driven by increased servicing activity, higher spare parts sales, and a material improvement in the net impact of contract catch-ups to LTSA profits. In 2019 catch-ups had a £33m positive impact on profit (2018: £(276)m negative). This was driven by improvements in servicing costs in business aviation, which was partly offset by a reassessment of costs and utilisation across various widebody programmes. Gross profit was negatively affected by a modestly lower LTSA underlying margin due to the mix of shop visits, ~£70m of FX related headwind principally relating to the revaluation of USD creditors and deposits, and a modest impact from higher customer charges. The profit contribution from spare engine sales was relatively stable year-over-year.

Self-funded R&D cash spend reduced by £18m to £(767)m 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 £(374)m from £(332)m in 2018.

Underlying C&A costs were 11% lower 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 (our engine financing joint venture).

Trading cash flow
Civil Aerospace trading cash flow improved £201m to £419m, driven by increased flying hour receipts from our growing in-service engine fleet, increased spare parts sales and lower capital expenditure. Cash costs on Trent 1000 in-service issues of £578m (2018:£431m) were partly offset by insurance receipts of £173m.

Cash inflow from working capital was significantly lower in 2019 notably due to the non-recurrence of a c.£400m benefit from standardisation of supplier payments in 2018. Year-on-year growth in inventory was significantly lower.

Operational and strategic review
Our top priority in 2019 remained securing the return of the Trent 1000 fleet to full health. We made major steps forward in rolling out fixes, expanding maintenance capacity and providing additional clarity to our customers. Much more work remains to be done in 2020. Importantly, we did not allow the Trent 1000 challenge to derail the much needed transformation of our business; significant progress was also made on near-term operational improvement, and we achieved a number of milestones in our longer term strategy to become a leader in the lower carbon future of aviation.

In 2019 we delivered 510 widebody engines, in line with guidance and a record figure for Rolls-Royce. This included the successful ramp up of the Trent 7000, with 106 engines delivered compared with just 8 engines in 2018. We continued to make progress in reducing our large engine average OE unit losses, which fell by 14% to £1.2m during the year, helped by a 22% improvement on the Trent XWB-84. We continue to expect to deliver our first breakeven Trent XWB-84 by the end of 2020. Thanks to these record engine deliveries, our large engine installed base grew by 6% in 2019 and crossed the 5,000 mark to 5,029 engines.

Overall, the performance of our fleet continues to be very strong, with invoiced engine flying hours increasing by 7% to 15.3 million. The Trent 700, the largest part of our installed base at 32%, has crossed 55 million flying hours and continues to deliver excellent performance in fuel burn, reliability and durability. The Trent XWB became our second largest Trent programme by volume in 2019, and has now flown over 5 million hours. As we highlighted in November, fleet leading Trent XWB-84 engines have reached our original expectations for time-on-wing. The Trent 7000 has made an excellent entry into service, with 80 engines now flying and a dispatch reliability of 99.9%. The Trent 1000 is 13% of our widebody fleet and we continue to work to improve durability and reduce customer disruption. To this end we announced actions to boost our maintenance capacity and add additional spare engines, with a significant investment in 2020 set to drive a ~50% increase in our Trent 1000 spare engine pool. We also gave greater certainty to customers and clarity to investors following an extensive review of the programme. Our focus is now on executing the clear plan we have to reduce aircraft on ground and return the fleet to the level of service which our customers expect.

In business aviation, 2019 was a year of milestones. The Bombardier Global 5500 and Global 6500, both powered by our Pearl 15 engine, received EASA and FAA certification. In November, we also announced the new Pearl 700 to power the upcoming Gulfstream G700. The Pearl family now powers two airframer platforms, bolstering our position as the leader in the large cabin, long-range market.

Our transformation and cost reduction efforts accelerated during the year, and Civil Aerospace made the largest contribution towards the group's 1,600 net headcount reduction in 2019. The removal of roles was enabled by increased use of digital technologies, largely in engineering, simplification of processes and removal of duplication.

We are determined to seize the opportunity of becoming a leader in the provision of lower carbon air power. This means not only improving our existing gas turbine technology to be more fuel efficient with lower carbon emissions, but also pioneering future technologies that will enable a low carbon future for aviation. We reached an important milestone with design freeze on UltraFan, which will be 25% more efficient than original Trent engines and 10% more efficient than the Trent XWB, the world's most efficient large engine in service today. We also carried out successful tests of the composite fan system, a key technology enabler for UltraFan to reduce weight and increase fuel efficiency.

On future technologies, we have taken significant steps towards increasing our capabilities in hybrid electric propulsion. During the year we acquired the eAircraft business from Siemens and achieved major milestones in three of our key electric demonstrator programmes:

- In August we began ground tests of our 2.5-megawatt generator in Norway. This forms part of our E-Fan X project with Airbus, the largest hybrid aircraft demonstrator in the world
- In November we announced a flight demonstrator based on our hybrid M250 propulsion system with APUS and the Brandenburg University of Technology, paving the way for experimental flights after 2021.
- In December we unveiled the plane which will seek to break the speed record for an all-electric aircraft in 2020 as part of our ACCEL programme

Outlook

During the year we booked a net widebody order intake of 213 engines. As a result, our widebody backlog at the end of 2019 was 1,978 engines, providing good visibility on our deliveries in the coming years and driving continued growth in our installed base. The long term trends supporting air traffic growth remain intact, though the outbreak of COVID-19 represents a near term macro risk. In 2019, approximately 20% of our invoiced engine flying hours were derived from the greater China region. We have a small number of tier one suppliers in the Greater China region, all of whom have resumed operations. We are in daily communication and are offering support as appropriate.

Although currently subdued, we expect an improvement in widebody orders driven by a replacement cycle in the coming years as a growing number of aircraft reach retirement age, including Boeing 777s, Boeing 767s and older Airbus A330s. We believe we are well positioned to continue to win a large share of these orders, having captured 64% of gross order intake and 52% of net orders for widebody engines in 2019. The increase in retirements in the coming years represents a challenge for the industry, but we are favourably positioned due to the younger age distribution of our fleet relative to our competitors. The average age of our widebody in-service fleet is less than 8 years, compared to the industry average (ex. Rolls-Royce) of 13 years. As a result, we continue to expect strong growth in our installed base in the coming years, which supports growth in our engine flying hours and the widebody aftermarket cash margin.

In 2020 we expect stable to low-single-digit sales growth in Civil Aerospace and operating margins 50-100bps higher year-over-year, despite a £100-150m reduction in the level of R&D capitalisation.

Power Systems

Overview
Power Systems made good progress in 2019, with sales continuing to outgrow global GDP and gross margins improving due to operating leverage and a better product mix. We continued to advance our services strategy, with strong growth in LTSA sales a particular highlight. Order intake was good at £3,415m, a book-to-bill of 1.0x.

Financial overview^

£m	2019	2018	Change	Organic change
Underlying revenue	**3,545**	**3,434**	**+3%**	**+4%**
Underlying OE revenue	2,386	2,310	+3%	+4%
Underlying services revenue	1,159	1,124	+3%	+4%
Underlying gross profit	**909**	**866**	**+5%**	**+6%**
Gross margin %	25.6%	25.2%	+40bps	+50bps
Commercial and administrative	(374)	(363)	+3%	+4%
Restructuring	-	(1)	-	-
Research and development cost	(176)	(188)	-6%	-6%
Joint ventures and associates	(2)	1	-	-
Underlying operating profit	**357**	**315**	**+13%**	**+15%**
Underlying operating margin %	**10.1%**	**9.2%**	**+90bps**	**+90bps**

^Commentary and figures exclude the Civil Nuclear North America Services business which has been treated as non-core following its disposal in February 2020

Underlying revenue
Underlying revenue of £3,545 increased by 4%, OE revenue was up 4% driven by strong demand for mission critical power generation products, notably to serve the data centre market. This growth more than offset an expected reduction in demand from the construction & agriculture sectors, following the non-recurrence of the emissions-led pre-buy effect seen in 2018.

Services revenue rose 4% reflecting higher spare parts sales and 6% growth in LTSAs. We continue our focus on generating greater value from our large installed base, both through a more proactive approach to spare parts sales and a greater emphasis on LTSA sales which now account for ~12% of total service revenues.

Underlying operating profit
Underlying operating profit rose by 15% to £357m, led by revenue growth. Gross profit was 6% higher at £909m, helped by a 50bps increase in gross margins to 25.6%, due to better product mix. C&A costs of £(374)m were 4% higher year-on-year reflecting cost escalation, additional spend on digital solutions, and higher sales-related activities. The R&D charge reduced by £11m reflecting the timing of key projects, with cash spend modestly higher. In the coming years we expect R&D spend in Power Systems to increase as we ramp up activity on new programme investment and our electrification strategy.

Operational and strategic review
Conditions across our markets were challenging in 2019. Despite this, our financial performance remained robust, supported by a strong order book. A combination of rising energy demand in developing countries and the expansion of renewable energy sources drove orders for flexible power solutions and products such as microgrids, hybrid and gas engines, electrification and energy storage.

In 2019 we delivered 6,580 engines (excluding smaller off-highway engines). This compares to 5,976 deliveries in 2018. Our installed base increased to approximately 146,000 engines (from approximately 142,000 in 2018) which will continue to support replacement demand and drive our growing services revenue.

Power Systems has a key role to play in our drive towards low carbon power across the Group. A number of technologies that will have applications in civil aerospace markets, notably hybrid, electric, and fuel cells, are already being developed and adopted in Power Systems. Significantly, 2019 marked the last year in which Power Systems sold only fossil fuel based power solutions as we reached several important strategic milestones on this journey, including the signing of customer contracts and framework agreements to implement hybrid engine solutions for the rail sector, where we are first to market, and the yacht market, building on our leadership position with the MTU series engines. We anticipate being first to market in both of these applications. Since October, Power Systems has been operating its own microgrid in Friedrichshafen, which provides over 30% of the energy required for the weekly running of the plant. We successfully received the first orders for our new battery container and microgrid solutions, delivering cleaner and decentralised energy. Together with Lab1886, an innovation lab within the Daimler Group, we started a pilot project to test the use of Mercedes-Benz fuel cell technology for backup power and the supply of energy to data centres. This technology will provide safe, sustainable and emission free energy to one of the world's most significant power consuming industries. Power Systems is also researching more sustainable fuels. During the year, we signed an agreement to construct a demonstration plant to produce synthetic fuels in Brandenburg, Germany.

Continuing our push into life-cycle services, we are placing increased focus on digital services and predictive maintenance. Our digital solutions team was expanded during the year and we established a data and analytics competence centre in Munich, Germany. We also expanded our service network for Yachts in La Spezia, Italy. These actions have helped to drive a steady increase in long-term service agreements, including the signing of a 10-year agreement with Svitzer, a global towage and marine services operator.

Expanding our geographic footprint is a key driver of our ability to outgrow underlying markets. In 2019 we successfully strengthened our position in China, signing agreements for the delivery of more than 700 MTU engines. These included the largest ever single order of MTU gas gensets to supply over 200 MTU Series 4000s to China's VPower. In India, our Force MTU Power Systems joint venture will begin local assembly of Series 1600 engines in the first half of 2020. This enables us to be closer to our customers and to reduce operating costs. In anticipation of this move we have ceased assembly of MTU Series 1600 engines in Überlingen, Germany.

Investing in our people is vital if we are to continue to position ourselves for growth in new markets including hybrid power. To meet our need for increased electrical engineering capability, 100 mechanical engineers undertook a course in electrical engineering as part of a new project at Karlsruhe University.

Outlook

As we enter 2020, the early indication is that conditions in a number of our end markets will remain challenging. However, we aim to outperform our markets, driven by our strategy to increase services sales and the shift towards new technologies and integrated solutions. We are also continuing our efforts to gain market share in Asia, where Power Systems has previously been underexposed. As a result, we expect to deliver low single-digit organic revenue growth in 2020 despite this challenging backdrop. We expect margins to improve again in 2020, increasing by 0-100bps as we take another step towards our medium term target of mid-teens. The outbreak of COVID-19 represents a near term macro risk. In 2019, approximately 10% of Power Systems revenues were derived from the greater China region.

As part of our ongoing efforts to evaluate our portfolio and create a simpler, more efficient Group, we have taken the decision to carry out a strategic review of Bergen, our medium speed gas and diesel engine business. In 2019 Bergen generated revenues of £239m with an operating loss of £(18)m. From 2020 Bergen will be reported within non-core businesses and has been therefore been excluded from our guidance above.

Defence

Overview
Defence had an excellent year for both order intake and cash flows. Record order intake and a 1.6x book-to-bill ratio helped to drive strong cash flow performance and 26% growth in the order book in 2019. Sales were broadly stable and operating profit margins declined by 110bps, as expected, driven largely by a less profitable OE mix and increased investment in R&D to support a number of major new programme opportunities in the coming years.

Financial overview

£m	2019	2018	Change	Organic change
Underlying revenue	**3,250**	**3,124**	**+4%**	**+1%**
Underlying OE revenue	1,461	1,452	+1%	-2%
Underlying services revenue	1,789	1,672	+7%	+4%
Underlying gross profit	**669**	**690**	**-3%**	**-6%**
Gross margin %	20.6%	22.1%	-150bps	-160bps
Commercial and administrative	(151)	(170)	-11%	-13%
Restructuring	(7)	(3)	+133%	+133%
Research and development cost	(105)	(100)	+5%	+4%
Joint ventures and associates	9	10	-10%	-10%
Underlying operating profit	**415**	**427**	**-3%**	**-7%**
Underlying operating margin %	**12.8%**	**13.7%**	**-90bps**	**-110bps**

Underlying revenue
Underlying revenue of £3,250m was up 1% on an organic basis. OE revenue was 2% lower year-on-year driven by fewer deliveries of transport engines due to the phasing of orders, including lower volumes of Trent 700s for Multi-Role Tanker Transport (MRTT) aircraft and AE series engines for the C-130J and V-22. These were partly offset by increased volumes for LiftSystem hardware for the F-35B. Service revenue was up 4%, driven by higher LTSA volume for the AE1107 and AE2100 transport engines, together with increased time and materials (T&M) revenue from EJ200 services.

Underlying operating profit
Underlying operating profit of £415m was £28m lower than the prior year, in line with expectations. Gross profit of £669m fell 6%, driven by the lower OE volumes in transport, particularly on the Trent 700 MRTTs, and lower LTSA margins due to the non-repeat of one-off customer settlements in the prior year.

A modest increase in R&D spend of £4m reflected ongoing investment to support future programmes across our Defence portfolio, with a number of attractive growth opportunities in the coming years. C&A costs were £22m lower year-on-year at £(151)m.

Operational and strategic review
2019 was a very successful year for Defence, with record order intake, strong operational execution, and the achievement of significant milestones in our ongoing R&D projects which will position the business to grow in the coming years in both transport and combat markets.

Our markets remained stable in 2019. The US continues to represent nearly half of the addressable defence spend globally, while the UK and Europe also remain key markets. We expect higher growth in Asia and the Middle East, driven by regional tensions. While the budget backdrop in our markets is relatively stable, we see a number of exciting programme opportunities in the coming years, notably in the Tempest combat programme in the UK and in multiple upcoming campaigns in the US market.

Defence had a record order intake of £5.3 billion, driving 26% growth in the order book. Book-to-bill in 2019 was 1.6x, taking the cumulative book-to-bill over the last five years to 1.2x. The strength in 2019 was led by services, highlighting the demand driven by our installed base of over 16,000 engines. Key highlights included a five-year contract worth over $1bn to maintain AE1107 engines for the US Marine

Corps, which have now reached the service milestone of over one million flying hours. Two UK Ministry of Defence support contracts were signed; one for Spey naval engines, and one for the maintenance of the EJ200. A multi-year spare parts order was additionally confirmed for our Adour engines in India. OE orders grew, including four Dreadnought power-plants in Submarines and a LiftFan OE order for LRIP 12 of the F-35 programme. We continued to leverage our existing installed base with the Series 3.5 upgrade kit for the T56 engine, which secured further orders from the US Air Force. Fewer than 5% of the C-130 aircraft in service with the US Air Force currently have the Series 3.5 upgrade kit fitted, presenting a significant opportunity for future orders.

We delivered 499 aero engines in 2019. In aerospace, three Bombardier Global 6000s, powered by our BR710 engines, were delivered to the German Special Air Mission Wing and German Air Force. LiftSystem production ramped up to meet F-35B programme demand and the Boeing MQ-25 unmanned aerial refuelling tanker, powered by the AE 3007, completed its maiden flight. In maritime, our 50th MT30 gas turbine came off the production line and we delivered key early components for the first Dreadnought submarine.

Operationally, our Submarines business implemented a management restructure, reducing complexity and aligning to the needs of the customer. We continued to invest in facilities; the revitalisation of our Indianapolis site is nearing completion while a new 24,000 sqft facility in Walpole, Massachusetts is due to be commissioned in late 2020. These actions to improve efficiency are helping us meet customer demand for cost-effective solutions while minimising the impact on our margins.

R&D investment stepped up in 2019 ahead of a period of important upcoming opportunities. We made good progress as part of Team Tempest, for which we are developing a power and propulsion system which will provide fully integrated power and thermal management. We were also awarded a two-year contract by the UK Ministry of Defence to develop hypersonic propulsion systems. LibertyWorks, our dedicated US defence development unit, successfully demonstrated an integrated power and thermal management system for high-power directed energy applications. We announced an agreement with Bell Helicopter to exclusively develop an optimised propulsion system for the V280 Valor. Over 50,000 hours of engineering analysis, including digital engineering, were devoted to refine our offering for the B-52 re-engining competition and early engine tests were successfully completed in Indianapolis.

Outlook

We expect Defence to deliver stable to low-single-digit sales growth in 2020, with stable operating margins. Longer term, supported by the order intake in 2019 and the pipeline of upcoming new programme opportunities, we expect Defence growth to accelerate.

ITP Aero

Overview
ITP Aero had a strong year. Underlying revenue grew 21% year-on-year, driven by increases in both aftermarket and OE sales for civil aerospace, both on Trent and non-Rolls-Royce engine programmes. Operating profit increased materially to £111m, reflecting revenue growth and improved pricing. ITP's Aero's 2019 performance also benefitted from a change made to simplify its trading relationship and contractual terms with Civil Aerospace. This change was net neutral at Group level.

Financial overview

£m	2019	2018	Change	Organic change
Underlying revenue	**936**	**779**	**+20%**	**+21%**
Underlying OE revenue	782	666	+17%	+19%
Underlying services revenue	154	113	+36%	+37%
Underlying gross profit	**206**	**156**	**+32%**	**+33%**
Gross margin %	22.0%	20.0%	+200bps	+200bps
Commercial and administration costs	(61)	(57)	+7%	+9%
Restructuring	(1)	(2)	-50%	-50%
Research and development costs	(33)	(30)	+10%	+10%
Underlying operating profit	**111**	**67**	**+66%**	**+67%**
Underlying operating margin	**11.9%**	**8.6%**	**+330bps**	**+330bps**

Underlying revenue
Underlying revenue was £936m, an increase of 21% over 2018. OE growth of 19% was driven by higher engine volumes on civil programmes, with ITP Aero 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. Aftermarket revenue increased by 37% due to higher spare parts sales, largely from Rolls-Royce engine programmes. Revenues also benefitted by ~£50m from a change made to simplify ITP Aero's trading relationship and contractual terms with Civil Aerospace. This was net neutral at the Group level.

Underlying operating profit
Operating profit increased materially, by 67% to £111m, led by higher gross profit. This increase was driven by higher OE volumes and improved pricing. Profit also benefitted by ~£25m from the change in ITP Aero's trading terms with Civil Aerospace, with a corresponding negative impact in Group eliminations. C&A costs increased by 9% to £(61)m, and R&D rose by 10% to £33m reflecting ongoing investment in aerospace programmes.

Operational and strategic review
In November, ITP Aero celebrated its 30th anniversary. The business continued to grow, underpinned by strong positions across a range of large commercial aircraft and business jet platforms. In large commercial we delivered a 20% increase in engine module deliveries for Rolls-Royce widebody programmes and a 40% increase in deliveries to other customers. In business aviation, we continued to see growth through our positions on engine programmes including the PW800 and HTF700.

Good progress was made during the year in the expansion of production facilities to meet rising demand for ITP Aero products. Investment included a new Externals facility in Biscay, Spain, focusing on high technology products, and the extension of the Externals facility in Queretaro, Mexico. Both sites are now open and fully operational. In addition to adding new capacity, these facilities will further improve our manufacturing efficiency, driving cost reduction across civil and defence engine programmes.

We also achieved important technology milestones in 2019. In June the first aerodynamic tests of the intermediate pressure turbine for UltraFan were successfully carried out. UltraFan will be 25% more efficient than the first generation of Rolls-Royce Trent engines and 10% more efficient than the Trent XWB, the most efficient civil large engine in service globally. Other significant milestones in 2019 included producing the first components designed and manufactured using additive technology. Our new additive manufacturing cell in Zamudio, Spain, manufactured both the low pressure turbine seal segments for the Trent XWB-84 engine and non-structural vanes for the TP400 engine. Additionally, earlier in the year we were certified as only the second provider of servicing globally for the MTR390-E engine for the Tiger helicopter.

At the end of the year we strengthened our Board and Management, including the promotion of Carlos Alzola to CEO and ITP Aero board member.

Outlook

We expect continued demand growth on newer, more fuel-efficient engine programmes in both narrowbody and widebody aircraft. We are well placed with strong positions on newer Rolls-Royce Trent engines, as well as the Pratt & Whitney 1000G engines and other non-Rolls-Royce programmes. Longer term, we have secured participation in technology projects that will contribute significantly to sustainable aviation and efficient digital transformation of production processes. These include the Investigation and Maturation of Technologies for Hybrid Electric Propulsion (IMOTHEP), within the EU's Horizon 2020 framework, which is focused on assessing the potential of hybrid electric propulsion.

Following the very strong performance in 2019, we expect to deliver stable sales and margin improvement of 50-100bps in 2020. Longer term the trends outlined above will drive further good growth in profitability and cash flow.

Condensed consolidated income statement

For the year ended 31 December 2019

	Notes	**2019 £m**	2018 £m
Revenue [1]	2	**16,587**	15,729
Cost of sales [1]		**(15,645)**	(14,531)
Gross profit	2	**942**	1,198
Commercial and administrative costs [1]	2	**(1,128)**	(1,595)
Research and development costs	3	**(770)**	(768)
Share of results of joint ventures and associates		**104**	4
Operating loss		**(852)**	(1,161)
Gain arising on disposal of businesses [2]	23	**139**	358
Loss before financing and taxation		**(713)**	(803)
Financing income	4	**252**	271
Financing costs	4	**(430)**	(2,415)
Net financing costs		**(178)**	(2,144)
Loss before taxation †		**(891)**	(2,947)
Taxation	5	**(420)**	554
Loss for the year		**(1,311)**	(2,393)
Attributable to:			
Ordinary shareholders		**(1,315)**	(2,401)
Non-controlling interests		**4**	8
Loss for the year		**(1,311)**	(2,393)
Other comprehensive (expense)/income		**(1,013)**	182
Total comprehensive expense for the year		**(2,324)**	(2,211)
Earnings per ordinary share attributable to ordinary shareholders:	6		
Basic		**(69.07)p**	(129.15)p
Diluted		**(69.07)p**	(129.15)p
Payments to ordinary shareholders in respect of the year	7		
Pence per share		**11.7p**	11.7p
Total		**224**	220
† Underlying profit before taxation	2	**583**	466

[1] Included within revenue, cost of sales and commercial and administrative costs are exceptional charges relating to Civil Aerospace programmes, impairment charges and restructuring costs. Further details can be found in note 2.

[2] Commercial Marine was disposed of on 1 April 2019 and Rolls-Royce Power Development Limited was disposed of on 15 April 2019. L'Orange was disposed of on 1 June 2018.

† (Loss)/profit before taxation disclosed on an underlying and statutory basis.

Condensed consolidated statement of comprehensive income

For the year ended 31 December 2019

	Notes	**2019 £m**	2018 £m
Loss for the year		**(1,311)**	(2,393)
Other comprehensive (expense)/income (OCI)			
Actuarial movements in post-retirement schemes [1]		**(934)**	27
Share of OCI of joint ventures and associates	11	**(1)**	(1)
Related tax movements		**324**	(2)
Items that will not be reclassified to profit or loss		**(611)**	24
Foreign exchange translation differences on foreign operations		**(313)**	171
Reclassified to income statement on disposal of businesses	23	**(98)**	(19)
Cash flow hedge reserve movements		**22**	(17)
Share of OCI of joint ventures and associates	11	**(7)**	18
Related tax movements		**(6)**	5
Items that may be reclassified to profit or loss		**(402)**	158
Total other comprehensive (expense)/income		**(1,013)**	182
Total comprehensive expense for the year		**(2,324)**	(2,211)
Attributable to:			
Ordinary shareholders		**(2,328)**	(2,219)
Non-controlling interests		**4**	8
Total comprehensive expense for the year		**(2,324)**	(2,211)

[1] Includes an asset re-measurement net loss estimated at £600m following the agreement to transfer the future pension obligations of circa 33,000 pensions in the UK scheme to Legal & General Assurance Society Limited. See note 20 for further information.

Condensed consolidated balance sheet

At 31 December 2019

	Notes	2019 £m	2018 £m
ASSETS			
Intangible assets	8	**5,442**	5,295
Property, plant and equipment	9	**4,803**	4,929
Right-of-use assets [1]	10	**2,009**	–
Investments – joint ventures and associates	11	**402**	412
Investments – other	11	**14**	22
Other financial assets	18	**467**	343
Deferred tax assets	5	**1,887**	2,092
Post-retirement scheme surpluses	20	**1,170**	1,944
Non-current assets		**16,194**	15,037
Inventories	12	**4,320**	4,287
Trade receivables and other assets	13	**5,065**	4,690
Contract assets	14	**2,095**	2,057
Taxation recoverable		**39**	34
Other financial assets	18	**86**	22
Short-term investments		**6**	6
Cash and cash equivalents	15	**4,443**	4,974
Current assets		**16,054**	16,070
Assets held for sale	23	**18**	750
TOTAL ASSETS		**32,266**	31,857
LIABILITIES			
Borrowings and lease liabilities	16	**(775)**	(858)
Other financial liabilities	18	**(493)**	(647)
Trade payables and other liabilities	17	**(8,450)**	(8,292)
Contract liabilities	14	**(4,228)**	(3,794)
Current tax liabilities		**(172)**	(138)
Provisions for liabilities and charges	19	**(858)**	(1,122)
Current liabilities		**(14,976)**	(14,851)
Borrowings and lease liabilities	16	**(4,910)**	(3,804)
Other financial liabilities	18	**(3,094)**	(3,542)
Trade payables and other liabilities	17	**(2,071)**	(1,940)
Contract liabilities	14	**(6,612)**	(5,336)
Deferred tax liabilities	5	**(618)**	(962)
Provisions for liabilities and charges	19	**(1,946)**	(795)
Post-retirement scheme deficits	20	**(1,378)**	(1,303)
Non-current liabilities		**(20,629)**	(17,682)
Liabilities associated with assets held for sale	23	**(15)**	(376)
TOTAL LIABILITIES		**(35,620)**	(32,909)
NET LIABILITIES		**(3,354)**	(1,052)
EQUITY			
Called-up share capital		**386**	379
Share premium account		**319**	268
Capital redemption reserve		**159**	161
Cash flow hedging reserve		**(96)**	(106)
Merger reserve		**650**	406
Translation reserve		**397**	809
Accumulated losses		**(5,191)**	(2,991)
Equity attributable to ordinary shareholders		**(3,376)**	(1,074)
Non-controlling interests		**22**	22
TOTAL EQUITY		**(3,354)**	(1,052)

[1] IFRS 16 *Leases* 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 notes 1 and note 25 for more details.

Condensed consolidated cash flow statement

For the year ended 31 December 2019

	Notes	**2019 £m**	2018 £m
Reconciliation of cash flows from operating activities			
Operating loss		**(852)**	(1,161)
(Profit)/loss on disposal of property, plant and equipment		**(13)**	11
Share of results of joint ventures and associates	11	**(104)**	(4)
Dividends received from joint ventures and associates	11	**92**	105
Amortisation and impairment of intangible assets [2]	8	**372**	565
Depreciation and impairment of property, plant and equipment [2]	9	**532**	521
Depreciation and impairment of right-of-use assets	10	**411**	–
Impairment of and other movement on investments	11	**1**	6
Increase in provisions		**1,108**	1,003
Increase in inventories		**(43)**	(616)
Increase in trade receivables and other assets		**(610)**	(469)
Increase in contract assets		**(41)**	(112)
Penalties paid on agreements with investigating bodies		**(102)**	–
Increase in trade payables and other liabilities		**683**	1,732
Increase in contract liabilities		**1,778**	1,419
Cash flows on other financial assets and liabilities held for operating purposes		**(757)**	(732)
Interest received		**31**	–
Net defined benefit post-retirement cost recognised in loss before financing	20	**222**	352
Cash funding of defined benefit post-retirement schemes	20	**(266)**	(181)
Share-based payments		**30**	35
Net cash inflow from operating activities before taxation		**2,472**	2,474
Taxation paid		**(175)**	(248)
Net cash inflow from operating activities [1]		**2,297**	2,226
Cash flows from investing activities			
Net movement in unlisted investments		**3**	(6)
Additions of intangible assets	8	**(640)**	(680)
Disposals of intangible assets	8	**13**	13
Purchases of property, plant and equipment		**(747)**	(905)
Disposals of property, plant and equipment		**50**	43
Acquisition of businesses	23	**(43)**	–
Disposal of other businesses	23	**453**	573
Movement in investments in joint ventures and associates and other movements on investments		**(8)**	(13)
Disposal of joint ventures		**1**	–
Net cash outflow from investing activities		**(918)**	(975)
Cash flows from financing activities			
Repayment of loans		**(1,136)**	(37)
Proceeds from increase in loans		**22**	1,054
Capital element of lease payments (2018: Capital element of finance lease payments)		**(271)**	(23)
Net cash flow from (decrease)/increase in borrowings and leases		**(1,385)**	994
Interest received		**–**	27
Interest paid		**(104)**	(92)
Interest element of lease payments (2018: Interest element of finance lease payments)		**(88)**	(5)
Increase in short-term investments		**–**	(3)
Issue of ordinary shares (net of expenses)		**24**	1
Purchase of ordinary shares		**(15)**	(1)
Dividends to NCI		**(4)**	(3)
Redemption of C Shares		**(220)**	(216)
Net cash (outflow)/inflow from financing activities		**(1,792)**	702
Change in cash and cash equivalents		**(413)**	1,953
Cash and cash equivalents at 1 January		**4,952**	2,933
Exchange (losses)/gains on cash and cash equivalents		**(104)**	66
Cash and cash equivalents at 31 December [3]		**4,435**	4,952

[1] Operating cash flow includes Trent 1000 insurance receipts of £173m.

[2] In 2019, an impairment of £58m in respect of Bergen Engines AS was included in these lines (2018: £160m in respect of Commercial Marine).

[3] 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.

In deriving the consolidated cash flow statement, movements in balance sheet line items have been adjusted for non-cash items.

The cash flow in the year includes the sale of goods and services to joint ventures and associates.

	2019 £m	2018 £m
Reconciliation of movements in cash and cash equivalents to movements in net funds/(debt)		
Change in cash and cash equivalents	**(413)**	1,953
Cash flow from decrease/(increase) in borrowings and leases	**1,385**	(994)
Cash flow from increase in short-term investments	**–**	3
Change in net funds resulting from cash flows	**972**	962
New leases in the year (2018: new finance leases in the year)	**(217)**	(97)
Net debt (excluding cash and cash equivalents) of previously unconsolidated subsidiary	**(1)**	–
Exchange (losses)/gains on net funds	**(32)**	54
Fair value adjustments	**48**	(69)
Transferred to liabilities associated with assets held for sale	**3**	–
Movement in net funds	**773**	850
Net funds/(debt) at 1 January excluding the fair value of swaps	**318**	(532)
Reclassifications [1]	**(79)**	–
Adoption of IFRS 16 (see note 25)	**(2,248)**	–
Net debt at 1 January restated	**(2,009)**	(532)
Net (debt)/funds at 31 December excluding the fair value of swaps	**(1,236)**	318
Fair value of swaps hedging fixed rate borrowings	**243**	293
Net (debt)/funds at 31 December	**(993)**	611

[1] In 2019, the Group has reclassified £79m as borrowings previously included in other financial liabilities. These borrowings mature between 2019 and 2029 – see note 16.

The movement in net funds/(debt) (defined by the Group as including the items shown below) is as follows:

	At 31 December 2018 £m	Transition to IFRS 16 and reclassifications [1] £m	At 1 January £m	Funds flow £m	Net funds on acquisition /disposal £m	Exchange differences £m	Fair value adjustments £m	Reclassifications £m	Other movements on leases £m	At 31 December £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 [2] (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 swaps	318	(2,327)	**(2,009)**	**972**	**(1)**	**(32)**	**48**	**3**	**(217)**	**(1,236)**
Fair value of swaps hedging fixed rate borrowings [3]	293	–	**293**	**–**	**–**	**–**	**(50)**	**–**	**–**	**243**
Net funds/(debt)	611	(2,327)	**(1,716)**	**972**	**(1)**	**(32)**	**(2)**	**3**	**(217)**	**(993)**
Net funds (excluding lease liabilities)	*840*	*(79)*	*761*							*1,361*
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 swaps			(532)	865	–	54	(69)	–	–	318
Fair value of swaps hedging fixed rate borrowings			227	–	–	–	66	–	–	293
Net (debt)/funds			(305)	865	–	54	(3)	–	–	611

[1] In 2019, the Group has reclassified £79m as borrowings previously included in other financial liabilities. These borrowings mature between 2019 and 2029 – see note 16.

[2] Includes Trent 1000 insurance receipts of £173m.

[3] 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 16.

Condensed consolidated statement of changes in equity

For the year ended 31 December 2019

	Attributable to ordinary shareholders									
	Share capital	Share premium	Capital redemption reserve	Cash flow hedging reserve	Merger reserve	Translation reserve	Accumulated losses [1]	Total	Non-controlling interests (NCI)	Total equity
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
At 31 December 2017	368	195	162	(112)	3	657	(343)	930	3	933
Impact of adopting IFRS 9	–	–	–	–	–	–	(15)	(15)	–	(15)
At 1 January 2018	368	195	162	(112)	3	657	(358)	915	3	918
(Loss)/profit for the year	–	–	–	–	–	–	(2,401)	(2,401)	8	(2,393)
Foreign exchange translation differences on foreign operations	–	–	–	–	–	171	–	171	–	171
Reclassified to income statement on disposal of L'Orange	–	–	–	–	–	(19)	–	(19)	–	(19)
Movements on post-retirement schemes	–	–	–	–	–	–	27	27	–	27
Debited to cash flow hedge reserve	–	–	–	(17)	–	–	–	(17)	–	(17)
OCI of joint ventures and associates	–	–	–	18	–	–	(1)	17	–	17
Related tax movements	–	–	–	5	–	–	(2)	3	–	3
Total comprehensive income/(expense) for the year	–	–	–	6	–	152	(2,377)	(2,219)	8	(2,211)
Shares issued in respect of acquisition of ITP Aero	10	–	–	–	403	–	–	413	–	413
Other issues of ordinary shares	1	73	–	–	–	–	–	74	–	74
Issue of C Shares [2]	–	–	(217)	–	–	–	1	(216)	–	(216)
Redemption of C Shares	–	–	216	–	–	–	(216)	–	–	–
Shares issued to employee share trust	–	–	–	–	–	–	(75)	(75)	–	(75)
Share-based payments – direct to equity [3]	–	–	–	–	–	–	32	32	–	32
Transfer of joint operations to subsidiaries	–	–	–	–	–	–	–	–	15	15
Transactions with NCI	–	–	–	–	–	–	–	–	(4)	(4)
Related tax movements	–	–	–	–	–	–	2	2	–	2
Other changes in equity in the year	11	73	(1)	–	403	–	(256)	230	11	241
At 31 December 2018	379	268	161	(106)	406	809	(2,991)	(1,074)	22	(1,052)
Impact of adopting IFRS 16	–	–	–	–	–	–	(40)	(40)	–	(40)
At 1 January 2019	**379**	**268**	**161**	**(106)**	**406**	**809**	**(3,031)**	**(1,114)**	**22**	**(1,092)**
(Loss)/profit for the year	–	–	–	–	–	–	**(1,315)**	**(1,315)**	**4**	**(1,311)**
Foreign exchange translation differences on foreign operations	–	–	–	–	–	**(313)**	–	**(313)**	–	**(313)**
Reclassified to income statement on disposal of Commercial Marine	–	–	–	–	–	**(98)**	–	**(98)**	–	**(98)**
Movements on post-retirement schemes	–	–	–	–	–	–	**(934)**	**(934)**	–	**(934)**
Credited to cash flow hedge reserve	–	–	–	**22**	–	–	–	**22**	–	**22**
OCI of joint ventures and associates	–	–	–	**(7)**	–	–	**(1)**	**(8)**	–	**(8)**
Related tax movements	–	–	–	**(5)**	–	**(1)**	**324**	**318**	–	**318**
Total comprehensive income/(expense) for the year	–	–	–	**10**	–	**(412)**	**(1,926)**	**(2,328)**	**4**	**(2,324)**
Arising on issues of ordinary shares	**1**	**51**	–	–	–	–	–	**52**	–	**52**
Shares issued in respect of acquisition of ITP Aero	**6**	–	–	–	**244**	–	–	**250**	–	**250**
Issue of C Shares [2]	–	–	**(222)**	–	–	–	**1**	**(221)**	–	**(221)**
Redemption of C Shares	–	–	**220**	–	–	–	**(220)**	–	–	–
Ordinary shares purchased	–	–	–	–	–	–	**(15)**	**(15)**	–	**(15)**
Shares issued to employee share trust	–	–	–	–	–	–	**(51)**	**(51)**	–	**(51)**
Share-based payments – direct to equity [3]	–	–	–	–	–	–	**50**	**50**	–	**50**
Transactions with NCI	–	–	–	–	–	–	–	–	**(4)**	**(4)**
Related tax movements	–	–	–	–	–	–	**1**	**1**	–	**1**
Other changes in equity in the year	**7**	**51**	**(2)**	–	**244**	–	**(234)**	**66**	**(4)**	**62**
At 31 December 2019	**386**	**319**	**159**	**(96)**	**650**	**397**	**(5,191)**	**(3,376)**	**22**	**(3,354)**

1 At 31 December 2019, **12,476,576** ordinary shares with a net book value of **£108m** (2018: 13,538,921, 2017: 6,466,153 ordinary shares with net book values of £123m and £52m respectively) were held for the purpose of share-based payment plans and included in accumulated losses. During the year, **8,984,219** ordinary shares with a net book value of **£82m** (2018: 468,165 shares with a net book value of £4m) vested in share-based payment plans. During the year, the Company acquired **118,831** (2018: 80,810) of its ordinary shares via reinvestment of dividends received on its own shares and purchased **1,673,143** (2018: nil) of its ordinary shares through purchases on the London Stock Exchange. During the year, the Company issued **28,973,262** new ordinary shares relating to the remaining three instalments for the acquisition of ITP Aero (2018: 47,556,914 new ordinary shares relating to the first five instalments) and **7,803,043** new ordinary shares (2018: 7,460,173) to the Group's share trust for its employee share-based payment plans with a net book value of **£66m** (2018: £74m).

2 In Rolls-Royce Holdings plc's Company Financial Statements, C Shares are issued from the merger reserve, this reserve was created by a scheme of arrangement in 2011. As this reserve is eliminated on consolidation, in the Consolidated Financial Statements, the C Shares are shown as being issued from the capital redemption reserve.

3 Share-based payments – direct to equity is the share-based payment charge for the year less the actual cost of vesting excluding those vesting from own shares and cash received on share-based schemes vesting.

1 Basis of preparation and accounting policies

The Company

Rolls-Royce Holdings plc (the 'Company') is a public company incorporated under the Companies Act 2006 and domiciled in the United Kingdom. The condensed consolidated financial statements of the Company for the year ended 31 December 2019 consist of the consolidation of the Financial Statements of the Company and its subsidiaries (together referred to as the Group) and include the Group's interest in jointly controlled and associated entities.

The consolidated financial statements of the Group as at and for the year ended 31 December 2019 (2019 Annual Report) are available upon request from the Company Secretary, Rolls-Royce Holdings plc, Kings Place, 90 York Way, London, N1 9FX.

Statement of compliance

These condensed Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS) adopted for use in the EU. They do not include all of the information required for full annual statements, and should be read in conjunction with the 2019 Annual Report.

The comparative figures for the financial year 31 December 2018 are not the Group's statutory accounts for that financial year. Those accounts have been reported on by the Group's auditors and delivered to the registrar of companies. The report of the auditors was (i) unqualified, (ii) did not include a reference to any matters to which the auditors drew attention by way of emphasis without qualifying their report, and (iii) did not contain a statement under section 498(2) or (3) of the Companies Act 2006.

The Board of directors approved the condensed consolidated financial statements on 28 February 2020.

Significant accounting policies

Except for the adoption of IFRS 16 *Leases* and IFRIC 23 *Uncertainty over Income Tax Treatment*, the accounting policies applied by the Group in these condensed Consolidated Financial Statements are the same as those that were applied to the Consolidated Financial Statements of the Group for the year ended 31 December 2018 (International Financial Reporting Standards issued by the International Accounting Standards Board (IASB), as adopted for use in the EU effective at 31 December 2018).

IFRS 16 *Leases*

The Group adopted IFRS 16 on 1 January 2019 using the modified retrospective approach. Under the specific transitional provisions in the standard, comparative information has not been restated. The reclassifications and the adjustments arising from the new leasing rules have been recognised in the opening balance sheet on 1 January 2019 (see note 25).

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. From 1 January 2019, leases are 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.

On adoption of IFRS 16, the Group recognised additional lease liabilities in relation to leases which had previously been classified as 'operating leases' under the previous principles of IAS 17 *Leases*. These liabilities were measured at the present value of the remaining lease payments, discounted using the Group's incremental borrowing rate as of 1 January 2019. The weighted average incremental borrowing rate applied by the Group to the lease liabilities on 1 January 2019 was 3.7%.

The associated 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 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 31 December 2018.

In applying IFRS 16 for the first time, the Group has used the following practical expedients permitted by the standard:

- on initial application, IFRS 16 was only applied to contracts that were previously classified as leases, the Group has elected not to reassess whether a contract is, or contains, a lease at the date of initial application. Instead, for contracts entered into before the transition date the Group has relied on its assessment made applying IAS 17 and IFRIC 4 *Determining whether an Arrangement contains a Lease*;
- lease contracts with a duration of less than 12 months will continue to be expensed to the income statement on a straight-line basis over the lease term;
- the lease term has been determined with the use of hindsight where the contract contains options to extend the lease; and
- reliance on previous assessments on whether or not leases are onerous.

Note 25 sets out the adjustments made on transition to IFRS 16 *Leases* on 1 January 2019. The most significant changes are where the Group is a lessee as the standard has not significantly changed the accounting where the Group is a lessor in a lease arrangement.

Accounting policy

Key judgement – Determining 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 2022-2028 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.

Key estimate – Estimates of the payments required to meet residual value guarantees at the end of engine leases

Engine leases in the Civil Aerospace segment often include clauses that guarantee engine value when returned to the lessor. This is in the form of additional payments to the lessor if the measured useful life of the engine is below levels specified in the contracts. The estimated cost of meeting these obligations are included in the lease payments. The amount payable is calculated based upon an estimate of the utilisation of the engines over the lease term that would determine the cash payable to the lessor and whether engine life can be restored at a lower estimated cost by performing an overhaul prior to the end of the lease. At 31 December 2019, the lease liability included £401m relating to the cost of meeting these residual value guarantees, 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.

1 Basis of preparation and accounting policies continued

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 terminating 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 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.

IFRIC 23 *Uncertainty over Income Tax Treatment*
The Group adopted IFRIC 23 on 1 January 2019. The interpretation clarifies how to apply the recognition and measurement requirements in IAS 12 *Income Taxes* when there is uncertainty over income tax treatments. Adoption of this interpretation did not have a material impact on the Group's financial statements.

Post balance sheet events
Non-adjusting post balance sheet events in relation to pensions and mergers and acquisitions activity is disclosed in notes 20 and 23 respectively.

2 Analysis by business segment

The analysis by divisions (business segment) is presented in accordance with IFRS 8 *Operating Segments*, on the basis of those segments whose operating results are regularly reviewed by the Board (who act as the Chief Operating Decision Maker as defined by IFRS 8). Our four divisions are set out below and referred to collectively 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, submarines nuclear power plants and aftermarket services
ITP Aero	- design, research and development, manufacture and casting, assembly and test of aeronautical engines and gas turbines, and MRO services

Non-core businesses include the trading results of the North America Civil Nuclear business and the Knowledge Management System business which have been treated as a disposal group held for sale at 31 December 2019, 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, L'Orange until the date of disposal on 1 June 2018 and other smaller businesses including former Energy businesses not included in the disposal to Siemens on 2014 (Retained Energy). Segmental analysis for 2018 has been restated to reflect the 2019 definition of non-core.

Underlying results
We present the financial performance of our business in accordance with IFRS 8 and consistently with the basis on which performance is communicated to the Board each month. Underlying results are presented to reflect the economic impact of the Group's foreign exchange and interest rate risk management activities with interest receivable/(payable) on interest rate swaps not designated into hedging relationships for accounting purposes reclassified from fair value movement on a reported basis to interest receivable/(payable) on an underlying basis – see note 4.

Underlying performance excludes the following:

- the effect of acquisition accounting and business disposals;
- impairment of goodwill and other non-current assets where the reasons for impairment are outside of normal operating activities;
- exceptional items; and
- other items which are market driven and outside the control of management.

Acquisition accounting, business disposals and impairment
We exclude these so that the current year and comparative results are directly comparable.

Exceptional items
We classify items as 'exceptional' where the Directors believe that presentation of our results in this way is more relevant to an understanding of our financial performance, as exceptional items are identified by virtue of their size, nature or incidence.

In determining whether an event or transaction is exceptional, management considers quantitative as well as qualitative factors such as the frequency or predictability of occurrence. Examples of exceptional items include one-time costs and charges in respect of aerospace programmes, costs of restructuring programmes and one-time past-service charges and credits on our post-retirement schemes.

In 2019, the risk-free discount rate we applied to exceptional onerous contract provisions reduced from between 4%-5% to 2%-3%. This was largely driven by movements in US bonds in the last quarter of 2019. The change in the risk-free rate (US bonds) is market driven and the impact of the reduction in the rate has been included as a reconciling difference between underlying performance and headline performance.

Exceptional items are not allocated to segments and may not be comparable to similarly titled measures used by other companies.

2 Analysis by business segment continued

Other items

The financing component of the defined benefit pension scheme cost is determined by market conditions and has therefore been included as a reconciling difference between underlying performance and headline performance.

Penalties paid on agreements with investigating bodies are considered to be one-off in nature and are therefore excluded from underlying performance.

The tax effects of the adjustments above are excluded from the underlying tax charge. In addition, changes in tax rates and changes in the amount of recoverable advance corporation tax recognised are also excluded.

See page 36 for the reconciliation between Underlying performance and Reported performance.

The following analysis sets out the results of the core businesses on the basis described above and also includes a reconciliation of the underlying results to those reported in the consolidated income statement.

	Civil Aerospace £m	Power Systems [1] £m	Defence £m	ITP Aero £m	Corporate and inter-segment £m	Core businesses £m
Year ended 31 December 2019						
Underlying revenue from sale of original equipment	**3,246**	**2,386**	**1,461**	**782**	**(502)**	**7,373**
Underlying revenue from aftermarket services	**4,861**	**1,159**	**1,789**	**154**	**(75)**	**7,888**
Total underlying revenue	**8,107**	**3,545**	**3,250**	**936**	**(577)**	**15,261**
Gross profit/(loss)	**622**	**909**	**669**	**206**	**(64)**	**2,342**
Commercial and administrative costs	**(299)**	**(374)**	**(151)**	**(61)**	**(53)**	**(938)**
Restructuring	**(7)**	**–**	**(7)**	**(1)**	**–**	**(15)**
Research and development costs	**(374)**	**(176)**	**(105)**	**(33)**	**–**	**(688)**
Share of results of joint ventures and associates	**102**	**(2)**	**9**	**–**	**–**	**109**
Underlying operating profit/(loss)	**44**	**357**	**415**	**111**	**(117)**	**810**
Segment assets	**17,954**	**3,587**	**2,743**	**2,160**	**(2,476)**	**23,968**
Interests in joint ventures and associates	**365**	**18**	**19**	**–**	**–**	**402**
Segment liabilities	**(24,819)**	**(1,450)**	**(2,950)**	**(1,129)**	**2,645**	**(27,703)**
Net (liabilities)/assets	**(6,500)**	**2,155**	**(188)**	**1,031**	**169**	**(3,333)**
Year ended 31 December 2018						
Underlying revenue from sale of original equipment	3,119	2,310	1,452	666	(375)	7,172
Underlying revenue from aftermarket services	4,259	1,124	1,672	113	(54)	7,114
Total underlying revenue	7,378	3,434	3,124	779	(429)	14,286
Gross profit	493	866	690	156	35	2,240
Commercial and administrative costs	(336)	(363)	(170)	(57)	(51)	(977)
Restructuring	(8)	(1)	(3)	(2)	–	(14)
Research and development costs	(332)	(188)	(100)	(30)	–	(650)
Share of results of joint ventures and associates	21	1	10	–	–	32
Underlying operating (loss)/profit	(162)	315	427	67	(16)	631
Segment assets	14,271	3,692	2,612	2,210	(1,621)	21,164
Interests in joint ventures and associates	380	14	16	–	–	410
Segment liabilities	(21,309)	(1,651)	(2,924)	(1,168)	1,743	(25,309)
Net (liabilities)/assets	(6,658)	2,055	(296)	1,042	122	(3,735)

[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.

2 Analysis by business segment continued

Reconciliation to reported results

	Core businesses £m	Non-core businesses [1,2] £m	Total underlying £m	Underlying adjustments and adjustments to foreign exchange £m	Group at actual exchange rates £m
Year ended 31 December 2019					
Revenue from sale of original equipment	**7,373**	**83**	**7,456**	**596**	**8,052**
Revenue from aftermarket services	**7,888**	**106**	**7,994**	**541**	**8,535**
Total revenue	**15,261**	**189**	**15,450**	**1,137**	**16,587**
Gross profit/(loss)	**2,342**	**45**	**2,387**	**(1,445)**	**942**
Commercial and administrative costs	**(938)**	**(41)**	**(979)**	**(149)**	**(1,128)**
Restructuring	**(15)**	**1**	**(14)**	**14**	**–**
Research and development costs	**(688)**	**(8)**	**(696)**	**(74)**	**(770)**
Share of results of joint ventures and associates	**109**	**1**	**110**	**(6)**	**104**
Operating profit/(loss)	**810**	**(2)**	**808**	**(1,660)**	**(852)**
Gain arising on the disposal of businesses	**–**	**–**	**–**	**139**	**139**
Profit/(loss) before financing and taxation	**810**	**(2)**	**808**	**(1,521)**	**(713)**
Net financing	**(223)**	**(2)**	**(225)**	**47**	**(178)**
Profit/(loss) before taxation	**587**	**(4)**	**583**	**(1,474)**	**(891)**
Taxation	**(281)**	**4**	**(277)**	**(143)**	**(420)**
Profit/(loss) for the year	**306**	**–**	**306**	**(1,617)**	**(1,311)**
Attributable to:					
Ordinary shareholders			**302**	**(1,617)**	**(1,315)**
Non-controlling interests			**4**	**–**	**4**
Year ended 31 December 2018					
Revenue from sale of original equipment	7,172	358	7,530	285	7,815
Revenue from aftermarket services	7,114	423	7,537	377	7,914
Total revenue	14,286	781	15,067	662	15,729
Gross profit/(loss)	2,240	210	2,450	(1,252)	1,198
Commercial and administrative costs	(977)	(184)	(1,161)	(434)	(1,595)
Restructuring	(14)	(2)	(16)	16	–
Research and development costs	(650)	(39)	(689)	(79)	(768)
Share of results of joint ventures and associates	32	–	32	(28)	4
Operating profit/(loss)	631	(15)	616	(1,777)	(1,161)
Gain arising on the disposal of L'Orange	–	–	–	358	358
Profit/(loss) before financing and taxation	631	(15)	616	(1,419)	(803)
Net financing	(148)	(2)	(150)	(1,994)	(2,144)
Profit/(loss) before taxation	483	(17)	466	(3,413)	(2,947)
Taxation	(153)	(8)	(161)	715	554
Profit/(loss) for the year	330	(25)	305	(2,698)	(2,393)
Attributable to:					
Ordinary shareholders			297	(2,698)	(2,401)
Non-controlling interests			8	–	8

[1] Includes the North America Civil Nuclear business and the Knowledge Management System business which have been treated as a disposal group held for sale at 31 December 2019, the Commercial Marine business disposed of on the 1 April 2019, RRPD disposed of on the 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). See note 23 for more details.

[2] Non-core businesses for 31 December 2018 has been restated to include the North America Civil Nuclear business.

2 Analysis by business segment continued

Disaggregation of revenue from contracts with customers

Analysis by type and basis of recognition

	Civil Aerospace £m	Power Systems [1] £m	Defence £m	ITP Aero [2] £m	Corporate and inter-segment £m	Core businesses £m
Year ended 31 December 2019						
Original equipment recognised at a point in time	**3,246**	**2,285**	**567**	**702**	**(478)**	**6,322**
Original equipment recognised over time	**–**	**101**	**894**	**80**	**(24)**	**1,051**
Aftermarket services recognised at a point in time	**1,599**	**1,026**	**696**	**48**	**(32)**	**3,337**
Aftermarket services recognised over time	**3,138**	**133**	**1,093**	**106**	**(43)**	**4,427**
Total underlying customer contract revenue [3]	**7,983**	**3,545**	**3,250**	**936**	**(577)**	**15,137**
Other underlying revenue	**124**	**–**	**–**	**–**	**–**	**124**
Total underlying revenue	**8,107**	**3,545**	**3,250**	**936**	**(577)**	**15,261**
Year ended 31 December 2018						
Original equipment recognised at a point in time	3,119	2,257	694	585	(355)	6,300
Original equipment recognised over time	–	53	758	81	(20)	872
Aftermarket services recognised at a point in time	1,575	996	718	(4)	21	3,306
Aftermarket services recognised over time	2,630	128	954	117	(75)	3,754
Total underlying customer contract revenue [3]	7,324	3,434	3,124	779	(429)	14,232
Other underlying revenue	54	–	–	–	–	54
Total underlying revenue	7,378	3,434	3,124	779	(429)	14,286

[1] The underlying revenue for Power Systems for 31 December 2018 has been represented to reclassify the North America Civil Nuclear business as non-core.

[2] ITP Aero prior year disaggregation of revenue restated to be consistent with current year presentation.

[3] Includes **£(93)m** (2018: £(196)m) of revenue recognised in the year relating to performance obligations satisfied in previous years – see note 14.

	Core businesses £m	Non-core businesses [1,2] £m	Total underlying £m	Underlying adjustments and adjustments to foreign exchange [3] £m	Group results at actual exchange rates £m
Year ended 31 December 2019					
Original equipment recognised at a point in time	**6,322**	**40**	**6,362**	**596**	**6,958**
Original equipment recognised over time	**1,051**	**43**	**1,094**	**–**	**1,094**
Aftermarket services recognised at a point in time	**3,337**	**94**	**3,431**	**313**	**3,744**
Aftermarket services recognised over time	**4,427**	**12**	**4,439**	**228**	**4,667**
Total customer contract revenue	**15,137**	**189**	**15,326**	**1,137**	**16,463**
Other revenue	**124**	**–**	**124**	**–**	**124**
Total revenue	**15,261**	**189**	**15,450**	**1,137**	**16,587**
Year ended 31 December 2018					
Original equipment recognised at a point in time	6,300	64	6,364	283	6,647
Original equipment recognised over time	872	294	1,166	2	1,168
Aftermarket services recognised at a point in time	3,306	388	3,694	148	3,842
Aftermarket services recognised over time	3,754	35	3,789	229	4,018
Total customer contract revenue	14,232	781	15,013	662	15,675
Other revenue	54	–	54	–	54
Total revenue	14,286	781	15,067	662	15,729

[1] Includes the North America Civil Nuclear business and the Knowledge Management System business which have been treated as a disposal group held for sale at 31 December 2019, the Commercial Marine business disposed of on the 1 April 2019, RRPD disposed of on the 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). See note 23 for more details.

[2] Non-core businesses for 31 December 2018 has been restated to include North America Civil Nuclear business.

[3] Includes **£(187)m** (2018: £nil) of revenue recognised relating to performance obligations satisfied in previous years over and above that in underlying revenue.

Order backlog

Contracted consideration that is expected to be recognised as revenue when performance obligations are satisfied in the future (referred to as order backlog) is as follows:

	2019			2018		
	Within five years £bn	**After five years £bn**	**Total £bn**	Within five years £bn	After five years £bn	Total £bn
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
	33.9	**27.0**	**60.9**	32.1	31.0	63.1

The parties to these contracts have approved the contract and our customers do not have a unilateral enforceable right to terminate the contract without compensation. We exclude Civil Aerospace OE orders (for deliveries beyond the next 7-12 months) that our customers have placed where they retain a right to cancel. Our expectation based on historical experience is that these orders will be fulfilled. Within the 0-5 years category, contracted revenue in: Defence will largely be recognised in the next three years; Power Systems will be recognised over the next two years as it is a short cycle business; and ITP Aero (where internal Group revenues have been eliminated) evenly spread over the next five years.

2 Analysis by business segment continued

Underlying adjustments

	2019			2018		
	Revenue £m	**Profit before financing £m**	**Net financing £m**	Revenue £m	Profit before financing £m	Net financing £m
Underlying performance	**15,450**	**808**	**(225)**	15,067	616	(150)
Transactions recognised at exchange rate on date of cash flow and revaluation of trading assets / liabilities [1]	**1,137**	**145**	**80**	781	(23)	163
Impact of unrealised fair value changes to derivative contracts held for trading [2]	**–**	**(1)**	**(6)**	–	(1)	(2,144)
Impact of unrealised fair value changes to derivative contracts held for financing [3]	**–**	**–**	**1**	–	–	(3)
Exceptional programme charges [4,5]	**–**	**(1,409)**	**–**	(119)	(976)	(15)
Impact of discount rate changes [6]	**–**	**–**	**(40)**	–	–	–
Exceptional restructuring charges [4,7]	**–**	**(136)**	**–**	–	(317)	–
(Loss)/gains arising on the acquisitions and disposals [8]	**–**	**(24)**	**(8)**	–	183	(8)
Impairments and asset write-offs [9]	**–**	**(84)**	**–**	–	(155)	–
Other [10]	**–**	**(12)**	**20**	–	(130)	13
Total underlying adjustments	**1,137**	**(1,521)**	**47**	662	(1,419)	(1,994)
Reported per consolidated income statement	**16,587**	**(713)**	**(178)**	15,729	(803)	(2,144)

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.

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 before taxation.

3 Includes the losses on hedge ineffectiveness in the period of **£13m** (2018: losses £3m)

4 The table below summarises the exceptional items recorded in 2019 and 2018.

	Year to 31 December	
	2019	2018
	£m	£m
Programme charges and associated contract losses [5]	**1,409**	976
Related foreign exchange impact [5]	**171**	147
Restructuring charges [7]	**136**	317
Pension charges [10]	**–**	121
	1,716	1,561

5 Included within programme exceptional items is **£1,361m** (2018: £790m), **£1,531m** (2018: £905m) 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), **£49m** (2018: £218m) 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 19.

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** (2018: £317m) in the year. The costs include: **£88m** (2018: £223m) 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 (Loss)/gains arising on the acquisitions and disposals of businesses. See note 23 for more details.

9 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.

10 Other includes the 2018 cost of equalisation of pension benefits between men and women.

Appropriate rates of tax have been applied to adjustments made to profit before tax in the table above. Adjustments in 2019 which impact the UK tax loss have an effective tax rate of zero. See note 5 for more details. The total underlying adjustments to profit before tax in 2019 are a charge of £143m (2018: credit £715m). The charge in 2019 was £57m plus an additional charge of £86m relating to the derecognition of UK deferred tax assets on foreign exchange and commodity financial assets and liabilities. The credit in 2018 was £672m plus an additional credit of £43m relating to the reduction in the Spanish Basque region tax rate.

Group employees monthly average during the year

	2019	2018
Civil Aerospace	**26,100**	25,500
Power Systems	**10,400**	10,500
Defence	**9,900**	10,500
ITP Aero	**3,900**	3,700
Corporate [1]	**100**	100
Core businesses	**50,400**	50,300
Non-core business [2]	**1,300**	4,200

1 Corporate consists of employees who do not provide a shared service to the business segments. Where corporate functions provide such a service, employees have been allocated to the business segments on an appropriate basis.

2 Includes the North America Civil Nuclear business (disposal group held for sale), Commercial Marine (disposed of on 1 April 2019), RRPD (disposed of on 15 April 2019), L'Orange (disposed of on 1 June 2018) and Retained Energy. See note 23 for more details.

2 Analysis by business segment continued

Reconciliation to the balance sheet

	2019 £m	2018 £m
Reportable segment assets	**23,968**	21,164
Interests in joint ventures and associates	**402**	412
Non-core businesses	**84**	188
Assets held for sale	**18**	750
Cash and cash equivalents and short-term investments	**4,449**	4,980
Fair value of swaps hedging fixed rate borrowings	**249**	293
Deferred and income tax assets	**1,926**	2,126
Post-retirement scheme surpluses	**1,170**	1,944
Total assets	**32,266**	31,857
Reportable segment liabilities	**(27,703)**	(25,309)
Non-core businesses	**(43)**	(159)
Liabilities associated with assets held for sale	**(15)**	(376)
Borrowings and lease liabilities	**(5,685)**	(4,662)
Fair value of swaps hedging fixed rate borrowings	**(6)**	–
Deferred and income tax liabilities	**(790)**	(1,100)
Post-retirement scheme deficits	**(1,378)**	(1,303)
Total liabilities	**(35,620)**	(32,909)
Net liabilities	**(3,354)**	(1,052)

3 Research and development

	2019 £m	2018 £m
Expenditure in the year	**(1,118)**	(1,145)
Capitalised as intangible assets	**481**	498
Amortisation and impairment of capitalised costs [1]	**(133)**	(121)
Net cost recognised in the income statement	**(770)**	(768)
Underlying adjustments relating to the effects of acquisition accounting and foreign exchange	**74**	79
Net underlying cost recognised in the income statement	**(696)**	(689)

[1] See note 8 for analysis of amortisation and impairment.

4 Net financing

	2019		2018	
	Per consolidated income statement £m	***Underlying financing [1] £m***	Per consolidated income statement £m	*Underlying financing [1] £m*
Interest receivable	**31**	***31***	27	*27*
Net fair value gains on non-hedge accounted interest rate swaps [2]	**14**	**–**	–	–
Financial RRSAs – foreign exchange differences and changes in forecast payments	**11**	**–**	25	–
Net fair value gains on commodity contracts	**36**	**–**	–	–
Financing on post-retirement scheme surpluses	**60**	**–**	56	–
Net foreign exchange gains	**100**	**–**	163	–
Financing income	**252**	***31***	271	*27*
Interest payable	**(182)**	***(163)***	(107)	*(99)*
Net fair value losses on foreign currency contracts	**(43)**	**–**	(2,122)	–
Financial RRSAs – foreign exchange differences and changes in forecast payments	**(10)**	**–**	(27)	–
Financial charge relating to financial RRSAs	**(3)**	***(3)***	(8)	*(8)*
Net fair value losses on commodity contracts	**–**	**–**	(22)	–
Financing on post-retirement scheme deficits	**(37)**	**–**	(33)	–
Other financing charges	**(155)**	***(90)***	(96)	*(70)*
Financing costs	**(430)**	***(256)***	(2,415)	*(177)*
Net financing costs	**(178)**	***(225)***	(2,144)	*(150)*
Analysed as:				
Net interest payable	**(151)**	***(132)***	(80)	*(72)*
Net fair value (losses)/gains on derivative contracts	**7**	**–**	(2,144)	–
Net post-retirement scheme financing	**23**	**–**	23	–
Net other financing	**(57)**	***(93)***	57	*(78)*
Net financing costs	**(178)**	***(225)***	(2,144)	*(150)*

[1] See note 2 for definition of underlying results.
[2] The condensed consolidated income statement shows the net fair value gain on any interest rate swaps not designated into hedging relationships for accounting purposes. Underlying financing reclassifies the interest receivable on these interest rates swaps from fair value movement to interest receivable.

5 Taxation

	UK		Overseas		Total	
	2019	2018	**2019**	2018	**2019**	2018
	£m	£m	**£m**	£m	**£m**	£m
Current tax charge for the year	**15**	13	**228**	167	**243**	180
Adjustments in respect of prior years	**(4)**	(13)	**(3)**	15	**(7)**	2
Current tax	**11**	–	**225**	182	**236**	182
Deferred tax charge/(credit) for the year	**117**	(630)	**(24)**	(43)	**93**	(673)
Adjustments in respect of prior years	**20**	22	**(15)**	(42)	**5**	(20)
Derecognition of deferred tax	**86**	–	**–**	–	**86**	–
Deferred tax credit resulting from reduction in tax rates	**–**	–	**–**	(43)	**–**	(43)
Deferred tax	**223**	(608)	**(39)**	(128)	**184**	(736)
Charged/(credited) in the income statement	**234**	(608)	**186**	54	**420**	(554)

Deferred taxation assets and liabilities

	2019	2018
	£m	£m
At 1 January	**1,130**	380
Impact of adopting of IFRS 16 (2018: Impact of adopting IFRS 9)	**8**	2
Amount (charged)/credited to income statement	**(184)**	736
Amount credited/(charged) to other comprehensive income	**323**	(2)
Amount (charged)/credited to cash flow hedge reserve	**(5)**	5
Amount credited to equity	**1**	2
On disposal/acquisition of businesses [1]	**(3)**	6
Transferred to assets held for sale [2]	**(2)**	(4)
Exchange differences	**1**	5
At 31 December	**1,269**	1,130
Deferred tax assets	**1,887**	2,092
Deferred tax liabilities	**(618)**	(962)
	1,269	1,130

[1] The 2019 deferred tax on disposal of businesses relates to Commercial Marine. The 2018 comparative relates to the disposal of L'Orange.

[2] The 2019 deferred tax transferred to assets held for sale relates to the North America Civil Nuclear business. The 2018 comparative relates to Commercial Marine.

Deferred tax assets of **£1,887m** include **£1,010m** (2018: £998m) relating to tax losses in the UK and **£163m** (2018: £163m) relating to Advance Corporation Tax (ACT). These assets have been recognised based on the expectation that the UK business will generate taxable profits and tax liabilities in the future against which the losses and ACT can be utilised.

Most of the tax losses relate to the Group's Civil Aerospace widebody business in the UK which makes initial losses through the investment period of a programme and then makes a profit through its contracts for services. The programme lifecycles typically range between 30 and 55 years with more of the widebody engine programmes forecast at the upper end of that range. In the past few years there have been four new engines that have entered into service (Trent 1000–TEN, Trent 7000, Trent XWB-84 and Trent XWB-97), all of which are still in the investment stage.

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. A recoverability assessment has been undertaken, taking account of deferred tax liabilities against which the reversal can be offset and using latest UK forecasts, which are mainly driven by the Group's Civil Aerospace widebody business, to assess the level of future taxable profits.

The recoverability of UK deferred tax assets relating to UK tax losses and ACT has been assessed in 2019 on the following basis:

- using the most recent UK profit forecasts prepared by management, which are consistent with past experience and external sources on market conditions. These forecasts cover the next five years;
- the long-term forecast profit profile of certain of the major widebody engine programmes which is typically between 30 and 55 years from initial investment to retirement of the fleet, including the aftermarket revenues earned from airline customers; and
- the long-term forecast profit and cost profile of the other parts of the Group's UK business.

The assessment takes into account UK tax laws that, in broad terms, restrict the offset of the carried forward tax losses to 50% of current year profits. Based on this assessment, the Group has recognised a deferred tax asset of £1,010m relating to losses and £163m relating to ACT. This reflects the Group's conclusions that:

- It is probable that the UK business will generate taxable income and tax liabilities in the future against which these losses and the ACT can be utilised;
- Based on current forecasts and using various scenarios these losses and the ACT will be used in full within the next 20 to 30 years which is within the expected widebody engine programme lifecycles.

A deferred tax asset of £438m has not been recognised. This is based management's assumptions relating to the amounts and timing of future taxable profits and takes into account that higher losses were incurred in 2019 than expected primarily due to the recognition of a £1.4bn exceptional charge in respect of the Trent 1000.

Changes in future profits will impact the recoverability of the deferred tax assets, the key assumptions impact contract margins. A 5% charge in such margins would result in around a £2bn change in UK profits over the remaining life of the programmes against which the recovery of the tax losses and ACT would be assessed. Such a variance could result in a change of up to £170m in the related deferred tax balances recorded on the Group balance sheet, assuming a 17% tax rate and the 50% loss offset restriction mentioned above.

The Group has also reassessed the recovery of other deferred tax assets, including those arising on unrealised losses on derivative contracts. Whilst the deferred tax asset has reduced anyway as a result of the reduction in the unrealised losses in 2019, the Group has also derecognised £86m in line with the approach outlined above. The impact of this is non-underlying.

5 Taxation continued

Any future changes in tax law or the structure of the Group could have a significant effect on the use of losses and ACT, including the period over which they can be used. In view of this and the significant judgement involved the Board continuously reassess this area.

The Budget 2016 announced that the UK tax rate will reduce to 17% with effect from 1 April 2020. The rate reduction to 17% has been substantively enacted on 6 September 2016. The deferred tax assets and liabilities of UK companies within the Group have therefore been calculated at 17%.

The temporary differences associated with investments in subsidiaries, joint ventures and associates, for which a deferred tax liability has not been recognised, aggregate to **£108m** (2018: £99m). No deferred tax liability has been recognised on the potential withholding tax due on the remittance of undistributed profits as the Group is able to control the timing of such remittances and it is probable that consent will not be given in the foreseeable future.

6 Earnings per ordinary share

Basic earnings per ordinary share (EPS) is calculated by dividing the loss attributable to ordinary shareholders by the weighted average number of ordinary shares in issue during the year, excluding ordinary shares held under trust, which have been treated as if they had been cancelled.

Diluted EPS is calculated by adjusting the weighted average number of ordinary shares in issue during the year for the bonus element of share options.

	2019			2018		
	Basic	**Potentially dilutive share options** [1]	**Diluted**	Basic	Potentially dilutive share options [1]	Diluted
Loss attributable to ordinary shareholders (£m)	**(1,315)**		**(1,315)**	(2,401)		(2,401)
Weighted average number of ordinary shares (millions)	**1,904**	**–**	**1,904**	1,859	–	1,859
EPS (pence)	**(69.07p)**	**–**	**(69.07p)**	(129.15)p	–	(129.15)p

[1] As there is a loss, the effect of potentially dilutive ordinary shares is anti-dilutive.

The reconciliation between underlying EPS and basic EPS is as follows:

	2019		2018	
	Pence	**£m**	Pence	£m
Underlying EPS / underlying profit attributable to ordinary shareholders	**15.86**	**302**	15.98	297
Total underlying adjustments to loss before tax (note 2)	**(77.42)**	**(1,474)**	(183.59)	(3,413)
Related tax effects	**(7.51)**	**(143)**	38.46	715
EPS/loss attributable to ordinary shareholders	**(69.07)**	**(1,315)**	(129.15)	(2,401)
Diluted underlying EPS	**15.86**		15.98	

7 Payments to shareholders in respect of the year

Payments to shareholders in respect of the year represent the value of C Shares to be issued in respect of the results for the year. Issues of C Shares were declared as follows:

	2019		2018	
	Pence per share	**£m**	Pence per share	£m
Interim (issued in January)	**4.60**	**87**	**4.60**	**86**
Final (issued in July)	**7.10**	**137**	**7.10**	**135**
	11.70	**224**	**11.70**	**221**

8 Intangible assets

	Goodwill £m	Certification costs £m	Development expenditure £m	Customer relationships £m	Software £m	Other £m	Total £m
Cost							
At 31 December 2018	1,087	948	2,883	1,384	964	811	8,077
Additions	**–**	**15**	**481**	**–**	**101**	**43**	**640**
Acquisition of businesses	**11**	**–**	**–**	**–**	**4**	**23**	**38**
Transferred to assets held for sale [1]	**(34)**	**–**	**(11)**	**(16)**	**(3)**	**(11)**	**(75)**
Disposals	**–**	**–**	**(8)**	**(1)**	**(111)**	**(19)**	**(139)**
Reclassifications from PPE	**–**	**–**	**17**	**–**	**19**	**(18)**	**18**
Exchange differences	**(40)**	**(1)**	**(68)**	**(64)**	**(7)**	**(26)**	**(206)**
At 31 December 2019	**1,024**	**962**	**3,294**	**1,303**	**967**	**803**	**8,353**
Accumulated amortisation and impairment							
At 31 December 2018	42	373	1,111	304	607	345	2,782
Charge for the year [2]	**–**	**19**	**113**	**72**	**88**	**26**	**318**
Impairment	**18**	**–**	**20**	**9**	**7**	**–**	**54**
Transferred to assets held for sale [1]	**(34)**	**–**	**(11)**	**(16)**	**(3)**	**(11)**	**(75)**
Disposals	**–**	**–**	**(7)**	**(1)**	**(99)**	**(19)**	**(126)**
Reclassifications from PPE	**–**	**–**	**–**	**–**	**10**	**(1)**	**9**
Exchange differences	**4**	**–**	**(25)**	**(14)**	**(5)**	**(11)**	**(51)**
At 31 December 2019	**30**	**392**	**1,201**	**354**	**605**	**329**	**2,911**
Net book value							
At 31 December 2019	**994**	**570**	**2,093**	**949**	**362**	**474**	**5,442**
At 31 December 2018	1,045	575	1,772	1,080	357	466	5,295

[1] The North America Civil Nuclear business was classified as a disposal group held for sale on 26 September 2019, prior to this an impairment of goodwill of £15m was recognised. The Commercial Marine business was classified as a disposal group held for sale on 30 June 2018 – see note 23.

[2] Charged to cost of sales and commercial and administrative costs except development costs, which are charged to research and development costs.

Goodwill

Goodwill has been tested for impairment during 2019 on the following basis:

- The carrying values of goodwill have been assessed by reference to value in use. These have been estimated using cash flows from the most recent forecasts prepared by management, which are consistent with past experience and external sources of information on market conditions. These forecasts generally cover the next five years. Growth rates for the period not covered by the forecasts are based on a range of growth rates between 1.0% – 2.5% that reflect the products, industries and countries in which the relevant CGU or group of CGUs operate.
- The key assumptions for the impairment tests are the discount rate and, in the cash flow projections, the programme assumptions, the growth rates and the impact of foreign exchange rates on the relationship between selling prices and costs. Impairment tests are performed using prevailing exchange rates.

The principal value in use assumptions for goodwill balances considered to be individually significant are:

Rolls-Royce Power Systems AG

- trading assumptions (e.g. volume of equipment deliveries, pricing achieved and cost escalation) are based on current and known future programmes, estimates of capture of market share and long-term economic forecasts;
- cash flows beyond the five-year forecasts are assumed to grow at **1.0%** (2018: 1.8%); and
- pre-tax discount rate **12%** (2018: 12%).

The Directors do not consider that any reasonably possible changes in the key assumptions would cause the value in use of the goodwill to fall below its carrying value.

Rolls-Royce Deutschland Ltd & Co KG

- trading assumptions (e.g. volume of engine deliveries, flying hours of installed fleet and cost escalation) are based on current and known future programmes, estimates of customers' fleet requirements and long-term economic forecasts;
- cash flows beyond the five-year forecasts are assumed to grow at **2.5%** (2018: 2.5%); and
- pre-tax discount rate **14%** (2018: 13%).

The Directors do not consider that any reasonably possible changes in the key assumptions would cause the value in use of the goodwill to fall below its carrying value.

Commercial Marine

On 6 July 2018, the Group announced the sale of Commercial Marine to KONGSBERG. The disposal met the criteria of IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* that where the carrying value of a 'disposal group' is expected to be recovered through a sale transaction, the disposal group should be treated as 'held for sale', with assets and liabilities presented separately on the balance sheet measured at the lower of carrying value or fair value less costs to sell.

As a result of the classification of the Commercial Marine business as a disposal group, its carrying value was assessed against the anticipated proceeds and the disposal costs. An impairment charge of £155m for the related goodwill (with an additional £5m impairment charge to Property, Plant and Equipment) was recognised in the income statement at 31 December 2018 and the remaining net balance of £227m transferred to assets held for sale and associated liabilities.

The Commercial Marine business was disposed of on 1 April 2019 – see note 23.

8 Intangible assets continued

Other intangible assets (including programme related intangible assets)

Other intangible assets have been reviewed for impairment in accordance with the requirements of IAS 36 *Impairment of Assets*. Where an impairment test was considered necessary, it has been performed on the following basis:

- The carrying values have been assessed by reference to value in use. These have been estimated using cash flows from the most recent forecasts prepared by management, which are consistent with past experience and external sources of information on market conditions over the lives of the respective programmes.
- The key assumptions underlying cash flow projections are assumed market share, programme timings, unit cost assumptions, discount rates, and foreign exchange rates.
- The pre-tax cash flow projections have been discounted at **7% – 15%** (2018: 7% – 13%), based on the Group's weighted average cost of capital, adjusted for the estimated programme risk, for example taking account of whether or not the forecast cash flows arise from contracted business.

In addition, for programme-related intangible assets, these have been reviewed for impairment in accordance with the requirements of IAS 36. Where there is a triggering event, an impairment test has been performed on the following basis:

- The programme related intangible asset's carrying value as at 31 December is compared to the asset's recoverable amount. The Group has determined that the recoverable amount of the asset should be calculated on a value in use basis as this represents the highest value to the Group in terms of the future cash flows that it can generate.
- Future cash flows used in the value in use calculations are based on our most recent forecasts prepared by management and are discounted using a pre-tax discount rate that reflects current market assessment of the time value of money. These forecasts include contracted business together with management's expectation of speculative business over the life of the programme together with cash outflows that are necessary to maintain the current level of economic benefit expected to arise from the asset in its current condition.
- The key programme assumptions underlying cash flow projections are forecast market share and pricing, engine flying hours, number of shop visits/cost of shop visits, R&D, capital investment and foreign exchange rates.
- The pre-tax cash flow projections have been discounted at **7% –15%** (2018: 7% –13%)

No impairment was identified (2018: no impairment). For programmes where the headroom could be significantly reduced over the next 12 months any of the following changes in assumption, in isolation, would cause the recoverable amount of the programme assets to equal its carrying value:

- an increase in discount rates by 36%
- an increase in costs of 10%.

9 Property, plant and equipment

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	In course of construction £m	Total £m
Cost					
At 31 December 2018	1,916	5,296	967	722	8,901
Impact of adopting IFRS 16 (note 25)	(12)	(11)	(205)	(29)	(257)
At 1 January 2019	**1,904**	**5,285**	**762**	**693**	**8,644**
Additions	**27**	**286**	**126**	**328**	**767**
Acquisition of businesses	**–**	**3**	**–**	**–**	**3**
Transferred to assets held for sale [1]	**(5)**	**(9)**	**–**	**(2)**	**(16)**
Disposals of businesses	**(4)**	**(168)**	**–**	**–**	**(172)**
Disposals/write-offs	**(54)**	**(187)**	**(17)**	**(4)**	**(262)**
Reclassifications [2]	**186**	**390**	**11**	**(605)**	**(18)**
Reclassification of joint venture to joint operations	**5**	**3**	**–**	**–**	**8**
Exchange differences	**(39)**	**(106)**	**(6)**	**(9)**	**(160)**
At 31 December 2019	**2,020**	**5,497**	**876**	**401**	**8,794**
Accumulated amortisation					
At 31 December 2018	579	3,142	244	7	3,972
Impact of adopting IFRS 16 (note 25)	(7)	(13)	(40)	–	(60)
At 1 January 2019	**572**	**3,129**	**204**	**7**	**3,912**
Charge for the year [3]	**67**	**381**	**43**	**–**	**491**
Impairment	**1**	**29**	**–**	**11**	**41**
Transferred to assets held for sale [1]	**(5)**	**(9)**	**–**	**(1)**	**(15)**
Disposal of businesses	**–**	**(165)**	**–**	**–**	**(165)**
Disposals/write-offs	**(45)**	**(150)**	**(5)**	**(1)**	**(201)**
Reclassifications [2]	**9**	**6**	**(19)**	**(5)**	**(9)**
Reclassification of joint venture to joint operations	**1**	**3**	**–**	**–**	**4**
Exchange differences	**(10)**	**(57)**	**–**	**–**	**(67)**
At 31 December 2019	**590**	**3,167**	**223**	**11**	**3,991**
Net book value					
At 31 December 2019	**1,430**	**2,330**	**653**	**390**	**4,803**
At 1 January 2019	**1,332**	**2,156**	**558**	**686**	**4,732**
At 31 December 2018	1,337	2,154	723	715	4,929

[1] The North America Civil Nuclear business was classified as a disposal group held for sale on 26 September 2019. The Commercial Marine business was classified as a disposal group held for sale on 30 June 2018 – see note 23.

[2] Includes reclassifications for assets under construction and to intangibles.

[3] Depreciation charged during the year is presented in the income statement or included in the cost of inventory as appropriate.

10 Right-of-use assets

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	Total £m
Cost:				
At 31 December 2018	–	–	–	–
Impact of adopting IFRS 16 (see note 25)	493	107	1,654	2,254
Transferred to assets held for sale [1]	(40)	(1)	–	(41)
At 1 January 2019	**453**	**106**	**1,654**	**2,213**
Additions/modifications of leases	**70**	**28**	**129**	**227**
Transferred to assets held for sale [1]	**(4)**	**–**	**–**	**(4)**
Disposals	**(2)**	**(4)**	**(13)**	**(19)**
Exchange differences	**(13)**	**(2)**	**(3)**	**(18)**
At 31 December 2019	**504**	**128**	**1,767**	**2,399**
Accumulated depreciation and impairment:				
At 1 January 2019	**–**	**–**	**–**	**–**
Charge for the year	**58**	**32**	**309**	**399**
Impairment	**1**	**1**	**10**	**12**
Transferred to assets held for sale [1]	**(1)**	**–**	**–**	**(1)**
Disposals	**(2)**	**(4)**	**(13)**	**(19)**
Exchange differences	**(1)**	**–**	**–**	**(1)**
At 31 December 2019	**55**	**29**	**306**	**390**
Net book value at:				
31 December 2019	**449**	**99**	**1,461**	**2,009**
1 January 2019	**453**	**106**	**1,654**	**2,213**

[1] The North America Civil Nuclear business was classified as a disposal group held for sale on 26 September 2019 – see note 23.

11 Investments

Equity accounted and other investments

	Equity accounted			Other
	Joint ventures £m	Associates £m	Total £m	Unlisted £m
At 1 January 2019	**412**	**–**	**412**	**22**
Additions	**8**	**–**	**8**	**2**
Disposals	**(4)**	**–**	**(4)**	**(6)**
Transfer from joint venture to joint operation	**(3)**	**–**	**(3)**	**–**
Impairment	**–**	**–**	**–**	**(1)**
Consolidation of previously non-consolidated subsidiary	**–**	**–**	**–**	**(4)**
Share of retained profit [1]	**12**	**–**	**12**	**–**
Reclassification of deferred profit to deferred income [2]	**4**	**–**	**4**	**–**
Exchange differences	**(19)**	**–**	**(19)**	**1**
Share of OCI	**(8)**	**–**	**(8)**	**–**
At 31 December 2019	**402**	**–**	**402**	**14**

[1] See table below
[2] The group's share of unrealised profit on sales to joint ventures is eliminated against the carrying value of the investment in the entity. Any excess amount once the carrying value is reduced to nil is recorded as deferred income.

Reconciliation of share of retained profit/(loss) to the income statement and cash flow statement:

	2019 £m	2018 £m
Share of results of joint ventures and associates	**141**	114
Adjustments for intercompany trading	**(37)**	(110)
Share of results of joint venture and associates to the Group (income statement)	**104**	4
Dividends paid by joint ventures and associates to the Group (cash flow statement)	**(92)**	(105)
Share of retained profit/(loss) above [1]	**12**	(101)

[1] During the year we sold spare engines to Rolls-Royce & Partners Finance, a joint venture company.

12 Inventories

	2019 £m	2018 £m
Raw materials	**522**	553
Work in progress	**1,652**	1,551
Finished goods	**2,119**	2,168
Payment on account	**27**	15
	4,320	4,287

13 Trade receivables and other assets

	Current		Non-current		Total	
	2019 £m	2018 * £m	2019 £m	2018 * £m	2019 £m	2018 * £m
Trade receivables [1]	**2,538**	2,680	**–**	–	**2,538**	2,680
Amounts owed by joint ventures and associates [1]	**197**	229	**12**	–	**209**	229
Costs to obtain contracts with customers [2]	**10**	8	**33**	34	**43**	42
Other receivables [3]	**1,490**	1,218	**181**	145	**1,671**	1,363
Prepayments	**356**	367	**248**	9	**604**	376
	4,591	4,502	**474**	188	**5,065**	4,690

* Balances at 31 December 2018 have been represented to move £217m from prepayments to other receivables to better reflect the nature of these balances.

[1] Includes **£267m** (2018: £146m) of trade receivables held to collect or sell and **£76m** (2018: nil) receivables from joint ventures and associates held to collect or sell.

[2] These are amortised over the term of the related contract, resulting in amortisation of **£8m** (2018: £13m) in the year. There were no impairment losses recognised in either year.

[3] Other receivables includes the RRSA component of the LTSA which is held separately on the basis of differing counterparties, together with receivables arising from overhaul activity outside of LTSA coverage.

The expected credit losses for trade receivables and other assets has increased by £12m to £138m (2018: £126m). Amounts included are considered as current so no ageing of expected credit losses is disclosed.

For many years the Group has undertaken the sale of trade receivables, without recourse, to banks. This is commonly known as ‘invoice discounting’ or ‘factoring’, and is common place in the aerospace industry. The absolute amount carried out in any given year depends on specific engine delivery volumes and phasing. This activity has been used to normalise customer receipts as certain aerospace customers have extended their payment terms. This in turn has helped to normalise our Group cash flows in line with physical delivery volumes. Over the last three years the sale of trade receivables has averaged £1,037m at the year-end. Trade receivables factored are generally due within the following quarter.

At 31 December 2019 £1,117m was drawn under factoring facilities, an increase of £95m compared to December 2018, representing cash collected before it was contractually due from the customer.

In exceptional circumstances, the sale of trade receivables has taken place where amounts contractually due from aerospace customers before the period end have been deferred into the following period. There was £504m relating to this activity at the 2018 year end. There were no equivalent amounts in 2019.

14 Contract assets and liabilities

	Current		Non-current		Total	
	2019 £m	2018 £m	**2019 £m**	2018 £m	**2019 £m**	2018 £m
Contract assets						
Contract assets with operators	**404**	295	**1,092**	1,108	**1,496**	1,403
Participation fee contract assets	**57**	49	**542**	605	**599**	654
	461	344	**1,634**	1,713	**2,095**	2,057

Contract assets are analysed as follows:		
Financial instruments (note 18):		
Other non-derivative financial assets	**–**	–
Non-financial instruments	**2,095**	2,057
	2,095	2,057

Contract assets include **£1,086m** (2018: £1,097m) of Civil Aerospace LTSA assets, with most of the remainder relating to Defence Aerospace. The main driver of the increase is driven by Defence Aerospace which increased by £90m due to the timing differences between revenue being recognised on a stage of completion basis and when customers are billed, as well as the timing of the flow down of amounts received in prior years from programme partners. Revenue from performance obligations satisfied in previous years has been adjusted by £(166)m.

Participation fee contract assets have reduced by £(55)m due to amortisation exceeding additions by £(35)m and FX on consolidation of overseas entities of £(20)m. No impairment losses (2018: none) of contract assets have arisen during the year.

The expected credit losses for contract assets has decreased by £9m in relation to normal business cycle to **£13m** (2018: £22m).

	Current		Non-current		Total	
	2019 £m	2018 £m	**2019 £m**	2018 £m	**2019 £m**	2018 £m
Contract liabilities	**4,228**	3,794	**6,612**	5,336	**10,840**	9,130

During the year, **£3,491m** (2018: £2,823m) of the opening contract liability was recognised as revenue and contract liabilities have increased by £1,710m. The main reasons for the increase being a £1,199m growth in Civil Aerospace LTSA liabilities to **£6,783m** (2018: £5,584m) driven by an overall growth in engine flying hour receipts. Our installed base increased by 6% in 2019 compared with 2018. In addition, engine flying hours increased by 7% year on year. Revenue from performance obligations satisfied in previous years has been adjusted by £(114)m.

15 Cash and cash equivalents

	2019 £m	2018 £m
Cash at bank and in hand	**825**	1,023
Money-market funds	**1,095**	1,222
Short-term deposits	**2,523**	2,729
Cash and cash equivalents per the balance sheet	**4,443**	4,974
Overdrafts (note 16)	**(8)**	(22)
Cash and cash equivalents per cash flow statement (page 28)	**4,435**	4,952
Cash held as collateral against third party obligations (note 19)	**–**	4

Cash and cash equivalents at 31 December 2019 includes **£34m** (2018: £31m) that is not available for general use by the Group. This balance predominantly relates to cash held in non-wholly owned subsidiaries and joint arrangements.

Balances are presented on a net basis when the Group has both a legal right of offset and the intention to either settle on a net basis or realise the asset and settle the liability simultaneously.

16 Borrowings and lease liabilities

	Current		Non-current		Total	
	2019 £m	2018 £m	**2019 £m**	2018 £m	**2019 £m**	2018 £m
Unsecured						
Overdraft	**8**	22	**–**	–	**8**	22
Bank loans	**27**	298	**16**	354	**43**	652
6.75% Notes 2019 £500m [1]	**–**	504	**–**	–	**–**	504
2.375% Notes 2020 US$500m [2]	**378**	–	**–**	383	**378**	383
2.125% Notes 2021 €750m [2]	**–**	–	**655**	699	**655**	699
0.875% Notes 2024 €550m [3]	**–**	–	**481**	498	**481**	498
3.625% Notes 2025 US$1,000m [3]	**–**	–	**781**	765	**781**	765
3.375% Notes 2026 £375m [4]	**–**	–	**410**	403	**410**	403
1.625% Notes 2028 €550m [3]	**–**	–	**501**	502	**501**	502
Other loans [5]	**22**	–	**52**	5	**74**	5
Total unsecured	**435**	824	**2,896**	3,609	**3,331**	4,433
Secured [6]						
Lease liabilities – property	**50**	–	**473**	–	**523**	–
Lease liability – aero engines	**261**	–	**1,463**	–	**1,724**	–
Lease liability – equipment	**29**	–	**78**	–	**107**	–
Obligations under finance leases	**–**	34	**–**	195	**–**	229
Total secured	**340**	34	**2,014**	195	**2,354**	229
Total borrowings and lease liabilities	**775**	858	**4,910**	3,804	**5,685**	4,662

1 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.
2 These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of GBP interest, which form a fair value hedge.
3 These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of GBP 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 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.
5 In 2019, the Group reclassified £79m as borrowings previously included in other financial liabilities. Other loans of **£8m** (2018: £5m) 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.
6 Obligations under leases are secured by related leased assets.

Some of the Group's borrowings are subject to the Group meeting certain obligations, including customary financial covenants. If the Group fails to meet its obligations these arrangements give rights to the lenders, upon agreement, to accelerate repayment of the facilities. At 31 December 2019, **none** of these were in breach (2018: none). There are no rating triggers contained in any of the Group's facilities that could require the Group to accelerate or repay any facility for a given movement in the Group's credit rating.

In addition, the Group has **£2,500m** (2018: £2,500m) of undrawn committed borrowing facilities which is available for at least the next four years.

17 Trade payables and other liabilities

	Current		Non-current		Total	
	2019 £m	2018 £m	**2019 £m**	2018 £m	**2019 £m**	2018 £m
Trade payables	**2,300**	2,520	**–**	–	**2,300**	2,520
Amounts owed to joint ventures and associates	**798**	635	**36**	18	**834**	653
Accruals	**1,751**	1,673	**89**	109	**1,840**	1,782
Deferred receipts from RRSA workshare partners	**17**	9	**516**	520	**533**	529
Government grants [1]	**12**	14	**71**	85	**83**	99
Other taxation and social security	**128**	125	**–**	–	**128**	125
Other payables [2]	**3,444**	3,316	**1,359**	1,208	**4,803**	4,524
	8,450	8,292	**2,071**	1,940	**10,521**	10,232

1 During the year **£12m** (2018: £8m) of government grants were released to the income statement.
2 Other payables include **£280m** (2018: £378m) for financial penalties from agreements with investigating bodies and **£nil** (2018: £245m) for deferred consideration in relation to the acquisition of ITP Aero. In addition, other payables includes amounts due to RRSA concessions, warranty credits and other sundry payables.

Our payment terms with suppliers vary on the products and services being sourced, the competitive global markets we operate in and other commercial aspects of suppliers' relationships. Industry average payment terms vary between 90-120 days. We offer reduced payment terms for smaller suppliers, so that they are paid in 30 days. In line with aerospace industry practice, we offer a SCF programme in partnership with banks to enable suppliers who are on our standard 75-day payment terms to receive their payment sooner. The SCF programme is available to suppliers at their discretion and does not change our rights and obligations with suppliers nor the timing of our payment to suppliers. At 31 December 2019 suppliers had drawn **£859m** under the SCF scheme (31 December 2018: £817m).

18 Financial instruments

Carrying values of other financial assets and liabilities

	Foreign exchange contracts £m	Commodity contracts £m	Interest rate contracts [1] £m	Total derivatives £m	Financial RRSAs £m	Other £m	C Shares £m	Total £m
2019								
Non-current assets	**234**	**14**	**203**	**451**	**–**	**16**	**–**	**467**
Current assets	**16**	**9**	**49**	**74**	**–**	**12**	**–**	**86**
Assets	**250**	**23**	**252**	**525**	**–**	**28**	**–**	**553**
Current liabilities	**(394)**	**(5)**	**–**	**(399)**	**(31)**	**(32)**	**(31)**	**(493)**
Non-current liabilities	**(2,960)**	**(6)**	**(9)**	**(2,975)**	**(79)**	**(40)**	**–**	**(3,094)**
Liabilities	**(3,354)**	**(11)**	**(9)**	**(3,374)**	**(110)**	**(72)**	**(31)**	**(3,587)**
	(3,104)	**12**	**243**	**(2,849)**	**(110)**	**(44)**	**(31)**	**(3,034)**
2018								
Non-current assets	47	4	292	343	–	–	–	343
Current assets	16	2	4	22	–	–	–	22
Assets	63	6	296	365	–	–	–	365
Current liabilities	(523)	(15)	–	(538)	(52)	(28)	(29)	(647)
Non-current liabilities	(3,304)	(25)	(4)	(3,333)	(175)	(34)	–	(3,542)
Liabilities	(3,827)	(40)	(4)	(3,871)	(227)	(62)	(29)	(4,189)
	(3,764)	(34)	292	(3,506)	(227)	(62)	(29)	(3,824)

[1] Includes the foreign exchange impact of cross-currency interest rate swaps.

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.

Movements in the fair values of derivative financial assets and liabilities were as follows:

	Foreign exchange instruments		**Commodity instruments**		**Interest rate instruments**		**Total**	
	2019 £m	2018 £m	**2019 £m**	2018 £m	**2019 £m**	2018 * £m	**2019 £m**	2018 £m
At 1 January	**(3,764)**	(2,312)	**(34)**	1	**292**	227	**(3,506)**	(2,084)
Movements in fair value hedges	**–**	–	**–**	–	**(27)**	101	**(27)**	101
Movements in cash flow hedges	**(4)**	(14)	**13**	(9)	**–**	(1)	**9**	(24)
Movements in other derivative contracts [1]	**(43)**	(2,122)	**36**	(22)	**14**	–	**7**	(2,144)
Contracts settled	**707**	684	**(3)**	(4)	**(36)**	(35)	**668**	645
At 31 December	**(3,104)**	(3,764)	**12**	(34)	**243**	292	**(2,849)**	(3,506)

* Prior year balances have been represented in order to give a more accurate reflection of the cash flows associated with interest rate instruments.

[1] Included in financing.

18 Financial instruments continued

Financial risk and revenue sharing arrangements (RRSAs) and other financial liabilities

The Group has financial liabilities arising from financial RRSAs. 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.

Movement in the carrying values were as follows:

	Financial RRSAs		Other liabilities		Other assets	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
At 1 January as previously reported	(227)	(247)	(62)	(57)	–	–
Reclassification to borrowings [1]	79	–	–	–	–	–
At 1 January restated	(148)	(247)	(62)	(57)	–	–
Exchange adjustments included in OCI	10	(3)	1	(1)	–	–
Additions	(4)	(3)	(37)	(25)	–	–
Financing charge [2]	(3)	(8)	(3)	(1)	–	–
Excluded from underlying profit:						
Changes in forecast payments [2]	1	(2)	–	–	–	–
Exchange adjustments [2]	6	–	–	–	–	–
Cash paid	28	36	29	22	–	–
Reclassification from trade receivables	–	–	–	–	16	–
At 31 December	(110)	(227)	(72)	(62)	16	–

[1] In 2019, the Group reclassified £79m as borrowings previously included in other financial liabilities.

[2] Included in financing.

19 Provisions for liabilities and charges

	At 1 January 2019 £m	Reclassified to lease liabilities (IFRS 16) £m	Charged to income statement £m	Reversed £m	Utilised £m	Transfers £m	Exchange differences £m	At 31 December 2019 £m
Trent 1000 exceptional costs [1]	779	–	1,275	–	(672)	–	–	1,382
Contract losses [2]	206	–	592	(4)	(78)	62	(5)	773
Warranty and guarantees	373	–	129	(19)	(123)	–	(15)	345
Customer financing	17	–	12	–	(7)	–	–	22
Restructuring	204	(8)	49	(48)	(128)	–	(1)	68
Insurance	87	–	25	(17)	(25)	–	–	70
Tax related interest and penalties	62	–	14	(19)	(1)	–	(1)	55
Employer liability claims	48	–	4	–	(3)	–	–	49
Other	141	(67)	33	(34)	(21)	(9)	(3)	40
	1,917	(75)	2,133	(141)	(1,058)	53	(25)	2,804
Current liabilities	1,122							858
Non-current liabilities	795							1,946

[1] The charge to the income statement for Trent 1000 includes £15m as a result of discount unwind.

[2] The charge to the income statement for contract losses includes a £40m impact from the change in discount rates on contract losses recorded in prior years as a result of the fall in US bonds, which drives the calculation of the risk-free discount rate.

In November, we announced the outcome of recent testing and a thorough technical and financial review of the Trent 1000 TEN programme, following technical issues which were identified in 2019. This resulted in a revised timeline and a more conservative estimate of durability for the improved HP turbine blade for the TEN variant. An exceptional charge of £1,361m (at underlying exchange rates) has been recorded in the income statement. The charge is £1,531m at prevailing exchange rates and net of £203m reflecting insurance receipts and contract accounting adjustments. Of the charge £1,275m has been recorded in relation to Trent 1000 exceptional costs, and a further £459m in relation to contract losses (see below). See note 2 for further details.

During 2019, we have utilised £672m of the Trent 1000 exceptional costs provision. This represents customer disruption costs settled in cash and credit notes, and remediation shop visit costs. We expect to use this provision over the period 2020 to 2023.

Provisions for contract losses are recorded when the direct costs to fulfil a contract are assessed as being greater than the expected revenue. Included within the provision charged of £592m, is £459m (at prevailing exchange rates) relating to the upfront recognition of future losses on a small number of contracts which are now loss making as a result of the margin impact of our updated HP turbine durability expectations on the Trent 1000 TEN. Provisions for contract losses are expected to be utilised over the term of the customer contracts, typically within 10 – 15 years.

Provisions for warranties and guarantees primarily relate to products sold and generally cover a period of up to three years.

Customer financing provisions cover guarantees provided for asset value and/or financing.

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 many 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$2.8bn** (2018: US$2.3bn) (on a discounted basis) to provide facilities to enable customers to purchase aircraft (of which approximately US$656m could be called during 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. Consequently, the Directors do not consider that there is a significant exposure arising from the provision of these facilities.

19 Provisions for liabilities and charges continued

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 reflect better 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 sterling equivalent at the reporting date spot rate. The values of aircraft providing security are based on advice from a specialist aircraft appraiser.

	2019		2018	
	£m	**$m**	£m	$m
Gross commitments	**60**	***79***	93	*119*
Value of security [1]	**(9)**	***(11)***	(24)	*(30)*
Indemnities	**(8)**	***(11)***	(19)	*(24)*
Net commitments	**43**	***57***	50	*65*
Net commitments with security reduced by 20% [2]	**43**	***57***	60	*77*
[1] Security includes unrestricted cash collateral of	**–**	**–**	4	*6*

[2] Although sensitivity calculations are complex, the reduction of relevant security by 20% illustrates the sensitivity to changes in this assumption.

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.

Provisions for tax related interest and penalties relate to uncertain tax positions in some of the jurisdictions in which the Group operates. Utilisation of the provisions will depend on the timing of resolution of the issues with the relevant tax authorities.

The provision relating to employer healthcare liability claims is as a result of an historical insolvency of the previous provider and is expected to be utilised over the next 30 years.

Other provisions comprise a number of liabilities with varying expected utilisation rates.

20 Post-retirement benefits

Amounts recognised in the income statement

	2019			2018		
	UK schemes £m	**Overseas schemes £m**	**Total £m**	UK schemes £m	Overseas schemes £m	Total £m
Defined benefit schemes:						
Current service cost and administrative expenses	**164**	**52**	**216**	183	58	241
Past-service cost in respect of equalisation [1]	**–**	**–**	**–**	121	–	121
Other past service cost/(credit) [2]	**–**	**6**	**6**	(9)	(1)	(10)
	164	**58**	**222**	295	57	352
Defined contribution schemes	**66**	**91**	**157**	41	100	141
Operating cost	**230**	**149**	**379**	336	157	493
Net financing (credit)/charge in respect of defined benefit schemes	**(59)**	**36**	**(23)**	(55)	32	(23)
Total income statement charge	**171**	**185**	**356**	281	189	470

[1] In the UK in 2018, past-service costs of £121m were recognised relating to the estimated cost of equalising benefits earned after May 1990 between men and women. The UK scheme (Rolls-Royce UK Pension Fund) has to provide Guaranteed Minimum Pensions (GMPs) which, as a result of statutory rules, have been calculated differently for men and women. Although equal treatment in pension provision for males and females has been required since 1990, there has been uncertainty on whether and how pension schemes are required to equalise GMPs. A High Court judgement on the Lloyds Banking Group hearing was published on 26 October 2018. The judgement confirmed that GMPs earned from 1990 must be equalised and highlighted an acceptable range of methods. The estimated cost of this equalisation was £97m. In addition, a cost of £24m was recognised in relation to obligations to equalise certain other post-1990 benefits between men and women. The total cost of £121m represents the Directors' best estimate of the cost, based on actuarial advice. However, the final cost will differ from this amount when the final method of equalisation is agreed with the Trustee and subsequently implemented.

[2] In addition in 2018, a past-service credit of £9m arose related to the restructuring activities. This credit was offset against the restructuring costs. All amounts were excluded from the underlying results.

On 5 June 2019, the Group entered into a partial buy-in with Legal & General Assurance Society Limited covering the benefits of circa 33,000 in-payment pensioners. As a result of the transaction, an asset re-measurement net loss estimated at £600m has been recognised within the line 'Actuarial gains/(losses) recognised in OCI'. The buy-in was in anticipation of a buy-out. On 1 December 2019, 90% of the buy-in liabilities (covering 29,614 pensioners) were transferred, resulting in pension assets and pension liabilities of £3.6bn being derecognised from the Group's balance sheet. The remaining 10% of the buy-in liabilities (covering 2,261 pensioners) was concluded in January 2020 with the final balancing payment made on 1 February 2020. Pension assets and liabilities of £408m will be derecognised in 2020. There is no impact upon the income statement arising from this transaction.

20 Post-retirement benefits continued

Amounts recognised in the balance sheet in respect of defined benefit schemes

	2019 UK schemes £m	2019 Overseas schemes £m	2019 Total £m	2018 UK schemes £m	2018 Overseas schemes £m	2018 Total £m
At 1 January	1,926	(1,312)	614	2,108	(1,370)	738
Exchange adjustments	–	54	54	–	(32)	(32)
Current service cost and administrative expenses	(164)	(52)	(216)	(183)	(58)	(241)
Other past service credit	–	(6)	(6)	(112)	1	(111)
Financing recognised in the income statement	59	(36)	23	55	(32)	23
Contributions by employer	199	67	266	117	64	181
Actuarial gains/(losses) recognised in OCI	(1,335)	(161)	(1,496)	646	139	785
Returns on plan assets excluding financing recognised in OCI	456	106	562	(705)	(53)	(758)
Disposal of businesses (see note 23)	–	28	28	–	31	31
Transfers	–	(37)	(37)	–	(2)	(2)
At 31 December	1,141	(1,349)	(208)	1,926	(1,312)	614
Post-retirement scheme surpluses – included in non-current assets [1]	1,141	29	1,170	1,926	18	1,944
Post-retirement scheme deficits – included in non-current liabilities	–	(1,378)	(1,378)	–	(1,303)	(1,303)
Post-retirement scheme deficits – liabilities held for sale	–	–	–	–	(27)	(27)
	1,141	(1,349)	(208)	1,926	(1,312)	614

[1] The surplus in the UK scheme is recognised as, on ultimate wind-up when there are no longer any remaining members, any surplus would be returned to the Group, which has the power to prevent the surplus being used for other purposes in advance of this event.

Future contributions

The Group expects to contribute approximately **£170m** to its defined benefit schemes in 2020 (2019: £220m): UK £100m, Overseas £70m (2019: UK £140m, Overseas £80m).

In the UK, the funding is based on a statutory triennial funding valuation process. This includes a negotiation between the Group and the Trustee on actuarial assumptions used to value obligations (Technical Provisions) which may differ from those used for accounting set out above. The assumptions used to value Technical Provisions must be prudent rather than a best estimate of the liability. Most notably, the Technical Provision discount rate is currently based upon UK Government yields plus 0.5% rather than being based on yields of AA corporate bonds. Following the triennial valuation process, a Schedule of Contributions (SoC) must be agreed which sets out the required contribution for current service cost and any contributions from the employer to eliminate a deficit. The most recent valuation, as at 31 March 2017, agreed by the Trustee in December 2017, showed that the UK scheme was estimated to be 112% funded on the Technical Provisions basis. Employer contributions (inclusive of employee contributions paid by a salary sacrifice arrangement) will subsequently be paid at a rate of 28.5% during 2020 until a new SoC is agreed (2019: 27%). The current SoC includes an arrangement for a potential increase in contributions during 2021 to 2023 (capped at £48.3m a year) if the Technical Provisions funding position is below 107% at 31 March 2020. As at 31 December 2019, the Technical Provisions funding position was estimated to be **112%** (2018: 111%).

Changes to UK defined benefit scheme

A consultation with active managers in the UK scheme was concluded in January 2020. The consultation process agreed certain changes for future accrual for the relevant manager group which will mitigate future funding cost increases. The accounting impact of this change will occur in 2020 rather than 2019. The change is expected to be immaterial to these accounts. The triennial valuation due at 31 March 2020 for the UK scheme, will take these changes into account.

21 Leases

Leases as lessee

The net book value of lease right-of-use assets at 31 December 2019 was £2,009m (as per note 10) with a lease liability of £2,354m (as per note 16).

	2019 £m
Land and buildings depreciation and impairment [1]	(59)
Plant and equipment depreciation [2]	(33)
Aircraft and engines depreciation and impairment [3]	(319)
Total depreciation and impairment charge for right-of-use assets	**(411)**
Interest expense [4]	(88)
Expense relating to short-term leases of 12 months or less recognised as an expense on a straight-line basis [2]	(23)
Expense relating to variable lease payments not included in lease liabilities [3,5]	(1)
Total lease expense	**(523)**
Income from sub-leasing right-of-use assets	79
Total amount recognised in income statement	**(444)**

1 Included in cost of sales and commercial and administration costs depending on the nature and use of the right-of-use asset.

2 Included in cost of sales, commercial and administration costs, or research and development depending on the nature and use of the right-of-use asset.

3 Included in cost of sales.

4 Included in financing costs.

5 Variable lease payments primarily arise on a small number of contracts where engine lease payments are solely dependent upon utilisation rather than a periodic charge.

The total cash outflow for leases in 2019 was £383m. Of this: £359m related to leases reflected in the lease liability; £23m to short-term leases where lease payments are expensed on a straight-line basis; and £1m for variable lease payments where obligations are only due when the right-of-use assets are used. The timing difference between the income statement charge and cash flow relates to costs incurred at the end of leases for residual value guarantees that are recognised within depreciation over the term of the lease, the most significant amounts relate to engine leases.

The Group's leasing activities as a lessee and how they are accounted for
The Group leases aero engines that are used to support customers' aircraft fleets; land and buildings used for production, administration or training purposes; and equipment used in the manufacturing process and to support commercial and administrative activities. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease arrangements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

Until 31 December 2018, leases were classified as either finance or operating leases. Payments made under operating leases and residual value guarantees were charged to the income statement on a straight-line basis over the period of the lease. From 1 January 2019, leases are recognised as a right-of-use asset and a corresponding lease 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.

Right-of-use assets and lease liabilities arising over the lease term are now initially measured on a present value basis. The lease term represented is the non-cancellable period of the lease together with periods covered by an option to extend the lease where the Group is reasonably certain to extend. Lease liabilities include the net present value of the following lease payments where such flows exist:

- fixed payments less any lease incentive;
- 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 terminating the lease, if the lease term reflects the Group exercising that option.

Leases for engines typically contain no specific contractual right to renew. Certain land and building leases have renewal options with renewal dates for the most significant property leases evenly spread over 2022-2028 and in 2041. Such judgements on lease terms are made each period end and consider the specific terms of the lease and the operational significance of the site, especially where utilised for manufacturing activities. Lease obligations beyond the renewal dates are included in the lease liability where we are reasonably certain to extend the lease.

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. The cost of meeting these requirements are included in the estimate of the lease payments set out above. The amount payable is dependent upon the utilisation of the engines over the lease term, whether the engine is restored to the required condition by performing an overhaul at our own cost or through the payment of amounts specified in the contract and any new contractual arrangements arising when the current lease contracts end. Where estimates of payments change, an adjustment is made to the lease liability and the right-of-use asset. Liabilities in USD and other non-functional currencies are reported at the closing spot rates with changes arising from a change in exchange rates reported within financing.

On transition to IFRS 16 on 1 January 2019, finance leases continued to be recognised at their 2018 closing value and operating leases were measured at the present value of the remaining lease payments discounted using an incremental borrowing rate appropriate to the lease. For new leases, the lease payments are discounted using the interest rate implicit in the lease or if that rate cannot be readily determined, which is generally the case for leases in the Group, the incremental borrowing rate, being the rate required to pay to borrow the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment with similar terms, security and conditions.

To determine the incremental borrowing rate, the Group uses a build-up approach that starts with the risk-free interest rate which is then adjusted for credit risk to reflect the nature of the borrowing based on empirical evidence of similar external borrowings undertaken by the Group. The rate used reflects the term and currency of the lease.

The Group is exposed to potential future increases or reductions in lease payments where the amount paid is based on an index (such as LIBOR) or rate, which are not included in the lease liability until it takes effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is remeasured and an equivalent adjustment made to the right-of-use asset except where the change results from a change in floating interest rates when a revised discount rate is used that reflects changes in the interest rate.

21 Leases continued

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of the 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 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.

There was a single onerous lease contract where as a permitted practical expedient the Group has adjusted the right-of-use asset at the date of initial application by the amount of the provision on the balance sheet at 31 December 2018.

Income from sub-leasing right-of-use assets is primarily generated from the use of engines by our Civil Aerospace customers. In a small number of circumstances current excess property capacity is sub-let at market rates.

22 Contingent liabilities

Contingent liabilities in respect of customer financing commitments are described in note 19.

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 individuals. In addition, we could still be affected by 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.

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 as previously reported, 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.

The Group's share of equity accounted entities' contingent liabilities is **nil** (2018: nil).

23 Acquisitions and disposals

Acquisitions

eAircraft business
On the 30 September 2019, the Group completed the acquisition of the electric and hybrid-electric aerospace propulsion activities of Siemens. On acquisition the book value of assets acquired consisted of £2.8m of property, plant and equipment and £0.2m of other assets and liabilities. Of the £43m (€48.5m) acquisition cost, which was settled in cash, £38m has been allocated to identifiable intangible assets and £5m to other assets and liabilities. Goodwill of £11m was recognised on the transaction.

Qinous
The Group increased its shareholding in the Berlin-based electricity storage specialist, Qinous GmbH from 19.9% to 73.1% on the 15 January 2020 for a consideration of €10m. The acquisition will be incorporated within our Power Systems business.

23 Acquisitions and disposals continued

Disposals

Commercial Marine and Rolls-Royce Power Development Limited

On the 1 April 2019, the Group completed the sale of its Commercial Marine business to KONGSBERG for £547m. The business was disclosed as a disposal group held for sale from 30 June 2018. In our 2018 half-year financial statements, we 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* we have recycled the cumulative currency translation reserve through the income statement in 2019. This has resulted in a cumulative currency translation gain of £98m.

On the 15 April 2019, the Group sold its shareholding in Rolls-Royce Power Development Limited (RRPD) to Rockland Capital Partners for £46m. The principal activity of this company was to operate a fleet of six industrial Trent power stations in the UK.

	Commercial Marine £m	RRPD £m	Total £m
Proceeds			
Cash consideration	**547**	**46**	**593**
Cash and cash equivalents disposed	**(118)**	**–**	**(118)**
Net cash consideration	**429**	**46**	**475**
Disposal costs paid	**(21)**	**(1)**	**(22)**
Cash inflow per cash flow statement	**408**	**45**	**453**
Assets and liabilities disposed			
Intangible assets	**236**	**–**	**236**
Property, plant and equipment	**139**	**7**	**146**
Right-of-use assets	**40**	**–**	**40**
Deferred tax assets	**7**	**–**	**7**
Inventory	**207**	**4**	**211**
Trade receivables and other assets	**210**	**4**	**214**
Current tax assets	**1**	**–**	**1**
Lease liabilities	**(39)**	**–**	**(39)**
Trade payables and other liabilities	**(274)**	**(5)**	**(279)**
Deposits (payments received on account)	**(74)**	**–**	**(74)**
Provisions for liabilities and charges	**(27)**	**–**	**(27)**
Post-retirement scheme deficits	**(28)**	**–**	**(28)**
Net assets disposed	**398**	**10**	**408**

The gain of disposal of businesses totalled £139m.

	Commercial Marine £m	RRPD £m	Total £m
Income statement			
Net cash consideration	**429**	**46**	**475**
Carrying amount of net assets sold	**(398)**	**(10)**	**(408)**
Profit on disposal before disposal costs	**31**	**36**	**67**
Disposal costs	**(23)**	**(3)**	**(26)**
Profit on disposal on business before tax	**8**	**33**	**41**
Tax on disposal	**–**	**–**	**–**
Profit on disposal of business after tax	**8**	**33**	**41**
Cumulative currency translation gain recycled from OCI	**98**	**–**	**98**
Gain recognised in the income statement	**106**	**33**	**139**

Trigno Energy S.r.l.

On 29 January 2020 the Group exercised its put option to sell 100% of the shares held in Trigno Energy S.r.l. The transaction is expected to complete in the first quarter of 2020. The shares will be transferred to Pilkington Italia S.r.l. for an estimated consideration of €5.6m.

Businesses held for sale

On the 26 September 2019, the Group signed an agreement for the sale of the North America Civil Nuclear business to Westinghouse Electric Company LLC. for a cash consideration of approximately $18m. The sale was completed on 31 January 2020.

As a result of the decision to classify the business as a disposal group held for sale, in accordance with IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations,* its carrying value was assessed against the anticipated proceeds and the disposal costs. An impairment charge of £25m has been recognised in the income statement, of which £15m relates to goodwill and an additional £10m impairment charge to property, plant and equipment and intangible assets. The impairment charge was allocated to the non-core businesses. The remaining assets of £17m have been transferred to assets held for sale, together with associated liabilities of £14m at 31 December 2019.

On the 17 December 2019, the Group signed a share purchase agreement with Valsoft Corp. for the sale of the Knowledge Management System business. The consideration for the disposal is expected to be $2.6m. The sale was completed on 3 February 2020.

Disposal – 2018

L'Orange

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 at 31 December 2019. Profit on disposal of the business (net of disposal costs) was £358m.

24 Derivation of summary funds flow statement

The table below shows the derivation of the summary funds flow statement (lines marked *) on page 11 from the cash flow statement on page 28.

	2019		2018 †	
	£m	**£m**	£m	£m
*** Underlying operating profit (see note 2)**		**808**		616
Depreciation and impairment of property, plant and equipment	**532**		521	
Amortisation and impairment of intangible assets	**372**		565	
Depreciation and impairment of right-of-use assets	**411**		–	
Impairment of goodwill	**(84)**		(155)	
Acquisition accounting	**(163)**		(175)	
*** Depreciation and amortisation**		**1,068**		756
*** Lease payments (capital plus interest)**		**(319)**		–
*** Additions of intangible assets**		**(591)**		(680)
*** Purchases of property, plant and equipment**		**(747)**		(905)
*** Increase in inventories**		**(43)**		(616)
Movement in receivables/payables	**77**		1,129	
Movements in contract balances	**526**		363	
Realised derivatives in financing	**(187)**		(465)	
Revaluation of trading assets (excluding exceptional items)	**158**		170	
*** Movement on receivables/payables/contract balances (excluding Civil LTSA)**		**574**		1,197
*** Underlying Civil Aerospace LTSA contract balances**		**754**		679
*** Movement on provisions**		**(506)**		(242)
*** Trent 1000 insurance**		**173**		–
*** Net interest received and paid**		**(73)**		(70)
*** Other**		**(41)**		22
*** Trading cash flow**		**1,057**		757
*** Contributions to defined benefit schemes in excess of underlying PBT charge**		**(9)**		59
*** Tax**		**(175)**		(248)
*** Group free cash flow**		**873**		568
Of which: Disposed entities		***(41)***		*(78)*
Group free cash flow (pre disposed entities)		***914***		*646*
Of which: Non-core businesses		***3***		*(2)*
Core free cash flow		***911***		*648*
*** Shareholder payments**		**(224)**		(219)
*** Acquisition of eAircraft**		**(43)**		–
*** Disposal of Commercial Marine and RRPD (2018: Disposal of L'Orange)**		**453**		573
*** Exceptional restructuring costs**		**(216)**		(70)
*** DPA payments**		**(102)**		–
*** Pension fund contribution**		**(35)**		–
*** IFRS 16**		**123**		–
*** Other**		**(8)**		10
*** Foreign exchange**		**(98)**		54
*** Change in net funds**		**723**		916
Change in net funds		**723**		916
IFRS 16 impact (non cash)		**(123)**		–
Reclassification of other financial liabilities to borrowings		**(79)**		–
Change in net funds excluding IFRS16		**521**		916

† The comparative information for the year ended 31 December 2018 has been re-presented to be on a comparable basis with the presentation adopted for the year ended 31 December 2019. 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' have been included within those items.

During the year ended 31 December 2019, the Group received insurance receipts of £173m relating to the Trent 1000 in-service issues. This amount has been recognised within the Group's underlying results – see note 2.

24 Derivation of summary funds flow statement continued

Free cash flow is a measure of financial performance of the business' cash flow to see what is available for distribution among those 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 table below shows a reconciliation of free cash flow to the change in cash and cash equivalents presented in the cash flow statement on page 28.

	31 December 2019		31 December 2018		
	£m	**£m**	£m	£m	**Source**
Change in cash and cash equivalents		**(413)**		1,953	A
Returns to shareholders		**224**		219	A
Net cash flow from changes in borrowings and lease liabilities (2018: finance leases)		**1,385**		(1,091)	A
Increase in short-term investments		**–**		3	A
Acquisition of eAircraft	**43**		–		A
Disposal of Commercial Marine and RRPD (2018: Disposal of L'Orange)	**(453)**		(573)		A
Other acquisitions and disposals	**1**		(10)		B
Changes in group structure		**(409)**		(583)	
Payments of financial penalties from agreements with investigating bodies		**102**		–	A
Exceptional restructuring expenditure		**216**		70	B
Pension fund contribution		**35**		–	B
Other		**4**		(3)	B
Capital element of lease repayments [1]		**(271)**		–	A
Free cash flow		**873**		568	

[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.

Sources:
A Cash flow statement
B Cash flow statement adjusted for non-underlying items including exchange differences

25 Impact of adopting IFRS 16 *Leases*

For leases previously classified as finance leases, the Group recognised the carrying amount of the lease asset and lease liability immediately before transition as the carrying amount of the right-of-use asset and the lease liability at the date of initial application. The measurement principles of IFRS 16 are only applied after that date.

The following table reconciles the operating lease obligations under the previous accounting standard, IAS 17 *Leases*, to the lease liability recorded under IFRS16 on transition:

	£m
Operating lease commitments as reported at 31 December 2018	2,343
Lease commitments at end of aero engines lease contracts previously reflected in provisions and other liabilities	515
Discounted using the incremental borrowing rate at the date of initial application	(749)
Additional commitments recognised during final data review [1]	180
Impact of adoption of IFRS 16	**2,289**
Commitments relating to disposal groups	(41)
At 1 January 2019	**2,248**
Finance lease liabilities recognised as at 31 December 2018	229
Lease liability recognised as at 1 January 2019	**2,477**
Of which are:	
Current lease liabilities	**322**
Non-current lease liabilities	**2,155**

[1] These have been offset by right-of-use assets with an equivalent value.

The recognised right-of-use assets relate to the following types of asset:

	1 January 2019 £m
Land and buildings	453
Plant and equipment	106
Aircraft and engines	1,654
Total right-of-use assets	2,213

25 Impact of adopting IFRS 16 *Leases* continued

The change in accounting policy affected the following items in the balance sheet on 1 January 2019:

Consolidated balance sheet

	Previous accounting as at 31 December 2018 £m	IFRS 16 impact £m	Transferred to assets held for sale [1] £m	As at 1 January 2019 £m
ASSETS				
Property, plant and equipment [2]	4,929	(197)	–	**4,732**
Right-of-use assets [3]	–	2,254	(41)	**2,213**
Deferred tax assets [4]	2,092	2	–	**2,094**
Other non-current assets	8,016	–	–	**8,016**
Non-current assets	15,037	2,059	(41)	**17,055**
Current assets	16,070	–	–	**16,070**
Assets held for sale	750	–	41	**791**
TOTAL ASSETS	31,857	2,059	–	**33,916**
LIABILITIES				
Borrowings and lease liabilities	(858)	(295)	7	**(1,146)**
Trade payables and other liabilities [5]	(8,292)	49	–	**(8,243)**
Provisions for liabilities and charges [6]	(1,122)	30	–	**(1,092)**
Other current liabilities	(4,579)	–	–	**(4,579)**
Current liabilities	(14,851)	(216)	7	**(15,060)**
Borrowings and lease liabilities	(3,804)	(1,994)	34	**(5,764)**
Trade payables and other payables [5]	(1,940)	60	–	**(1,880)**
Deferred tax liabilities [4]	(962)	6	–	**(956)**
Provisions for liabilities and charges [6]	(795)	45	–	**(750)**
Other non-current liabilities	(10,181)	–	–	**(10,181)**
Non-current liabilities	(17,682)	(1,883)	34	**(19,531)**
Liabilities associated with assets held for sale	(376)	–	(41)	**(417)**
TOTAL LIABILITIES	(32,909)	(2,099)	–	**(35,008)**
NET LIABILITIES	(1,052)	(40)	–	**(1,092)**
EQUITY				
Accumulated losses [7]	(2,991)	(40)	–	**(3,031)**
Other equity attributable to ordinary shareholders	1,917	–	–	**1,917**
Equity attributable to ordinary shareholders	(1,074)	(40)	–	**(1,114)**
Non-controlling interests	22	–	–	**22**
TOTAL EQUITY	(1,052)	(40)	–	**(1,092)**

1 Relates to the Commercial Marine business which was classified as 'held for sale' at 31 December 2018. See note 23 for more details.

2 Transfer of net book value of finance leased assets to right-of-use assets.

3 Initial recognition of right-of-use assets accounted for under IFRS 16.

4 Deferred tax on the difference between the right-of-use assets measured on a retrospective basis at the Group's incremental borrowing rate and the lease liabilities at transition date.

5 Lease-related creditors reclassified against the IFRS 16 right-of-use asset on transition.

6 Provisions related to engine residual value guarantees reclassified against IFRS 16 right-of-use assets.

7 Post-tax difference between the right-of-use assets measured on a retrospective basis and the lease liabilities at the transition date.

Principal risks and uncertainties

The following table describes the principal risks facing the Group, notwithstanding that there are other risks that may occur and may impact the achievement of the Group's objectives:

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT
SAFETY Failure to meet the expectations of: i) our customers to provide safe products; or ii) people who work for or with us to provide a safe and healthy place of work which minimises the impact on the environment; would adversely affect our reputation and long-term sustainability.	We manage product safety by: • Ensuring clear accountability for safety and a culture that puts safety first. • Applying our engineering design and validation process from initial design, through production and into service to reduce the safety risks so far as is reasonably practicable; always ensuring that we meet or better the relevant company, legal, regulatory and industry requirements. • Operating a safety management system, governed by the product safety assurance board, and subject to continual improvement based on review of existing and emerging threats, experience, and industry • best practice. • Ensuring that our products and those of our suppliers conform to their specification. • Ensuring that everyone receives appropriate product safety awareness training. We manage people's safety and wellbeing by: • Ensuring clear accountability for HSE and a culture that puts operating safely first. • Refreshing our global HSE policy and introducing our Zero Harm programme. • Operating an HSE management system, including reporting, investigating and learning lessons from incidents. • Driving sustainable use of resources.
BUSINESS CONTINUITY The major disruption of the Group's operations, which results in our failure to meet agreed customer commitments and damages our prospects of winning future orders. Disruption could be caused by a range of events, for example: extreme weather or natural hazards (e.g. earthquakes, floods); political events; financial insolvency of a critical supplier; scarcity of materials; loss of data; and fire or infectious disease. The consequences of these events could have adverse impact on our people, our internal facilities or our external supply chain.	• Sustaining investment in adequate capacity, modern equipment and facilities, dual sources of supply and researching alternative materials. • Promoting and developing resilience within our external supplier partners. • Providing a supplier finance programme in partnership with banks to enable our suppliers to benefit from the Rolls-Royce credit rating and access funds at low interest rates. • Building a resilient culture through flexible and collaborative working, using our single Group-wide incident management framework. • Developing, maintaining and regularly exercising effective business continuity and crisis management plans to prepare our people to respond quickly and confidently to any business disruption. • Sharing lessons learned identified through exercises • or incidents. • Scanning the horizon to provide awareness of emerging risks/potential incidents.
CLIMATE CHANGE Understanding of the impact of climate change and our products increases our susceptibility to physical and transitional climate-related risks. We will need to transition our products and services to a lower-carbon economy. Failure to consider changes in atmospheric conditions could result in changes in maintenance and overhaul requirements, affecting revenues generated by our in service fleet and jeopardising the viability of a services based business model. Failure to transition from carbon-intensive products and services at pace could impact our ability to win future business; achieve operating results; attract and retain talent; secure access to funding; realise future growth opportunities, or force government intervention to limit emissions.	• Investment in our existing product range to reduce its carbon impact and in zero carbon technologies to replace our existing products. • Partnering programme to introduce the skills, capability and hunger to rapidly develop class leading solutions. • Seeking a balanced portfolio of products, customers and revenue streams to reduce our dependence on any one product, customer or carbon emitting fuel source. • Clear communication and acknowledgment of our role in the problem and the solution, and the actions we are taking to enact a credible plan of action in line with society's expectations.
COMPETITIVE ENVIRONMENT The presence of competitors in the majority of our markets means that the Group is susceptible to significant price pressure for original equipment or services. Our main competitors have access to significant government funding programmes as well as the ability to invest heavily in technology and industrial capability. Disruptive technologies or new entrants with alternative business models could also reduce our ability to sustainably win future business, achieve operating results and realise future growth opportunities.	• Horizon scanning for emerging technology and other competitive threats, including patent searches. • Establishing our Innovation Hub to invest in innovation, manufacturing and production, and ensure continuing governance of technology programmes. • Enhancing our capabilities to access, invest in and develop key technologies and innovative service offerings which differentiate us competitively. • Improving the quality, delivery and durability of our products and services through investment in innovation, manufacturing and production capabilities. • Forming strategic partnerships and conducting joint research programmes with our partners. • Driving down cost to improve margins. • Protecting credit lines. • Strengthening our balance sheet to enable access to cost-effective sources of third party funding.

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT
COMPLIANCE Non-compliance by the Group with legislation, the terms of the DPAs or other regulatory requirements in the heavily regulated environment in which it operates (for example, export controls; use of controlled chemicals and substances; anti-bribery and corruption; and tax and customs legislation). This could affect our ability to conduct business in certain jurisdictions and would expose the Group to potential: reputational damage; financial penalties; debarment from government contracts for a period of time; and suspension of export privileges (including export credit financing), each of which could have a material adverse effect.	• Taking an uncompromising approach to compliance. • Operating an extensive compliance programme. Global mandatory policies, processes and training are disseminated throughout the Group and are updated from time to time to ensure their continued relevance, and to ensure that they are complied with, both in spirit and to the letter. • Regular reviews of the strength of relevant teams including the ethics, anti-bribery and corruption, compliance, tax, sustainability and export control teams. • A legal team is in place to manage any ongoing regulatory investigations. • Engaging with all relevant external regulatory authorities. • Implementing a comprehensive REACH compliance programme. This includes ensuring that we and our supply chain are covered by REACH authorisations for a number of chemicals needed for our products, establishing appropriate data systems and processes and working with our suppliers, customers and trade associations.
CYBER THREAT An attempt to cause harm to the Group, its customers, suppliers and partners through the unauthorised access, manipulation, corruption, or destruction of data, systems or products through cyber space.	• Implementing defence in depth through deployment of multiple layers of software and processes including web gateways, filtering, firewalls, intrusion, advanced persistent threat detectors and integrated reporting. • Running security and network operations centres. • Actively sharing cyber security information through industry, government and security forums. • Information and product assurance processes. • Training and awareness to improve cyber security culture.
MAJOR PRODUCT PROGRAMME DELIVERY Failure to deliver a major programme on time, within budget, to technical specification or falling significantly short of customer expectations, or not delivering the planned business benefits, would have potentially significant adverse financial and reputational consequences, including the risk of impairment of the carrying value of the Group's intangible assets and the impact of potential litigation.	• Major programmes are subject to Board approval. • Reviewing major programmes at levels and frequencies appropriate to their criticality and performance, against key financial and non-financial deliverables and potential risks throughout the programmes lifecycle. • Investing in facilities and people to manage the level of disruption to our customers from Trent 1000 in-service issues and developing longer-term solutions to these issues. • Conducting technical audits at pre-defined points which are performed by a team that is independent from the programme. • Requiring programmes to address the actions arising from reviews and audits and monitoring and controlling progress through to closure. • Applying knowledge management principles to provide benefit to current and future programmes.
MARKET AND FINANCIAL SHOCK The Group is exposed to a number of market risks, some of which are of a macro-economic nature (for example, foreign currency, oil price, interest rates) and some of which are more specific to the Group (for example, liquidity and credit risks, reduction in air travel or disruption to other customer operations). Significant extraneous market events could also materially damage the Group's competitiveness and/or creditworthiness. This would affect operational results or the outcomes of financial transactions.	• Maintaining a strong balance sheet, through managing cash balances and debt levels. • Providing financial flexibility by maintaining high levels of liquidity and an investment grade credit rating. • Sustaining a balanced portfolio through earning revenue both from the sale of original equipment and aftermarket services, providing a broad product range and addressing diverse markets that have differing business cycles. • Deciding where and what currencies to source in, and where and how much credit risk is extended or taken. The Group has a number of treasury policies that are designed to hedge residual risks using financial derivatives (foreign exchange, interest rates and commodity price risk). • Review debt financing and hedging in light of volatility in external financial markets caused by external events, such as Brexit or other geopolitical changes.
POLITICAL RISK Geopolitical factors that lead to an unfavourable business climate and significant tensions between major trading parties or blocs which could impact the Group's operations. Examples include: changes in key political relationships; explicit trade protectionism, differing tax or regulatory regimes, potential for conflict or broader political issues; and heightened political tensions.	• Where possible, diversifying our global operations to avoid excessive concentration of risks in particular areas. • The Group's businesses, strategic marketing network and global government relations teams proactively monitoring local situations. • We develop and maintain relationships with governments and stakeholders and proactively influence policy, regulation and legislation where it affects us. • Steering committee to co-ordinate activities across the Group and minimise the impact of Brexit.
STRATEGIC TRANSFORMATION Failure to deliver our strategic transformation, including changing our behaviours could result in: missed opportunities; dissatisfied customers; disengaged employees; ineffective use of our scarce resources; and increasing the likelihood of other principal risks occurring. This could lead to a business that is overly dependent on a small number of products and customers; failure to achieve our vision; non-delivery of financial targets and not meeting investor expectations.	• Implementing a new organisational operating model. • Focusing on behaviours to drive cultural change. • Simplifying the processes in our Rolls-Royce • Management System, whilst ensuring we comply with our legal, contractual and regulatory requirements. • Horizon scanning and scenario planning. • Investing in products with lower emissions, reducing our impact on climate change. • Employee innovation portal.

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT
TALENT AND CAPABILITY Inability to identify, attract, retain and apply the critical capabilities and skills needed in appropriate numbers to effectively organise, deploy and incentivise our people would threaten the delivery of our strategies, business plans and projects.	• Attracting, rewarding and retaining the right people with the right skills globally and locally in a planned and targeted way, including regular benchmarking of remuneration. • Developing and enhancing organisational, leadership, technical and functional capability to deliver global programmes. • Continuing a strong focus on individual development and succession planning, recognising the changing nature of careers and expectations of work. • Proactively monitoring retirement in key areas and actively managing the development and career paths of our people with a special focus on employees with the highest potential. • Embedding a lean, agile, high-performance culture where everyone can be at their best that tightly aligns Group strategy with individual and team objectives. • Incentivising and effectively deploying the critical capabilities, skills and people needed to deliver our strategic priorities, plans and projects whilst implementing the Group's major programme to transform its business, to be resilient and to act with pace and simplicity. • Tracking engagement through regular employee opinion surveys and a commitment to drive year-on-year improvement to employee engagement.

Annual General Meeting

All holders of ordinary shares may attend the Company's AGM at which the Chairman and Chief Executive present a review of the key business developments during the year. This year's AGM will be held at 11.00am on Thursday 7 May 2020 at King's Place, 90 York Way, London, N1 9FX. Shareholders can ask questions of the Board on the matters put to the meeting, including the Annual Report and the running of the Company generally. All Directors are invited to attend each AGM. Unless unforeseen circumstances arise, all committee chairmen will be present to take questions at the AGM.

Payments to shareholders

The Company issues non-cumulative redeemable preference shares of 0.1p (C Shares) as an alternative to paying a cash dividend.

Shareholders can choose to:

- redeem all C Shares for cash;
- redeem all C Shares for cash and reinvest the proceeds in the C Share Reinvestment Plan (CRIP); or
- keep the C Shares.

The CRIP is operated by Computershare Investor Services PLC (the Registrar). The Registrar will purchase ordinary shares in the market for shareholders electing to reinvest their C Share proceeds. Shareholders wishing to participate in the CRIP or redeem their C Shares in July 2020 must ensure that their instructions are lodged with the Registrar no later than 5:00pm (BST) on 1 June 2020 (CREST holders must submit their election in CREST before 2:55pm on 1 June 2020). Redemption will take place on 3 July 2020.

At the 2020 AGM, the Directors will recommend an issue of 71 C Shares with a total nominal value of 7.1p for each ordinary share. The C Shares will be issued on 1 July 2020 to shareholders on the register on 24 April 2020 and the final day of trading with entitlement to C Shares is 23 April 2020. Together with the interim issue on 3 January 2020 of 46 C Shares for each ordinary share with a total nominal value of 4.6p, this is the equivalent of a total annual payment to ordinary shareholders of 11.7p for each ordinary share.

Annual report and financial statements

The statements below have been prepared in connection with the Company's full Annual Report for the year ended 31 December 2019. Certain parts thereof are not included in this announcement.

Going concern

The going concern assessment considers whether it is appropriate to prepare the financial statements on a going concern basis. The Board has also considered the net liability position at 31 December 2019 and the going concern status of the Group's material subsidiaries.

The Group meets its funding requirements through a mixture of shareholders' funds, bank borrowings, bonds and notes. At 31 December 2019, the Group had borrowing facilities of £5.6bn (excluding lease liabilities of £2.4bn) and total liquidity of £6.9bn, including cash and cash equivalents of £4.4bn and undrawn facilities of £2.5bn. £435m of the facilities mature in 2020 (excluding lease liabilities of £340m).

The Group's forecasts and projections, taking into account reasonably possible changes in trading performance, show that the Group has sufficient financial resources. The Directors have reasonable expectations that the Company and the Group are well placed to manage business risks and to continue in operational existence for the foreseeable future (which accounting standards require to be at least a year from the date of this report) and have not identified any material uncertainties to the Company's and the Group's ability to do so.

On the basis described above, the Directors consider it appropriate to adopt the going concern basis in preparing the Consolidated Financial Statements (in accordance with the Guidance on Risk Management, Internal Control and Related Financial and Business Reporting published by the FRC in September 2014).

Directors' confirmations

The Directors consider that the Annual Report, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group and parent company's position and performance, business model and strategy.

Each of the Directors, whose names and functions are listed in the Directors' Report, confirm that to the best of his or her knowledge:

- the Group Financial Statements, which have been prepared in accordance with IFRSs as adopted by the European Union, give a true and fair view of the assets, liabilities, financial position and loss of the Group;

- the parent company Financial Statements, which have been prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 *Reduced Disclosure Framework*, and applicable law), give a true and fair view of the assets, liabilities, financial position and result of the Company; and

- the Strategic Report includes a fair review of the development and performance of the business and the position of the Group and parent company, together with a description of the principal risks and uncertainties that it faces.

By order of the Board

Warren East
Chief Executive

Stephen Daintith
Chief Financial Officer

28 February 2020