



24 February 2022

ROLLS-ROYCE HOLDINGS PLC - 2021 Full Year Results

A better balanced and more sustainable business

- Improved financial performance driven by growth and cost reduction**
 - Underlying operating profit of £414m (statutory £513m), recovered from prior year loss
 - Free cash flow substantially improved and ahead of expectations
- Delivering on our commitments**
 - Restructuring run-rate savings of more than £1.3bn delivered one year ahead of schedule
 - Disposals on-track with total expected proceeds of around £2bn
- Investing to drive further growth and deliver sustainable value**
 - FY 2021 £(1.2)bn gross R&D on market-leading technology for new and existing markets
 - Focused investments in net zero opportunities to deliver long-term sustainable value

Warren East, Chief Executive said: "We have improved our financial and operational performance, continued to deliver on our commitments and created a better balanced business capable of sustainable growth. We have achieved the benefits of our restructuring programme a year ahead of schedule, positioning Civil Aerospace to capitalise on increasing international travel. In Defence, we have seen growth driven by strong demand in all our markets and in Power Systems we achieved record order intake in the last quarter. The positive momentum we are generating gives us confidence both in our expectations for 2022 and our future growth. We have also made significant progress with our new businesses in electrical power and small modular reactors, both of which have the potential to create very significant long-term value. We are continuing to make disciplined investments to develop new and existing technologies, which will enable us to seize the significant commercial opportunity presented by the global energy transition driving sustainable returns."

Full Year 2021 Group financial performance

£ million, continuing operations	Statutory 2021	Restated Statutory 2020	Underlying 2021	Restated Underlying 2020
Revenue	11,218	11,491	10,947	11,430
Gross profit/(loss)	2,136	(187)	1,996	(613)
Operating profit/(loss)	513	(1,972)	414	(2,008)
Operating margin %	4.6%	(17.2)%	3.8%	(17.6)%
Profit/(loss) for the year	124	(3,101)	10	(4,039)
Earnings per share (p)	1.48	(51.81)	0.11	(67.48)

£ million	2021	2020	Change
Free cash flow from continuing operations	(1,485)	(4,255)	2,770
Group free cash flow	(1,442)	(4,185)	2,743

£ million	31 Dec 2021	31 Dec 2020	Change
Net debt (including lease liabilities)	(5,157)	(3,576)	(1,581)

Improved financial performance driven by cost reduction and market growth

Underlying revenue from continuing operations of £10.9bn, reflected a more balanced contribution from the business units compared with the prior year. It included a positive £214m Civil Aerospace LTSA revenue catch-up compared with a £(1.1)bn negative revenue catch-up in 2020.

Underlying operating profit from continuing operations of £414m included significant cost savings from the restructuring programme, primarily in Civil Aerospace, continued resilient performance in Defence and strong growth in Power Systems as it benefitted from recovering end markets. The prior year comparative underlying loss of £(2.0)bn included £(1.3)bn of one-off charges mostly related to the impact of COVID-19 on Civil Aerospace.

Free cash outflow from continuing operations of £(1.5)bn and trading cash outflow from continuing operations of £(1.2)bn were substantially improved on the prior year helped by robust progress on cost reduction, stronger operating performance including higher flying hour receipts in Civil Aerospace and reduced capital expenditure. Working capital outflows of £(0.8)bn, which were mostly driven by concession payments and lower OE deliveries in Civil Aerospace, improved on the prior year due to the non-repeat of £(1.1)bn negative impact from the cessation of invoice factoring in 2020.

Business unit underlying performance summary

£ million	Underlying revenue	Organic Change ¹	Underlying operating (loss)/profit	Organic Change ¹	Trading cash flow	Change
Civil Aerospace ^{2, 3}	4,536	(491)	(172)	2,371	(1,670)	2,840
Defence	3,368	155	457	13	377	79
Power Systems ³	2,749	89	242	67	219	57
New Markets ³	2	(2)	(70)	(27)	(56)	(1)
Other businesses ^{3, 4}	303	40	2	22	(43)	(13)
Corporate/eliminations	(11)	(5)	(45)	20	(38)	25
Total (continuing operations)	10,947	(214)	414	2,466	(1,211)	2,987

For footnotes referenced in tables on pages 2-13, see page 14.

Civil Aerospace Our fundamental restructuring programme has been largely completed resulting in higher productivity and sustainably lower costs, better suited to the current environment and positioned well for future growth. The launch of the Airbus A350 freighter in 2021 represents a significant opportunity for our Trent XWB engine, with 58 engine orders secured for the A350F since its launch. In Business Aviation, we achieved two key new selections with our Pearl 10X chosen by Dassault for the Falcon 10X and our Pearl 700 chosen by Gulfstream for the G800. In 2021, we powered 7.4m large engine flying hours, up 11% on 2020 with gradual recovery in international flying activity, which continued to be impacted by COVID-19 travel restrictions.

Defence Our longstanding commitment to strategic investments in Defence products and facilities has resulted in a strong order book and is driving longer-term sustainable growth. In 2021, we secured new work for the coming decades in the US with the award of the B-52 engine replacement contract, and we remain in a competitive process for the Future Long-Range Assault Aircraft (FLRAA) programme. Our profitability and strong cash conversion are supporting increased investment to meet the customer demand for products that deliver advances in technology and sustainability.

Power Systems End market demand increased significantly for our Power Systems business in the second half of 2021 as the impacts of COVID-19 reduced. Order intake accelerated, with record order intake in the fourth quarter, driving book to bill of 1.2x in 2021 and good order cover for 2022. Significant awards included a power solution for a hyperscale data centre customer and a first-of-a-kind net zero microgrid which will combine fuel cells and hydrogen combustion engines for the Port of Duisburg in Germany.

New Markets We have created a new reporting segment for our early-stage businesses with high growth potential, focused on addressing new market opportunities being created by the transition to net zero. Rolls-Royce SMR reached a major milestone with grant funding and new equity investors supporting entry into the UK's Generic Design Assessment (GDA) process. Rolls-Royce Electrical achieved key product advances with a world speed record for our all-electric aircraft. We believe our two New Markets businesses could generate more than £5bn combined annual revenue by the early 2030s.

Delivering on our commitments

We have met our £1.3bn run-rate savings target a year ahead of schedule and delivered on our Group restructuring commitment with the removal of more than 9,000 roles from continuing operations. Our focus now is on ensuring the benefits are sustained. Our restructuring programme has fundamentally changed the way we work in our Civil Aerospace business, reducing the size of the business by around a third and creating a more productive, more efficient business poised for future growth.

We are committed to rebuilding our balance sheet. We have announced four disposals which are expected to generate around £2bn in proceeds (including retained cash). Three of the disposals have completed, two in 2021 and the other one since the start of 2022. The final and largest of the disposals, ITP Aero, is progressing well and we expect completion in the first half of 2022. Disposal proceeds, together with underlying free cash flow generation from the Group, will be used to reduce net debt, in line with our ambition to return to an investment grade credit profile in the medium term.

Our liquidity position is strong with £7.1bn of liquidity including £2.6bn in cash at the end of the year after repaying the 2021 €750m bond and the £300m Covid Corporate Financing Facility (CCFF) commercial paper. Net debt was £(5.2)bn including leases (2020:£(3.6)bn). Net debt excluding leases was £(3.4)bn (2020:£(1.5)bn).

Some of our loan facilities place restrictions and conditions on payments to shareholders. The restrictions mean no shareholder payment will be made for 2021. From 2023, the Board may recommend shareholder payments, subject to satisfaction of the conditions and our consideration of progress made to strengthen the balance sheet. We aim to be able to recommend shareholder payments in the medium term.

Investing to drive growth and deliver sustainable value

Our technology and engineering expertise gives us a critical role in enabling the transition to a low carbon global economy. We are focused on producing the technology breakthroughs society needs to decarbonise the global economy and capture the economic opportunity this transition represents. We are doing that by making our existing products compatible with net zero and pioneering new technologies that can meet accelerating demand for net zero power, as well as identifying additional applications for our current portfolio of technologies. Our investment in small modular reactors (SMRs) and electrical propulsion create net zero solutions and opportunities in new end markets, as we aim to maximise the future market potential for our technological and industrial solutions and products.

In 2021, our gross R&D costs totalled £(1.2)bn (2020:£(1.2)bn), £366m of which was paid for by contributions from third parties. Our continued prioritisation of targeted investment, even in the most challenging years, drove commercial success in 2021 including the Pearl engine selections, the B-52 engine replacement contract, the first all-hydrogen microgrid, a world speed record for electric flight and entry into the UK GDA for our SMRs.

Outlook and financial guidance

We are well positioned for the anticipated growth in our end markets as the impact of the COVID-19 pandemic eases. This, along with continued good contribution from Defence, gives us confidence that we will see positive momentum in our financial performance in 2022 despite the challenges and risks around the pace of market recovery, global supply chain disruption and rising inflation. We expect low-to-mid-single digit revenue growth and we expect our operating profit margin to be broadly unchanged as underlying operational improvement is balanced with increased engineering spend to develop sustainable growth opportunities. We expect to generate modestly positive free cash flow in 2022, seasonally weighted towards the second half of the year.

Results webcast and conference call

A webcast will be held at 08:30 (GMT) today and details of how to join are provided below. Conference call details are also available for those who would prefer to dial-in. Downloadable materials will also be available on the Investor Relations section of the Rolls-Royce website.

Webcast details

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

<https://edge.media-server.com/mmc/p/gi4zqu9m>

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

Conference call details

UK dial-in: 0207 192 8338/ US dial-in: +1 646 741 3167

International dial-in for all participants: +44 207 192 8338

Participant passcode: 784 4816#

Downloadable materials

Please visit the Investor Relations section of the Rolls-Royce website to download our Full Year

Results materials: <https://www.rolls-royce.com/investors/results-and-events.aspx>

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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 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 Rolls-Royce Holdings plc and its directors accept no liability to any other person other than under English law.

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Group Statutory Results

Statutory Income Statement

£ million	2021	Restated 2020	Change
Revenue	11,218	11,491	(273)
Gross profit/(loss)	2,136	(187)	2,323
Operating profit/(loss)	513	(1,972)	2,485
Gain/(loss) on disposal/acquisition of businesses	56	(14)	70
Net financing costs	(863)	(813)	(50)
Loss before taxation	(294)	(2,799)	2,505
Taxation	418	(302)	720
Profit/(loss) for the year from continuing operations	124	(3,101)	3,225
Earnings per share from continuing operations (p)	1.48	(51.81)	53.29

Statutory revenue of £11.2bn was 2% lower compared with 2020 driven by a decline in Civil Aerospace revenue, due to lower OE deliveries and shop visit volumes. Revenue included a £214m positive LTSA catch-up in Civil Aerospace compared with a £(1.1)bn negative revenue catch-up in the prior year. Defence benefitted from increased spare parts and spare engine sales. Power Systems revenues were driven by our more resilient end markets, with increased demand for Services from our defence and industrial customers.

Gross profit returned to profit of £2.1bn compared with a prior year loss of £(187)m reflecting growth and cost discipline as well as substantial cost savings and productivity gains delivered by the restructuring programme. Gross profit also included a £105m provision reversal in relation to the Trent 1000 engine programme (2020: £620m) and a £256m positive LTSA catch-up in 2021. The prior year comparative included £(1.8)bn of net charges relating to negative LTSA catch-ups, impairments and write-offs.

Operating profit improved significantly to £513m from a prior year £(2.0)bn loss. Research & Development costs were £(778)m down 35% from 2020 as a consequence of one-off impairments in the prior year. Commercial & Administrative costs of £(890)m were 15% higher than the prior year (2020: £(771)m), which benefitted from a one-off pension credit partly offset by a restructuring provision.

Loss before taxation of £(294)m included £(538)m net fair value losses on derivative contracts, £(245)m net interest payable and a net £56m profit from disposals.

Profit from continuing operations of £124m included a tax credit of £418m, (2020: tax charge £302m), which mostly related to movements in deferred tax balances due to the impact of the UK tax rate change from 19% to 25%, effective from April 2023. The tax charge in 2020 was mostly driven by the derecognition of some of the deferred tax asset on UK losses previously recognised, partly offset by a credit relating to the change in the UK tax rate from 17% to 19%.

Earnings per share of 1.48p (2020: (51.81)p) reflected the improvement in profit and an increase in weighted average number of shares compared with the prior year to reflect the full year impact of the bonus element of the rights issue completed in November 2020.

Statutory Balance Sheet

£ million	Statutory 2021	Adjusted 2020	Held for sale ⁵	Statutory 2020	Change excluding HfS ⁵
Intangible assets	4,041	4,191	954	5,145	(150)
Property, plant and equipment	3,917	4,103	412	4,515	(186)
Right of use assets	1,203	1,390	15	1,405	(187)
Joint ventures and associates	404	386	8	394	18
Contract assets and liabilities	(8,836)	(8,945)	23	(8,922)	109
Working capital ⁷	1,458	464	106	570	994
Provisions	(1,582)	(1,907)	(38)	(1,945)	325
Net debt ⁸	(5,110)	(3,556)	(71)	(3,627)	(1,554)
Net financial assets and liabilities ⁸	(3,034)	(3,077)	(34)	(3,111)	43
Net post-retirement scheme deficits	(225)	(673)	–	(673)	448
Taxation	1,787	1,240	55	1,295	547
Held for sale	1,305	1,490	(1,430)	60 ⁶	(185)
Other net assets and liabilities	36	19	–	19	17
Net liabilities	(4,636)	(4,875)	–	(4,875)	239
Other items					
US\$ hedge book (US\$bn)	22			25	
Civil LTSA asset	915			726	
Civil LTSA liability	(7,129)			(6,841)	
Civil net LTSA liability	(6,214)			(6,115)	

Key drivers of balance sheet movements, adjusted for assets held for sale, were:

Intangible assets: Net decrease of £(150)m included additions of £223m primarily related to programme development in Civil Aerospace and Power Systems, and investment in the development of software applications across the business. There was an adverse foreign exchange impact of £(146)m and amortisation for the year was £(281)m.

Property, plant and equipment: Net decrease of £(186)m included additions of £299m, more than offset by £(439)m of depreciation and a foreign exchange impact of £(63)m. Additions were £254m lower than prior year as a result of focus on prioritisation of business critical infrastructure projects and focus on reducing capital intensity.

Right-of-use assets: Net reduction of £(187)m was driven by £(272)m depreciation charged in the year partly offset by additions of £82m.

Contract assets and liabilities: The £109m movement in net liability balance was mainly driven by the utilisation of deposits, foreign exchange movements and invoiced LTSA receipts in Civil Aerospace exceeding revenue recognised in the year, partly offset by £214m LTSA catch-ups.

Working capital: The £1,458m net current asset position was £994m higher than prior year, due to a £0.7bn reduction in payables driven mostly by Civil Aerospace, including a £0.5bn reduction in concessions payable as payments significantly exceeded new concessions accrued in the year, alongside a modest reduction in trade payables due to the timing and volume of supplier payments. We also made the final financial penalty payment of £156m related to agreements reached in January 2017. Inventory increased by £0.2bn, mostly in Power Systems and Defence, to support 2022 sales.

Provisions: The £325m decrease primarily reflected the utilisation and reversal of restructuring provisions of £212m as the restructuring programme nears completion, utilisation of Trent 1000 provision of £199m, partly offset by £82m of contract loss provision net of reversals.

Net debt: Increased from £(3.6)bn to £(5.1)bn primarily driven by free cash outflow of £(1.5)bn.

Net post-retirement scheme deficits: £448m movement driven by an increase in the UK scheme surplus reflecting company contributions and actuarial gains and a decrease in the overseas schemes deficit mainly attributable to actuarial gains and foreign exchange.

Taxation: The net tax asset increased by £547m, most of which (£344m) related to remeasurement of the opening UK deferred tax balances due to the UK tax rate change from 19% to 25% effective from April 2023. In addition, there was an increase in the deferred tax asset on unrealised losses on derivatives (£96m) and certain other UK deferred tax assets (£126m) reflecting tax relief that will be taken in the future, based on profit forecasts.

Group Underlying⁹ Results

Underlying Income Statement

£ million	2021	Restated 2020	Change	Organic Change ¹	M&A ¹⁰	FX
Underlying revenue	10,947	11,430	(483)	(214)	19	(288)
Underlying OE revenue	4,911	5,626	(715)	(598)	19	(136)
Underlying services revenue	6,036	5,804	232	384	–	(152)
Underlying gross profit/(loss)	1,996	(613)	2,609	2,672	6	(69)
<i>Gross margin %</i>	<i>18.2%</i>	<i>(5.4)%</i>	<i>23.6%pt</i>	<i>23.8%pt</i>		
Commercial and administration costs	(899)	(866)	(33)	(45)	(8)	20
Research and development costs	(774)	(708)	(66)	(79)	(1)	14
Joint ventures and associates	91	179	(88)	(82)	(1)	(5)
Underlying operating profit/(loss)	414	(2,008)	2,422	2,466	(4)	(40)
<i>Underlying operating margin %</i>	<i>3.8%</i>	<i>(17.6)%</i>	<i>21.4%pt</i>	<i>21.8%pt</i>		
Financing costs	(378)	(1,985)	1,607	1,605	–	2
Underlying profit/(loss) before taxation	36	(3,993)	4,029	4,071	(4)	(38)
Taxation	(26)	(46)	20	15	–	5
Profit/(loss) for the period	10	(4,039)	4,049	4,086	(4)	(33)
Underlying earnings per share (p)	0.11	(67.48)	67.59	67.94		

Underlying revenue of £10.9bn reflected a more balanced contribution from our business units. Services revenue increased 7% while OE fell 11%. Services revenue included a £214m Civil Aerospace LTSA revenue catch-ups compared with £(1.1)bn in the prior year.

Underlying gross profit of £2.0bn reflected the benefit of cost reductions and a £256m Civil Aerospace LTSA catch-up. The prior year loss of £(613)m included £(1.3)bn of one-off COVID-19 related charges, mainly relating to negative Civil Aerospace LTSA catch-ups.

Underlying operating profit was £414m, with a return to profit reflecting the higher gross profit in the year partly offset by lower contribution from JVs and associates.

Underlying profit before taxation of £36m reflected net financing costs of £(378)m with higher charges relating to interest bearing debt compared with the prior year. In 2020, a £(1.7)bn one-off underlying finance charge was taken to close out over hedged positions on the USD hedge book.

Underlying profit for the year of £10m included a tax charge of £(26)m (2020: £(46)m). The tax charge reflects the tax arising on overseas profits and increases in other deferred tax assets. Deferred tax has not been recognised on current year UK tax losses. The tax charge in 2020 included the impact of derecognising some of the deferred tax asset previously recognised on UK tax losses.

Underlying earnings per share of 0.11p reflected the improvement in profit and an increase in weighted average number of shares compared with the prior year to reflect the full year impact of the bonus element of the rights issue completed in November 2020.

Group Funds Flow Statement ¹¹

£ million	2021	2020	Change
Underlying operating profit/(loss)	414	(2,008)	2,422
Operating loss from discontinued operations	(43)	(109)	66
Depreciation, amortisation and impairment	971	1,048	(77)
Lease payments (capital plus interest)	(403)	(379)	(24)
Expenditure on intangible assets	(185)	(316)	131
Capital expenditure (PPE)	(311)	(579)	268
Change in inventory	(169)	588	(757)
Movement in receivables/payables/contract balances (excluding Civil LTSA)	(641)	(2,115)	1,474
Civil Aerospace net LTSA balance change	66	479	(413)
Movement on provisions	(136)	(195)	59
Cash flows on settlement of excess derivative contracts	(452)	(202)	(250)
Net interest and fees on undrawn facilities	(259)	(172)	(87)
Cash flow on financial instruments net of realised losses included in operating profit	(85)	(105)	20
Other	68	(49)	117
Trading cash flow	(1,165)	(4,114)	2,949
...of which relates to continuing operations	(1,211)	(4,198)	2,987
Contributions to defined benefit pensions (in excess of)/less than that of underlying operating profit charge	(92)	160	(252)
Taxation paid	(185)	(231)	46
Group free cash flow	(1,442)	(4,185)	2,743
...of which relates to continuing operations	(1,485)	(4,255)	2,770
Shareholder payments	(4)	(92)	88
Rights issue	—	1,972	(1,972)
Disposals and acquisitions	49	(119)	168
Exceptional Group restructuring	(231)	(323)	92
Payment of financial penalties	(156)	(135)	(21)
Other underlying adjustments	(23)	(33)	10
Movement in net funds from cash flows (excluding lease liabilities)	(1,807)	(2,915)	1,108
Capital element of lease repayments	374	284	90
Movement in net funds from cash flows	(1,433)	(2,631)	1,198
Movement in short-term investments	(8)	6	(14)
Net cash flow from changes in borrowings and lease liabilities	666	1,630	(964)
Statutory cash flow	(775)	(995)	220

Key changes in the funds flow items are described below:

Expenditure on intangible assets: Expenditure of £(185)m included £(104)m capitalised Research & Development (2020: £(232)m), which was lower than prior year reflecting the mix of spend across Civil Aerospace engine programmes.

Capital expenditure: Investment of £(311)m was £268m lower than prior year as a result of continued focus on prioritisation of business critical infrastructure projects and focus on reducing capital intensity in Civil Aerospace in line with the cost reduction programme.

Increase in inventory: The £169m increase in the year was primarily driven by planned inventory build in Defence and Power Systems to meet expected sales volumes, and the impact of global supply chain disruption on Power Systems.

Movement in receivables/payables/contract balances (excluding Civil LTSA):

The movement of £(641)m was primarily driven by Civil Aerospace and included a significant volume of concession payments during the year as well as a reduction in trade payables driven by timing and volume of supplier payments. In addition, deposits were utilised in Civil and Defence as we continued to execute on customer contracts.

Movement in underlying Civil Aerospace net LTSA creditor: In 2021, there was a £66m increase in the net LTSA balance as invoiced flying hour receipts exceeded revenues recognised. This reflected an improvement in invoiced flying hour receipts as air traffic recovered during the year offset by higher revenues due to materially improved LTSA catch-ups compared to the prior year.

Movement on provisions: The £(136)m movement primarily reflected a decrease in the Trent 1000 provision driven by provision utilisation, including customer disruption costs settled and remediation shop visit costs.

Cash flows on settlement of excess derivative contracts: Relates to the cash settlement costs in the year for the offsetting foreign exchange contracts that were entered into to reduce the size of the US Dollar hedge book in 2020. The cash settlement costs of £1.7bn occur across 2020-2026, of which £1.0bn remains to be paid in future years.

Fees and interest: The net payment of £(259)m in the year was higher than the prior year, reflecting £(197)m of net interest paid (2020: £(75)m).

Contributions to defined benefit pensions: In 2021, cash contributions were £92m higher than the pensions charge in the income statement (2020: £160m lower) reflecting payment deferrals from 2020 into the first quarter of 2021.

Taxation: Net cash tax payments in 2021 were £(185)m (2020: £(231)m). The decrease is mainly due to timing, with additional payments arising in 2020.

Disposals and acquisitions: The £49m inflow related to proceeds associated with disposal activity partly offset by the costs incurred on acquisition and disposal activity.

Exceptional restructuring: Payments of £(231)m related to the restructuring programme and associated initiatives.

Payment of financial penalties: The final payment of £(156)m relating to the deferred prosecution agreement (DPA) in the UK was made in January 2021.

Other underlying adjustments: Outflow of £(23)m includes timing of cash flows on a prior period disposal where we retain the responsibility for collecting cash before passing it on to the acquirer, along with other smaller items.

Net cash flow from changes in borrowings and lease liabilities: During the year, we drew down on a £2.0bn loan which is supported by an 80% guarantee from UK Export Finance. £300m of commercial paper under the Covid Corporate Financing Facility and €750m (£639m) loan notes were repaid in line with repayment terms.

Civil Aerospace

£ million	2021	Organic Change ¹	FX	2020 ^{2,3}	Change	Organic Change ¹
Underlying revenue	4,536	(491)	(41)	5,068	(10)%	(10)%
Underlying OE revenue	1,612	(654)	(12)	2,278	(29)%	(29)%
Underlying services revenue	2,924	163	(29)	2,790	5%	6%
Underlying gross profit/(loss)	474	2,477	(16)	(1,987)	–	–
Gross margin %	10.4%			(39.2)%	49.7%pt	49.9%pt
Commercial and administrative costs	(297)	11	2	(310)	(4)%	(4)%
Research and development costs	(434)	(35)	8	(407)	7%	9%
Joint ventures and associates	85	(82)	(2)	169	(50)%	(49)%
Underlying operating loss	(172)	2,371	(8)	(2,535)	(93)%	(94)%
<i>Underlying operating margin %</i>	<i>(3.8)%</i>			(50.0)%	46.2%pt	46.4%pt
	2021		2020 ^{2,3}	Change		
Trading cash flow	(1,670)		(4,510)	2,840		
Key operational metrics:	2021	2020	Change			
Large engine deliveries	195	264	(69)			
Business jet engine deliveries	114	184	(70)			
Total engine deliveries	309	448	(139)			
Large engine LTSA flying hours (million)	7.4	6.6	0.8			
Large engine LTSA major refurbs	208	272	(64)			
Large engine LTSA check & repairs	402	559	(157)			
Total large engine LTSA shop visits	610	831	(221)			

Civil Aerospace financial performance significantly improved due to the successful restructuring programme, gradual market recovery and non-repeat of largely COVID-19 related one-time charges in 2020. Large engine LTSA flying hours were up 11% compared with 2020 with the second half EFH up 57% year on year as COVID-19 vaccination programmes enabled most key routes to reopen on reduced volumes. Fewer large engines were required to fulfil customer build schedules, but sales of spare engines increased. Business aviation OE deliveries were down as we are transitioning to newer engines programmes, which are growing well from a low base.

- **Underlying revenue** of £4.5bn, down 10% on the prior year. OE revenue of £1.6bn was down 29% reflecting the reduction in engine deliveries. Services revenue of £2.9bn was up 6% on the prior year and included £214m positive LTSA catch-ups (2020: £(1.1)bn), partly offset by lower shop visit volumes and reduced contribution from the V2500 engine programme.
- **Underlying gross profit** of £474m improved from a £(2.0)bn loss in 2020, driven by strong operating cost performance resulting from restructuring savings as well as positive LTSA catch-ups of £256m. The prior year loss included £(1.3)bn of one-off charges and £(0.6)bn relating to USD purchases and under recovery of fixed costs.
- **Underlying operating loss** of £(172)m was significantly better than the prior year. This improvement reflected the increase in gross profit partly offset by the higher R&D charge and lower contribution from JVs and associates.
- **Trading cash outflow** was £(1.7)bn, a substantial improvement on 2020 reflecting higher EFH receipts, lower operating costs, capex and working capital as well as the non-repeat of £(1.0)bn from invoice factoring cessation in 2020. Working capital cash flow included large engine OE concession payments that reduced the concession liability by £474m (2020: £219m increase).

Outlook

Industry forecasters expect a continuation of the gradual improvement in international travel in 2022 with an acceleration in flying hours as COVID-19 related border restrictions are lifted. We will remain focused on actions within our control, keeping costs low and maintaining the recent productivity gains as shop visits increase. This, along with an expected increase in spare engine sales, would support modest revenue growth and improved profitability in 2022, as well as a substantial improvement in trading cash flow.

Defence

£ million	2021	Organic Change ¹	FX	2020 ³	Change	Organic Change ¹
Underlying revenue	3,368	155	(142)	3,355	–	5%
Underlying OE revenue	1,411	42	(59)	1,428	(1)%	3%
Underlying services revenue	1,957	113	(83)	1,927	2%	6%
Underlying gross profit	721	63	(26)	684	5%	9%
Gross margin %	21.4%			20.4%	1.0%pt	0.9%pt
Commercial and administrative costs	(161)	(19)	4	(146)	10%	13%
Research and development costs	(105)	(24)	5	(86)	22%	28%
Joint ventures and associates	2	(7)	–	9	–	–
Underlying operating profit	457	13	(17)	461	(1)%	3%
<i>Underlying operating margin %</i>	<i>13.6%</i>			13.7%	(0.1)%pt	(0.2)%pt

	2021	2020 ³	Change
Trading cash flow	377	298	79

Our Defence business continued to perform well with strong demand for OE and services driving growth in all our end markets: combat, transport, submarines and naval. Disciplined investment is pivotal to the long-term sustainable growth opportunities that will shape our Defence business for decades into the future. Our targeted investment in our facilities in North America as well as product development has supported recent growth in order intake and revenues. Our largest customers, the US DoD and the UK MoD, remain committed to the modernisation of their fleets with a particular focus on technology and an accelerating interest in reducing their carbon footprint.

- **Order intake** was £2.3bn with a book-to-bill of 0.7x. Our order book is strong following several years' of high intake with a five year average book-to-bill of 1.1x and 85% order cover for 2022. In 2021 we secured a key award with the US DoD for the replacement engine programme for the B-52 aircraft, with an initial value of \$0.5bn and total OE programme value of \$2.6bn.
- **Underlying revenue** increased by 5% to £3.4bn, with services revenue up 6% and OE revenue up 3%. Sales benefitted from strong sales of parts in our export markets in Asia and Middle East.
- **Underlying gross profit** of £721m was 9% higher than the prior year and the gross margin expanded 0.9%pt to 21.4%. This was driven by a positive mix towards higher margin spare parts and spare engine sales.
- **Underlying operating profit** was £457m, an increase of 3% compared with 2020. This profit growth occurred despite a 28% increase in R&D spend to support the UK Future Combat programme and targeted investment in growth opportunities in North America to support continued long-term product development.
- **Trading cash flow** was £377m, representing a cash conversion of over 80%. The prior year trading cash flow included adverse impact from the timing of cash deposit receipts.

Outlook

We expect continued modest revenue growth in 2022 with a strong order book cover securing near term activity in all our end markets. Our increased investment will support growth in programmes related to future projects and recent awards, as well as product development to help the transition to net zero. We do expect a return to more usual levels of spare engines and spare parts sales in 2022.

Power Systems

£ million	2021	Organic Change ¹	M&A ¹⁰	FX	2020 ³	Change	Organic Change ¹
Underlying revenue	2,749	89	19	(94)	2,735	1%	3%
Underlying OE revenue	1,744	(2)	19	(60)	1,787	(2)%	-
Underlying services revenue	1,005	91	-	(34)	948	6%	10%
Underlying gross profit	778	120	6	(26)	678	15%	18%
Gross margin %	28.3%				24.8%	3.5%pt	3.6%pt
Commercial and administrative costs	(383)	(57)	(8)	13	(331)	16%	18%
Research and development costs	(157)	(1)	(1)	5	(160)	(2)%	1%
Joint ventures and associates	4	5	(1)	(1)	1	-	-
Underlying operating profit	242	67	(4)	(9)	188	29%	37%
<i>Underlying operating margin %</i>	<i>8.8%</i>				6.9%	1.9%pt	2.2%pt
		2021	2020 ³	Change			
Trading cash flow	219	162	57				

The effects of COVID-19 on our end markets lessened over the course of 2021 and we recorded a strong increase in order intake in the second half of 2021, especially in power generation with orders for data centres and infrastructure projects. The transition to net zero power is a significant opportunity with the mission critical power for data centres, power for construction and infrastructure, and marine solutions leading the demand for net zero carbon solutions. Along with many manufacturing businesses, global supply chain disruption impacted the availability of some parts and components in the second half of 2021. Challenges are likely to persist into 2022 until additional capacity has been created.

- **Order intake** of £3.3bn was 24% higher than the prior year, with record order intake in the fourth quarter and a book-to-bill ratio of 1.2x in the year. Order growth was strongest in marine, defence and power generation end markets. The customer interest in net zero carbon solutions is accelerating and our investment in decarbonising our solutions is critical to our future growth.
- **Underlying revenue** of £2.7bn was up 3%. Aftermarket services grew 10% as product utilisation increased in our end markets, and OE was broadly flat. Sales were strongest in industrial and power generation end markets, partly offset by lower activity in China.
- **Underlying gross profit** grew by 18% to £778m and gross margin increased by 3.6%pt. This included an increase in higher-margin aftermarket spare parts as well as improved utilisation in our manufacturing facilities and lower warranty costs.
- **Underlying operating profit** was £242m, up 37%. Operating margin of 8.8% was 2.2%pts higher than the prior year, reflecting the positive mix of activity and increased volumes. The increase in commercial and administrative costs reflected an increase in employee costs, partly due to the non-repeat of government support received in the prior year.
- **Trading cash flow** was £219m (2020:£162m), representing a cash conversion of about 90%.

Outlook

Looking ahead to 2022, we see continued strong demand growth from our customers supported by global economic growth and the transition to lower carbon solutions. We expect good revenue growth in 2022 helped by the strong order intake, partly offset by the current global supply chain constraints. Higher activity levels will drive improved profitability partly offset by increased Research & Development investment as we pursue net zero growth opportunities. Cash conversion is expected to be lower in 2022 as we focus on inventory and supply chain management to mitigate the impact of industry-wide disruption.

New Markets

£ million	2021	Organic Change ¹	FX	2020 ³	Change	Organic Change ¹
Underlying revenue	2	(2)	(1)	5	(60)%	(40)%
Underlying OE revenue	–	(2)	(1)	3	(100)%	(67)%
Underlying services revenue	2	–	–	2	–	–
Underlying gross profit	1	(1)	–	2	(50)%	(50)%
Gross margin %	50.0%			40.0%	10.0%pt	(6.7)%pt
Commercial and administrative costs	(3)	(2)	–	(1)	200%	200%
Research and development costs	(68)	(24)	2	(46)	48%	52%
Underlying operating loss	(70)	(27)	2	(45)	56%	60%
	2021		2020 ³		Change	
Trading cash flow	(56)		(55)		(1)	

New Markets is our new reporting segment for our early-stage businesses, with high growth potential, focused on addressing the opportunities being created by the transition to net zero and solving the climate change challenge. There are two businesses currently in this segment: Rolls-Royce SMR and Rolls-Royce Electrical. These businesses leverage our existing, in-depth engineering expertise and capabilities to develop new sustainable products for future markets.

Rolls-Royce SMR secured £490m of funding in 2021 (including approximately £50m from Rolls-Royce), with receipts phased over the next few years to align with the future cash spend profile. This investment will help support our SMR design through the multi-year UK Generic Design Assessment (GDA) process. First orders for SMRs are not dependent on the completion of the GDA and are anticipated within the next few years.

In Rolls-Royce Electrical, we broke two world speed records for all-electric flight in our Spirit of Innovation aircraft and our eVTOL partners received multi-billion dollar pre-orders for their eVTOL programmes.

Over the next five years, we expect cumulative R&D investment in Rolls-Royce SMR and Rolls-Royce Electrical of over £1.0bn to be funded by third-party grants and investments as well as self-funded cash investment of over £0.5bn. New markets are more challenging to forecast due to the pace of customer demand growth and regulation, however the potential opportunities for these businesses are significant and we believe they could generate more than £5bn combined annual revenue by the early 2030s.

- **Underlying revenue** of £2m came from Rolls-Royce Electrical sales relating to marine engineering services and propulsion systems. Both Rolls-Royce Electrical and Rolls-Royce SMR are early-stage businesses in their investment phase, with significant future revenue generating potential in the 2030s.
- **Underlying operating loss** of £(70)m increased from the prior year comparative as we increased the pace of investment in both Rolls-Royce SMR and Rolls-Royce Electrical. The increased investment is critical to the development of the products that will drive our net zero growth in the future and is in line with our plans. R&D costs of £(68)m included £(16)m on the design development to ready our SMRs to enter the UK GDA process and £(52)m on electrical propulsion technology.
- **Trading cash flow** of £(56)m was lower than operating losses mainly due to the receipt of funding for the SMR programme.

Outlook

Our financial performance in 2022 will show a significant increase in Research & Development costs as we invest to develop our products and grow our businesses in these exciting new markets. Cash outflow is expected to be approximately £100m better than the underlying operating loss in 2022, mainly due to the phased receipt of secured third party equity investment in Rolls-Royce SMR.

Notes to financial tables and commentary on pages 1-13:

- ¹ Organic change at constant translational currency (constant currency) applying full year 2020 average rates to 2021, excluding M&A. All commentary is provided on an organic basis unless otherwise stated.
- ² The underlying results for Civil Aerospace for 31 December 2020 have been restated to reflect the changes to activity during 2021 due to the transfer of the Hucknall site and associated fabrications activities to ITP Aero.
- ³ The underlying results of Civil Aerospace, Defence and Power Systems for 31 December 2020 have been restated to reclassify the results of the Group's small modular reactor (SMR) and new electrical power solutions as New Markets and UK Civil Nuclear as Other businesses.
- ⁴ Other businesses include the results of the Bergen Engines AS business, the results of the Civil Nuclear Instrumentation & Control business, the results of the North America Civil Nuclear business (until the date of disposal on 31 January 2020) and the results of the Knowledge Management System business (until the date of disposal on 3 February 2020). The trading results of the UK Civil Nuclear business have also been included in other businesses.
- ⁵ 2020 figures have been adjusted to reflect ITP Aero being classified as a disposal group held for sale since 30 June 2021; the Group's investment in Airtanker Holdings Limited being classified as a non-current asset held for sale since 13 September 2021; and certain tangible assets related to the Group's site rationalisation activities being classified as held for sale at 31 December 2021.
- ⁶ Relates to Bergen Engines AS and the Civil Nuclear Instrumentation & Control business which were classified as disposal groups held for sale at 31 December 2020. Both disposals were completed in 2021.
- ⁷ Net working capital includes inventory, trade receivables and payables and similar assets and liabilities
- ⁸ Net debt includes £37m (2020: £251m) of the fair value of derivatives included in fair value hedges and the element of fair value relating to exchange differences on the underlying principal of derivatives in cash flow hedges. Net debt has been adjusted to exclude net debt held for sale.
- ⁹ Underlying performance excludes the impact of year-end mark-to-market adjustments, the effect of acquisition accounting and business disposals, impairment of goodwill and other non-current and current assets, and exceptional items. Adjustments between the underlying income statement and the statutory income statement are set out in note 2 in the Condensed Consolidated Financial Statements on page 33.
- ¹⁰ M&A includes 2020 Power Systems acquisitions comprising of Kinolt Group S.A and Servowatch Systems Limited (SSL).
- ¹¹ The derivation of the summary funds flow statement from the statutory cash flow statement is included on page 53.
- A reconciliation of alternative performance measures to their statutory equivalent is provided on pages 55 to 56.
- Statutory results were referred to as "reported" results in the 2020 full year results statement.

Condensed consolidated financial statements

Condensed consolidated income statement

For the year ended 31 December 2021

	Notes	2021 £m	Restated 2020 ¹ £m
Continuing operations			
Revenue	2	11,218	11,491
Cost of sales ²		(9,082)	(11,678)
Gross profit/(loss)	2	2,136	(187)
Commercial and administrative costs	2	(890)	(771)
Research and development costs	2, 3	(778)	(1,204)
Share of results of joint ventures and associates	10	45	190
Operating profit/(loss)		513	(1,972)
Gain/(loss) arising on acquisition and disposal of businesses	22	56	(14)
Profit/(loss) before financing and taxation		569	(1,986)
Financing income	4	229	61
Financing costs ³	4	(1,092)	(874)
Net financing costs		(863)	(813)
Loss before taxation		(294)	(2,799)
Taxation	5	418	(302)
Profit/(loss) for the year from continuing operations		124	(3,101)
Discontinued operations			
Profit/(loss) for the year from ordinary activities		36	(68)
Costs of disposal of discontinued operations		(39)	—
Loss for the year from discontinued operations	22	(3)	(68)
Profit/(loss) for the year		121	(3,169)
Attributable to:			
Ordinary shareholders		120	(3,170)
Non-controlling interests (NCI)		1	1
Profit/(loss) for the year		121	(3,169)
Other comprehensive income/(expense)		41	(265)
Total comprehensive income/(expense) for the year		162	(3,434)
Earnings/(loss) per ordinary share attributable to ordinary shareholders:	6		
From continuing operations:			
Basic		1.48p	(51.81)p
Diluted		1.47p	(51.81)p
From continuing and discontinued operations:			
Basic		1.44p	(52.95)p
Diluted		1.43p	(52.95)p

¹ The comparative figures have been restated to reflect ITP Aero being classified as a discontinued operation. The respective notes to the financial statements have also been restated on this basis. Further detail can be found in note 22.

² Cost of sales includes a charge for expected credit losses of £124m (2020: £119m). Further details can be found in note 12.

³ Included within financing are fair value changes on derivative contracts. Further details can be found in notes 2, 4 and 16.

Condensed consolidated statement of comprehensive income

For the year ended 31 December 2021

	Notes	2021 £m	2020 £m
Profit/(loss) for the year		121	(3,169)
Other comprehensive income/(expense) (OCI)			
Actuarial movements in post-retirement schemes	20	254	(590)
Revaluation to fair value of other investments	10	(2)	–
Share of OCI of joint ventures and associates	10	1	(1)
Related tax movements		(79)	195
Items that will not be reclassified to profit or loss		174	(396)
Foreign exchange translation differences on foreign operations		(178)	121
Foreign exchange translation differences reclassified to income statement on disposal of businesses	22	(1)	6
Movement on fair values debited to cash flow hedge reserve		(32)	(16)
Reclassified to income statement from cash flow hedge reserve		39	26
Share of OCI of joint ventures and associates	10	44	(4)
Related tax movements		(5)	(2)
Items that will be reclassified to profit or loss		(133)	131
Total other comprehensive income/(expense)		41	(265)
Total comprehensive income/(expense) for the year		162	(3,434)
Attributable to:			
Ordinary shareholders		161	(3,435)
Non-controlling interests (NCI)		1	1
Total comprehensive income/(expense) for the year		162	(3,434)
Total comprehensive income/(expense) for the year attributable to ordinary shareholders arises from:			
Continuing operations		278	(3,457)
Discontinued operations		(117)	22
Total comprehensive income/(expense) for the year attributable to ordinary shareholders		161	(3,435)

Condensed consolidated balance sheet

At 31 December 2021

	Notes	2021 £m	2020 £m
ASSETS			
Intangible assets	7	4,041	5,145
Property, plant and equipment	8	3,917	4,515
Right-of-use assets	9	1,203	1,405
Investments – joint ventures and associates	10	404	394
Investments – other	10	36	19
Other financial assets	16	361	687
Deferred tax assets	5	2,249	1,826
Post-retirement scheme surpluses	20	1,148	907
Non-current assets		13,359	14,898
Inventories	11	3,666	3,690
Trade receivables and other assets	12	5,383	5,455
Contract assets	15	1,473	1,510
Taxation recoverable		90	117
Other financial assets	16	46	107
Short-term investments		8	–
Cash and cash equivalents	13	2,621	3,452
Current assets		13,287	14,331
Assets held for sale	22	2,028	288
TOTAL ASSETS		28,674	29,517
LIABILITIES			
Borrowings and lease liabilities	17	(279)	(1,272)
Other financial liabilities	16	(689)	(608)
Trade payables and other liabilities	14	(6,016)	(6,653)
Contract liabilities	15	(3,599)	(4,187)
Current tax liabilities		(101)	(154)
Provisions for liabilities and charges	19	(475)	(826)
Current liabilities		(11,159)	(13,700)
Borrowings and lease liabilities	17	(7,497)	(6,058)
Other financial liabilities	16	(2,715)	(3,046)
Trade payables and other liabilities	14	(1,575)	(1,922)
Contract liabilities	15	(6,710)	(6,245)
Deferred tax liabilities	5	(451)	(494)
Provisions for liabilities and charges	19	(1,107)	(1,119)
Post-retirement scheme deficits	20	(1,373)	(1,580)
Non-current liabilities		(21,428)	(20,464)
Liabilities associated with assets held for sale	22	(723)	(228)
TOTAL LIABILITIES		(33,310)	(34,392)
NET LIABILITIES		(4,636)	(4,875)
EQUITY			
Called-up share capital		1,674	1,674
Share premium		1,012	1,012
Capital redemption reserve		165	162
Cash flow hedging reserve		(45)	(94)
Merger reserve		650	650
Translation reserve		342	524
Accumulated losses		(8,460)	(8,825)
Equity attributable to ordinary shareholders		(4,662)	(4,897)
Non-controlling interests		26	22
TOTAL EQUITY		(4,636)	(4,875)

Condensed consolidated cash flow statement

For the year ended 31 December 2021

	Notes	2021 £m	2020 £m
Operating profit/(loss) from continuing operations		513	(1,972)
Operating loss from discontinued operations	22	(43)	(109)
Operating profit/(loss) ¹		470	(2,081)
Loss on disposal of property, plant and equipment		9	37
Share of results of joint ventures and associates	10	(45)	(191)
Dividends received from joint ventures and associates	10	27	60
Amortisation and impairment of intangible assets	7	290	902
Depreciation and impairment of property, plant and equipment	8	462	821
Depreciation and impairment of right-of-use assets	9	257	732
Adjustment of amounts payable under residual value guarantees within lease liabilities ²		(4)	(102)
Impairment of and other movements on investments	10	7	24
Decrease in provisions		(394)	(801)
(Increase)/decrease in inventories		(169)	588
Movement in trade receivables/payables and other assets/liabilities		(507)	(2,655)
Movement in contract assets/liabilities		(134)	259
Financial penalties paid ³		(156)	(135)
Cash flows on other financial assets and liabilities held for operating purposes		(85)	(126)
Interest received		9	13
Net defined benefit post-retirement cost/(credit) recognised in profit/(loss) before financing	20	23	(68)
Cash funding of defined benefit post-retirement schemes	20	(162)	(80)
Share-based payments		28	25
Net cash outflow from operating activities before taxation		(74)	(2,778)
Taxation paid		(185)	(231)
Net cash outflow from operating activities		(259)	(3,009)
Cash flows from investing activities			
Movement in other investments	10	(26)	(5)
Additions of intangible assets	7	(231)	(365)
Disposals of intangible assets	7	5	18
Purchases of property, plant and equipment		(328)	(585)
Disposals of property, plant and equipment		61	23
Acquisition of businesses		–	(106)
Disposal of businesses	22	99	23
Movement in investments in joint ventures and associates and other movements on investments	10	–	(19)
Movement in short-term investments		(8)	6
Net cash outflow from investing activities		(428)	(1,010)
Cash flows from financing activities			
Repayment of loans ⁴		(965)	(2,884)
Proceeds from increase in loans ⁴		2,005	4,774
Capital element of lease payments		(374)	(284)
Net cash flow from increase in borrowings and leases		666	1,606
Interest paid		(206)	(88)
Interest element of lease payments		(63)	(74)
Fees paid on undrawn facilities		(62)	(97)
Cash flows on settlement of excess derivative contracts ⁵	4	(452)	(202)
Issue of ordinary shares – rights issue (net of expenses and rights taken by share trust)		–	1,972
Purchase of ordinary shares		–	(1)
Transactions with NCI ⁶		30	–
NCI on formation of subsidiary		3	–
Dividends to NCI		(1)	(1)
Redemption of C Shares		(3)	(91)
Net cash (outflow)/inflow from financing activities		(88)	3,024
Change in cash and cash equivalents		(775)	(995)
Cash and cash equivalents at 1 January		3,496	4,435
Exchange (losses)/gains on cash and cash equivalents		(82)	56
Cash and cash equivalents at 31 December⁷		2,639	3,496

Condensed consolidated cash flow statement continued

For the year ended 31 December 2021

- 1 During the year, the Group received £11m (2020: £47m) from the British Government as part of the UK furlough scheme. This was recognised within operating profit/(loss).
- 2 Where the cost of meeting residual value guarantees is less than that previously estimated, as costs have been mitigated or liabilities waived by the lessor, the lease liability has been remeasured. To the extent that the value of this remeasurement exceeds the value of the right-of-use asset, the reduction in the lease liability is credited to cost of sales.
- 3 Relates to penalties paid on agreements with investigating bodies.
- 4 Repayment of loans includes repayment of £300m commercial paper under the Covid Corporate Financing Facility (CCFF) and €750m (£639m) loan notes in line with repayment terms. Proceeds from increase in loans includes the drawdown of a £2,000m loan (supported by an 80% guarantee from UK Export Finance). Further details are provided in note 17.
- 5 During the year, the Group incurred a cash outflow of £452m as a result of settling foreign exchange contracts that were originally in place to sell \$3,184m receipts. Further detail is provided in note 4.
- 6 Relates to NCI investment received in the year, in respect of Rolls-Royce SMR Limited. Following the formation of Rolls-Royce SMR Limited during the year, and in line with the shareholder agreements, £30m investment was received by Rolls-Royce SMR Limited.
- 7 The Group considers overdrafts (repayable on demand) and cash held for sale 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 condensed 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.

	2021 £m	2020 £m
Reconciliation of movements in cash and cash equivalents to movements in net debt		
Change in cash and cash equivalents	(775)	(995)
Cash flow from increase in borrowings and leases	(666)	(1,606)
Less: settlement of related derivatives included in fair value of swaps below	6	50
Cash flow from increase/(decrease) in short-term investments	8	(6)
Change in net debt resulting from cash flows	(1,427)	(2,557)
New leases and other non-cash adjustments to lease liabilities and borrowings	(86)	(38)
Exchange (losses)/gains on net debt	(51)	143
Fair value adjustments	170	(126)
Debt disposed of on disposal of business/(debt assumed on acquisition of business)	8	(24)
Reclassifications	19	11
Movement in net debt excluding the fair value of swaps	(1,367)	(2,591)
Net debt at 1 January excluding the fair value of swaps	(3,827)	(1,236)
Net debt at 31 December excluding the fair value of swaps	(5,194)	(3,827)
Fair value of swaps hedging fixed rate borrowings	37	251
Net debt at 31 December	(5,157)	(3,576)

Condensed consolidated cash flow statement continued

For the year ended 31 December 2021

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

	At 1 January		Funds flow	Net funds on acquisition/ disposal	Exchange differences	Fair value adjustments	Reclassifi- cations ¹	Other movements	At 31 December
	£m	£m							
2021									
Cash at bank and in hand	940	(87)	–	(20)	–	(38)	–	–	795
Money market funds	669	(620)	–	–	–	–	–	–	49
Short-term deposits	1,843	–	–	(66)	–	–	–	–	1,777
Cash and cash equivalents (per balance sheet)	3,452	(707)	–	(86)	–	(38)	–	–	2,621
Cash and cash equivalents included within assets held for sale	51	(68)	–	4	–	38	–	–	25
Overdrafts	(7)	–	–	–	–	–	–	–	(7)
Cash and cash equivalents (per cash flow statement)	3,496	(775)	–	(82)	–	–	–	–	2,639
Short-term investments	–	8	–	–	–	–	–	–	8
Other current borrowings	(1,006)	950	–	1	35	18	–	–	(2)
Non-current borrowings	(4,274)	(2,002)	–	38	136	88	(9)	(6,023)	
Borrowings included within liabilities held for sale	–	18	–	1	(1)	(77)	–	–	(59)
Lease liabilities	(2,043)	370	–	(9)	–	15	(77)	(1,744)	
Lease liabilities included within liabilities held for sale	–	4	8	–	–	(25)	–	–	(13)
Financial liabilities	(7,323)	(660)	8	31	170	19	(86)	(7,841)	
Net debt excluding fair value of swaps	(3,827)	(1,427)	8	(51)	170	19	(86)	(5,194)	
Fair value of swaps hedging fixed rate borrowings ²	251	(6)	–	(35)	(173)	–	–	–	37
Net debt³	(3,576)	(1,433)	8	(86)	(3)	19	(86)	(5,157)	
2020									
Cash at bank and in hand	825	163	–	3	–	(51)	–	–	940
Money market funds	1,095	(426)	–	–	–	–	–	–	669
Short-term deposits	2,523	(733)	–	53	–	–	–	–	1,843
Cash and cash equivalents (per balance sheet)	4,443	(996)	–	56	–	(51)	–	–	3,452
Cash and cash equivalents included within assets held for sale	–	–	–	–	–	51	–	–	51
Overdrafts	(8)	1	–	–	–	–	–	–	(7)
Cash and cash equivalents (per cash flow statement)	4,435	(995)	–	56	–	–	–	–	3,496
Short-term investments	6	(6)	–	–	–	–	–	–	–
Other current borrowings	(427)	134	(24)	(1)	–	(686)	(2)	(1,006)	
Non-current borrowings	(2,896)	(1,974)	–	38	(126)	686	(2)	(4,274)	
Lease liabilities	(2,354)	284	–	50	–	11	(34)	(2,043)	
Financial liabilities	(5,677)	(1,556)	(24)	87	(126)	11	(38)	(7,323)	
Net debt excluding fair value of swaps	(1,236)	(2,557)	(24)	143	(126)	11	(38)	(3,827)	
Fair value of swaps hedging fixed rate borrowings ²	243	(50)	–	(42)	114	(14)	–	–	251
Net debt³	(993)	(2,607)	(24)	101	(12)	(3)	(38)	(3,576)	

¹ Reclassifications include the transfer of ITP Aero to held for sale and fees of £29m paid in previous periods for the £2,000m loan (supported by an 80% guarantee from UK Export Finance) that have been reclassified to borrowings on the drawdown of the facility during the current period.

² Fair value of swaps hedging fixed rate borrowings reflects the impact of derivatives on repayments of the principal amount of debt. Net debt therefore includes the fair value of derivatives included in fair value hedges (2021: £114m, 2020: £293m) and the element of fair value relating to exchange differences on the underlying principal of derivatives in cash flow hedges (2021: £(77)m, 2020: £(42)m).

³ As at 31 December 2021, net debt excluding lease liabilities was £(3,400)m (2020: £(1,533)m).

Condensed consolidated statement of changes in equity

For the year ended 31 December 2021

Attributable to ordinary shareholders

Notes	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 1 January 2021	1,674	1,012	162	(94)	650	524	(8,825)	(4,897)	22	(4,875)	
Profit for the year	—	—	—	—	—	—	120	120	1	121	
Foreign exchange translation differences on foreign operations	—	—	—	—	—	(178)	—	(178)	—	(178)	
Reclassified to income statement on disposal of businesses	22	—	—	—	—	(1)	—	(1)	—	(1)	
Movement on post-retirement schemes	20	—	—	—	—	—	254	254	—	254	
Fair value movement on cash flow hedges	—	—	—	(32)	—	—	—	(32)	—	(32)	
Reclassified to income statement from cash flow hedge reserve	—	—	—	39	—	—	—	39	—	39	
Revaluation to fair value of other investments	—	—	—	—	—	—	(2)	(2)	—	(2)	
OCI of joint ventures and associates	10	—	—	—	44	—	—	1	45	—	45
Related tax movements	5	—	—	(2)	—	(3)	(79)	(84)	—	(84)	
Total comprehensive income for the year	—	—	—	49	—	(182)	294	161	1	162	
Redemption of C Shares	—	—	3	—	—	—	(3)	—	—	—	
Share-based payments - direct to equity ²	—	—	—	—	—	—	28	28	—	28	
Dividends to NCI	—	—	—	—	—	—	—	—	(1)	(1)	
Transactions with NCI ³	—	—	—	—	—	—	29	29	1	30	
NCI on formation of subsidiary	—	—	—	—	—	—	—	—	3	3	
Related tax movements	5	—	—	—	—	—	—	17	17	—	17
Other changes in equity in the year	—	—	3	—	—	—	71	74	3	77	
At 31 December 2021	1,674	1,012	165	(45)	650	342	(8,460)	(4,662)	26	(4,636)	
At 1 January 2020	386	319	159	(96)	650	397	(5,191)	(3,376)	22	(3,354)	
Loss for the year	—	—	—	—	—	—	(3,170)	(3,170)	1	(3,169)	
Foreign exchange translation differences on foreign operations	—	—	—	—	—	121	—	121	—	121	
Reclassified to the income statement on disposal of businesses	—	—	—	—	—	6	—	6	—	6	
Movement on post-retirement schemes	20	—	—	—	—	—	(590)	(590)	—	(590)	
Fair value movement on cash flow hedges	—	—	—	(16)	—	—	—	(16)	—	(16)	
Reclassified to income statement from cash flow hedge reserve	—	—	—	26	—	—	—	26	—	26	
OCI of joint ventures and associates	10	—	—	(4)	—	—	(1)	(5)	—	(5)	
Related tax movements	5	—	—	(4)	—	—	197	193	—	193	
Total comprehensive expense for the year	—	—	—	2	—	127	(3,564)	(3,435)	1	(3,434)	
Issues of ordinary shares - Rights issue ⁴	1,288	693	—	—	—	—	(10)	1,971	—	1,971	
Issue of C Shares	—	—	(89)	—	—	—	1	(88)	—	(88)	
Redemption of C Shares	—	—	92	—	—	—	(92)	—	—	—	
Ordinary shares purchased	—	—	—	—	—	—	(1)	(1)	—	(1)	
Share-based payments - direct to equity ²	—	—	—	—	—	—	27	27	—	27	
Transactions with NCI	—	—	—	—	—	—	—	—	(1)	(1)	
Related tax movements	5	—	—	—	—	—	5	5	—	5	
Other changes in equity in the year	1,288	693	3	—	—	—	(70)	1,914	(1)	1,913	
At 31 December 2020	1,674	1,012	162	(94)	650	524	(8,825)	(4,897)	22	(4,875)	

¹ At 31 December 2021, 29,405,191 ordinary shares with a net book value of £65m (2020: 39,866,717 ordinary shares with a net book value of £89m) were held for the purpose of share-based payment plans and included in accumulated losses. During the year:

- 10,667,095 ordinary shares with a net book value of £24m (2020: 3,458,865 ordinary shares with a net book value of £29m) vested in share-based payment plans; and
- the Company acquired none (2020: 85,724) of its ordinary shares via reinvestment of dividends received on its own shares and purchased none (2020: 30,763,282) of its ordinary shares through purchases on the London Stock Exchange.

² 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.

³ Relates to NCI investment received in the year in respect of Rolls-Royce SMR Limited. Further detail can be found on page 19.

⁴ In 2020, the Company issued 6,436,601,676 new ordinary shares with a net book value of £1,288m and the Employee Share Trust subscribed for new shares at a value of £10m relating to the November 2020 rights issue. The amount credited to share premium is net of £79m in relation to transaction costs associated with the rights issue.

Notes to the year-end financial statements

1 Basis of preparation and accounting policies

Reporting entity

Rolls-Royce Holdings plc (the 'Company') is a public company limited by shares incorporated under the Companies Act 2006 and domiciled in the UK. These condensed consolidated financial statements of the Company as at and for the year ended 31 December 2021 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 2021 (Annual Report 2021) 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 UK adopted International Accounting Standards (IAS) and interpretations issued by the IFRS Interpretations Committee applicable to companies reporting under UK adopted IFRS. They do not include all the information required for full annual statements and should be read in conjunction with the 2021 Annual Report.

The Board of directors approved the condensed consolidated financial statements on 24 February 2022. They are not statutory accounts within the meaning of section 435 of the Companies Act 2006.

The Group's financial statements for the year ended 31 December 2021 were approved by the Board on 24 February 2022. They have been reported on by the Group's auditors and will be delivered to the registrar of companies in due course. 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 comparative figures for the financial year 31 December 2020 have been extracted from the Group's statutory accounts for that financial year. The 2020 financial statements, which were prepared in accordance with international accounting standards in conformity with the requirements of the Companies Act 2006 and IFRS adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union, have been reported on by the Group's auditors and delivered to the registrar of companies. There are no differences for the Group in applying each of these accounting frameworks. 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.

Changes to accounting policies

In April 2021, the IFRS Interpretations Committee published its final agenda decision on Configuration and Customisation costs in a Cloud Computing Arrangement. The agenda decision considers how a customer accounts for configuration or customisation costs where an intangible asset is not recognised in a cloud computing arrangement. The agenda decision does not have a material impact on the Group in respect of the current period or prior periods.

During 2021, an IBOR reform transition project to assess and implement changes to systems, processes, risk and valuation models, as well as managing related tax and accounting implications was carried out within the Group. The Group's risk exposure that is directly affected by the interest rate benchmark reform is its portfolio of long-term borrowings of £6.1bn and a number of its foreign exchange contracts. The borrowings are hedged, using interest rate swaps and cross-currency interest rate swaps, for changes in fair value and cash flows attributable to the relevant benchmark interest rate. The Group has made amendments to the contractual terms of IBOR-referenced floating-rate debt, swaps and foreign exchange contracts, and updated the relevant hedge designations.

A number of the Group's lease liabilities are based on a LIBOR index. These are predominantly referencing USD LIBOR which is not expected to cease until 2023, hence the change in relation to these contracts has not impacted the 2021 financial statements. These contracts will be amended in due course.

Discontinued operations

A discontinued operation is defined in IFRS 5 *Non-current assets held for sale and discontinued operations* as a component of an entity that has been disposed of or is classified as held for sale, represents a separate major line of business or geographical area of operations, is part of a single co-ordinated plan to dispose of such a line of business or is a subsidiary acquired exclusively with a view to resale. The results of discontinued operations are required to be presented separately in the statement of profit or loss with the comparative period restated to show results attributable to continuing operations.

Assets and businesses are classified as held for sale when their carrying amounts are recovered through sale rather than through continuing use.

At 31 December 2021, the ITP Aero business has been classified as held for sale following activities undertaken in the period to 30 June 2021 to transfer assets (including the Civil Aerospace Hucknall site with associated fabrications activities) within the Group from Civil Aerospace to ITP Aero in preparation for sale. The comparative balance sheet has not been restated. Consequently ITP Aero has been classified as a discontinued operation at 31 December 2021. See notes 2 and 22 for more detail.

Post balance sheet events

The Group has taken the latest legal position in relation to any ongoing legal proceedings and reflected these in the 2021 results as appropriate. In addition, the Group completed the sale of its 23.1% shareholding in AirTanker Holdings Limited to Equitix Investment Management Limited on 9 February 2022. Further details are included in note 22.

1 Basis of preparation and accounting policies continued

Going concern

The Group operates an annual planning process. The Group's plans, and risks to their achievement are reviewed by the Board and, once approved are used as the basis for monitoring the Group's performance, incentivising employees, and providing external guidance to shareholders.

The processes for identifying and managing risk are described on pages 52 to 57 of the 2021 Annual Report. As described on these pages, the risk management process, and the going concern and viability statements, are designed to provide reasonable but not absolute assurance.

In accordance with the requirements of the UK Corporate Governance Code 2018, the Directors have undertaken a comprehensive going concern review over an 18-month period to August 2023, considering the forecast cash flows and the available liquidity of the Group over that 18-month period, taking into account the Group's principal risks and uncertainties.

Impact of COVID-19

The COVID-19 pandemic continues to have an impact on the Group, primarily within Civil Aerospace, due to continued travel restrictions and varied quarantine requirements imposed by governments across the globe. The speed of vaccination programmes, efficacy of vaccines and differing governmental testing and quarantine requirements means that uncertainty remains in the short term over the timing of recovery of demand, in particular in relation to the civil aviation industry. This has been considered by the Directors in assessing the adoption of the going concern basis in the consolidated financial statements. Recognising the challenges of reliably estimating and forecasting the timing of recovery of demand, the Group has modelled two forecasts in its assessment of going concern which have been considered by the Directors, along with a likelihood assessment of these forecasts, being:

- base case, which reflects the Directors current expectations of future trading; and
- severe but plausible downside forecast, which envisages a 'stress' or 'downside' situation.

Since the start of the pandemic, the Group has taken action to reduce cash expenditure and maintain liquidity. The Group raised £7.3bn of additional funding during 2020 through a combination of equity and debt. In March 2021, the Group secured a further £1bn term-loan facility, 80% of which is guaranteed by UK Export Finance (UKEF), repayable in March 2026, and in August 2021 extended its £1bn undrawn bank loan facility from a maturity date of 15 October 2022 to a maturity date of 15 January 2024.

A major restructuring programme was launched in 2020 to reshape and resize the Group to deliver forecast annualised savings of at least £1.3bn by the end of 2022, with a plan to remove at least 9,000 roles across the Group. At 31 December 2021, over 9,000 roles had been removed from continuing operations and annualised savings exceeded the £1.3bn target 12 months ahead of schedule.

Impact of climate change

The Directors believe there are significant business growth opportunities to come from the Group playing a leading role in the transition to net zero, whilst at the same time climate change poses potentially significant risks to the Group. Whilst it is unlikely that physical and transition risks will arise during the 18-month period being assessed for going concern, both physical and transition risks have been considered as part of the Group's risk assessment. The investment required to achieve net zero scope 1 + 2 GHG emissions, together with that required to ensure our new products will be compatible with net zero operation by 2030, has been included in the Group's forecasts, including those periods used in the assessment of going concern. Over the next 18 months, 64% of the Group's R&D investment will be directed to the delivery of our decarbonisation strategy.

Liquidity and borrowings

At 31 December 2021, the Group had liquidity of £7.1bn including cash and cash equivalents of £2.6bn and undrawn facilities of £4.5bn.

The Group's committed borrowing facilities at 31 December 2021 and 31 August 2023 are set out below. None of the facilities are subject to any financial covenants or rating triggers which could accelerate repayment.

(£m)	31 December 2021	31 August 2023
Issued Bond Notes ¹	3,995	3,995
Other loans	63	-
UKEF £2bn loan (drawn) ² and UKEF £1bn loan (undrawn) ³	3,000	3,000
Revolving Credit Facility (undrawn) ⁴	2,500	2,500
Bank Loan Facility (undrawn) ⁵	1,000	1,000
Total committed borrowing facilities	10,558	10,495

¹ The value of Issued Bond Notes reflects the impact of derivatives on repayments of the principal amount of debt. The bonds mature by May 2028.

² The £2,000m UKEF loan matures in August 2025.

³ The £1,000m UKEF loan matures in March 2026 (currently undrawn).

⁴ The £2,500m Revolving Credit Facility matures in April 2025 (currently undrawn).

⁵ The £1,000m Bank Loan Facility matures in January 2024 (currently undrawn).

Taking into account the maturity of borrowing facilities, the Group has committed facilities of at least £10.5bn available throughout the period to 31 August 2023.

1 Basis of preparation and accounting policies continued

Forecasts

The Group has modelled a base case, reflecting a best estimate of future trading. The base case forecast assumes the continuation of a steady recovery in customer confidence in the aftermath of the COVID-19 pandemic. Vaccination programmes continue to be rolled out but the efficacy of vaccines over different variants and differing governmental testing and quarantine requirements means that the recovery of demand is hindered in the short term, in particular in relation to the civil aviation industry.

In August 2020, the Group announced it would deliver proceeds of around £2bn from planned disposals. Some of these disposals were completed by 24 February 2022. For the remaining planned disposals, as these are due to complete within the 18-month period being considered, the proceeds have been included in the base case forecast, together with a corresponding decrease in debt facilities.

The downside forecast assumes Civil widebody EFHs remain at average Q4 2021 levels over the 18-month period to August 2023, with recovery subdued due to ongoing infection rates and a continuation of new variants of the virus, resulting in ongoing caution in opening borders to international travel and no upward trend in EFH until September 2023, resulting in a much slower recovery in demand compared with the base case. The downside forecast also reflects risks in relation to load reduction through our factories, and possible supply chain challenges.

Conclusion

After reviewing the current liquidity position, the cash flow forecasts modelled under both the base case and downside, the Directors consider that the Group has sufficient liquidity to continue in operational existence for a period of at least 18 months from the date of this report and are therefore satisfied that it is appropriate to adopt the going concern basis of accounting in preparing the financial statements.

Climate change

In preparing the Condensed Consolidated Financial Statements the Directors have considered the potential impact of climate change. Based on the Taskforce for Climate-related Financial Disclosures (TCFD) recommendations, the Group assesses the potential impact of climate-related risks which cover both transition risks and physical risks. The transition risks may include extensive policy, legal, technological, and market changes and physical risks could include direct damage to assets and supply chain disruption.

The Group has set decarbonisation commitments and identified longer-term considerations in response to the climate challenge and is engaging proactively with external stakeholders to advocate for the conditions that society needs to achieve its net zero target. The Group's main short and longer-term priorities include the following:

- achieving net zero greenhouse gas (GHG) emissions by 2030 from all energy purchased and consumed in the operation of the buildings, facilities and manufacturing processes (with the exception of product testing and development). This will be met through continued investment in onsite renewable energy installations; the procurement of renewable energy; and continued investment in energy efficiency improvements to reduce the Group's overall energy demands and operating costs. The investment required to meet these scope 1 and 2 emission improvements is included in the forecasts that support these Financial Statements. The Group expects the Bristol, UK, manufacturing site to be its first site to achieve net zero carbon operations during 2022.
- pioneering breakthrough new technologies, including investment in hybrid-electric solutions in Power Systems, continued development of the more efficient UltraFan aero engine, testing of sustainable aviation fuels, small modular reactors (SMRs) and hybrid and fully electric propulsion. New products will be compatible with net zero operation by 2030 and all products will be compatible with net zero operation by 2050. In the year, R&D costs of £(68)m within New Markets included design development to ready the SMRs to enter the UK GDA process and investment in electrical propulsion technology. Future investment required to deliver these technologies is included in the forecasts that support the financial statements.

Climate change scenarios have been prepared to assess the viability of our business strategy, decarbonisation plans and approach to managing climate-related risk. There is inherent uncertainty over the assumptions used within these and how they will impact the Group's business operations, cash flows and profit projections. The Directors assess the assumptions on a regular basis to ensure that they are consistent with the risk management activities and the commitments made to investors and other stakeholders.

Assumptions used within the Financial Statements in relation to areas such as revenue recognition for long-term contracts, impairment reviews of non-current assets and the carrying amount of deferred tax assets consider the findings from the climate scenarios prepared. Key variables include carbon prices based on the IEA Net Zero scenario, which assumes an increase from \$47 per tonne of carbon in 2022 to \$250 per tonne in 2050, commodity price trends derived from the climate scenarios set out by the Intergovernmental Panel on Climate Change (IPCC RCP1.9), temperature rises from the (IPCC SSP1-19) scenario, and GDP information from the Oxford Economics Net Zero model.

1 Basis of preparation and accounting policies continued

As details of what specific future intervention measures will be taken by governments are not yet available, carbon pricing has been used to quantify the potential impact of future policy changes on the Group. To ensure revenue recognition or the carrying value of assets is not overstated it has cautiously been assumed that the impact of carbon pricing predominantly falls on the cost base of the domestic facilities and external supply chain, rather than directly on customers or consumers. The Group will be able to mitigate an element of the financial impact as it reduces the scope 1 and 2 emissions from its buildings, facilities and manufacturing processes and this is expected to decline. However, no account has been made of expected mitigations from decarbonisation in the external supply chain (who the Group is working with, whilst acknowledging in its financial modelling that this is complex and will therefore take some time). The financial modelling performed recognises the extent to which the Group's current supplier contracts offer protection from cost increases in the short to medium term where pricing is fixed or subject to capped escalation clauses. The Group has made a cautious assessment of whether higher costs would be passed on to customers in the short and medium term that considers the markets operated in and the pricing mechanisms in place. For example, in Civil Aerospace it is recognised that escalation caps within a number of its LTSA contracts would be triggered, meaning additional costs could remain within the business under current commercial arrangements until the end of existing contract periods.

When determining the amount of cumulative revenue recognised on long-term contracts, and the obligation in relation on onerous contracts, the assumptions above have been used to reflect the climate uncertainties. This has resulted in a revenue catch-up of £(17)m and an increase in contract loss provisions of £(20)m in the year from increased costs over the term of the current contracts of around 1%. A sensitivity is presented within the key sources of estimation uncertainty to disclose the impact of a further 1% cost increase that might arise from further unmitigated increases in carbon and/or commodity pricing.

Impairment testing of non-current assets including goodwill, programme assets and deferred tax assets has considered the above risks as well as assessing how the Group's 1.5°C scenario may change the demand for products over the medium and longer term. To assess the carrying value of assets where there is more potential for impairment, the Directors have modelled downside risks specific to those products. This included consideration of lower OE volumes or a shorter in-service life that generates lower aftermarket volumes, together with higher costs in Civil Aerospace. Power Systems is a shorter-cycle business with scope to reassess contractual terms to reflect the cost of carbon. Whilst the Defence programmes cover a longer period, the nature of the largest customers and the typical contractual arrangements mean that the Group expect future contracts to reflect the cost of carbon. Further information is provided in notes 5 and 7.

Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the unused tax losses and deductible temporary difference can be utilised. In addition to the weighted downside forecast (see note 7), the climate-related estimates and assumptions above have also been considered when assessing the recoverability of the deferred tax assets. Recognising the longer term over which these assets will be recovered, the Group has also considered the impact on OE and aftermarket sales if new, more efficient, civil aircraft or new engine options enter the market earlier than assumed in its most likely estimates. Under this scenario some older products would see a reduction in profits but additional opportunities exist for newer products such as the Trent XWB. Whilst carbon pricing illustrates pressure on costs, decarbonisation and new supplier and customer contracts offer the opportunity to receive value for more efficient and sustainable products. Further details are included in note 5 together with sensitivity analysis in the key sources of estimation uncertainty section below.

The climate-related estimates and assumptions that have been considered to be key areas of judgement or sources of estimation uncertainty for the year ended 31 December 2021 are those relating to the recoverable amount of non-current assets including goodwill, capitalised development costs, recovery of deferred tax assets, recognition and measurement of provisions and recognition of revenue on long-term contracts.

Further detail is set out in note 1 to the Financial Statements in the 2021 Annual Report.

1 Basis of preparation and accounting policies continued

Key areas of judgement and sources of estimation uncertainty

The determination of the Group's accounting policies requires judgement. The subsequent application of these policies requires estimates and the actual outcome may differ from that calculated. The key areas of judgement and sources of estimation uncertainty as at 31 December 2021, that were assessed as having a significant risk of causing material adjustment to the carrying amounts of assets and liabilities are set out in note 1 to the Financial Statements in the 2021 Annual Report and are summarised below.

Area	Key judgements	Key sources of estimation uncertainty	Sensitivities performed
Revenue recognition and contract assets and liabilities	<p>Whether Civil Aerospace OE and aftermarket contracts should be combined.</p> <p>How performance on long-term aftermarket contracts should be measured.</p> <p>Whether any costs should be treated as wastage.</p> <p>Whether sales of spare engines to joint ventures are at fair value.</p> <p>When revenue should be recognised in relation to spare engine sales to related entities.</p>	<p>Estimates of future revenue and costs of long-term contractual arrangements including the impact of climate change.</p> <p>Uncertainty remains in the short-term over the timing of recovery of demand, in particular in relation to the civil aviation industry, in the aftermath of the COVID-19 pandemic. Estimates of future revenue within Civil Aerospace are based upon future EFH forecasts, influenced by assumptions over the time period and profile over which the civil aviation industry will recover.</p>	<p>Based upon the stage of completion of all widebody LTSA contracts within Civil Aerospace as at 31 December 2021, the following changes in estimate would result in catch-up adjustments being recognised in the period in which the estimates change (at underlying rates):</p> <ul style="list-style-type: none"> - A change in forecast EFHs of 1% over the remaining term of the contracts would impact LTSA income and to a lesser extent costs, resulting in an in-year impact of around £6m to £9m. This would be expected to be seen as a catch-up change in revenue or, to the extent it impacts onerous contracts, within cost of sales. - A 1% increase or decrease in our pricing to customers over the life of the contracts would lead to a revenue catch-up adjustment in the next 12 months of around £100m. - A 1% increase or decrease in shop visit costs over the life of the contracts would reduce the stage of completion and lead to a revenue catch-up adjustment in the next 12 months of around £25m.
Risk and revenue sharing arrangements	Determination of the nature of entry fees received.		
Taxation		<p>Estimates are necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets. This is largely driven by the Civil Aerospace business and the estimates described above.</p>	<p>A 5% change in margin or shop visits would result in an increase/decrease in the deferred tax asset by around £150m.</p> <p>If only 90% of assumed future cost increases are passed on to customers it would result in a decrease in the deferred tax asset by around £40m, if carbon prices were to double, this would be £110m.</p>
Discontinued operations and assets held for sale	Whether the ITP Aero business and associated consolidation adjustments meets the criteria to be classified as held for sale and a discontinued operation.		Further detail is included in note 5.
Research and development	<p>Determination of the point in time where costs incurred on an internal programme development meet the criteria for capitalisation or ceasing capitalisation.</p> <p>Determination of the basis for amortising capitalised development costs.</p>		

Area	Key judgements	Key sources of estimation uncertainty	Sensitivities performed
Leases	Determination of the lease term.	Estimates of the payments required to meet residual value guarantees at the end of engine leases. Amounts due can vary depending on the level of utilisation of the engines, overhaul activity prior to the end of the contract, and decisions taken on whether ongoing access to the assets is required at the end of the lease term.	The lease liability at 31 December 2021 included £412m relating to the cost of meeting these residual value guarantees in the Civil Aerospace business. Up to £76m is payable in the next 12 months, £75m is due over the following four years and the remaining balance after five years.
Impairment of non-current assets	Determination of cash-generating units for assessing impairment of goodwill.	The carrying value of intangible assets (including programme-related intangible assets) is dependent on the estimates of future cash flows which are influenced by assumptions over the recovery of the industries in which the Group operate.	The Group has considered whether a 10% reduction in OE quantities or a 5% deterioration in EFHs (and hence future cash flows) on the business aviation programme assets that have previously been subject to impairment would lead to an additional impairment and concluded that it would not. For programmes that have not previously been impaired, but where there is existing headroom that could be significantly reduced over the next 12 months, the Group has considered whether an increase in costs of up to 10% would lead to an additional impairment and considered that it would not.
Provisions	Whether any costs relating to contracts with customers should be treated as wastage.	Estimates of the time to resolve the technical issues on the Trent 1000, including the development of the modified high pressure turbine (HPT) blade and estimates to Trent 1000 long-term contracts assessed as onerous. Estimates of the future revenues and costs to fulfil onerous contracts.	A 12-month delay in the availability of the modified HPT blade could lead to a £60-100m increase in the Trent 1000 exceptional costs provision. An increase in Civil Aerospace widebody estimates of LTSA costs of 1% over the remaining term of the contracts could lead to a £100-120m increase in the provision for contract losses across all programmes.
Post-retirement benefits		The valuation of the Group's defined benefit pension schemes are based on assumptions determined with independent actuarial advice. The size of the net surplus is sensitive to the actuarial assumptions, which include the discount rate used to determine the present value of the future obligation, longevity, and the number of plan members who take the option to transfer their pension to a lump sum on retirement or who choose to take the Bridging Pension Option.	A reduction in the discount rate from 1.90% to 1.65% could lead to an increase in the defined benefit obligations of the RR UK Pension Fund of approximately £460m. This would be expected to be broadly offset by changes in the value of scheme assets, as the scheme's investment policies are designed to mitigate this risk. A one-year increase in life expectancy from 21.8 years (male aged 65) and from 23.2 years (male aged 45) would increase the defined benefit obligations of the RR UK Pension Fund by approximately £365m. Where applicable, it is assumed that 50% and 40% (31 December 2020: 40%) of employed deferred and deferred members respectively of the RR UK Pension Fund will transfer out of the fund on retirement with a share of funds transfer value. An increase of 5% in this assumption would increase the defined benefit obligation by £30m.

2 Analysis by business segment

The analysis by 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 acts as the Chief Operating Decision Maker as defined by IFRS 8). The Group's four divisions are set out below.

Civil Aerospace	- development, manufacture, marketing and sales of commercial aero engines and aftermarket services
Defence	- development, manufacture, marketing and sales of military aero engines, naval engines, submarine nuclear power plants and aftermarket services
Power Systems	- development, manufacture, marketing and sales of integrated solutions for onsite power and propulsion
New Markets	- development, manufacture and sales of small modular reactor (SMR) and new electrical power solutions

For the year ended 31 December 2020, Civil Aerospace, Power Systems, Defence and ITP Aero were identified as core businesses, with other smaller businesses identified as non-core businesses. From 1 January 2021, the identification of core and non-core businesses has ceased with non-core businesses now included within the category of 'Other businesses'. The figures in the segmental analysis are shown in total to include the Group's four divisions and Other businesses.

Other businesses include the trading results of the Bergen Engines AS business until the date of disposal on 31 December 2021, the results of the Civil Nuclear Instrumentation & Control business until the date of disposal on 5 November 2021, the results of the North America Civil Nuclear business until the date of disposal on 31 January 2020 and the results of the Knowledge Management System business until the date of disposal on 3 February 2020. The trading results of the UK Civil Nuclear business have also been included in Other businesses. The segmental analysis for 2020 has been restated to reflect the 2021 definition of Other businesses.

During the year to 31 December 2021, activity previously managed as part of the Civil Aerospace segment has been transferred to ITP Aero. The activity transferred from Civil Aerospace to ITP Aero relates to the change in ownership of the Hucknall site with associated fabrications activities. This transfers the production of fabrications, combustors and fan outlet guide vanes manufactured in Hucknall from Civil Aerospace to ITP Aero. To ensure comparability, the segmental analysis for 2020 has been restated to reflect this transfer. ITP has been classified as a disposal group held for sale and discontinued operations since 30 June 2021 and as such, the operating segment is no longer regularly reviewed by the Board as a basis for making decisions about the allocation of resources to the business or to assess its performance. In line with IFRS 8, ITP Aero is no longer considered to meet the definition of an operating segment and the segmental analysis for 2020 has been restated to reflect the 2021 assessment of operating segments.

During the year to 31 December 2021, the Group assessed whether its New Markets activities met the criteria of an operating segment in accordance with IFRS 8. As the Group increases its investment in these important new technologies, the results of these activities have been combined and presented as an additional segment, reflecting the differing characteristics and risk profile of these businesses, in line with how performance is reviewed by the Board. These results were previously included within Civil Aerospace, Defence, Power Systems and Corporate and Inter-segment. The segmental analysis for 2020 has been restated to reflect the 2021 assessment of operating segments.

Underlying results

The Group presents the financial performance of the businesses in accordance with IFRS 8 and consistently with the basis on which performance is communicated to the Board each month.

Underlying results are presented by recording all relevant revenue and cost of sales transactions at the average exchange rate achieved on effective settled derivative contracts in the period that the cash flow occurs. The impact of the revaluation of monetary assets and liabilities using the exchange rate that is expected to be achieved by the use of the effective hedge book is recorded within underlying cost of sales. Underlying financing excludes the impact of revaluing monetary assets and liabilities to period end exchange rates. Transactions between segments are presented on the same basis as underlying results and eliminated on consolidation. Unrecognised fair value gains/(losses) on foreign exchange contracts, which are recognised as they arise in the statutory results, are excluded from underlying results. To the extent that the previously forecast transactions are no longer expected to occur, an appropriate portion of the unrealised fair value gain/(loss) on foreign exchange contracts is recorded immediately in the underlying results.

2 Analysis by business segment continued

Amounts receivable/(payable) on interest rate swaps which are not designated as hedge relationships for accounting purposes are reclassified from fair value movement on a statutory basis to interest receivable/(payable) on an underlying basis, as if they were in an effective hedge relationship.

In the first half of the year, the Group was a net purchaser of USD, with the consequence that the achieved exchange rate GBP:USD of 1.39 on settled contracts was similar to the average spot rate in the period. In the second half of 2021, the Group was a net seller of USD, at an achieved exchange rate GBP:USD of 1.59 based on the USD hedge book.

Estimates of future USD cash flows have been determined using the Group's base-case forecast. These USD cash flows have been used to establish the extent of future USD hedge requirements. In 2020, the Group took action to reduce the size of the USD hedge book by \$11.8bn across 2020-2026, resulting in an underlying charge of £1.7bn being recognised within underlying finance costs and the associated cash settlement costs occurring over the period 2020-2026. In the year to 31 December 2021, the Group took the opportunity to further reduce the size of the USD hedge book by an additional \$2bn by settling the mark-to market at £1m cost. The derivatives relating to this underlying charge have been subsequently excluded from the hedge book and, therefore, are also excluded from the calculation of the average exchange rate achieved in the current and future periods. This charge was reversed in arriving at statutory performance on the basis that the cumulative fair value changes on these derivative contracts are recognised as they arise.

In the year to 31 December 2021, cash settlement costs of £452m were incurred (2020: £202m).

Underlying performance excludes the following:

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

Acquisition accounting, business disposals and impairment

These are excluded from underlying results so that the current year and comparative results are directly comparable.

Exceptional items

Items are classified as exceptional where the Directors believe that presentation of the results in this way is useful in providing an understanding of the Group's financial performance. Exceptional items are identified by virtue of their size, nature or incidence.

In determining whether an event or transaction is exceptional, the Directors consider 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 post-retirement schemes.

Subsequent changes in exceptional items recognised in a prior period will also be recognised as exceptional. All other changes will be recognised within underlying performance.

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

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 statutory 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 or changes in the amount of recoverable deferred tax or advance corporation tax recognised are also excluded.

See page 33 for the reconciliation between underlying performance and statutory performance.

2 Analysis by business segment continued

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

	Civil Aerospace 1,2 £m	Defence 2 £m	Power Systems 2 £m	New Markets 2 £m	Other businesses £m	Corporate and Inter- segment 2 £m	Total underlying £m
For the year ended 31 December 2021							
Underlying revenue from sale of original equipment	1,612	1,411	1,744	–	155	(11)	4,911
Underlying revenue from aftermarket services	2,924	1,957	1,005	2	148	–	6,036
Total underlying revenue	4,536	3,368	2,749	2	303	(11)	10,947
Gross profit/(loss)	474	721	778	1	32	(10)	1,996
Commercial and administrative costs	(297)	(161)	(383)	(3)	(20)	(35)	(899)
Research and development costs	(434)	(105)	(157)	(68)	(10)	–	(774)
Share of results of joint ventures and associates	85	2	4	–	–	–	91
Underlying operating (loss)/profit	(172)	457	242	(70)	2	(45)	414
 For the year ended 31 December 2020							
Underlying revenue from sale of original equipment	2,278	1,428	1,787	3	136	(6)	5,626
Underlying revenue from aftermarket services	2,790	1,927	948	2	137	–	5,804
Total underlying revenue	5,068	3,355	2,735	5	273	(6)	11,430
Gross (loss)/profit	(1,987)	684	678	2	15	(5)	(613)
Commercial and administrative costs	(310)	(146)	(331)	(1)	(26)	(52)	(866)
Research and development costs	(407)	(86)	(160)	(46)	(9)	–	(708)
Share of results of joint ventures and associates	169	9	1	–	–	–	179
Underlying operating (loss)/profit	(2,535)	461	188	(45)	(20)	(57)	(2,008)

¹ The underlying results for Civil Aerospace for 31 December 2020 have been restated to reflect the changes to activity during 2021 due to the transfer of the Hucknall site and associated fabrications activities to ITP Aero.

² The underlying results of Civil Aerospace, Defence, Power Systems and Corporate and Inter-segment activities for 31 December 2020 have been restated to reclassify the results of the Group's SMR and electrical activities as New Markets.

2 Analysis by business segment continued

Reconciliation to statutory results

	Total underlying £m	Underlying adjustments and adjustments to foreign exchange £m	Group statutory results £m
For the year ended 31 December 2021			
Continuing operations			
Revenue from sale of original equipment	4,911	152	5,063
Revenue from aftermarket services	6,036	119	6,155
Total revenue	10,947	271	11,218
Gross profit	1,996	140	2,136
Commercial and administrative costs	(899)	9	(890)
Research and development costs	(774)	(4)	(778)
Share of results of joint ventures and associates	91	(46)	45
Operating profit	414	99	513
Gain arising on the acquisition and disposal of businesses	–	56	56
Profit before financing and taxation	414	155	569
Net financing	(378)	(485)	(863)
Profit/(loss) before taxation	36	(330)	(294)
Taxation	(26)	444	418
Profit after taxation from continuing operations	10	114	124
Discontinued operations ¹	51	(54)	(3)
Profit for the year	61	60	121
Attributable to:			
Ordinary shareholders	60	60	120
Non-controlling interests	1	–	1

For the year ended 31 December 2020

Continuing operations			
Revenue from sale of original equipment	5,626	(68)	5,558
Revenue from aftermarket services	5,804	129	5,933
Total revenue	11,430	61	11,491
Gross (loss)/profit	(613)	426	(187)
Commercial and administrative costs	(866)	95	(771)
Research and development costs	(708)	(496)	(1,204)
Share of results of joint ventures and associates	179	11	190
Operating (loss)/profit	(2,008)	36	(1,972)
Loss arising on the disposal of businesses	–	(14)	(14)
(Loss)/profit before financing and taxation	(2,008)	22	(1,986)
Net financing	(1,985)	1,172	(813)
(Loss)/profit before taxation	(3,993)	1,194	(2,799)
Taxation	(46)	(256)	(302)
Loss/profit after taxation from continuing operations	(4,039)	938	(3,101)
Discontinued operations ¹	42	(110)	(68)
Loss for the year	(3,997)	828	(3,169)
Attributable to:			
Ordinary shareholders	(3,998)	828	(3,170)
Non-controlling interests	1	–	1

¹ Discontinued operations relate to the results of ITP Aero and are presented net of intercompany trading eliminations and related consolidation adjustments.

2 Analysis by business segment continued

Disaggregation of revenue from contracts with customers

Analysis by type and basis of recognition	Civil Aerospace 1,2	Defence 2	Power Systems 2	New Markets 2	Other businesses	Corporate and Inter-segment 2	Total underlying
	£m	£m	£m	£m	£m	£m	£m
For the year ended 31 December 2021							
Original equipment recognised at a point in time	1,612	604	1,720	–	142	(11)	4,067
Original equipment recognised over time	–	807	24	–	13	–	844
Aftermarket services recognised at a point in time	629	825	871	2	148	–	2,475
Aftermarket services recognised over time	2,223	1,132	134	–	–	–	3,489
Total underlying customer contract revenue ³	4,464	3,368	2,749	2	303	(11)	10,875
Other underlying revenue	72	–	–	–	–	–	72
Total underlying revenue	4,536	3,368	2,749	2	303	(11)	10,947

For the year ended 31 December 2020

Original equipment recognised at a point in time	2,278	522	1,769	3	120	(6)	4,686
Original equipment recognised over time	–	905	17	–	16	–	938
Aftermarket services recognised at a point in time	1,168	794	824	2	136	–	2,924
Aftermarket services recognised over time	1,398	1,132	124	–	1	–	2,655
Total underlying customer contract revenue ³	4,844	3,353	2,734	5	273	(6)	11,203
Other underlying revenue	224	2	1	–	–	–	227
Total underlying revenue	5,068	3,355	2,735	5	273	(6)	11,430

¹ The underlying results for Civil Aerospace for 31 December 2020 have been restated to reflect the changes to activity during 2021 due to the transfer of the Hucknall site and associated fabrications activities to ITP Aero.

² The underlying results of Civil Aerospace, Defence, Power Systems and Corporate and Inter-segment activities for 31 December 2020 have been restated to reclassify the results of the Group's SMR and electrical activities as New Markets.

³ Includes £159m (2020: £1,048m) of revenue recognised in the year relating to performance obligations satisfied in previous years.

	Total underlying £m	Underlying adjustments and adjustments to foreign exchange £m	Group statutory results £m
For the year ended 31 December 2021			
Original equipment recognised at a point in time	4,067	152	4,219
Original equipment recognised over time	844	–	844
Aftermarket services recognised at a point in time	2,475	38	2,513
Aftermarket services recognised over time	3,489	75	3,564
Total customer contract revenue	10,875	265	11,140
Other revenue	72	6	78
Total revenue	10,947	271	11,218
 For the year ended 31 December 2020			
Original equipment recognised at a point in time	4,686	(63)	4,623
Original equipment recognised over time	938	(6)	932
Aftermarket services recognised at a point in time	2,924	53	2,977
Aftermarket services recognised over time	2,655	110	2,765
Total customer contract revenue	11,203	94	11,297
Other revenue	227	(33)	194
Total revenue ¹	11,430	61	11,491

¹ During the year to 31 December 2021, revenue recognised within Civil Aerospace, Defence and Power Systems of £1,634m (2020: 1,701m) was received from a single customer.

2 Analysis by business segment continued

Underlying profit adjustments	2021				Restated 2020			
	Revenue £m	Profit before financing £m	Net financing £m	Taxation ¹¹ £m	Revenue £m	Profit before financing £m	Net financing £m	Taxation ¹¹ £m
Total underlying performance	10,947	414	(378)	(26)	11,430	(2,008)	(1,985)	(46)
Impact of settled derivative contracts on trading transactions ¹	A 271	(34)	62	33	61	995	(324)	(39)
Unrealised fair value changes on derivative contracts held for trading ²	A –	(6)	(618)	110	–	8	(85)	(182)
Unrealised net (gain)/losses on closing future over-hedged position ³	A –	–	(8)	–	–	–	1,503	(106)
Realised net (gain)/losses on closing future over-hedged position ³	A –	–	(6)	–	–	–	202	(38)
Unrealised fair value change to derivative contracts held for financing ⁴	A –	–	79	(20)	–	–	(86)	–
Exceptional programme credits/(charges) ⁵	B –	105	–	(1)	–	620	(36)	–
Exceptional restructuring credit/(charge) ⁶	B –	45	–	1	–	(470)	–	32
Impairments ⁷	C –	9	–	–	–	(1,244)	–	258
Other write-offs	C –	–	–	–	–	(92)	–	25
Effect of acquisition accounting ⁸	C –	(50)	–	12	–	(85)	–	23
Pension past-service credit ⁹	B –	47	–	(13)	–	308	–	(108)
Other	D –	(17)	6	(37)	–	(4)	(2)	(7)
Included in operating profit	271	99	(485)	85	61	36	1,172	(142)
Gains/(losses) arising on the acquisitions and disposals of businesses ¹⁰	C –	56	–	2	–	(14)	–	3
Impact of tax rate change	–	–	–	327	–	–	–	159
Re-recognition/(de-recognition) of UK losses	–	–	–	30	–	–	–	(276)
Total underlying adjustments	271	155	(485)	444	61	22	1,172	(256)
Statutory performance per condensed consolidated income statement	11,218	569	(863)	418	11,491	(1,986)	(813)	(302)

A - FX, B - Exceptional, C - M&A and impairment, D - Other

¹ The impact of measuring revenues and costs and the impact of valuation of assets and liabilities using the period end exchange rate rather than the achieved rate or the exchange rate that is expected to be achieved by the use of the hedge book increased reported revenues by £271m (2020: increased by £61m) and reduced profit before financing and taxation by £34m (2020 restated: reduced loss by £995m). Underlying financing excludes the impact of revaluing monetary assets and liabilities at the period end exchange rate.

² The underlying results exclude the fair value changes on derivative contracts held for trading. These fair value changes are subsequently recognised in the underlying results when the contracts are settled.

³ In 2020, the Group took action to reduce the size of the USD hedge book by \$11.8bn across 2020-2026, resulting in an underlying charge of £1.7bn at 31 December 2020. In 2021, this estimate was updated to reflect the actual cash cost and resulted in a £15m gain to underlying finance costs in the year to 31 December 2021. In the year to 31 December 2021, the Group took the opportunity to further reduce the size of the USD hedge book by an additional \$2bn resulting in a £1m charge to underlying finance costs. Further detail is provided in note 4.

⁴ Includes the losses on hedge ineffectiveness in the year of £1m (2020: losses of £11m) and net fair value gains of £80m (2020: losses of £75m) on any interest rate swaps not designated into hedging relationships for accounting purposes.

⁵ During the year to 31 December 2021, the estimated Trent 1000 abnormal wastage costs reduced by £105m following a reassessment of the number of engines impacted by these issues, with an associated reduction in expected contract losses.

⁶ During the year to 31 December 2021, the Group recorded an exceptional restructuring credit of £45m (2020 restated: charge of £470m) which included a £138m provision release offset by £93m (2020: £116m) associated with initiatives to enable the restructuring which have been charged directly to the income statement. Further details are provided in note 19.

⁷ The Group has assessed the carrying value of its assets. Further details are provided in notes 7, 8 and 9.

⁸ The effect of acquisition accounting includes the amortisation of intangible assets arising on previous acquisitions.

⁹ The past service credit £47m comprises of; £7m has been recorded following the final details on the additional transitional protections agreed during the period; £4m as a result of transferring employment of 236 employees in anticipation of a business disposal; £4m from the updated scope of the fundamental restructuring programmes following a higher than expected rate of natural attrition; and £32m from remeasurement of the US defined benefit liability to remove spousal benefits not included in the plan benefits.

¹⁰ Gains/(losses) arising on the acquisitions and disposals of businesses are set out in note 22.

¹¹ Appropriate rates of tax have been applied to adjustments made to profit/(loss) before tax in the table above. Adjustments which impact the UK tax loss have an effective tax rate of zero. See note 5 for more details. The total underlying adjustments in 2021 are a credit of £444m (2020: tax charge of £256m). The overall tax credit in 2021 includes £327m which arises on the re-measurement of UK deferred tax balances following the change in the UK tax rate from 19% to 25% and £30m re-recognition of deferred tax assets previously not recognised. The £159m tax credit in 2020 relates to the re-measurement of the UK deferred tax balances from 17% to 19%. In 2020 there is a tax charge of £276m relating to the derecognition of some of the deferred tax asset on UK losses previously recognised.

2 Analysis by business segment continued

Balance sheet analysis

	Civil Aerospace ^{1, 2}	Defence ²	Power Systems ²	New Markets ²	Total reportable segments
At 31 December 2021					
Segment assets	15,846	2,766	3,531	90	22,233
Interests in joint ventures and associates	378	9	16	–	403
Segment liabilities	(20,745)	(2,635)	(1,503)	(33)	(24,916)
Net (liabilities)/assets	(4,521)	140	2,044	57	(2,280)
At 31 December 2020					
Segment assets	16,622	3,083	3,471	65	23,241
Interests in joint ventures and associates	363	19	11	–	393
Segment liabilities	(22,331)	(3,079)	(1,352)	(17)	(26,779)
Net (liabilities)/assets	(5,346)	23	2,130	48	(3,145)

¹ The financial position for Civil Aerospace for 31 December 2020 has been restated to reflect the transfer of activity during 2021 as described on page 28.

² The financial positions of Civil Aerospace, Defence, Power Systems and Corporate and Inter-segment activities at 31 December 2020 have been restated to reclassify the results of the Group's SMR and electrical activities as New Markets.

Reconciliation to the balance sheet

	2021 £m	2020 £m
Total reportable segment assets excluding held for sale	22,233	23,241
Other businesses	14	21
Corporate and inter-segment	(2,255)	(3,112)
Interests in joint ventures and associates	403	393
ITP Aero prior to classification as held for sale	–	2,091
Assets held for sale ¹	2,028	288
Cash and cash equivalents and short-term investments	2,629	3,452
Fair value of swaps hedging fixed rate borrowings	135	293
Deferred and income tax assets	2,339	1,943
Post-retirement scheme surpluses	1,148	907
Total assets	28,674	29,517
Total reportable segment liabilities excluding held for sale	(24,916)	(26,779)
Other businesses	(11)	(10)
Corporate and inter-segment	2,139	3,261
ITP Aero prior to classification as held for sale	–	(1,036)
Liabilities associated with assets held for sale ¹	(723)	(228)
Borrowings and lease liabilities	(7,776)	(7,330)
Fair value of swaps hedging fixed rate borrowings	(98)	(42)
Deferred and income tax liabilities	(552)	(648)
Post-retirement scheme deficits	(1,373)	(1,580)
Total liabilities	(33,310)	(34,392)
Net liabilities	(4,636)	(4,875)

¹ As at 31 December 2021, assets and liabilities relating to ITP Aero, the investment in Airtanker Holdings and other non-current assets related to the Group's site rationalisation activities are classified as held for sale. At 31 December 2020, Bergen Engines AS and Civil Nuclear Instrumentation and Control were classified as held for sale. For further details see note 22.

3 Research and development

	2021 £m	Restated 2020 £m
Gross research and development costs	(1,179)	(1,225)
Contributions and fees ¹	366	353
Expenditure in the year	(813)	(872)
Capitalised as intangible assets	105	228
Amortisation and impairment of capitalised costs ²	(70)	(560)
Net cost recognised in the income statement	(778)	(1,204)
Underlying adjustments relating to the effects of acquisition accounting, impairment and foreign exchange ³	4	496
Net underlying cost recognised in the income statement	(774)	(708)

¹ Includes government funding.

² See note 7 for analysis of amortisation and impairment. During the year, amortisation of £5m has been incurred within the disposal group recognised as a discontinued operation.

³ During the year, no impairment of research and development was recorded. In the comparative period to 31 December 2020 (restated), impairment charges of £464m were recorded, relating to the financial and operational impact of COVID-19.

4 Net financing

	2021		Restated 2020	
	Per consolidated income statement £m	Underlying financing ¹ £m	Per consolidated income statement £m	Underlying financing ¹ £m
Interest receivable	7	7	21	21
Net fair value gains on non-hedge accounted interest rate swaps ²	80	—	—	—
Financial RRSAs – foreign exchange differences and changes in forecast payments	—	—	12	—
Net fair value gains on commodity contracts	63	—	—	—
Financing on post-retirement scheme surpluses	17	—	28	—
Net foreign exchange gains	62	—	—	—
Realised net gains on closing over-hedged position ³	—	6	—	—
Unrealised net gains on closing over-hedged position ³	—	8	—	—
Financing income	229	21	61	21
Interest payable	(252)	(262)	(178)	(175)
Net fair value losses on foreign currency contracts	(681)	—	(23)	—
Net fair value losses on non-hedge accounted interest rate swaps ²	—	—	(75)	—
Unrealised net losses on closing future over-hedged position	—	—	—	(1,503)
Realised net losses on closing over-hedged position	—	—	—	(202)
Financial RRSAs – foreign exchange differences and changes in forecast payments	(7)	—	(20)	—
Financial charge relating to financial RRSAs	—	—	(3)	(8)
Net fair value losses on commodity contracts	—	—	(62)	—
Financing on post-retirement scheme deficits	(20)	—	(29)	—
Net foreign exchange losses	—	—	(324)	—
Fees on undrawn facilities	(62)	(62)	(97)	(97)
Other financing charges	(70)	(75)	(63)	(21)
Financing costs	(1,092)	(399)	(874)	(2,006)
Net financing costs	(863)	(378)	(813)	(1,985)
Analysed as:				
Net interest payable	(245)	(255)	(157)	(154)
Net fair value (losses)/gains on derivative contracts	(538)	14	(160)	(1,705)
Net post-retirement scheme financing	(3)	—	(1)	—
Net foreign exchange gains/(losses)	62	—	(324)	—
Net other financing	(139)	(137)	(171)	(126)
Net financing costs	(863)	(378)	(813)	(1,985)

¹ See note 2 for definition of underlying results.

² The condensed consolidated income statement shows the net fair value gain/(loss) on any interest rate swaps not designated into hedging relationships for accounting purposes. Underlying financing reclassifies the fair value movements on these interest rates swaps to interest payable.

³ In 2020, the Group took action to reduce the size of the USD hedge book by \$11.8bn across 2020-2026, resulting in an underlying charge of £1,689m at 31 December 2020. In 2021, this estimate was updated to reflect the actual cash settlement cost of £1,674m and resulted in a £15m gain to underlying finance costs in the year to 31 December 2021. In the year to 31 December 2021, the Group took the opportunity to further reduce the size of the USD hedge book by an additional \$2bn resulting in a £1m charge to underlying finance costs. The cash settlement costs of £1,674m covers the period 2020-2026, £186m was incurred in 2020 and £452m was incurred in the year to 31 December 2021. The Group estimates that future cash outflows of £326m will be incurred in 2022 and £710m spread over 2023 to 2026.

5 Taxation

	UK		Overseas		Total	
	2021 £m	Restated 2020 £m	2021 £m	Restated 2020 £m	2021 £m	Restated 2020 £m
Current tax charge for the year	17	12	151	162	168	174
Adjustments in respect of prior years	2	–	12	(27)	14	(27)
Current tax	19	12	163	135	182	147
Deferred tax (credit)/charge for the year	(173)	178	(59)	(327)	(232)	(149)
Adjustments in respect of prior years	(15)	(12)	(26)	42	(41)	30
Derecognition of deferred tax	–	433	–	–	–	433
Deferred tax credit resulting from increase in UK tax rate	(327)	(159)	–	–	(327)	(159)
Deferred tax	(515)	440	(85)	(285)	(600)	155
(Credited)/charged in the income statement	(496)	452	78	(150)	(418)	302

Deferred taxation assets and liabilities

	2021 £m	2020 £m
At 1 January		
Amount credited/(charged) to income statement	1,332	1,269
Amount (charged)/credited to other comprehensive income	636	(107)
Amount charged to cash flow hedge reserve	(82)	197
Amount credited to equity	(2)	(4)
On disposal/acquisition of businesses ¹	17	5
Transferred to assets held for sale ²	(4)	(20)
Exchange differences	(85)	(4)
At 31 December	1,798	1,332
Deferred tax assets	2,249	1,826
Deferred tax liabilities	(451)	(494)
	1,798	1,332

¹ The 2021 deferred tax relates to disposal of Bergen Engines AS and the Civil Nuclear Instrumentation & Control business. The 2020 deferred tax relates to the acquisitions of Qinous GmbH and Kinolt Group S.A.

² The 2021 deferred tax transferred to assets held for sale relates to ITP Aero. The 2020 deferred tax transferred to assets held for sale relates to Bergen Engines AS and the Civil Nuclear Instrumentation and Control business.

Deferred tax assets of £2,249m include £1,054m (2020: £801m) relating to UK tax losses and £162m (2020: £163m) relating to advance corporation tax (ACT), both arising in Rolls-Royce plc. These assets have been recognised based on the expectation that the 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 Civil Aerospace widebody business which makes initial losses through the investment period of a programme and then makes a profit through its contracts for services. The programme lifecycles are typically in excess of 30 years. 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).

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 Civil Aerospace widebody business, to assess the level of future taxable profits.

The recoverability of deferred tax assets relating to tax losses and ACT has been assessed in 2021 on the following basis:

- using the most recent UK profit forecasts 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 in excess of 30 years from initial investment to retirement of the fleet, including the aftermarket revenues earned from airline customers;
- taking into account forecast reductions in the usage of older aircraft, and including new business in certain areas;
- taking into account a 25% probability of the severe but plausible downside forecast materialising in relation to the civil aviation industry; and
- the long-term forecast profit and cost profile of the other parts of the 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. In addition, management's assumptions relating to the amounts and timing of future taxable profits take into account the impact of COVID-19 and climate change on existing widebody engine programmes. Based on this assessment, the Group has recognised a deferred tax asset of £1,054m relating to losses and £162m relating to ACT. This reflects the conclusions that:

- It is probable that the 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 expected widebody engine programme lifecycles.
- The Group has not recognised any deferred tax assets in respect of 2021 UK tax losses.

5 Taxation continued

An explanation of the potential impact of climate change on forecast profits and sensitivity analysis can be found in note 1.

The Group has also reassessed the recovery of other deferred tax assets in Rolls-Royce plc, including those arising on unrealised losses on derivative contracts, resulting in a net increase of £154m of which £58m relates to the increase in the UK corporation tax rate (see below). Any future changes in tax law or the structure of the Group could have a significant effect on the use of losses, ACT and other deferred tax assets, including the period over which they can be used. In view of this and the significant judgement involved the Board continuously reassesses this area.

The other significant deferred tax assets in respect of tax losses and other deductible temporary differences continue to arise in Rolls-Royce Deutschland Ltd & Co KG, where the main business is business aviation. The total net deferred tax asset is £254m (2020: £252m), which has been recognised in full as it is considered probable that the business will generate taxable income in the future against which these assets can be utilised.

The Spring Budget 2021 announced that the UK corporation tax rate will increase from 19% to 25% from 1 April 2023. The new law was substantively enacted on 24 May 2021. The prior year UK deferred tax assets and liabilities were calculated at 19%, as this was the enacted rate at the 2020 balance sheet date. As the 25% rate has been substantively enacted before 31 December 2021, the UK deferred tax assets and liabilities have been re-measured at 25%.

The resulting credits and charges have been recognised in the income statement except to the extent that they relate to items previously credited or charged to equity. Accordingly, in 2021, £327m has been credited to the income statement and £17m has been credited directly to equity.

The temporary differences associated with investments in subsidiaries, joint ventures and associates, for which a deferred tax liability has not been recognised, aggregate to £957m (2020: £907m). 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 share (EPS) is calculated by dividing the profit/(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.

In the current year, the potentially dilutive share options element has been assessed as 20 million shares. Where a loss for the year is recognised, the effect of potentially dilutive ordinary shares is anti-dilutive.

	2021		Restated 2020	
	Basic	Potentially dilutive share options	Basic	Potentially dilutive share options
		Diluted		Diluted
Profit/(loss) attributable to ordinary shareholders (£m):				
Continuing operations	123	123	(3,102)	(3,102)
Discontinued operations	(3)	(3)	(68)	(68)
	120	120	(3,170)	(3,170)
Weighted average number of ordinary shares (millions)	8,332	20	8,352	5,987
EPS (pence):				
Continuing operations	1.48p	(0.01p)	1.47p	(51.81p)
Discontinued operations	(0.04p)	–	(0.04p)	(1.14p)
	1.44p	(0.01p)	1.43p	(52.95p)

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

	2021		Restated 2020	
	Pence	£m	Pence	£m
Underlying EPS / Underlying profit/(loss) from continuing operations attributable to ordinary shareholders	0.11	9	(67.48)	(4,040)
Total underlying adjustments to profit/(loss) before tax (note 2)	(3.96)	(330)	19.94	1,194
Related tax effects	5.33	444	(4.27)	(256)
EPS / profit/(loss) from continuing operations attributable to ordinary shareholders	1.48	123	(51.81)	(3,102)
Diluted underlying EPS from continuing operations attributable to ordinary shareholders	0.11		(67.48)	

7 Intangible assets

	Goodwill £m	Certification costs £m	Development expenditure £m	Customer relationships £m	Software ⁴ £m	Other £m	Total £m
Cost:							
At 1 January 2021	1,112	963	3,564	1,403	968	893	8,903
Additions	–	1	104	–	83	35	223
Transferred to assets held for sale ¹	–	(6)	(179)	(868)	(15)	(59)	(1,127)
Disposals	(4)	(22)	–	–	(51)	(2)	(79)
Reclassifications ²	–	–	–	–	(2)	8	6
Exchange differences	(48)	(3)	(96)	(60)	(5)	(42)	(254)
At 31 December 2021	1,060	933	3,393	475	978	833	7,672
Accumulated amortisation and impairment:							
At 1 January 2021	38	429	1,803	478	607	403	3,758
Charge for the period ³	–	21	75	59	97	29	281
Impairment	–	–	–	–	1	8	9
Transferred to assets held for sale ¹	–	(4)	(51)	(176)	(10)	–	(241)
Disposals	(4)	(21)	–	–	(48)	(1)	(74)
Reclassifications ²	–	–	(1)	–	6	1	6
Exchange differences	–	–	(66)	(19)	(3)	(20)	(108)
At 31 December 2021	34	425	1,760	342	650	420	3,631
Net book value:							
31 December 2021	1,026	508	1,633	133	328	413	4,041
1 January 2021	1,074	534	1,761	925	361	490	5,145

¹ ITP Aero has been classified as a disposal group held for sale since 30 June 2021. Bergen Engines AS and the Civil Nuclear Instrumentation & Control business were classified as held for sale at 31 December 2020 - see note 22.

² Includes reclassifications within intangible assets or from property, plant and equipment when available for use.

³ Charged to cost of sales and commercial and administrative costs except development costs, which are charged to research and development costs.

⁴ Includes £115m (2020: £110m) of software under course of construction which is not amortised.

Goodwill has been tested for impairment during 2021 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 the Directors, 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 growth rates of 2% which reflect the products, industries and countries in which the relevant CGU or group of CGUs operate.
- The key forecast assumptions for the impairment tests are the discount rate and the cash flow projections, in particular the programme assumptions (such as sales volumes and product costs), the impact of foreign exchange rates on the relationship between selling prices and costs, and growth rates. Impairment tests are performed using prevailing exchange rates.
- The Group believes there are significant business growth opportunities to come from Rolls-Royce playing a leading role in the transition to net zero, whilst at the same time climate change poses potentially significant risks. The assumptions used by the Directors are based on past experience and external sources of information. The main areas that have been considered are demand for engines and their in-service lives, utilisation of the products whilst in service, and the impact of market and regulatory change. The investment required to ensure our new products will be compatible with net zero operation by 2030, and to achieve net zero scope 1 and 2 GHG emissions is reflected in the forecasts used.

A 1.5°C Paris-aligned sensitivity, based on IEA and Oxford Economics forecasts, has been considered which assumes that Governments adopt strict product and behavioural standards, high carbon pricing and strategic investments in low carbon alternatives, with markets willing to pay for low carbon solutions. The sensitivity has considered the likelihood of demand changes for our products based on their relative fuel efficiency in the marketplace and the probability of alternatives being introduced earlier than currently expected. The sensitivity also reflects a broad range of potential costs imposed by policy or regulatory interventions (through carbon pricing). This sensitivity does not indicate the need for an impairment charge. Further detail can be found in note 1.

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) that are based on current and known future programmes, estimates of market share and long-term economic forecasts;
- Plausible downside scenario in relation to COVID-19 recovery included with a 20% weighting;
- Cash flows beyond the five-year forecasts are assumed to grow at 2.0% (2020: 2.0%); and
- Pre-tax discount rate 10.7% (2020: 11.7%).

The Directors do not consider that any reasonably possible changes in the key assumptions (including taking consideration of the climate risks above) would cause the value in use of the goodwill to fall below its carrying value.

7 Intangible assets continued

Rolls-Royce Deutschland Ltd & Co KG

- Trading assumptions (e.g. volume of engine deliveries, flying hours of installed fleet, including assumptions on the recovery of the civil aviation industry, and cost escalation) that are based on current and known future programmes, estimates of market share and long-term economic forecasts;
- Plausible downside scenario in relation to COVID-19 recovery included with a 25% weighting;
- Cash flows beyond the five-year forecasts are assumed to grow at 2.0% (2020: 2.0%).
- Pre-tax discount rate 11.9% (2020: 11.9%).

The Directors do not consider that any reasonably possible changes in the key assumptions (including taking consideration of the climate risks above) would cause the value in use of the goodwill to fall below its carrying value.

Other cash generating units

Goodwill balances across the Group that are not considered to be individually significant were also tested for impairment, resulting in no impairment charge (2020: £8m) being recognised in 2021.

The carrying amount and the residual life of the material intangible assets (excluding goodwill) for the Group are as follows:

	Residual life	2021 £m	2020 £m
Trent programme intangible assets ¹	7-15 years	1,787	1,770
Business aviation programme intangible assets ²	15 years	237	256
Customer relationship assets on acquisition of ITP Aero ³	typically 13-35 years	—	651
Intangible assets from the acquisition of Power Systems ⁴		491	531
		2,515	3,208

¹ Included within the Trent programmes are the Trent 1000, Trent 7000 and Trent XWB.

² Included within business aviation are the Pearl 700 and Pearl 15.

³ ITP Aero has been classified as a disposal group held for sale since 30 June 2021.

⁴ Includes £108m (2020: £115m) in respect of a brand intangible asset which is not amortised. Remaining assets are amortised over a range of 2-10 years.

The carrying amount of goodwill or intangible assets allocated across multiple CGUs is not significant in comparison with the Group's total carrying amount of goodwill or intangible assets with indefinite useful lives.

Other intangible assets (including programme intangible assets) have been reviewed for impairment in accordance with IAS 36 *Impairment of Assets*. Assessments have considered potential triggers of impairment such as external factors including climate change (as set out in the goodwill section above), significant changes with an adverse effect on a programme and by analysing latest management forecasts against those prepared in 2020 to identify any deterioration in performance. Where a trigger event has been identified, an impairment test has been carried out. Where an impairment was required, the test was 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 the Directors, 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 based on estimates of product performance related estimates, future market share and pricing and cost for uncontracted business. Climate risks are considered when making these estimates consistent with the assumptions above. The uncertainty over the recovery from COVID-19 has been modelled by including downside forecasts at an appropriate weighting taking into account the business segment being considered.

There have been no individually material impairment charges or reversals recognised during the year.

8 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 1 January 2021	1,994	5,442	1,025	451	8,912
Additions	19	120	6	154	299
Transferred to assets held for sale ¹	(200)	(305)	(22)	(8)	(535)
Disposals/write-offs	(59)	(264)	(11)	(23)	(357)
Reclassifications ²	144	75	53	(271)	1
Exchange differences	(33)	(82)	(5)	(3)	(123)
At 31 December 2021	1,865	4,986	1,046	300	8,197
Accumulated depreciation and impairment:					
At 1 January 2021	679	3,336	374	8	4,397
Charge for the period ³	70	312	57	–	439
Impairment ⁴	1	18	–	–	19
Transferred to assets held for sale ¹	(74)	(127)	(5)	–	(206)
Disposals/write-offs	(48)	(254)	(1)	–	(303)
Reclassifications ²	(7)	11	(10)	–	(6)
Exchange differences	(7)	(52)	(1)	–	(60)
At 31 December 2021	614	3,244	414	8	4,280
Net book value at:					
31 December 2021	1,251	1,742	632	292	3,917
1 January 2021	1,315	2,106	651	443	4,515

¹ ITP Aero has been classified as a disposal group held for sale since 30 June 2021. In addition, certain items of property, plant and equipment related to the Group's site rationalisation activities have been classified as held for sale at 31 December 2021. Bergen Engines AS and the Civil Nuclear Instrumentation & Control business were classified as held for sale at 31 December 2020 – see note 22.

² Includes reclassifications of assets under construction to the relevant classification in property, plant and equipment, right-of-use assets or intangible assets when available for use.

³ Depreciation is charged to cost of sales and commercial and administrative costs or included in the cost of inventory as appropriate.

⁴ The carrying values of property, plant and equipment have been assessed during the period in line with IAS 36. Material items of plant and equipment and aircraft and engines are assessed for impairment together with other assets used in individual programmes – see assumptions in note 7. Land and buildings are generally used across multiple programmes and are considered based on future expectations of the use of the site, which includes any implications from climate-related risks as explained in note 7. As a result of this assessment, there are no individually material impairment charges or reversals in the year.

9 Right-of-use assets

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	Total £m
Cost:				
At 1 January 2021	447	150	1,833	2,430
Additions/modification of leases	37	15	30	82
Transferred to assets held for sale ¹	(16)	(2)	–	(18)
Disposals	(8)	(16)	(66)	(90)
Reclassifications	–	–	(8)	(8)
Exchange differences	(4)	(4)	(4)	(12)
At 31 December 2021	456	143	1,785	2,384
Accumulated depreciation and impairment:				
At 1 January 2021	159	60	806	1,025
Charge for the period	43	30	199	272
Impairment ²	(2)	(6)	(7)	(15)
Transferred to assets held for sale ¹	(4)	(1)	–	(5)
Disposals	(8)	(16)	(66)	(90)
Reclassifications	–	–	(1)	(1)
Exchange differences	(2)	(1)	(2)	(5)
At 31 December 2021	186	66	929	1,181

Net book value at:

31 December 2021	270	77	856	1,203
1 January 2021	288	90	1,027	1,405

¹ ITP Aero has been classified as a disposal group held for sale since 30 June 2021. Bergen Engines AS and the Civil Nuclear Instrumentation & Control business were classified as held for sale at 31 December 2020 - see note 22.

² The carrying values of right-of-use assets have been assessed during the period in line with IAS 36. Material items of plant and equipment and aircraft and engines are assessed for impairment together with other assets used in individual programmes – see assumptions in note 7. Land and buildings are generally used across multiple programmes and are considered based on future expectations of the use of the site (which includes any implications from climate-related risks as explained in note 7). As a result of this assessment, an impairment reversal of £8m has been recognised through non-underlying profit. The reversal relates to an element of the non-underlying impairments recorded in 2020 in Civil Aerospace for site rationalisation where there has been a subsequent change in strategy to continue production on that site.

10 Investments

Equity accounted and other investments

	Equity accounted			Other ¹ £m
	Joint ventures £m	Associates £m	Total £m	
At 1 January 2021	393	1	394	19
Additions ²	2	1	3	27
Disposals	—	—	—	(1)
Impairment ³	(2)	—	(2)	(5)
Share of retained profit ⁴	19	(1)	18	—
Reclassification of deferred profit to deferred income ⁵	(24)	—	(24)	—
Transferred to assets held for sale ⁶	(35)	—	(35)	—
Repayment of loans	(3)	—	(3)	—
Revaluation of other investments accounted for at FVOCI	—	—	—	(2)
Exchange differences	8	—	8	(2)
Share of OCI ⁷	45	—	45	—
At 31 December 2021	403	1	404	36

¹ Other investments includes unlisted investments of £29m and listed investments of £7m.

² During the year, additions to other investments of £27m include the following significant transactions. On 17 December 2021, the Group acquired a 1% investment in Vertical Aerospace for consideration of £9m. The Group has elected to value this investment at fair value through other comprehensive income. On 18 May 2020, the Group increased its shareholding in Reaction Engines Limited from 2% to 10.1% for £20m (£4m of which was paid during 2020) which was payable (and the associated shares acquired) in instalments. During the year, the Group paid the remaining instalments of £16m for the Reaction Engines acquisition.

³ During the year, the Group recognised an impairment of £7m (2020: nil) through underlying and nil (2020: £24m) charged to the income statement through non-underlying.

⁴ See table below.

⁵ 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.

⁶ The Group's investment in Airtanker Holdings Limited has been classified as a non-current asset held for sale since 13 September 2021. Further detail can be found in note 22.

⁷ Up to 13 September 2021 when Airtanker Holdings Limited was transferred to held for sale, the Group recognised share of OCI relating to cash flow hedges of £43m.

Reconciliation of share of retained profit to the income statement and cash flow statement:

	2021 £m	Restated 2020 £m
Share of results of joint ventures and associates	22	132
Adjustments for intercompany trading ¹	23	58
Share of results of joint venture and associates to the Group (income statement)	45	190
Dividends paid by joint ventures and associates to the Group (cash flow statement)	(27)	(60)
Share of retained profit attributable to continuing operations	18	130
Share of retained profit attributable to discontinued operations	—	1
Share of retained profit above	18	131

¹ During the year, the Group sold spare engines to Rolls-Royce & Partners Finance, a joint venture company. The Group's share of the profit on these sales is deferred and released to match the depreciation of the engines in the joint venture's financial statements. In 2021 and 2020, profit deferred on the sale of engines was lower than the release of that deferred in prior years.

11 Inventories

	2021 £m	2020 £m
Raw materials	376	417
Work in progress	1,135	1,139
Finished goods	2,146	2,111
Payments on account	9	23
	3,666	3,690

12 Trade receivables and other assets

	Current		Non-current		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
Trade receivables ¹	2,141	2,479	52	—	2,193	2,479
Receivables due on risk and revenue sharing arrangements (RRSAs)	702	603	67	82	769	685
Amounts owed by joint ventures and associates	598	486	1	16	599	502
Costs to obtain contracts with customers ²	13	12	41	50	54	62
Other taxation and social security receivable	197	225	8	6	205	231
Other receivables ³	593	639	20	20	613	659
Prepayments	572	412	378	425	950	837
	4,816	4,856	567	599	5,383	5,455

¹ Non-current trade receivables relate to amounts not expected to be received in the next 12 months from customers on payment plans.

² These are amortised over the term of the related contract, resulting in amortisation of £9m (2020: £10m) in the year. There were no impairment losses.

³ Other receivables include unbilled recoveries relating to overhaul activity.

During the year to 31 December 2021, the Group reassessed which trade receivables are held to collect or sell. The Group's intent is to no longer utilise invoice discounting and consequently, balances are generally not classified as held to collect or sell. A small amount of invoice discounting has continued within Power Systems at the request and cost of the customers.

The expected credit losses for trade receivables and other assets have increased by £7m to £259m (2020: £252m). This movement is mainly driven by the Civil Aerospace business of £7m, of which £10m relates to specific customers and £(3)m relates to updates to the recoverability of other receivables.

The Group has adopted the simplified approach to provide for expected credit losses, measuring the loss allowance at a probability weighted amount incorporated by using credit ratings which are publicly available, or through internal risk assessments derived using the customer's latest available financial information.

The movements of the Group's expected credit losses provision are as follows:

	2021 £m	2020 £m
At 1 January	(252)	(138)
Increases in loss allowance recognised in the income statement during the year	(124)	(119)
Loss allowance utilised	46	5
Releases of loss allowance previously provided	46	13
Transferred to held for sale	2	—
Exchange differences	23	(13)
At 31 December	(259)	(252)

13 Cash and cash equivalents

	2021 £m	2020 £m
Cash at bank and in hand	795	940
Money-market funds	49	669
Short-term deposits	1,777	1,843
Cash and cash equivalents per the balance sheet	2,621	3,452
Cash and cash equivalents within assets held for sale	25	51
Overdrafts (note 17)	(7)	(7)
Cash and cash equivalents per cash flow statement (page 18)	2,639	3,496

Cash and cash equivalents at 31 December 2021 includes £89m (2020: £143m) that is not available for general use by the Group. This balance includes £40m which is held in an account that is exclusively for the general use of Rolls-Royce Submarines Limited. This cash is not available for use by other entities within the Group. The remaining balance 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.

14 Trade payables and other liabilities

	Current		Non-current		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
Trade payables	1,272	1,418	—	—	1,272	1,418
Payables due on RRAs	739	697	—	—	739	697
Amounts owed to joint ventures and associates	486	583	—	—	486	583
Customer concession credits	1,106	1,536	399	514	1,505	2,050
Warranty credits	201	173	161	196	362	369
Accruals	1,361	1,322	192	117	1,553	1,439
Deferred receipts from RSA workshare partners	23	17	484	507	507	524
Government grants ¹	28	16	39	66	67	82
Other taxation and social security	40	127	—	7	40	134
Other payables ²	760	764	300	515	1,060	1,279
	6,016	6,653	1,575	1,922	7,591	8,575

¹ During the year, £13m, including £1m in discontinued operations, (2020: £10m) of government grants were released to the income statement.

² Other payables includes parts purchase obligations, payroll liabilities, HM UK Government levies and payables associated with business disposals.

The Group's payment terms with suppliers vary on the products and services being sourced, the competitive global markets the Group operates in and other commercial aspects of suppliers' relationships. Industry average payment terms vary between 90 to 120 days. The Group offers reduced payment terms for smaller suppliers, so that they are paid in 30 days. In line with civil aviation industry practice, the Group offers a supply chain financing (SCF) programme in partnership with banks to enable suppliers, including joint ventures, who are on standard 75-day payment terms to receive their payments sooner. The SCF programme is available to suppliers at their discretion and does not change rights and obligations with suppliers nor the timing of payment of suppliers. At 31 December 2021, suppliers had drawn £540m under the SCF scheme (31 December 2020: £582m).

15 Contract assets and liabilities

	Current		Non-current ¹		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
Contract assets						
Contract assets with customers	586	416	641	660	1,227	1,076
Participation fee contract assets	27	48	219	386	246	434
	613	464	860	1,046	1,473	1,510

¹ Contract assets and contract liabilities have been presented on the face of the balance sheet in line with the operating cycle of the business. Contract liabilities are further split according to when the related performance obligation is expected to be satisfied and therefore when revenue is estimated to be recognised in the income statement. Further disclosure of contract assets is provided in the table above, which shows within current the element of consideration that will become unconditional in the next year.

² Contract assets are classified as non-financial instruments.

Contract assets with customers includes £915m (2020: £726m) of Civil Aerospace LTSA assets, with most of the remaining balance relating to Defence. The main driver of the increase in the Group balance is revenue recognised in Civil Aerospace in the year as performance obligations have been completed exceeding amounts received, partly reduced by £10m relating to performance obligations satisfied in previous years, together with foreign exchange movements. No impairment losses in relation to these contract assets (2020: none) have arisen during the year to 31 December 2021.

Participation fee contract assets have reduced by £188m (2020: reduced by £165m) due to ITP Aero being reclassified as a disposal group held for sale which had an impact of £147m, amortisation exceeding additions by £23m and foreign exchange on consolidation of overseas entities of £18m.

The absolute value of expected credit losses for contract assets has increased by £1m to £15m (2020: £14m).

15 Contract assets and liabilities continued

	Current		Non-current		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
Contract liabilities	3,599	4,187	6,710	6,245	10,309	10,432

During the year £2,713m (2020: £2,792m) of the opening contract liability was recognised as revenue.

Contract liabilities have decreased by £123m. The main driver of the change in the Group balance is as a result of ITP Aero contract liabilities (2020: £173m) being reclassified as held for sale. The remaining movement includes an increase in Civil Aerospace of £165m offset by a £99m decrease in Defence.

The Civil Aerospace movement consists of an increase in relation to LTSA liabilities of £288m to £7,129m (2020: £6,841m). LTSA revenue billed has been ahead of revenue recognised in the year and together with foreign exchange movements resulted in an increase in the LTSA liabilities by £512m, offset by £224m of revenue recognised relating to performance obligations satisfied in previous years, which were principally driven by price escalation in business aviation and the impact of specific customer negotiations. This is partially offset by the utilisation of deposits reflecting utilisation of amounts received in previous years as engines and aftermarket services were delivered in 2021.

The movement in Defence is from utilisation of prior year deposits and recognition of deferred income as revenue as performance obligations have been satisfied.

16 Financial assets and liabilities

Carrying value of other financial assets and liabilities

	Derivatives							
	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
At 31 December 2021								
Non-current assets	159	11	176	346	–	15	–	361
Current assets	12	21	–	33	–	13	–	46
Assets	171	32	176	379	–	28	–	407
Current liabilities	(629)	–	–	(629)	(7)	(28)	(25)	(689)
Non-current liabilities	(2,581)	–	(82)	(2,663)	(5)	(47)	–	(2,715)
Liabilities	(3,210)	–	(82)	(3,292)	(12)	(75)	(25)	(3,404)
	(3,039)	32	94	(2,913)	(12)	(47)	(25)	(2,997)
At 31 December 2020								
Non-current assets	396	18	258	672	–	15	–	687
Current assets	45	7	42	94	–	13	–	107
Assets	441	25	300	766	–	28	–	794
Current liabilities	(522)	(17)	(11)	(550)	(5)	(25)	(28)	(608)
Non-current liabilities	(2,790)	(19)	(113)	(2,922)	(76)	(48)	–	(3,046)
Liabilities	(3,312)	(36)	(124)	(3,472)	(81)	(73)	(28)	(3,654)
	(2,871)	(11)	176	(2,706)	(81)	(45)	(28)	(2,860)

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

Derivative financial instruments

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

	Foreign exchange instruments		Commodity instruments		Interest rate instruments – hedge accounted ²		Interest rate instruments – non-hedge accounted		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
	(2,871)	(3,104)	(11)	12	233	229	(57)	14	(2,706)	(2,849)
At 1 January										
Movements in fair value hedges	–	–	–	–	(143)	139	–	–	(143)	139
Movements in cash flow hedges	(13)	18	4	6	(2)	(60)	–	–	(11)	(36)
Movements in other derivative contracts ¹	(681)	(23)	63	(62)	–	–	80	(75)	(538)	(160)
Contracts settled	538	238	(9)	33	(31)	(75)	14	4	512	200
Reclassification to held for sale	(12)	–	(15)	–	–	–	–	–	(27)	–
At 31 December	(3,039)	(2,871)	32	(11)	57	233	37	(57)	(2,913)	(2,706)

¹ Included in net financing.

² Includes the foreign exchange impact of cross-currency interest rate swaps.

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

	Financial RRSAs		Other liabilities		Other assets	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
At 1 January	(81)	(110)	(73)	(72)	15	16
Exchange adjustments included in OCI	4	(6)	4	(2)	—	—
Additions	—	—	(9)	(17)	—	—
Financing charge ¹	—	(3)	(1)	(13)	—	—
Excluded from underlying profit:						
Changes in forecast payments ¹	(7)	(3)	—	—	—	—
Cash paid	3	39	3	18	—	(1)
Other	—	—	1	13	—	—
Reclassification to held for sale	69	2	—	—	—	—
At 31 December	(12)	(81)	(75)	(73)	15	15

¹ Included in net financing.

Fair values of financial instruments equate to book values with the following exceptions:

	2021		2020	
	Book value £m	Fair value £m	Book value £m	Fair value £m
Borrowings – Level 1	(4,038)	(4,106)	(4,886)	(4,814)
Borrowings – Level 2	(1,994)	(2,122)	(401)	(403)
Financial RRSAs – Level 3	(12)	(13)	(81)	(89)

Fair values

The fair value of a financial instrument is the price at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arms-length transaction. Fair values have been determined with reference to available market information at the balance sheet date, using the methodologies described below. There have been no transfers during the year from or to Level 3 valuation.

- Non-current investments – primarily comprise unconsolidated companies where fair value approximates to the book value.
- Money market funds, included within cash and cash equivalents, are valued using Level 1 methodology. Fair values are assumed to approximately equal cost either due to the short-term maturity of the instruments or because the interest rate of the investments is reset after periods not exceeding six months.
- The fair values of held to collect trade receivables and similar items, trade payables and other similar items, other non-derivative financial assets and liabilities, short-term investments and cash and cash equivalents are assumed to approximate to cost either due to the short-term maturity of the instruments or because the interest rate of the investments is reset after periods not exceeding six months.
- Fair values of derivative financial assets and liabilities and trade receivable held to collect or sell (2021: £17m; 2020: £938m) are estimated by discounting expected future contractual cash flows using prevailing interest rate curves. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. These financial instruments are included on the balance sheet at fair value, derived from observable market prices (Level 2 as defined by IFRS 13 *Fair Value Measurement*).
- Borrowings are carried at amortised cost. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. The fair value of borrowings is estimated using quoted prices (Level 1 as defined by IFRS 13) or by discounting contractual future cash flows (Level 2 as defined by IFRS 13).
- The fair values of RRSAs and other liabilities are estimated by discounting expected future cash flows. The contractual cash flows are based on future trading activity, which is estimated based on latest forecasts (Level 3 as defined by IFRS 13).
- Other assets are included on the balance sheet at fair value, derived from observable market prices or latest forecast (Level 2/3 as defined by IFRS 13). At 31 December 2021, Level 3 assets totalled £15m (2020: £15m).
- The fair value of lease liabilities are estimated by discounting future contractual cash flows using either the interest rate implicit in the lease or the Group's incremental cost of borrowing (Level 2 as defined by IFRS 13).

17 Borrowings and lease liabilities

	Current		Non-current		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
Unsecured						
Overdrafts	7	7	—	—	7	7
Bank loans ¹	2	9	1,975	10	1,977	19
Commercial paper ²	—	300	—	—	—	300
2.125% Notes 2021 €750m ³	—	680	—	—	—	680
0.875% Notes 2024 €550m ⁴	—	—	471	511	471	511
3.625% Notes 2025 \$1,000m ⁴	—	—	781	800	781	800
3.375% Notes 2026 £375m ⁵	—	—	394	420	394	420
4.625% Notes 2026 €750m ⁶	—	—	624	667	624	667
5.75% Notes 2027 \$1,000m ⁶	—	—	735	724	735	724
5.75% Notes 2027 £545m	—	—	540	539	540	539
1.625% Notes 2028 €550m ⁴	—	—	493	545	493	545
Other loans ⁷	—	17	10	58	10	75
Total unsecured	9	1,013	6,023	4,274	6,032	5,287
Lease liabilities	270	259	1,474	1,784	1,744	2,043
Total borrowings and lease liabilities	279	1,272	7,497	6,058	7,776	7,330

All outstanding items described above as notes are listed on the London Stock Exchange.

¹ On the 15 June 2021, the Group drew down the £2,000m loan maturing in 2025 (supported by an 80% guarantee from UK Export Finance).

² On 17 March 2021, the Group repaid commercial paper of £300m issued as part of the COVID Corporate Financing Facility (CCFF), a fund operated by the Bank of England on behalf of HM Treasury.

³ These notes were the subject of cross-currency interest rate swap agreements under which the Group had undertaken to pay floating rates of GBP interest, which form a fair value hedge. On the 18 June 2021, the Group repaid €750m (£639m) loan notes in line with repayment terms.

⁴ 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.

⁵ 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.

⁶ These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay fixed rates of GBP interest, which form a cash flow hedge.

⁷ During the year, the Group reclassified borrowings and lease liabilities relating to ITP Aero as liabilities associated with assets held for sale.

During the year, the Group entered into a new £1,000m facility maturing in 2026 (supported by an 80% guarantee from UK Export Finance and available to draw until March 2025). This facility was undrawn at 31 December 2021.

Under the terms of certain recent loan facilities, the Company is restricted from declaring, making or paying distributions to shareholders on or prior to 31 December 2022 and from declaring, making or paying distributions to shareholders from 1 January 2023 unless certain conditions are satisfied. The restrictions on distributions do not prevent shareholders from redeeming C Shares issued in January 2020 or earlier.

18 Leases

Leases as lessee

The net book value of right-of-use assets at 31 December 2021 was £1,203m (2020: £1,405m), with a lease liability of £1,744m (2020: £2,043m). Leases that have not yet commenced to which the Group is committed have a future liability of £55m and consist of mainly engines, plant and equipment, properties and cars. The condensed consolidated income statement shows the following amounts relating to leases:

	2021 £m	2020 £m
Land and buildings depreciation and impairment ¹	(41)	(122)
Plant and equipment depreciation ²	(24)	(44)
Aircraft and engines depreciation and impairment ³	(192)	(566)
Total depreciation and impairment charge for right-of-use assets	(257)	(732)
Adjustment of amounts payable under residual value guarantees within lease liabilities ^{3, 4}	4	102
Expense relating to short-term leases of 12 months or less recognised as an expense on a straight-line basis ²	(16)	(18)
Expense relating to variable lease payments not included in lease liabilities ^{3, 5}	(2)	(1)
Total operating costs	(271)	(649)
Interest expense ⁶	(63)	(74)
Total lease expense	(334)	(723)
Income from sub-leasing right-of-use assets	35	97
Total amount recognised in income statement	(299)	(626)

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 Where the cost of meeting residual value guarantees is less than that previously estimated, as costs have been mitigated or liabilities waived by the lessor, the lease liability has been remeasured. To the extent that the value of this remeasurement exceeds the value of the right-of-use asset, the reduction in the lease liability is credited to cost of sales.

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.

⁶ Included in financing costs.

The total cash outflow for leases in 2021 was £448m (2020: £377m). Of this £430m related to leases reflected in the lease liability, £16m to short-term leases where lease payments are expensed on a straight-line basis and £2m for variable lease payments where obligations are only due when the assets are used. The timing difference between income statement charge and cash flow relates to costs incurred at the end of leases for residual value guarantees and restoration costs that are recognised within depreciation over the term of the lease, the most significant amounts relate to engine leases.

19 Provisions

	At 1 January 2021 £m	Charged to income statement ¹ £m	Reversed £m	Utilised £m	Transfers to held for sale £m	Exchange differences £m	At 31 December 2021 £m
Trent 1000 exceptional costs	321	80	(45)	(199)	–	–	157
Contract losses	808	272	(190)	(27)	(13)	(5)	845
Restructuring	236	5	(138)	(74)	(5)	(3)	21
Warranty and guarantees	327	84	(5)	(75)	(11)	(15)	305
Customer financing	17	–	–	–	–	–	17
Insurance	60	22	(20)	(10)	–	–	52
Tax related interest and penalties	33	5	(13)	(11)	–	–	14
Employer liability claims	50	3	(3)	(2)	(1)	–	47
Other	93	61	(11)	(17)	–	(2)	124
	1,945	532	(425)	(415)	(30)	(25)	1,582
Current liabilities	826						475
Non-current liabilities	1,119						1,107

¹ The charge to the income statement includes £32m (2020: £48m) as a result of the unwinding of the discounting of provisions previously recognised.

Trent 1000 exceptional costs

In November 2019, the Group announced the outcome of testing and a thorough technical and financial review of the Trent 1000 TEN programme, following technical issues which were identified in 2019, resulting in a revised timeline and a more conservative estimate of durability for the improved HP turbine blade for the TEN variant. During the year, the Group has utilised £199m of the Trent 1000 exceptional costs provision. This represents customer disruption costs settled in cash and credit notes, and remediation shop visit costs. The value of remaining provision reflects the single most likely outcome and is expected to be utilised over the period 2022 to 2024.

19 Provisions continued

Contract losses

Provisions for contract losses are recorded when the direct costs to fulfil a contract are assessed as being greater than the expected revenue. In the year, additional contract losses for the Group of £272m have been recognised as a result of changes in future cost estimates, primarily in relation to LTSA shop visits; £20m was a result of revised estimates in relation to climate change. Contract losses of £190m previously recognised have been reversed following a reassessment of the number of engines impacted by the Trent 1000 technical issues and the cost of meeting contractual obligations. The Group continues to monitor the contract loss provision for changes in the market and revises the provision as required. The value of the remaining contract loss provisions reflect in each case the single most likely outcome. The provisions are expected to be utilised over the term of the customer contracts, typically within 8-16 years. From 1 January 2022, provisions for contract losses will be measured on a fully costed basis. See note 1 for further detail.

Warranties and guarantees

Provisions for warranties and guarantees primarily relate to products sold and are calculated based on an assessment of the remediation costs related to future claims based on past experience. The provision generally covers a period of up to three years.

Restructuring

In May 2020, the Group announced a fundamental restructuring programme in response to the financial and operational impact caused by COVID-19 with a plan to remove at least 9,000 roles across the Group. During the year, £74m of the provision was utilised as part of these plans and £138m of the provision released following reassessment of the anticipated cost per role and a higher than expected rate of natural attrition. The remaining provision is expected to be utilised by the end of 2022.

Customer financing

Customer financing provisions have been made to cover guarantees provided for asset value and/or financing where it is probable that a payment will be made.

In addition to the provisions recognised, the Group has contingent liabilities for customer financing arrangements where they payment is not probable as described below. 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 \$1.7bn (2020: \$1.9bn) (on a discounted basis) to provide facilities to enable customers to purchase aircraft (of which approximately \$952m could be called during 2022). 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. Significant events impacting the international aircraft financing market, including the COVID-19 pandemic, the failure by customers to meet their obligations under such financing agreements, or inadequate provisions for customer financing liabilities may adversely affect the Group's financial position.

Commitments on delivered aircraft in excess of the amounts provided are shown in the table below. These are reported on a discounted basis at the Group's borrowing rate to better reflect the time span over which these exposures could arise. These amounts do not represent values that are expected to crystallise. The commitments are denominated in US dollars. As the Group does not generally adopt cash flow hedge accounting for future foreign exchange transactions, this amount is reported together with the sterling equivalent at the reporting date spot rate. The values of aircraft providing security are based on advice from a specialist aircraft appraiser.

	2021		2020	
	£m	\$m	£m	\$m
Gross commitments	32	43	38	52
Value of security	(10)	(13)	(14)	(19)
Guarantees	(2)	(3)	(5)	(6)
Net commitments	20	27	19	27
Net commitments with security reduced by 20% ¹	22	29	22	30

¹ Although sensitivity calculations are complex, the reduction of the relevant security by 20% illustrates the sensitivity of the contingent liability to changes in this assumption.

Insurance

The Group's captive insurance company retains a portion of the exposures it insures on behalf of the remainder of the Group which include policies for aviation claims, employer liabilities and healthcare claims. Significant delays can 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 if the frequency or severity of claims differs from estimated. Provisions for outstanding claims are established to cover the outstanding expected liability as well as claims incurred but not yet reported.

Tax related interest and penalties

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.

19 Provisions continued

Employer liability claims

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

During the year, £61m of other provisions have been charged to the income statement. The largest item is £29m for costs related to the termination of a contract under which the Group now has an obligation to enter an onerous lease. On commencement of that lease, expected to be in 2022, this balance will be recognised as a lease liability. The additional items that make up the remaining charge in the year are individually immaterial and predominantly relate to claims. At 31 December 2021, other provisions includes those items as well as others (predominantly supplier claims), where the related legal proceedings are ongoing and utilisation will depend upon their resolution. The value of the provision reflects the single most likely outcome in each case.

20 Pensions and other post-retirement and long-term employee benefits

Amounts recognised in the income statement

	2021			2020		
	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	10	61	71	153	67	220
Other past service (credit)/cost ¹	(15)	(33)	(48)	(308)	20	(288)
	(5)	28	23	(155)	87	(68)
Defined contribution schemes	146	81	227	80	84	164
Operating cost/(credit)	141	109	250	(75)	171	96
Net financing (credit)/charge in respect of defined benefit schemes	(16)	19	3	(26)	27	1
Total income statement charge/(credit)	125	128	253	(101)	198	97

¹ The past service credit recognised during the year comprises the changes in the UK schemes below and £32m from the remeasurement of the US defined benefit liability to remove spousal benefits not included in the plan benefits. During the year to 31 December 2020, a UK past-service credit of £308m was recognised which comprised £213m arising from the restructuring programme and the introduction of the bridging pension option (BPO), £67m as a result of the closure of the scheme to future accrual, £35m as a result of changes to management benefits and a £7m past-service cost recognised as a result of the 20 November High Court judgement that previous statutory transfer values including guaranteed minimum pensions built up between May 1990 and April 1997 must be equalised between men and women.

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

	UK schemes £m	Overseas schemes £m	Total £m
At 1 January 2021			
Exchange adjustments	883	(1,569)	(686)
Current service cost and administrative expenses	–	61	61
Past service credit	(10)	(61)	(71)
Financing recognised in the income statement	15	33	48
Contributions by employer	16	(19)	(3)
Actuarial gains recognised in OCI	99	63	162
Returns on plan assets excluding financing recognised in OCI	227	169	396
Transfers and disposal of businesses	(112)	(30)	(142)
	–	10	10
At 31 December 2021	1,118	(1,343)	(225)
Post-retirement scheme surpluses – included in non-current assets ¹	1,118	30	1,148
Post-retirement scheme deficits – included in non-current liabilities	–	(1,373)	(1,373)
	1,118	(1,343)	(225)

¹ The surplus in the Rolls-Royce UK Pension Fund (RRUKPF) 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.

Changes to UK defined benefit scheme

On 20 May 2020, the Group announced its intention to reshape and resize the Group due to the financial and operational impact of COVID-19. As part of this restructuring programme, a voluntary severance programme was offered to certain UK employees and pension liabilities were remeasured in 2020 to reflect the number of members who were expected to leave the scheme. During the year, a £4m past service credit has arisen from the updated scope of the fundamental restructuring programmes following a higher than expected rate of natural attrition.

On the 29 July 2020, the Group announced a consultation with the active members of the UK scheme on a proposal to close the scheme to future accrual on 31 December 2020. As at 31 December 2020, a non-underlying past-service credit of £67m was recognised. Following the confirmation of the scheme closure, the Group held discussions with the employees' representatives and the Trustee regarding additional transitional protections that could be granted from the scheme. At 31 December 2021, £7m had been recognised as a non-underlying past service credit which relates to the differences between the final protections agreed and the obligation estimated at 31 December 2020.

20 Pensions and other post-retirement and long-term employee benefits continued

During the year to 31 December 2021, 236 employed deferred members transferred employment in anticipation of a business disposal. As a consequence of this, a £4m non-underlying past service credit was recognised.

Sensitivities

A reduction in the discount rate from 1.90% to 1.65% could lead to an increase in the defined benefit obligations of the RR UK Pension Fund of approximately £460m. This would be expected to be broadly offset by changes in the value of scheme assets, as the scheme's investment policies are designed to mitigate this risk.

A one-year increase in life expectancy from 21.8 years (male aged 65) and from 23.2 years (male aged 45) would increase the defined benefit obligations of the RR UK Pension Fund by approximately £365m.

Where applicable, it is assumed that 50% and 40% (2020: 40%) of employed deferred and deferred members respectively of the RR UK Pension Fund will transfer out of the fund on retirement with a share of funds transfer value. An increase of 5% in this assumption would increase the defined benefit obligation by £30m.

Contributions

The Group expects to contribute approximately £66m to its defined benefit schemes in 2022 (2021: £160m): UK: nil, Overseas: £66m (2020: UK: £100m, Overseas: £60m).

In the UK, cash funding is based on a statutory triennial funding valuation process. This process includes a negotiation between the Group and the Trustee on the actuarial assumptions used to value the liabilities (Technical Provisions); assumptions which may differ from those used for accounting. 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 a margin (0.5% at the 31 March 2020 valuation) 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 agreed rate of cash contributions and any contributions from the employer to eliminate a deficit. The most recent valuation, as at 31 March 2020, agreed by the Trustee in June 2021, showed that the UK scheme was estimated to be 105% funded on the Technical Provisions basis. This funding level reflected the short-term market impact of the COVID-19 pandemic. Funding has now returned to pre-pandemic levels and was estimated to be 112% at 31 December 2021. Following the closure of the scheme to future accrual on 31 December 2020, no contributions will be made in respect of future accrual and no deficit reduction contributions are required. The 2021 contributions included above are in respect of 2020 accrual, the payment of some of which were deferred in agreement with the Trustee as a result of the COVID-19 pandemic. All cash due has been paid in full. The current SoC includes an arrangement for potential contributions during 2024 to 2027 (capped at £145m in total) if the Technical Provisions funding position is below 107% at 31 March 2023.

21 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 (DPA) with the SFO and the US Department of Justice (DoJ) and a leniency agreement with the MPF, the Brazilian federal prosecutors. The terms of both DPAs have now expired; the DPA with the DoJ was dismissed by the US District Court on 19 May 2020 and the SFO filed notice of discontinuance of proceedings with the UK Court on 18 January 2022. Certain 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, the Group 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, commitments made for future service demand in respect of maintenance, repair and overhaul, and 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 (including with tax authorities) 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 (2020: nil).

22 Disposals, businesses held for sale and discontinued operations

Disposals

On 28 February 2020, the Group announced the decision to carry out a strategic review of Bergen Engines AS, the Group's medium-speed gas and diesel engine business. Bergen Engines AS formed part of the Power Systems business and from 31 December 2020 it has been classified as a disposal group held for sale. During the year to 31 December 2021, an impairment charge of £9m was recognised against the disposal group as a result of a change in the anticipated proceeds. On 31 December 2021, the Group completed the sale of Bergen Engines AS to Langley Holdings plc for a value of €91m. In accordance with IAS 21 *The Effects of Changes in Foreign Exchange Rates*, the Group has recycled the cumulative currency translation reserve through the income statement in 2021.

On 7 December 2020, the Group signed an agreement for the sale of Civil Nuclear Instrumentation & Control business to Framatome and consequently, in accordance with IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*, the business was classified as a disposal group held for sale at 31 December 2020. During the year to 31 December 2021, no impairment charge was recognised. On 5 November 2021, the Group completed the sale to Framatome for a value of £85m. In accordance with IAS 21, the Group has recycled the cumulative currency translation reserve through the income statement in 2021.

	Bergen Engines £m	Civil Nuclear £m	Total subsidiaries £m
Proceeds			
Cash consideration	77	85	162
Cash and cash equivalents disposed	(29)	(14)	(43)
Net cash consideration per cash flow statement	48	71	119
Less: Net assets disposed	(34)	–	(34)
Profit on disposal before disposal costs and continuing obligations	14	71	85
Cumulative currency translation (loss)/gain	(1)	2	1
Disposal costs	(20)	(3)	(23)
Non-underlying (loss)/profit before tax	(7)	70	63

Disposal completed in prior periods

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. A liability of €28m is recognised for amounts that are now expected to be payable in relation to the years 2022 and 2023 (2020: €29m liability in relation to the years 2021 to 2023). Cash of €9m has been paid during the year with an increase in the liability of €8m (£7m) reflected as an adjustment to sales proceeds. The maximum adjustment to sales proceeds has now been provided for in all future years to 2023.

Reconciliation of loss on acquisition & disposal of businesses per the income statement:	Total £m
Profit on disposal of businesses	63
Adjustment to L'Orange sales proceeds	(7)
Profit on acquisition & disposal of businesses per income statement	56

Reconciliation of cash flow on disposal of businesses to the cash flow statement:	Total £m
Net consideration on disposal of businesses	107
Cash outflow on disposals completed in prior periods	(8)
Cash flow on disposal of businesses per cash flow statement	99

Businesses held for sale

On 27 August 2020, the Group announced its intention to sell ITP Aero. During the period to 30 June 2021, the Hucknall site with associated fabrications activities, that were previously reported as part of the Civil Aerospace segment, were transferred to ITP Aero (see note 2 for more detail) and other preparatory work had been performed such that as at 30 June 2021 the business was classified as a disposal group held for sale. On 27 September 2021, the Group signed an agreement for the sale of ITP Aero to Bain Capital for £1.3bn and consequently, in accordance with IFRS 5, the business continues to be classified as a disposal group held for sale at 31 December 2021. The assets of ITP Aero have been assessed for impairment in line with the requirements of IFRS 5 and no impairment is required at 31 December 2021. ITP Aero had an additional £153m of cash which was held by another Group company at 31 December 2021 and consequently is not included in the disposal group as the resulting intra-group balances are eliminated on consolidation. On completion, such cash is expected to be included in the disposal group. In addition, the Group records significant adjustments to eliminate the impact of ITP Aero margin within onerous contract provisions within Civil Aerospace. Certain consolidation adjustments are not included in the balances held for sale but will be derecognised upon the sale of ITP Aero and the related income statement charge will be recognised as part of the profit on disposal.

22 Disposals, businesses held for sale and discontinued operations continued

On 13 September 2021, the Group signed an agreement with Equitix Investment Management Limited to dispose its 23.1% shareholding in AirTanker Holdings Limited for a cash consideration of £189m. The sale completed on 9 February 2022. In accordance with IFRS 5, the Group has classified £47m of the AirTanker assets as held for sale at 31 December 2021.

At 31 December 2021, the Group recognised property, plant and equipment and the deferred income of a related grant as held for sale in line with IFRS 5. These assets relate to the Group's site rationalisation activities.

The table below summarises the categories of assets and liabilities classified as held for sale at 31 December 2021 and 2020.

	2021			2020		
	ITP Aero	Other ¹	Total	Bergen Engines	Civil Nuclear	Total
	£m	£m	£m	£m	£m	£m
Intangible assets	872	—	872	—	16	16
Property, plant and equipment	313	26	339	3	4	7
Right-of-use assets	12	—	12	2	7	9
Investment in associates and joint ventures	1	34	35	—	—	—
Deferred tax assets	167	—	167	2	4	6
Inventory	222	—	222	97	14	111
Trade receivables and other assets	342	14	356	50	38	88
Cash and cash equivalents	25	—	25	25	26	51
Assets held for sale	1,954	74	2,028	179	109	288
Trade payables and other liabilities	(540)	(7)	(547)	(100)	(84)	(184)
Provisions for liabilities and charges	(22)	—	(22)	(11)	(7)	(18)
Borrowings and lease liabilities	(72)	—	(72)	(4)	(7)	(11)
Deferred tax liabilities	(82)	—	(82)	(2)	—	(2)
Post-retirement scheme deficits	—	—	—	—	(13)	(13)
Liabilities associated with assets held for sale	(716)	(7)	(723)	(117)	(111)	(228)
Net assets/(liabilities) held for sale	1,238	67	1,305	62	(2)	60

¹ Other assets and liabilities held for sale comprise: investment in joint venture and accrued interest with Airtanker Holdings Limited; and assets and associated government grant, related to the Group's site rationalisation activities.

Discontinued operations

ITP Aero represents a separate major line of business and is classified as a disposal group held for sale. Therefore, in line with IFRS 5, ITP Aero has been classified as a discontinued operation.

The financial performance and cash flow information presented reflects the operations for the year that have been classified as discontinued operations.

	2021 £m	2020 £m
Revenue	365	333
Operating loss ¹	(4)	(109)
Profit/(loss) before taxation ¹	2	(111)
Income tax credit ¹	34	43
Profit/(loss) for the year from discontinued operations on ordinary activities	36	(68)
Costs on disposal of discontinued operations	(39)	—
Loss for the year from discontinued operations	(3)	(68)
Net cash inflow from operating activities ²	12	40
Net cash outflow from investing activities	(32)	(39)
Net cash outflow from financing activities	(25)	(22)
Exchange gains/(losses)	4	(4)
Net change in cash and cash equivalents	(41)	(25)

¹ Profit/(loss) from discontinued operations on ordinary activities is presented net of intercompany trading eliminations, related consolidation adjustments and amortisation of intangible assets arising on previous acquisition (prior to classification to held for sale).

² Cash flows from operating activities include £39m costs of disposal paid during the year to 31 December 2021 that are not a movement in the cash balance of the disposal group as they were borne centrally.

23 Derivation of summary funds flow statement from statutory cash flow statement

	2021	2020	Source
	£m	£m	
Underlying operating profit/(loss) from continuing operations	414	(2,008)	Note 2
Operating loss from discontinued operations	(43)	(109)	Note 2
Amortisation and impairment of intangible assets	290	902	Cash flow statement (CFS)
Depreciation and impairment of PPE	462	821	CFS
Depreciation and impairment of right-of-use assets	257	732	CFS
Adjustment to residual value guarantees in lease liabilities	(4)	(102)	CFS
Impairment of joint ventures, associates and other investments	7	24	Note 10
Reversal of non-underlying impairments of non-current assets	9	(1,244)	Reversal of underlying adjustment (note 2)
Acquisition accounting	(50)	(85)	Reversal of underlying adjustment (note 2)
Depreciation, amortisation and impairment	971	1,048	
Additions of intangible assets	(185)	(316)	CFS less exceptional restructuring (see below)
Purchases of PPE	(311)	(579)	CFS less exceptional restructuring (see below)
Lease payments (capital plus interest)	(403)	(379)	CFS (capital and interest payments adjusted for foreign exchange (FX))
(Increase)/decrease in inventories	(169)	588	CFS
Movement in receivables/payables	(469)	(2,297)	CFS adjusted for the impact of exceptional programme charges and exceptional restructuring shown on the basis of the FX rate achieved on settled derivative contracts
Movement in contract balances (excluding Civil LTSA)	(289)	(263)	CFS adjusted for the impact of exceptional programme charges and FX and excluding Civil LTSA (shown separately below)
Underlying movement in Civil Aerospace LTSA contract balances	66	479	Movement in Civil LTSA balances within movement of contract balances in CFS less impact of FX
Revaluation of trading assets (excluding exceptional items)	32	219	Adjustment to reflect the impact of the FX contracts held on receivables/payables
Realised derivatives in financing	85	226	Realised cash flows on FX contracts not included in underlying operating profit less cash flows on settlement of excess derivative contracts
Movement on receivables/payables/contract balances	(575)	(1,636)	CFS adjusted for the impact of exceptional programme charges and anticipated recoveries, exceptional restructuring and FX contracts held
Movement on provisions	(136)	(195)	
Net interest received and paid	(197)	(75)	CFS
Fees paid on undrawn facilities	(62)	(97)	CFS
Cash flows on settlement of excess derivative contracts	(452)	(202)	CFS
Cash flows on financial instruments net of realised losses included in operating profit	(85)	(105)	Cash flows on other financial instruments (CFS) not allocated to lease payments or exceptional programme expenditure adjusted for the impact of FX not held for trading
Other	68	(49)	Principally disposals of non-current assets, joint venture trading and the effect of share-based payments
Trading cash flow	(1,165)	(4,114)	
<i>Trading cash flow from continuing operations</i>	<i>(1,211)</i>	<i>(4,198)</i>	
Contributions to defined benefit schemes (in excess of)/less than underlying operating profit charge	(92)	160	CFS
Tax	(185)	(231)	CFS
Free cash flow	(1,442)	(4,185)	
<i>Free cash flow from continuing operations</i>	<i>(1,485)</i>	<i>(4,255)</i>	
Net cash flow from changes in borrowings and lease liabilities	666	1,630	CFS excluding repayment of debt acquired.
(Decrease)/increase in short-term investments	(8)	6	CFS
Movement in net debt from cash flows	658	1,636	
Exclude: capital element of lease repayments	374	284	CFS
Movement in net debt from cash flows (excluding lease liabilities)	1,032	1,920	
Shareholder payments	(4)	(92)	CFS (includes dividends to NCI)
Proceeds of rights issue (net of expenses and rights taken by employee share trust)	—	1,972	CFS
Acquisition of business	—	(130)	CFS
Disposal of business	99	23	CFS
Other acquisitions and disposals	(50)	(12)	£50m related to costs incurred on central M&A activity.
Changes in Group structure	49	(119)	£168m related to severance costs and £63m capital expenditure (2020: £268m and £55m respectively)
Exceptional restructuring costs	(231)	(323)	
Financial penalties paid	(156)	(135)	CFS
Other	(23)	(33)	Cash outflow on M&A spend and timing of cash flows on a prior period disposal.
Change in cash and cash equivalents	(775)	(995)	

23 Derivation of summary funds flow statement from statutory cash flow statement continued

The comparative information for the period ended 31 December 2020 has been re-presented to be on a comparable basis with the presentation adopted at the year ended 31 December 2021. There is no change to trading or group free cash flow. In summary, foreign exchange transactions have been represented within line items to be consistent with presentation throughout the financial statements.

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 activity related to business acquisitions or disposals, financial penalties paid, exceptional restructuring costs and foreign exchange changes on net funds. The Board considers that free cash flow reflects cash generated from the Group's underlying trading.

Trading cash flow is defined as free cash flow (as defined above) before the deduction of recurring tax and post-employment benefit expenses.

The table below shows a reconciliation of free cash flow to the change in cash and cash equivalents presented in the condensed consolidated cash flow statement on page 18.

Reconciliation of Alternative Performance Measures (APMS) to their statutory equivalent

Alternative Performance Measures (APMS)

Business performance is reviewed and managed on an underlying basis. These alternative performance measures reflect the economic substance of trading in the year, including the impact of the Group's foreign exchange activities. In addition, a number of other APMs are utilised to measure and monitor the Group's performance.

Definitions and reconciliations to the relevant statutory measure are included below.

Underlying results from continuing operations

Underlying results including underlying revenue and underlying operating profit. Underlying results are presented by recording all relevant revenue and cost of sales transactions at the average exchange rate achieved on effective settled derivative contracts in the period that the cash flow occurs. Underlying results also exclude: the effect of acquisition accounting and business disposals, impairment of goodwill and other non-current assets where the reasons for the impairment are outside of normal operating activities, exceptional items and certain other items which are market driven and outside of management's control. Statutory results have been adjusted for discontinued operations and underlying results from continuing operations have been presented on the same basis. Further detail can be found in note 2 and note 22.

	Notes	2021 £m	2020 £m
Revenue from continuing operations			
Statutory revenue		11,218	11,491
Derivative & FX adjustments	2	(271)	(61)
Underlying revenue		10,947	11,430
Operating profit/(loss) from continuing operations			
Statutory operating profit/(loss)		513	(1,972)
Derivative & FX adjustments	2	40	(1,003)
Programme exceptional charges	2	(105)	(620)
Restructuring exceptional charges	2	(45)	470
Acquisition accounting & M&A	2	50	85
Impairments & asset write-offs	2	(9)	1,336
Pension past service credit	2	(47)	(308)
Other underlying adjustments	2	17	4
Underlying operating profit/(loss)		414	(2,008)

	Notes	2021 pence	2020 pence
Basic EPS from continuing operations			
Statutory basic EPS	6	1.48	(51.81)
Effect of underlying adjustments to profit/(loss) before tax	6	3.96	(19.94)
Related tax effects		(5.33)	4.27
Basic underlying EPS		0.11	(67.48)

Underlying results from discontinued operations

	Notes	2021 £m	2020 £m
Results from discontinued operations			
Profit/(loss) for the year from discontinued operations on ordinary activities	22	36	(68)
Costs of disposal on discontinued operations	22	(39)	–
Statutory loss from discontinued operations		(3)	(68)
Acquisition accounting & M&A		64	48
Derivative & FX adjustments		5	(3)
Restructuring exceptional charges		–	82
Impairments & asset write-offs		(1)	19
Related tax effects		(14)	(36)
Underlying profit from discontinued operations		51	42

Trading cash flow

Trading cash flow is defined as free cash flow (as defined on page 56) before the deduction of recurring tax and post-employment benefit expenses. Trading cash flow per segment is used as a measure of business performance for the relevant segments. For a reconciliation of group trading cash flow to free cash flow and reported cash flow, see note 23.

	2021 £m	2020 £m
Civil Aerospace	(1,670)	(4,510)
Defence	377	298
Power Systems	219	162
New Markets	(56)	(55)
Total reportable segments trading cash flow	(1,130)	(4,105)
Other businesses	(43)	(30)
Central and Inter-segment	(38)	(63)
Trading cash flow from continuing operations	(1,211)	(4,198)
Discontinued business	46	84
Trading cash flow	(1,165)	(4,114)
Underlying operating profit charge (exceeded by)/in excess of contributions to defined benefit schemes	(92)	160
Tax ¹	(185)	(231)
Free cash flow	(1,442)	(4,185)

¹ See page 18 for tax paid on statutory cash flow.

Reconciliation of Alternative Performance Measures (APMS) to their statutory equivalent continued

Free cash flow

Free cash flow is a measure of financial performance of the businesses' cash flow to see what is available for distribution among those stakeholders funding the business (including debt holders and shareholders). Free cash flow is the change in cash and cash equivalents excluding: amounts spent or received on activity related to business acquisitions or disposals; financial penalties paid; exceptional restructuring payments; proceeds from increase in loans; and repayment of loans. Free cash flow from continuing operations has been presented to remove free cash flow from discontinued operations as defined in note 22. For further detail, see note 23.

	2021 £m	2020 £m
Statutory change in cash and cash equivalents	(775)	(995)
Net cash flow from changes in short-term investments, borrowings and lease liabilities	(658)	(1,636)
Movement in net debt from cash flows	(1,433)	(2,631)
Exclude: capital element of lease payments	(374)	(284)
Rights issue	—	(1,972)
Payment to shareholders	4	92
Business acquisitions & disposals	(49)	119
Penalties paid on agreements with investigating bodies	156	135
Restructuring exceptional cash flow	231	323
Other underlying adjustments	23	33
Free cash flow	(1,442)	(4,185)
Discontinued operations free cash flow ¹	(43)	(70)
Free cash flow from continuing operations	(1,485)	(4,255)

¹ Discontinued operations free cash excludes: transactions with parent company of £(15)m (2020: £103m), movements in borrowings of £22m (2020: £7m), exceptional restructuring costs of £8m (2020: £2m), M&A costs of £44m (2020: nil) and other of £29m (2020: £(21)m).

Free cash flow from cash flows from operating activities

In addition to the above, a reconciliation of free cash flow to the statutory cash flow from operating activities has been provided below:

	2021 £m	2020 £m
Statutory cash flows from operating activities	(259)	(3,009)
Capital expenditure (including investment from NCI and movement in joint ventures, associates and other investments)	(489)	(933)
Capital element of lease payments	(374)	(284)
Interest paid	(331)	(259)
Settlement of excess derivatives	(452)	(202)
Exceptional restructuring costs	231	323
M&A costs	50	12
Financial penalties paid	156	135
Other	26	32
Free cash flow	(1,442)	(4,185)
Discontinued operations free cash flow	(43)	(70)
Free cash flow from continuing operations	(1,485)	(4,255)

Group R&D expenditure

R&D expenditure during the year excluding the impact of contributions and fees, including government funding, amortisation and impairment of capitalised costs and amounts capitalised during the year.

Notes	2021 £m	2020 £m
Statutory research and development costs	(778)	(1,204)
Amortisation and impairment of capitalised cost	3	70
Capitalised as intangible assets		(228)
Contributions and fees		(353)
Gross R&D expenditure	(1,179)	(1,225)

Key performance indicators

The following measures are key performance indicators and are calculated using alternative performance measures or statutory results. See below for calculation of these amounts.

Order backlog

Order backlog, also known as unrecognised revenue, is the amount of revenue on current contracts that is expected to be recognised in future periods. Civil Aerospace OE orders where the customer has retained the right to cancel (for deliveries in the next 7-12 months) are excluded.

Self-funded R&D as a proportion of underlying revenue

Self-funded cash expenditure on R&D before any capitalisation or amortisation relative to underlying revenue. Self-funded R&D and underlying revenue are presented for continuing operations in line with presentation in the statutory income statement. We expect to spend approximately 5% of underlying revenue on R&D although this proportion will fluctuate depending on the stage of development of current programmes. We expect this proportion will reduce modestly over the medium-term.

Notes	2021 £m	2020 £m
Gross R&D expenditure	3	(1,179)
Contributions and fees	3	366
Self funded R&D	3	(813)
Underlying revenue	10,947	11,430
	%	%
Self funded R&D as a % of underlying revenue	7.4	7.6

Capital expenditure as a proportion of underlying revenue

Cash purchases of PPE in the year relative to underlying revenue presented for continuing operations. All proposed investments are subject to rigorous review to ensure that they are consistent with forecast activity and will provide value for money. We measure annual capital expenditure as the cash purchases of PPE acquired during the period; over the medium-term we expect a proportion of around 3-4%.

	2021 £m	2020 £m
Purchases of PPE (cash flow statement)	328	585
Exclude: capital expenditure from discontinued operations	(24)	(33)
Net capital expenditure	304	552
Underlying revenue	10,947	11,430
	%	%
Capital expenditure as a % of underlying revenue	2.8	4.8

Principal risks and uncertainties

Our risk management system is described on pages 52 to 57 of our 2021 Annual Report as a continuous process that requires risk owners to constantly reassess risks and include learning from incidents to drive improvements in our control environment.

Safety

Failure to: i) meet the expectations of our customers to provide safe products; or ii) create a place to work which minimises the risk of harm to our people, those who work with us, and the environment, would adversely affect our reputation and long-term sustainability.

Strategic transformation

We see significant opportunities in leading the transition to net zero by pioneering the power that matters. Our strategy is to focus on delivering on our plans for existing and nascent businesses and to focus on exploiting opportunities to grow into new net zero areas, both organically and inorganically. Failure to execute this plan will prevent us from achieving our longer-term ambitions.

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 (for example earthquakes, floods) which could increase in severity or frequency given the impact of climate change; political events; financial insolvency of a critical supplier; scarcity of materials; loss of data; fire; or infectious disease. The consequences of these events could have an adverse impact on our people, our internal facilities or our external supply chain.

Climate change

We recognise the urgency of the climate challenge and have committed to net zero carbon by 2050. The principal risk to meeting these commitments is the need to transition our products and services to a lower carbon economy. 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.

Competitive environment

Existing competitors: 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.

Existing products: failure to achieve cost reduction, contracted technical specification, product (or component) life or falling significantly short of customer expectations, 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.

New programmes: failure to deliver an NPI project on time, within budget, to technical specification or falling significantly short of customer expectations would have potentially significant adverse financial and reputational consequences.

Disruptive technologies (or new entrants with alternative business models): could reduce our ability to sustainably win future business, achieve operating results and realise future growth opportunities.

Compliance

Non-compliance by the Group with legislation or other regulatory requirements in the heavily regulated environment in which we operate (for example, export controls; data privacy; use of controlled chemicals and substances; antibribery and corruption; and tax and customs legislation). This could affect our ability to conduct business in certain jurisdictions and would potentially expose the Group to: 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.

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 cyberspace.

Financial shock

The Group is exposed to a number of financial risks, some of which are of a macroeconomic 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).

Significant extraneous market events could also materially damage the Group's competitiveness and/or creditworthiness and our ability to access funding. This would affect operational results or the outcomes of financial transactions.

Market shock

The Group is exposed to a number of market risks, some of which are of a macroeconomic nature (e.g. economic growth rates) and some of which are more specific to the Group (for example, reduction in air travel or defence spending, or disruption to other customer operations). A large proportion of our business is reliant on the civil aviation industry, which is cyclical in nature.

Demand for our products and services could be adversely affected by factors such as: recession, current and predicted air travel, fuel prices and age and replacement rates of our in-service products.

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.

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.

Payments to shareholders

As previously reported, some of our loan facilities place restrictions and conditions on payments to shareholders. In 2021, as a result of these restrictions, the Board was not able to recommend shareholder payments. However, the Board may recommend shareholder payments from 2023, subject to satisfaction of the conditions and our consideration of progress made to strengthen the balance sheet. We aim to be able to recommend shareholder payments in the medium term. The restrictions on distributions do not prevent shareholders from redeeming C Shares issued in January 2020 or prior to that.

Shareholders wishing to redeem their existing C Shares must lodge instructions with the Registrar to arrive no later than 5.00pm on 1 June 2022 (CREST holders must submit their election in CREST by 2.55pm). The payment of C Share redemption monies will be made on 5 July 2022 and the CRIP purchase will begin as soon as practicable after 5 July 2022.

Statement of Directors' responsibilities

The statements below have been prepared in connection with the Company's full Annual Report and Accounts for the year ended 31 December 2021. Certain parts are not included in this announcement.

The Directors consider that the Annual Report and Accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's and Company 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 their knowledge:

- the Group Financial Statements, which have been prepared in accordance with UK-adopted international accounting standards, give a true and fair view of the assets, liabilities, financial position and profit of the Group;
- the Company Financial Statements, which have been prepared in accordance with United Kingdom Accounting Standards, comprising FRS 101, give a true and fair view of the assets, liabilities, financial position and result of the Company;
- the Strategic Report includes a fair review of the development and performance of the business and the position of the Group and Company, together with a description of the principal risks and uncertainties that it faces; and

In the case of each Director in office at the date the Directors' Report is approved:

- so far as the Director is aware, there is no relevant audit information of which the Group's and Company's auditors are unaware; and
- they have taken all steps that they ought to have taken as a Director in order to make themselves aware of any relevant audit information and to establish that the Group's or Company's auditor are aware of that information.

By order of the Board

Warren East
Chief Executive

24 February 2022

Panos Kakoullis
Chief Financial Officer

24 February 2022