COMPANY NUMBER 01003142

ROLLS-ROYCE PLC

ANNUAL REPORT AND AUDITED FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2021

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COMPANY INFORMATION

Registered office	Kings Place 90 York Way London N1 9FX
Independent Auditors	PricewaterhouseCoopers LLP Chartered Accountants and Statutory Auditors 1 Embankment Place London WC2N 6RH

STRATEGIC REPORT

The Directors present their Strategic Report on the Rolls-Royce plc Group (the Group), together with the audited financial statements for the year ended 31 December 2021.

Group at a glance

Pioneers of Power

Rolls-Royce pioneers cutting-edge technologies that deliver clean, safe and competitive solutions to meet our planet's vital power needs. Our purpose is to pioneer the power that matters to connect, power and protect society.

FREE CASH FLOW [1,2,3]	STATUTORY CASH FLOW	UNDERLYING REVENUE [1,2,3]	STATUTORY REVENUE [1,2]
£(1,484)m	**£(775)m**	**£10,947m**	**£11,218m**
2020: £(4,252)m	2020: £(986)m	2020: £11,430m	2020: £11,491m

UNDERLYING OPERATING PROFIT/(LOSS) [1,2,3]	STATUTORY OPERATING PROFIT/(LOSS) [1,2]
£414m	**£513m**
2020: £(2,008)m	2020: £(1,972)m

NET DEBT [4]	LIQUIDITY [5]	UNDERLYING PROFIT/(LOSS) BEFORE TAX [1,2,3]	STATUTORY LOSS BEFORE TAX [1,2]
£(5,157)m	**£7.1bn**	**£36m**	**£(294)m**
2020: £(3,576)m	2020: £9.0bn	2020: £(3,993)m	2020: £(2,799)m

See note 2 on page 72 for a reconciliation between underlying and reported results.

Underlying revenue by business in 2021	
Civil Aerospace	41%
Defence	31%
Power Systems	25%
New Markets and Other businesses	3%

ORDER BACKLOG	GROSS R&D EXPENDITURE [3,6]	COUNTRIES WITH ROLLS-ROYCE PRESENCE	EMPLOYEES (MONTHLY AVERAGE)
£50.6bn	**£1.2bn**	**49**	**44,000**

1 2021 figures represent the results of continuing operations.
2 2020 figures have been restated, where relevant, to show ITP Aero as a discontinued business in line with 2021 reporting.
3 A reconciliation of Alternative Performance Measures to their statutory equivalent is provided on page 162 to 163.
4 Net debt (including lease liabilities) is defined on page 49.
5 Liquidity is defined as net funds plus any undrawn facilities, as listed on page 41.
6 See note 3 on page 74 for a reconciliation of gross R&D expenditure to total R&D expenditure.

Use of underlying performance measures in the Annual Report

All figures in the narrative of the Strategic Report are underlying from continuing businesses unless otherwise stated. We believe this is the most appropriate basis to measure our in-year performance as this reflects the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which lock in transactions at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, certain impairment charges and exceptional items. A full definition of underlying and the reconciliation to the statutory figures can be found on page 162 and 163. All references to organic change are at a constant translational currency and exclude M&A.

Group at a glance *continued*

Our businesses in 2021

CIVIL AEROSPACE	DEFENCE	POWER SYSTEMS	NEW MARKETS
Civil Aerospace is a major manufacturer of aero engines for the large commercial aircraft, regional jets and business aviation markets. The business uses its engineering expertise, in-depth knowledge and capabilities to provide through-life support solutions for its customers.	Defence is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and trainer applications. It has significant scale in naval and also designs, supplies and supports the nuclear propulsion plant for all of the UK Royal Navy's nuclear submarines.	Power Systems, with its product and solutions brand, *mtu*, is a world-leading provider of integrated solutions for onsite power and propulsion, developing sustainable, climate-friendly solutions to meet the needs of its customers.	New Markets are early-stage businesses, with high growth potential, focused on addressing the opportunities being created by the transition to net zero. The businesses leverage our existing, in-depth engineering expertise and capabilities to develop new sustainable products for future markets.
UNDERLYING REVENUE MIX	**UNDERLYING REVENUE MIX**	**UNDERLYING REVENUE MIX**	**UNDERLYING REVENUE MIX**
Large Engines: 72% Business Aviation: 21% Regional: 4% V2500: 3%	Transport: 32% Combat 24% Submarines: 19% Naval: 11% Other: 14%	Marine: 33% Industrial: 25% Power Generation: 33% Defence: 9%	Rolls-Royce SMR: 23% Rolls-Royce Electrical: 77%
UNDERLYING REVENUE [7,8]	**UNDERLYING REVENUE [8]**	**UNDERLYING REVENUE [8]**	**UNDERLYING REVENUE [8]**
£4,536m 2020: £5,068m	**£3,368m** 2020: £3,355m	**£2,749m** 2020: £2,735m	**£2m** 2020: £5m
UNDERLYING OPERATING (LOSS) [7,8]	**UNDERLYING OPERATING PROFIT [8]**	**UNDERLYING OPERATING PROFIT [8]**	**UNDERLYING OPERATING LOSS [8]**
£(172)m 2020: £(2,535)m See page 22	**£457m** 2020: £461m See page 24	**£242m** 2020: £188m See page 26	**£(70)m** 2019: £(45)m See page 28

[7] The underlying results for Civil Aerospace have been restated to reflect the transfer of the Hucknall site with associated fabrications activities from Civil Aerospace to ITP Aero during 2021.

[8] 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 activities as New Markets and UK Civil Nuclear as Other businesses.

Chief Executive's review

Generating positive momentum

We improved our financial performance, delivered our near-term commitments, won new business opportunities and took important strategic steps forward during the year. While challenges remain, we can look with increasing confidence to the future and the significant commercial opportunity presented by the transition to net zero.

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 as we look to the future. 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.

During the year, we continued to invest prudently in the new technologies, products and services our customers will need for their future success and saw our more recent investments deliver new growth opportunities. We attracted new customers, secured our place on new aerospace platforms and pushed our existing products into new markets. 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 (see page 24) and we won a strategically important contract with the US Air Force.

In Power Systems, the effects of COVID-19 on our end markets lessened over the course of the year and we recorded a strong increase in order intake in the second half, especially in power generation with orders for data centres and infrastructure projects. The transition to net zero power is a significant opportunity for us in Power Systems with mission critical power for data centres, power for construction and infrastructure, and marine solutions leading the demand for net zero carbon solutions (see page 26).

Notwithstanding our crucial focus in Civil Aerospace on completing the restructuring, we secured new customers and our place on new aircraft platforms in the widebody and business jet markets (see page 22). Within our New Markets reporting segment, which we have introduced to provide greater clarity for stakeholders on our early-stage businesses with high growth potential, Rolls-Royce Electrical saw pre-orders announced for a key urban air mobility customer, a new platform partner unveiled and passed a number of significant development milestones, including securing the world all-electric aircraft speed record (see page 28). Five years after our programme to develop a small modular nuclear reactor business was created, we established as a special purpose vehicle during 2021. We have attracted not just UK Government funding but capital from external investors (see page 28). We will now proceed through the regulatory process and identify sites for the factories, which will manufacture the modules that will enable the on-site assembly of SMR power plants, as well as focusing on securing our first orders.

There remain challenges and risks around the pace of growth in the global civil aviation market and there is additional uncertainty caused by rising inflation and ongoing global supply chain disruption, especially in areas such as semi-conductors which are becoming ubiquitous in modern technology solutions. The potential for further variants of the COVID-19 virus to create future disruption also cannot be discounted. Recovery from the pandemic is unlikely to be a simple linear trajectory but we are a different business going into 2022 than we were when the pandemic hit.

Improved financial performance

The progress made in 2021, particularly on our restructuring programme in Civil Aerospace, resulted in a return to underlying operating profit from continuing operations. This was bolstered by continued resistent performance in Defence and strong growth in Power Systems, as it benefited from recovering end markets. Group underlying revenue, meanwhile, reflected a more balanced contribution from the business units compared with the prior year and was obviously impacted by lower widebody engine deliveries as a result of reduced demand for new aircraft from our airline customers. Free cash outflow was 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.

Across the Group, we seized new opportunities throughout the year. We were very proud to secure the contract with the US Air Force to power its fleet of 76 iconic B-52 aircraft. This was a tremendous success and the result of intense effort and hard work by the team in Defence. In the UK, the Ministry of Defence announced our role in the next generation of nuclear-powered submarines, which will replace the Astute class in the future. Towards the end of the year, we agreed to work with Japan's IHI Corporation to develop and deliver a future fighter engine demonstrator. Using our unparalleled expertise in the generation of energy from nuclear sources at small-scale, we also began exploring the potential of space, signing an innovative contract during 2021 with the UK Space Agency for a study into future nuclear power options for space exploration.

Power Systems is at the vanguard of the drive to net zero as customers look to transition from traditional diesel-powered engines, and as a result much of our activity in 2021 was centred around new sustainable power solutions (see page 5). We are also increasing our sales of complete system solutions, including gensets, battery storage systems and automation, generating even closer customer relationships. In Civil Aerospace, despite the impact of the pandemic, we were able to continue to build on the success of our existing technology portfolio. The Pearl 10X became the third member of our family of Pearl business jet engines, after being chosen by Dassault, to exclusively power its new flagship aircraft, the Falcon 10X. This was a particularly significant achievement as it is the first time that Dassault has chosen our engines to power a member of its business jet fleet. During the year, another key new business jet engine, the Pearl 700 for Gulfstream's new G700 aircraft, successfully passed a number of important test milestones on its way to certification and entry into service in 2022. In the widebody market, our Trent XWB – the world's most efficient large aero engine in service today – will now be powering the new Airbus A350F fleet of freighters, with Singapore Airlines agreeing, during the year, to take seven of the new aircraft. The introduction of the Airbus A350F into the growing freighter market represents a significant opportunity for us. Finally, we welcomed new widebody customers including Vietnamese airline Vietjet Aviation for the Trent 700, a further example of our success in the market for aircraft transitions, and German airline Condor Flugdienst for the Trent 7000.

Chief Executive's review *continued*

Delivering on our commitments

I said in last year's Annual Report that unprecedented times had called for unprecedented action and we have delivered on the commitments that we made in order to secure the funding for the decisive action we needed to take. The restructuring programme we launched in 2020 has now largely been completed. The investment we made before the pandemic to improve productivity and efficiency has enabled us to act at pace and realise the benefits of the restructuring ahead of schedule. 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 also delivering on our commitment to raise around £2bn of proceeds from disposals, with four agreements announced. Three have already 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.

Investing to create long-term growth and sustainable value

Technology is the lifeblood of our business and we must ensure that we create, through prudent investment, the technologies that our customers are going to need for the future. Our continued prioritisation of targeted investment, even in the most challenging of years, has driven commercial wins in 2021, and we are increasingly pivoting our activity towards supporting our mission to lead the transition to net zero. We pioneer the power that matters, power which is central to the successful functioning of the modern world. To combat the climate crisis, we know that power must be made compatible with net zero carbon emissions. 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.

During 2021, we laid out our technology pathway to net zero and committed to ensuring our new products will be compatible with net zero operation by 2030, and all our products compatible by 2050. We aim to meet our net zero ambitions in part by working towards enabling our products to be used in a way which is compatible with net zero emissions. We have already made considerable progress on the testing of sustainable fuels and the development of new products and engine architectures, which will further increase fuel efficiency and help improve the economics of new forms of energy storage. During 2021, we set out clear short-term targets, connected to senior management remuneration, to make all the commercial aero engines we produce, and our most popular reciprocating engines in Power Systems, compatible with sustainable fuels by 2023 and to work with our armed forces customers to achieve the same goal for the Rolls-Royce engines they use. We are actively testing 100% Sustainable Aviation Fuels (SAF) in our Trent engines right now, while Power Systems is developing engines, and upgrade kits for existing products, for new fuels such as hydrogen, methanol, and synthetic e-diesel.

At the same time, we are pioneering new breakthrough technologies that can enable our customers to achieve net zero. Our Power Systems portfolio has already expanded into microgrids and battery storage and during the year we added hydrogen fuel cells for the climate-neutral generation of emergency power for the data centre market, an area where we are already among the world's top three suppliers. We are increasingly bringing our technologies together to provide complete solutions such as for the German Port of Duisburg where we are creating a first-of-a-kind microgrid that combines renewable power, battery storage, fuel cells and hydrogen combustion engines to meet the clean energy needs of a new container terminal. Such a combined solution has potential applications for our Defence customers as they look to decarbonise their estates, which make up a significant proportion of government-owned emissions.

Our innovation is also taking us into exciting new areas, with novel technologies opening up new markets and significant growth opportunities: from all-electric Urban Air Mobility (UAM) and regional aviation to hybrid-electric systems. Perhaps one of the most high-profile technology milestones we passed during the year on our journey to net zero was the success of the Spirit of Innovation, which secured the record for the world's fastest all-electric aircraft. It was powered on its record-breaking runs by the most power-dense propulsion battery pack ever assembled in aerospace. The advanced battery and propulsion technology developed for this programme has exciting applications for the emerging advanced air mobility market. Our customers in this field are already announcing orders with Vertical Aerospace claiming the largest conditional pre-order book in the electric vertical take-off and landing (eVTOL) industry during the year. Towards the end of 2021, we also announced our involvement with Eve, the UAM business created by Embraer. Our innovation with SMRs, meanwhile, has seen us develop existing technology to enter new markets and sectors where we can offer technological solutions that can provide further growth opportunities.

Executive leadership

During the year, I was pleased to be joined by Panos Kakoullis as our new Chief Financial Officer. He is already having a significant positive impact on our Finance function and has clearly laid out his near-term priorities (see page 14). During the year, Paul Stein announced his intention to step down as Chief Technology Officer (CTO) though he will remain as Chairman of Rolls-Royce SMR; Harry Holt took the decision to leave his role as Chief People Officer (CPO) to take up a post with one of our partners in the UAM market; and Ben Story, Strategic Marketing Director, decided to leave us to pursue new opportunities. I would like to extend the thanks of all of us at Rolls-Royce to the three of them for their hard work and dedication. From the start of 2022, I am delighted to have been joined on the Executive Team (ET) by Grazia Vittadini as CTO. She has extensive expertise, from her career at Airbus, in the emerging and disruptive technologies that will help us on our journey to net zero. Sarah Armstrong, who led the restructuring in Civil Aerospace as People Officer, has joined the ET as CPO. Finally, Rob Watson, who has been instrumental in creating Rolls-Royce Electrical, has joined the ET as President - Electrical.

2022 outlook and longer-term prospects

As I said earlier, the positive momentum we are generating, along with the growth we can see in our end markets, gives us confidence that we will see further improvement in our performance in 2022 (see page 14). Looking further ahead, our technology and engineering expertise gives us a critical role in enabling the transition to a low carbon global economy. For us, this is a societal imperative as well as one of the greatest commercial and technological opportunities of our time although not without risk. The early-stage businesses, with high growth potential, within our New Markets segment are focused on addressing exactly these opportunities. They are leveraging our existing, in-depth engineering expertise and capabilities to develop new sustainable products. The desire to be part of the solution to climate change is strong throughout Rolls-Royce. The ambition, ingenuity and skill of our people will be instrumental to our success and I would like to thank all of them for their hard work during 2021. There are few companies better placed than us to pioneer the vital solutions we need to create a net zero carbon future. Success in this endeavour will also play a key role in the creation of a more sustainable – in all senses of the word – and prosperous Rolls-Royce.

Purpose, vision and strategy

Our **purpose** (below) guides our **near-term areas of focus** (below) and **strategic priorities** (see page 8), which are informed by our **business environment** (see page 9). Our strategy is delivered by our **people**, enabled by our **business model** (see page 10), enacted by our **business units** (see pages 22 to 29) and measured through our **Key Performance Indicators** (see page 12). Our strategy is underpinned by strong **governance** (see page 39) and leadership which manages **risk** (see page 30) and uncertainty and creates **value for all our stakeholders** (see Financial Review, page 14 and Stakeholder Engagement, page 35).

Our purpose, vision and mission

We pioneer the power that matters. Power that has an impact and is central to the successful functioning of the modern world. As a broad-based power and propulsion provider, we operate in some of the most complex, critical systems at the heart of global society.

Purpose

We pioneer the power that matters. Power that is vital to the success of our customers and which drives the functioning of the modern world. We harness the potential of cutting-edge technologies to create safe, cleaner and more efficient power and propulsion solutions. We push the boundaries of what is possible as pioneers.

We operate in some of the most complex and critical parts of the global economy, from transport and energy to the built environment. Our products and services enable our customers to connect people, societies, cultures and economies together; they meet the growing need for power generation across multiple industries; and enable governments to equip their armed forces with the power required to protect their citizens.

Vision

We create industrial technologies using expertise built over many years, that puts us in a leadership position. We combine distinct engineering disciplines to deliver highly complex power and propulsion solutions in the air, at sea and on land, building long-term relationships with our customers through service packages. The thread linking the Group together is the technical and engineering expertise needed to create power for very challenging applications. We share this expertise across the Group and create value through deployment in our multiple markets as required by customer demand.

Mission

Global economic growth and rising prosperity are expected to lead to increased demand for travel, trade and energy. As demand for power rises, so are calls from customers for that power to be more compatible with combatting climate change. We believe there are significant business growth opportunities to come from Rolls-Royce playing a leading role in the transition to net zero. At the same time, climate change poses a potentially significant risk to our business to which we must respond with the appropriate governance, risk management, strategic resilience and metrics. We are well positioned to capture the structural growth opportunity presented by the global energy transition and we are excited to be playing a leading role in enabling our customers make the move to net zero.

Our values and behaviours

Trust: We strive to outperform the expectation of key stakeholders. We have to earn trust every day and always remember it is easy to lose.

Integrity: We live up to all of our ethical principles and we demonstrate this by being true to ourselves and showing honesty and good judgement in all we do.

Safety: We put health and safety first. We care about the health and safety of our people and our products.

Embrace Agility: We explore different ways of doing things, we respond quickly and adapt to challenges.

Be Bold: We believe in ourselves, push boundaries and speak up.

Pursue Collaboration: We find strength in working together, both inside and outside of our business, and value the diversity of people and perspectives.

Seek Simplicity: We keep it simple and remove complexity, in how we communicate and the way we work.

Near-term areas of focus

The unprecedented times caused by the COVID-19 pandemic, particularly in the civil aviation market, called for unprecedented action in 2020 as we secured our future through the launch of the largest restructuring in our history, a fund raising and a disposals programme. Since then, we have made significant progress on the path to recovery, by focusing upon the elements within our control. We are emerging as a better-quality business, due largely to the restructuring in Civil Aerospace, and a more balanced one as Defence has remained resilient and Power Systems sees a strong recovery in demand, primarily for sustainable solutions. Our overall strategic direction is unchanged as we capitalise on the opportunities presented by our long-term customer relationships and installed product base; grow our capabilities in sustainable power; harness new digital technologies and create new business opportunities. Many of these individual elements, such as the drive for sustainable power, are now fundamental to our future direction. Our journey to creating a better quality and more balanced business, however, is far from over. As we look at the near term, there are three areas upon which we will focus.

Purpose, vision and strategy *continued*

Delivering on our commitments
We made clear commitments alongside the fund raising in late 2020, which we must deliver and which will assist us in rebuilding our balance sheet and achieving our mid-term ambition of returning to an investment grade credit rating. Very significant progress has been made on the restructuring (see page 23), assisting us in meeting our pledge to turn cash flow positive sometime during the second half of 2021. We must protect the savings that have been made and ensure value and cost consciousness remain a central tenet of the whole business as we look to future growth. During the year, we also announced a series of agreements as a result of our programme to raise around £2bn from disposals and we aim for completion in the first half of 2022.

Maximise value from existing capabilities
We are the beneficiaries of years – in some cases decades – of hard work to build up our market share, especially in Civil Aerospace, and now our focus is on optimising the returns from these positions. The current restructuring is a key enabler of this optimisation. We are also moving beyond a period of unprecedented investment in new Civil Aerospace engine programmes, with four new widebody engines and three new business jets launched in the last decade, to a period in which we must realise the benefits of that effort and investment. This means we must remain focused on our services strategy, increasing the opportunity to generate value from the installed product base, and supporting our products by innovating to extend their service life. Extending the life of our products in service also means enabling our customers to use them in a way that is compatible with net zero. We can pull the technology levers in our control through testing our existing products with new lower carbon and net zero fuels and creating upgrade kits, where necessary, to assist adoption.

Across all our business units, the underlying driver of services revenues will continue to be the size of our installed product base – that is the number of assets in the market. This provides resilience against Original Equipment (OE) sales volatility and allows us to continuously increase the scope of our aftermarket reach and to maximise value from the whole system life of our solutions. Some areas of the business, such as Power Systems, are at an earlier stage in this process than others, notably Civil Aerospace.

Seizing opportunities for growth
There are opportunities for growth, both within our existing businesses and from new areas which are emerging. In our Defence business, for instance, governments around the world are exploring approaches to reduce the carbon footprint of their armed forces, which means demand for newer, more efficient, powerplants and for sustainable fuels. Our airline and business jet customers are keen to address the same issues, as are our customers in the multiple sectors addressed by Power Systems. The context in which we are creating one of the world's leading industrial technology companies is that of a world which is taking on the challenge of achieving net zero by 2050. It represents a significant commercial opportunity for Rolls-Royce as some of our core applications are hard to decarbonise and require deep domain knowledge, which reduces the potential for the emergence of disruptive new entrants. The sectors in which we operate sit at the heart of modern society. As other parts of the global economy decarbonise, they will contribute a more significant proportion of remaining emissions. As a result, our innovation in sectors where reducing emissions is tough, has a fundamental role to play in enabling and even accelerating the overall global transition to a net zero carbon future.

Purpose, vision and strategy *continued*

Our strategic priorities

Our purpose, vision and mission provide an overall framework within which our strategic focus for the next several years sits. To complete the picture, we have a priorities framework which provides our people with clear guidance on our in-year priorities across five areas.

Secure a sustainable future

Our priorities framework is used by our business units in the setting of individual in-year targets. Our overall theme for 2022 is to secure a sustainable future for our business, not just in terms of making progress on our continued journey towards net zero but making significant strides towards meeting our ambition of creating a better quality and more balanced business. The five priority areas expand beyond what each part of the business needs to achieve in order to meet our in-year financial targets (see page 14).

STRATEGY

All our people have clear line of sight not just to the strategic priorities of their team but to their business unit and the Group as a whole. Leaders are charged with helping individual employees understand the role they play in meeting our strategy. As we play our part in enabling the transition to net zero we have also tied part of our senior management remuneration to meeting our sustainability targets introduced in 2021.

CUSTOMERS (links to KPI G)

Our customers are vital to our success and we must ensure we continually strive to provide the best possible service by delivering the value and quality we promise, at the time we promise, for the price we promise. Increasingly, our customers are requiring us to develop more sustainable solutions. We track customer engagement and success across the business, including for our internal support functions.

EFFICIENCY (links to KPIs C, F)

To ensure that we can maintain and improve our competitiveness, fund future growth and meet our promises to investors we must ensure we continue to champion efficiency across our whole business. For instance, we must retain the benefits of the restructuring programme as civil aviation recovers and returns to growth. We track cost metrics across the business and take effective action swiftly.

PEOPLE (links to KPI H)

Our people and culture are vital to our long-term success and we have a platform for engagement tracking which operates across the Group, allowing individual businesses to create action plans and set targets which roll-up to an overall score against which a proportion of senior management remuneration is set annually.

FINANCIAL (links to KPIs A, B, C, D, E, F

We must deliver on the financial commitments that we have made. We must continue our journey to rebuild strength in our balance sheet by meeting our financial goals, including driving positive net cash flow and increased profitability. This will play a vital role in assisting us in our ambition to return to an investment grade credit profile (see page 14).

KEY PERFORMANCE INDICATORS

Financial Performance Indicators

A – Order backlog
B – Underlying revenue
C – Underlying operating profit/(loss)
D – Capital expenditure as a proportion of underlying revenue
E – Self-funded R&D as a proportion of underlying revenue
F – Free cash flow from continuing operations

Non-financial Performance Indicators

G – Customer metric
H – Employee engagement

See Key Performance Indicators pages 12 and 13.

Business environment

Climate change	Our response
We recognise that human behaviour is increasing the levels of greenhouse gas in the atmosphere and accelerating global climate change. This is one of the world's greatest and most urgent challenges and has the potential to undermine every nation's ability to achieve sustainable development. Many of the countries we operate in, as well as a number of our customers, have made commitments to significantly reduce or reach net zero carbon emissions by the middle of the century. For example, our Defence customer, the RAF, our airline customers through IATA, and our Power Systems customers in the marine sector represented by the International Maritime Organization have published far-reaching commitments. Transitioning the essential, but difficult to decarbonise industries in which we operate to net zero is a tremendous challenge, but also provides business opportunities for bringing cutting-edge technologies to market.	To us, being sustainable means understanding the impact our business has on the world around us, and the impact climate has on our Group. We use this understanding to inform our purpose, strategy, and the decisions we make. Reducing the carbon impacts of our product portfolio and accelerating the decarbonisation of the sectors in which we operate is the most significant contribution Rolls-Royce can make to a more sustainable future; it is our mission to lead the transition to net zero. To that end, we are increasing our investment in lower carbon and net zero technologies. There are already tangible results of our efforts in advancing the efficiency of our existing portfolio, making new and existing products compatible with net zero operation, and pioneering new technologies in electric flight, SMRs, fuel cells, and microgrids.
Digitalisation	**Our response**
The digital revolution has already transformed ways of living, working, and entire industries. As a consequence of the COVID-19 pandemic, investment in digitalisation and the adoption of digital technologies has increased. This trend has been evident in industries like entertainment, where digital players have been able to outpace traditional rivals; and is increasingly reaching industries that have remained largely immune to digital disruption until recently. In our end markets, the US Department of Defense (DoD) for example, has more than doubled its budget for cyber in the last ten years, large players in the aviation industry are increasingly offering digital services, and the Internet of Things (IoT) platforms have been established to enable energy management and automation for power generation and consumption. Vast amounts of data are being generated by the over ten billion IoT connected devices globally today – forecast to reach over 30 billion by 2025. To draw insights, big data analytics and artificial intelligence are increasingly used, which require tremendous amounts of processing – now increasingly done via cloud computing services. As these technologies converge and become increasingly accessible and affordable, further innovation and disruption is sure to occur in all industries, including our own.	Having pioneered engine health monitoring for aircraft engines over 25 years ago, we have a heritage in data innovation. Pursuing our Civil Aerospace IntelligentEngine vision, we continue to utilise digital twins to maximise aircraft availability; and increasingly for product innovation, advanced manufacturing and for enabling the journey to electric flight. Our TwinAlytics digital services allow Defence customers securely to gather and analyse data and simplify decision-making processes; we are also extending our digital capabilities as part of the Tempest programme. In Power Systems, we operate the *mtu* Go platform, which enables users to quickly analyse system data, determine important action steps and plan them efficiently. Through our R2 Data Labs team, which focuses on data innovation within Rolls-Royce, we have been able to deliver over 60,000 hours of learning on digital and AI to our employees, connected to hundreds of companies through our ecosystem, and were able to complete transformative digital projects in a wide range of areas. Finally, we are positioning Rolls-Royce as a thought leader in the space of AI ethics, having published and refined The Alethia Framework that guides developers, executives and boards through ethical considerations surrounding artificial intelligence.
Population and economic growth	**Our response**
As the global population is set to increase to over 9.7 billion people by 2050 (a rise of more than 20% from 2020) and global gross domestic product is set to roughly double by that time, investment in clean power will also increase significantly. This will be particularly evident in the markets served by Power Systems, including power generation, commercial marine and industrial applications. Demand for Defence products is determined by national defence budgets – these are closely linked to economic growth and are expected to increase at low single digit rates in real terms each year. Further, as more people reach middle- and higher-income levels, it is expected that revenue passenger kilometres will increase; by some estimates more than double by 2050, a key driver for the growth of our Civil Aerospace business.	Addressing diverse end markets through our Defence and Power Systems businesses has helped us be more resilient to the short-term shocks caused by COVID-19. At the same time, we are positioning ourselves for growth by directly addressing key growth markets that will particularly benefit from increased population and economic activity, for example, by establishing dedicated business units for China and for sustainable power solutions within Power Systems. Through Rolls-Royce SMR, we seek to bring to scale a low-carbon source of power and have obtained significant government and partner funding. In pioneering electric flight, we see the potential for us to disrupt in the commuter aircraft and urban air mobility markets – both of which will increasingly become relevant in a more urban and densely populated world.

Business model

We believe we have a sustainable business model which will create value for all our stakeholders over the long term.

Our cross-cutting capability and assets that support our strategy

Brand and heritage
Our brand has global appeal; is enduring; engages a wide range of stakeholders; and is a powerful tool for attracting customers, partners and talent.

People and culture
We are powered by our people. We create an environment where all of our people can be at their best. We work hard to release their full potential.

Innovation and technology
Delivering highly complex systems solutions has enabled us to build a significant breadth of disciplines; while the nature of our products means we have acquired extraordinary depth.

Partnerships
We build meaningful relationships with partners across the value chain.

Global network and infrastructure
Our geographic footprint ensures we are able to serve customers where they need us.

Digitalisation
We use digital tools and skills across our business to enable growth without a commensurate increase in costs.

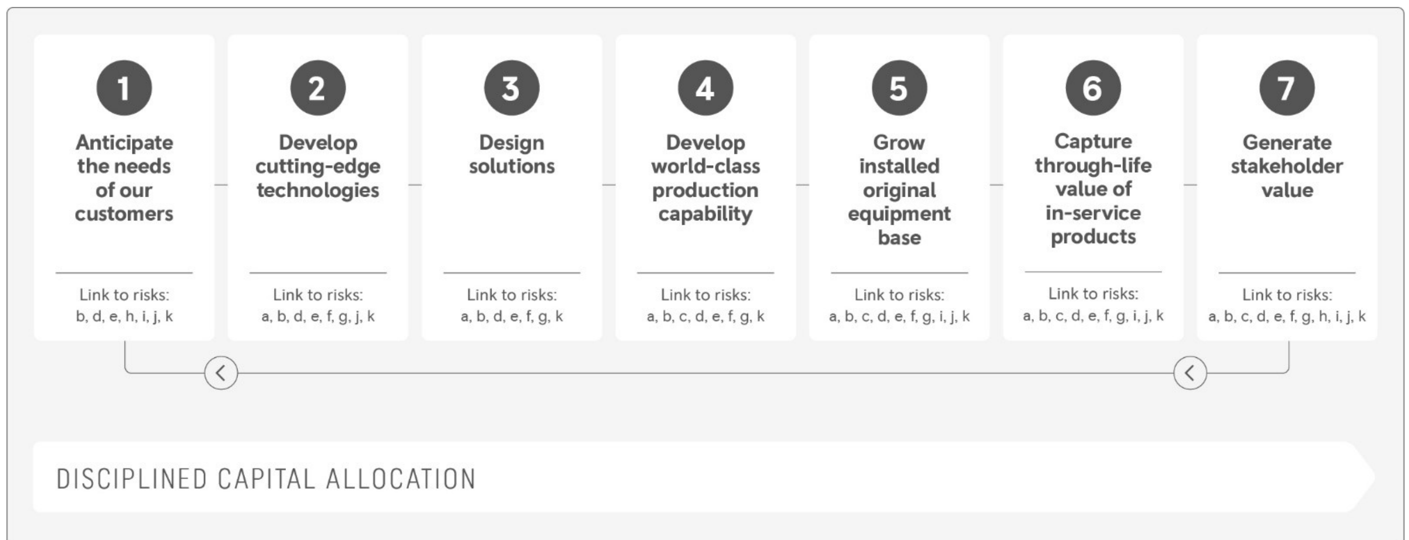
Business excellence
We drive a culture of continuous improvement.

Our competitive advantage comes from:

Cutting edge technologies
Our technologies ensure that our customers have the vital power that meets their emerging needs in an increasingly sustainable manner.

Systems solutions
We integrate individual enabling technologies into complete systems and power solutions, providing customers with the ability to work with a single partner.

System life
Our products have significant aftermarket requirements during their lengthy operating lives and we provide complete through-life support.



1. Anticipate the needs of our customers
Our focus on building complete power solutions provides the basis for strong customer relationships. Increasingly, our customers are requiring us to develop more sustainable solutions as they look to make the transition to net zero. Our aftermarket model of through-life support further deepens our connection with customers.

2. Develop cutting-edge technologies
Our products rely upon cutting-edge technologies, which are generated from intellectual property developed over decades and often in collaboration with our long-term partners.

3. Design solutions
We harness the potential of digital technologies and design thinking to create solutions that generate the greatest value from our cutting-edge technologies.

4. Develop world-class production capability
We use our production expertise and network of partners to harness new manufacturing techniques and technologies.

Business model *continued*

5. Grow installed original equipment base

Increasing our installed product base generates both in-year growth and the potential for our business to capture long-term service revenue.

6. Capture through-life value of in-service products

We believe our substantial installed product base provides a large, captive, visible, and long-term revenue, profit, and cash flow stream.

7. Generate stakeholder value

Our activities worldwide generate value for a wide range of stakeholders.

PRINCIPAL RISKS

a – Safety
b – Strategic transformation
c – Business continuity
d – Climate change
e – Competitive environment
f – Compliance
g – Cyber threat
h – Financial shock
i – Market shock
j – Political risk
k – Talent and capability

See Principal Risks page 30.

Value creation for our stakeholders

Customers

We develop product solutions that improve the competitiveness of our customers and assist them in their journey to net zero (see Business Review page 22). *Gross R&D expenditure: £1.2bn*

Investors

We aim to generate attractive returns for investors over the long-term. *2021 total shareholder return: 10.45%.*

Employees

To help our people be at their best, we enable them to learn and develop in a style and at a pace that suits them, at every point in their career (see Non-financial KPIs page 13). *Investment in learning and development (hours): 263,840.*

Partners

We create partnerships based on collaboration where each partner benefits from the relationship. *Spend with external suppliers: £7.9bn.*

Communities

We improve the communities that we impact locally, nationally and globally. *Hours of employee time volunteered: 26,427.*

See Stakeholder Engagement, page 35.

Key Performance Indicators

Financial Performance Indicators [1,2,3]

ORDER BACKLOG (£BN)	UNDERLYING REVENUE (£M)	UNDERLYING OPERATING PROFIT/(LOSS) (£M)
2021: 50.6 2020: 52.9 2019: 60.9 2018: 63.1 2017: 55.0	**2021: 10,947** 2020: 11,430 2019: 15,450 2018: 15,067 2017: 13,671	**2021: 414** 2020: (2,008) 2019: 808 2018: 616 2017: 306
How we define it Total value of firm orders placed by customers for delivery of products and services where there is no right to cancel. This KPI is the same as the statutory measure for order backlog. See note 2 on page 71 for more information.	**How we define it** Revenue generated from operations at the average exchange rate achieved on effective settled derivative contracts in the period that the cash flow occurs. See note 2 on page 69 for more information.	**How we define it** Operating profit generated from operations at the average exchange rate achieved on effective settled derivative contracts in the period that the cash flow occurs. It excludes exceptional and one-off items. See note 2 on page 69 for more information.
Why it is important Order backlog provides visibility of future business activity.	**Why it is important** Underlying revenue provides a measure of business growth and activity.	**Why it is important** Underlying operating profit indicates how the effect of growing revenue and control of our costs delivers value for our shareholders.
Link to remuneration Customer orders drive future revenue growth which in turn, enables profit and cash flow growth. Profit and free cash flow performance are key financial metrics in Rolls-Royce incentive plan, accounting for 75% of the metrics in 2021.	**Link to remuneration** Underlying revenue growth maximises the opportunity to improve profit and free cash flow performance in the year, both of which are key financial metrics in the Rolls-Royce incentive plan.	**Link to remuneration** Profit is a key financial performance measures for our Rolls-Royce incentive plan.

CAPITAL EXPENDITURE AS A PROPORTION OF UNDERLYING REVENUE (%)	SELF-FUNDED R&D AS A PROPORTION OF UNDERLYING REVENUE (%)	FREE CASH FLOW FROM CONTINUING OPERATIONS (£M)
2021: 2.8 2020: 4.8 2019: 5.0 2018: 6.0 2017: 5.3	**2021: 7.4** 2020: 7.6 2019: 7.2 2018: 7.6 2017: 7.6	**2021: (1,484)** 2020: (4,252) 2019: 865 2018: 568 2017: 262
How we define it Cash purchases of PPE in the year for continuing operations relative to underlying revenue.	**How we define it** In-year self-funded cash expenditure on R&D before any capitalisation or amortisation relative to underlying revenue.	**How we define it** Free cash flow is the change in cash and cash equivalents excluding: transactions with ordinary shareholders; 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. Cash flow is our statutory equivalent, see note 27 on page 113.
Why it is important This measure demonstrates the balance between essential investments in infrastructure and delivering short-term shareholder returns.	**Why it is important** This measure demonstrates the balance between long-term strategic investments and delivering short-term shareholder returns.	**Why it is important** Free cash flow is a key metric used to measure the performance of our business and how effectively we are creating value for our shareholders. It enables the business to fund growth, reduce debt and make shareholder payments.
Link to remuneration Disciplined allocation of capital expenditure optimises in-year profit and cash flow performance without compromising longer-term growth. Long-term metrics in the Rolls-Royce incentive plan in 2022 and 2023 reward strong financial performance.	**Link to remuneration** Disciplined control and allocation of R&D expenditure optimises in-year profit and cash flow performance without compromising long-term growth through innovation. There is a balance of long-term metrics which reward strong financial performance and also relative returns to our shareholders through Total Shareholder Return in the 2023 Rolls-Royce incentive plan.	**Link to remuneration** Free cash flow is a financial metric in the Rolls-Royce incentive plan.

[1] Following the adoption of IFRS 15 *Revenue from Contracts with Customers* in 2018, the 2017 figures were restated.

[2] The adoption of IFRS 16 *Leases* in 2019 had no material impact on our financial KPIs, see page 12 for more information.

[3] 2021 figures represent the results of continuing operations. 2020 figures have been restated, where relevant, to show ITP Aero as a discontinued operation in line with 2021 reporting. 2017, 2018 and 2019 figures have not been restated.

Key Performance Indicators *continued*

Non-financial Performance Indicators

CUSTOMER METRIC (%)	EMPLOYEE ENGAGEMENT (SCORED 1 - 5) [4]	SUSTAINABILITY
Civil Aerospace - 2021: 79 2020: 73.7 **Defence – 2021: 39** 2020: 0 **Power Systems – 2021: 40** 2020: 41.5 **How we define it** In 2019, we introduced a new balanced scorecard of metrics for each business. The scorecard includes on-time delivery, aircraft on ground and engine availability amongst other indicators. The focus for 2021 has been on the individual business performance against the scorecards. **Why it is important** Customer satisfaction demonstrates whether we are meeting our commitments to our customers across our businesses. This, in turn, drives our cash and profitability. **Link to remuneration** The customer metric accounts for 15% of the individual business incentive outturns.	**2021: 3.73** 2020: 3.68 2019: 3.53 **How we define it** In 2019, we introduced a new survey, Gallup Q12. Responses are scored on a scale of one to five. The employee engagement score averages the responses to all 12 questions in the survey. **Why is it important** Our people are crucial to delivering future business success. This is an objective way to assess how engaged our employees are with the business and its leaders. **Link to remuneration** Employee engagement performance against our target accounts for 10% of our incentive plan.	In 2021, sustainability was 5% of the Rolls-Royce incentive plan. Going forward, we expect sustainability to become a more prominent metric in our incentive plans.

[4] External assurance over the employee engagement score is provided by Bureau Veritas.

See Reconciliation of Alternative Performance Measures (APMs) to their Statutory Equivalent on page 162 for additional commentary on our financial KPIs.

Financial review

We have focused on the elements within our control to deliver on our commitments and improve our financial performance. As a result, we are building a better and more balanced business.

We can be proud of our performance in 2021. We have focused on the elements within our control, delivered on our commitments and driven improving cash flow and profits. We have also invested prudently in the products and programmes that are key to the transition of our markets to net zero carbon emissions by 2050.

I joined Rolls-Royce in May 2021, attracted by the opportunity to make a difference and to be a part of a company that is right at the heart of the energy transition with the technology and engineering excellence to transform the way we provide the power the world needs. I am excited by the journey ahead and encouraged by what we have achieved so far, while remaining very focused on the challenges ahead.

Delivering our commitments

As a result of the actions we have taken, we are a better quality and more balanced business. We have strong order books and revenue growth in Power Systems and Defence and a structurally lower cost base in Civil Aerospace. As a result, we are more able to withstand macro uncertainties and we are well positioned to benefit from the return to pre-pandemic levels of activity.

Our fundamental restructuring programme to remove over 9,000 roles from continuing operations has largely been completed, reducing our Civil Aerospace headcount by around a third. This rapid action delivered more than £1.3bn of run-rate cost savings by the end of 2021, one year earlier than our 2022 target. These are sustainable cost savings that are supported by better ways of working as well as automation and digitalisation to keep cost increases proportionately low when activity levels rise.

A strong balance sheet and liquidity position are important. We ended 2021 with £7.1bn of liquidity with no debt maturities due before 2024. We repaid €750m maturing bond and the £300m Covid Corporate Financing Facility (CCFF) commercial paper in the first half of the year and extended the duration of the unused £1.0bn loan facility to 2024.

In line with our 2020 commitment to rebuild our balance sheet, we have announced disposals to generate around £2bn of proceeds and retained cash that will be used to strengthen our financial position. The two of these disposals completed in 2021 and one more completed early in 2022. The final agreed disposal, ITP Aero, is expected to complete in 2022. We remain focused on reducing our net debt and aim to return to an investment grade credit profile in the medium-term.

Improving financial performance

We generated £414m of underlying operating profit from continuing operations in 2021, recovering from a loss in the prior year as the benefits of our actions to restructure the business along with growth in Power Systems and Defence helped to deliver a substantial improvement in our financial performance.

Our 2021 free cash outflow from continuing operations of £1.5bn was significantly better than the £2bn outflow guided at the start of the year, despite a slower than expected recovery in international travel. This was driven by fast delivery of cost and efficiency savings and also the benefit from the delayed timing of around £300m concession payments. The sequential £2.8bn improvement in 2021 was a huge step forward and we are aiming to continue in 2022 with guidance to deliver a modestly positive free cash flow outcome.

Our end markets improved in 2021, helping to drive better performance and order intake across the Group. In Civil Aerospace, business aviation flying hours returned to pre-COVID-19 levels of activity while large engine flying hours saw a gradual recovery. This drove increased cash receipts on our long-term service agreements. In Power Systems, our order intake increased significantly reflecting recovery in our industrial and power generation markets in addition to continued resilience in both yachts and governmental demand. Defence, which was resilient throughout the pandemic, continued to perform well and contributed significantly to Group profitability and cash flow.

Investing to drive growth and deliver sustainable value

Balancing the opportunity to invest with the need to strengthen our balance sheet is critical to our long-term vision as a leading industrial technology company.

In 2021, we spent £1.2bn on research and development, £366m of which was paid for by funding from third parties. We are an innovative company with deep and broad engineering and technology capability. Our continued prioritisation of targeted investment, even in the most challenging years, drove commercial success in 2021 including commercial wins of our Pearl engine on new airframes, the B-52 engine replacement contract, a first-of-a-kind hydrogen micro-grid, a world speed record for all-electric flight and entry into the UK GDA for our SMRs.

Our technology and engineering expertise gives us a critical role in enabling the transition to a low carbon global economy. The creation of our New Markets segment, bringing together Rolls-Royce Electrical and Rolls-Royce SMR, reflects the strategic importance and future financial potential of these businesses and increases the visibility of the early-stage investment we are making to create long term value from high potential opportunities for sustainable growth.

Our financial priorities

In the near term, I have three clear priorities for Finance. Firstly, to ensure we deliver on our promises. We will strengthen our balance sheet by completing our programme of disposals. We will finish the actions related to our restructuring with the closure of the final sites and associated role reductions and stay focused on sustaining the productivity improvements, keeping cost increases proportionately low as activity levels rise. Secondly, to simplify our reporting. We want to make our financial communications easier to understand. We intend to simplify our reporting, break down the complexity and focus on the key value drivers and targets in a more balanced and straightforward way. Thirdly, to invest wisely for the future. We are at an exciting point in our journey with the opportunity to lead our markets in our transition to net zero. Choosing the right investments and balancing the development of new solutions with investment in our established businesses is critical to generating good returns today and in the longer term.

Financial review *continued*

2022 Outlook

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.

Our framework for capital allocation and investment

It is key that we optimise our investments in order to deliver our strategy most effectively, maximise our returns and achieve our net zero commitments. In 2021, our approach to analysing investment cases was updated to place a greater focus on sustainability as well as other ESG considerations. We use an investment appraisal process that considers all Group-wide investment cases against a balanced set of criteria. This has been designed to ensure we both develop as well as adopt the most appealing investment choices which best deliver against our commitments and goals.

The approval process for investments fits within our overall governance framework. All projects must demonstrate alignment with the criteria identified. Smaller scale projects are approved at the business level. Above a defined threshold, approval is sought through the Investment Review Committee, a sub-committee of the ET, chaired by the Chief Financial Officer. The Board has approval rights over our largest investments.

Our levels of investment will be prudently managed, enabling us to deliver on our strategy whilst generating improved levels of free cash flow. This will enable us to reduce net debt and return to an investment grade credit profile in the medium term. We remain restricted on making shareholder payments until 2023, after which we will revisit our shareholder payment policy as cash flow further improves and our balance sheet strengthens.

Four primary factors are taken into account when making investment decisions:

1. Returns
Does it add shareholder value through explicit financial returns?

2. Risks
Is the proposal inside or outside our risk appetite?

3. Carbon
How does it contribute towards the transition to net zero?

4. Other ESG
What is the impact on the wider community? Is it required to protect our employees and stakeholders?

Financial review *continued*

Defining our Alternative Performance Measures (APMs)

Business performance is reviewed and managed on an underlying basis. These APMs reflect the economic substance of trading in the year, including the impact of the Group's foreign exchange activities.

The tables below summarise the adjustments between reported and underlying results for cash flow, revenue, and operating profit.

For more information on the reconciliation of APMs to their statutory equivalent, including the definition of APMs, please see pages 162 to 163.

Free cash flow

£m	2021	2020
Statutory cash flow	**(775)**	(986)
Net cash flow from changes in short-term investments, borrowings & lease liabilities	**(658)**	(1,636)
Movement in net funds from cash flows	**(1,433)**	(2,622)
Exclude: Capital element of lease payments	**(374)**	(284)
Movement on balances with parent company	**4**	(1,887)
Business acquisitions & disposals	**(49)**	119
Penalties paid on agreements with investigating bodies	**156**	135
Restructuring exceptional cash flow	**231**	323
Other underlying adjustments	**24**	34
Free cash flow	**(1,441)**	(4,182)
Discontinued operations free cash flow	**(43)**	(70)
Free cash flow from continuing operations	**(1,484)**	(4,252)

Operating profit/(loss) from continuing operations

£m	Notes	2021	2020
Statutory operating profit/(loss)		**513**	(1,972)
Derivative & FX adjustment	2	**40**	(1,003)
Programme exceptional charges	2	**(105)**	(620)
Restructuring exceptional charges	2	**(45)**	470
Acquisition accounting & M&A	2	**50**	85
Impairments and 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)

Revenue from continuing operations

£m	Notes	2021	2020
Statutory revenue		**11,218**	11,491
Derivative & FX adjustments	2	**(271)**	(61)
Underlying revenue		**10,947**	11,430

Financial review *continued*

Group statutory results

Statutory Income Statement

£ million	2021	Restated [1] 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)**	(2,779)	2,505
Taxation	**418**	(302)	720
Profit/(loss) for the year from continuing operations	**124**	(3,101)	3,225

[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.

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%.

Statutory Balance Sheet

£ million	Statutory 2021	Adjusted 2020	Held for sale [1]	Statutory 2020	Change Excl. HfS [1]
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 [2]	**1,791**	794	106	900	997
Provisions	**(1,582)**	(1,907)	(38)	(1,945)	325
Net debt [3]	**(5,110)**	(3,556)	(71)	(3,627)	(1,554)
Net financial assets and liabilities [3]	**(3,009)**	(3,049)	(34)	(3,083)	40
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 [4]	(185)
Other net assets and liabilities	**36**	19	–	19	17
Net liabilities	**(4,278)**	(4,517)	–	(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)	

[1] 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.

[2] Net working capital includes inventory, trade receivables and payables and similar assets and liabilities.

[3] 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.

[4] Relates to Bergen Engines AS and the Civil Nuclear Installation & Control business which were classified as disposal groups held for sale at 31 December 2020. Both disposals were completed in 2021.

Financial review *continued*

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 £1,791m net current asset position was £997m 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.

Financial review *continued*

Group underlying results

Underlying Income Statement

£ million	2021	Restated [1] 2020	Change	Organic change [2]	M&A [3]	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)
Gross margin %	**18.2%**	(5.4)%	23.6%pt	23.8%pt		
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 (loss)/profit	**414**	(2,008)	2,422	2,466	(4)	(40)
Underlying operating margin %	**3.8%**	(17.6)%	21.4%pt	21.8%pt		
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)

[1] 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.

[2] 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.

[3] M&A includes 2020 Power Systems acquisitions comprising of Kinolt Group S.A and Servowatch Systems Limited (SSL).

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.

Financial review *continued*

Group Funds Flow Statement [1]

£ 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)	**(640)**	(2,113)	1,473
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 flows on financial instruments net of realised losses included in operating profit	**(85)**	(105)	20
Other	**68**	(48)	116
Trading cash flow	**(1,164)**	(4,111)	2,947
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	**(1,441)**	(4,182)	2,741
Of which relates to continuing operations	**(1,484)**	(4,252)	2,768
Disposals and acquisitions	**49**	(119)	168
Movement on balances with parent company	**(4)**	1,887	(1,891)
Exceptional Group restructuring	**(231)**	(323)	92
Payment of financial penalties	**(156)**	(135)	(21)
Other underlying adjustments	**(24)**	(34)	10
Movements in net funds from cash flows (excluding lease liabilities)	**(1,807)**	(2,906)	1,099
Capital element of lease repayments	**374**	284	90
Movements in net funds from cash flows	**(1,433)**	(2,622)	1,189
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)**	(986)	211

[1] The derivation of the summary funds flow statement from the statutory cash flow statement is included on page 48.

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 £(640)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.

Financial review *continued*

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 £(24)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.

Business review

Civil Aerospace

Civil Aerospace is a major manufacturer of aero engines for the large commercial aircraft, regional jets and business aviation markets. The business uses its engineering expertise, in-depth knowledge and capabilities to provide through-life support solutions for its customers.

UNDERLYING REVENUE [1,2]	UNDERLYING OPERATING (LOSS) [1,2]	ORDER BACKLOG
£4,536m	**£(172)m**	**£41.1bn**
2020: £5,068m	2020: £(2,535)m	2020: £42.4bn

UNDERLYING REVENUE MIX	UNDERLYING REVENUE MIX BY SECTOR
OE: 36%	Large Engines: 72%
Services: 64%	Business Aviation: 21%
	Regional: 4%
	V2500: 3%

1 The underlying results for Civil Aerospace have been restated to reflect the transfer of the Hucknall site with associated fabrications activities from Civil Aerospace to ITP Aero during 2021.

2 The underlying results for 31 December 2020 have been restated to reclassify the results of the Group's small modular reactor (SMR) and new Electrical power solutions activities as New Markets and UK Civil Nuclear as Other businesses.

2021 market overview

The market for Civil Aerospace in 2021 continued to be impacted by the ongoing COVID-19 pandemic. Widespread border restrictions and short notice changes discouraged travel for both business and leisure. International travel recovery was gradual and uneven, particularly for countries with lower vaccination rates. Business aviation and domestic travel recovered more quickly, with both exceeding 2019 levels during the first half of 2021, reflecting the underlying desire to travel and connect where restrictions allow. According to industry forecasters, global international passenger traffic is expected to reach 2019 levels in late 2024.

Orders for new widebody passenger aircraft remained at very low levels. Original Equipment (OE) deliveries were low across the industry, with reduced build rates, as aircraft deliveries were rescheduled. Orders for new business aviation aircraft were strong as new airframes helped to further stimulate good underlying demand.

Financial performance

£ 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)%
Underlying operating margin %	**(3.8)%**			(50.0)%	46.2%pt	46.4%pt

	2021	2020	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)

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 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.

- **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).

Business review *continued*

Operating and strategic overview

In Civil Aerospace, we have a large installed product base of more than 5,700 large engines and around 9,700 business aviation and regional engines. Around two thirds of these are covered by LTSAs, providing long-term embedded value for the Group. We also have a large order book with more than 1,500 new large engines due to be delivered over the next few years, representing 52% market share and supporting our fleet growth expectations in the medium-term.

Our priority for Civil Aerospace is to maximise value from existing capabilities and position the business for the transition to net zero.

In 2021, we largely completed the role reductions associated with our fundamental restructuring programme, reducing the size of our Civil Aerospace workforce by around a third since the start of 2020. We also reduced our global operational footprint by around a third with the closure of sites in Crosspointe in the USA, and Singapore and significant consolidation activities in sites such as Barnoldswick, Inchinnan and Hucknall in the UK. These actions, and work to simplify our operating model, improved productivity in both our OE and aftermarket processes.

We have worked closely with all customers to support them during the COVID-19 pandemic and to protect their engine and aircraft availability. We are also reducing shop visit costs by re-using more parts, repairing more parts and by implementing new engine overhaul technologies. For our newer large engine programmes we are focused on improving time on wing by releasing life extensions and rolling out technical modifications. Throughout this work we are using ever more digital technology to give us new customer, engine and service insights. These actions are focused on improving cash generation and margins from our LTSA contracts while delivering a better experience for our customers.

Our 2021 operational performance was driven by delivery of cost reductions, significantly increased productivity and efficiency, and the gradual recovery of our EFH. We delivered fewer new large engines than the prior year as delivery schedules were adjusted in response to the impact of COVID-19 on the industry. Deliveries of business aviation engines were down on the prior year due to the transition to newer engine programmes in the fleet, with the Pearl engine fleet building share from a low base. Build time per engine reduced as we implemented productivity improvements and benefited from the footprint optimisation. Large engine LTSA flying hours were 7.4m in the year, up 11% on the prior year driven by over 57% year-on-year improvement in the second half.

We are also seizing new opportunities for growth. In 2021, our Pearl family of business jet engines achieved new successes, with the Pearl 10X chosen by Dassault for its brand-new flagship aircraft, the Falcon 10X, and the Pearl 700 selected by Gulfstream to power its latest ultra-long-range jet, the G800. The introduction of the Airbus A350 freighter created a great opportunity for the Trent XWB engine in a market that has long been dominated by the Boeing 777.

Our strategy for zero focuses on improving engine efficiency, enabling the use of SAFs and being at the forefront of developing innovative propulsion technologies. In 2021, we started to build an UltraFan engine which will demonstrate increases in efficiency of up to 25% compared with early Trent engines. We have tested our engines for use with 100% SAF and we aim to demonstrate that all Trent engines are 100% SAF compatible by 2023. We also worked with Airbus on a world-first in-flight study into the benefits of 100% SAF. We are an active member of the UK's Fly Zero initiative and a prime proponent of research to understand the entire hydrogen landscape. We are also focused on reducing our own emissions and those of our supply chain.

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.

Business review *continued*

Defence

Defence is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and trainer applications. It has significant scale in naval and also designs, supplies and supports the nuclear propulsion plant for all of the UK Royal Navy's nuclear submarines.

UNDERLYING REVENUE [1]	UNDERLYING OPERATING PROFIT [1]	ORDER BACKLOG
£3,368m	**£457m**	**£6.5bn**
2020: £3,355m	2020: £461m	2020: £7.5bn

UNDERLYING REVENUE MIX	UNDERLYING REVENUE MIX BY SECTOR
OE: 42% Services: 58%	Transport : 32% Combat: 24% Submarines: 19% Naval : 11% Other: 14%

[1] The underlying results for 31 December 2020 have been restated to reclassify the results of the Group's small modular reactor (SMR) and new Electrical power solutions activities as New Markets and UK Civil Nuclear as Other business.

2021 market overview

Our Defence business provides governments with the power to protect, enabling them to preserve peace, and underpin economic and social stability. In 2021 Rolls-Royce products have powered critical military assets that have deterred threats and saved lives, including in major humanitarian operations, around the world. We operate in a tightly regulated and controlled industry with key suppliers, like Rolls-Royce, chosen by governments for long-term partnerships to develop, manufacture and maintain their countries' defences.

The market for Defence in 2021 remained robust, and our business performance was strong despite the COVID-19 pandemic. Defence spending in the US and the UK, our largest end markets, is mostly driven by economic expansion and growing at low single digit compound rates. Budgets are increasingly focused on technology-led solutions that enhance capability. Sustainability is growing in importance in the defence market as governments identify militaries as their biggest opportunity to reduce their carbon emissions. We are well positioned to meet this need, harnessing our Group-wide capabilities in highly efficient gas turbines, nuclear and electrical capability and enabling the use of synthetic fuels in our applications.

In addition to our home markets in the US, UK and Germany, we export to customers in the Middle East, Korea, Japan, Canada, India and elsewhere. Export products are tightly regulated and subject to strategic export control (military and dual-use items). To serve these markets our home market governments assess export licensing criteria that include international obligations and applicable sanctions; respect for human rights and international humanitarian law; preservation of internal and global peace and security; as well as other geo-political criteria. We respect the capability and authority granted to elected government officials to determine whether to do business with other nations' governments and abide by their decisions. In addition, we work closely with government and trade associations and raise awareness and advise on the need for mechanisms to promote responsible arms trade including significant support of the UN Arms Trade Treaty.

Financial performance

£ million	2021	Organic Change [1]	FX	2020 [2]	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%
Underlying operating margin %	***13.6%***			*13.7%*	*(0.1)%pt*	*(0.2)%pt*

	2021	2020 [2]	Change
Trading cash flow	**377**	298	79

[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 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

- **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.

Business review *continued*

- **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.

Operational and strategic review

With over 16,000 Defence engines in service, we are a leading provider of military aircraft engines and aero-derivative gas turbines for naval use, and the sole provider of powerplants for the UK's nuclear submarine fleet. We do not provide or manufacture weapons.

In 2021, we were chosen by the US Air Force as the new provider of power for its fleet of 76 eight-engine B-52 aircraft. The testing and development phase of the award, valued at around $500m, commenced in 2022 with the total OE contract valued at $2.6bn over the next 16 years to 2038. In the UK, the Ministry of Defence announced our continuation as the sole supplier of propulsion systems for its next generation of nuclear-powered submarines, which will replace the Astute class in the future. The UK Government also signed an agreement with its Japanese counterpart to develop and deliver a future combat aircraft engine demonstrator. This builds on Team Tempest, the UK-led next-generation fighter programme we are a member of, in which the MoD has committed £2bn of initial investment spending.

Protecting people around the world is central to our mission in Defence. In 2021, our engines that power the C-130J, A400M and Voyager transport aircraft aided the critical humanitarian effort in Afghanistan, evacuating thousands of people from Kabul.

Disciplined investment in long-term sustainable growth opportunities shape our Defence business for decades to come. We are maximising the value from our existing capabilities by using digital technology and data analytics to unlock further potential from services and managing our costs to maintain margin as older products are phased out over time. We will also support out Defence customers in achieving net zero by showing compatibility with SAF in all products by 2023, subject to customer engagement. We are seizing strategic growth opportunities and research into novel applications for our technologies such as hypersonic, small engines, directed energy, and power in space.

In 2022, the US DoD is due to select its Future Long-Range Assault Aircraft (FLRAA) solution. A win for the V-280 Valor, on which we are partnered with Bell Textron, would secure a new vertical lift market for us totalling over 5,000 engines with production through the coming decades.

Our strong position in the US is supported by our world-class facilities in Indianapolis. In 2021, we concluded a multi-year revitalisation programme at our Indianapolis facility, creating a high-tech, revolutionary advanced manufacturing campus. The new facilities feature advanced manufacturing equipment, including digital engineering and robotics capabilities on a smaller but more efficient footprint. In addition, we made significant investment in several other Defence sites and have partnered with Purdue University in Indiana, US to establish an industry leading hypersonic test facility. In the UK, we will be reducing our carbon footprint by installing a microgrid at our main Defence facility in Bristol in 2022.

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.

Business review *continued*

Power Systems

Power Systems, with its product and solutions brand, *mtu*, is a world-leading provider of integrated solutions for onsite power and propulsion, developing sustainable, climate-friendly solutions to meet the needs of its customers.

UNDERLYING REVENUE [1]	UNDERLYING OPERATING PROFIT [1]	ORDER BACKLOG
£2,749m	**£242m**	**£2.8bn**
2020: £2,735m	2020: £188m	2020: £2.4bn

UNDERLYING REVENUE MIX	UNDERLYING REVENUE MIX BY SECTOR
OE: 63% Services: 37%	Marine: 33% Industrial: 25% Power Generation: 33% Defence: 9%

[1] The underlying results for 31 December 2020 have been restated to reclassify the results of the Group's small modular reactor (SMR) and new Electrical activities as New Markets and UK Civil Nuclear as Other businesses.

2021 market overview

The effects of COVID-19 on our end markets lessened over the course of 2021 as vaccination programmes were rolled-out and pandemic-related risks were balanced with economic needs. Governmental demand in land defence and marine end markets continued to be resilient. Across the different applications, we had a strong increase in order intake in the second half of 2021 and recorded order intake in the fourth quarter.

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.

Financial performance

£ million	2021	Organic Change [1]	M&A [2]	FX	2020 [3]	Change	Organic Change [4]
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%
Underlying operating margin %	***8.8%***				*6.9%*	*1.9%pt*	*2.2%pt*

	2021	2020 [3]	Change
Trading cash flow	**219**	162	57

[1] 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.

[2] M&A includes 2020 Power Systems acquisitions comprising of Kinolt Group S.A and Servowatch Systems Limited (SSL).

[3] The underlying results 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.

- **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%.

Operational and strategic review

In Power Systems, we focused on expanding our position as an industry leader in mission critical power and propulsion solutions in our end markets. To achieve this, we are maximising the value from existing capabilities by transitioning from supplying standalone products to fully integrated systems, as well as increasing our penetration in countries with high-growth economies. We are also seizing strategic growth opportunities by developing the solutions our customers need to support them in their transition to alternative power with net zero carbon emissions.

Business review *continued*

We have a large installed product base with over 150,000 engines and around 40,000 active customers worldwide, generating revenues from both OE and aftermarket services. Our established portfolio of products consists of a range of high-speed reciprocating diesel and gas engines delivered with a complete system solution or as a standalone engine. We have been increasing sales of complete system solutions, including gensets, battery storage systems and automation to achieve greater value capture and closer customer relationships and have been exploring opportunities to provide 'energy as a service'. Our agreement with Sustainable Development Capital LLP (SDCL) to jointly work on energy-as-a-service is an example of how we are helping to accelerate the transition to more sustainable power.

In 2021, customer demand was particularly strong for data centres with an increase in orders for power generation solutions. In particular, our *mtu* branded standby power generation solution was key to an order for one of the largest hyperscale data centre customers, leading to expansion of our global footprint and market share. Governmental orders were also strong, including large orders for both land defence and marine solutions in the year. In marine we established a framework agreement with a leading luxury yacht building company to pioneer the adoption of our hybrid solutions and fully integrated bridge, bringing together our complete propulsion and ship management system.

Our main objective is the transition to net zero power, which is a huge opportunity, and we are rising to the challenge. Our end markets are transitioning at different speeds. The three markets at the forefront of change are: mission critical power for data centres, power for infrastructure (including the transition of our own operating sites to clean energy), and marine solutions. To support the transition we are investing in new technology to replace internal combustion engines and further develop them to run on sustainable fuels such as green hydrogen and green methanol, and ensuring all our current engines are compatible with carbon-neutral e-diesel. These actions support our commitment to achieve a 35% cut in lifetime emission, compared with 2019, of new sold products by 2030 and for all our products to be compatible with net zero operations by 2050.

Milestone achievements in 2021 included our partnership with cell-centric, a Daimler Truck and Volvo joint venture to develop hydrogen powered fuel cells for energy supply, mainly for data centres with is targeting pilot installations by 2023 and full launch by mid-decade. A major step towards a carbon-neutral future in the infrastructure sector is the first-of-a-kind microgrid for the Port of Duisburg in Germany, which will combine fuel cells and hydrogen combustion engines to meet the clean energy needs of this new container terminal. In addition, we are adapting our *mtu* Series 500 and Series 4000 gas engines to run on hydrogen. Our gas engines for use in gensets can already run on a 10% hydrogen blend, by 2022 this will be increased to 25% and from 2023 conversion kits will be available for 100% hydrogen operation.

Throughout the year we have been monitoring and mitigating the global supply chain disruption reported across many manufacturing sectors in the second half of 2021 shortage of a relatively small number of components slowed our production rate resulting in a modest increase in inventory and some delayed revenue recognition.

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.

Business review *continued*

New Markets

New Markets are early-stage businesses, with high growth potential, focused on addressing the opportunities being created by the transition to net zero. The businesses leverage our existing, in-depth engineering expertise and capabilities to develop new sustainable products for new markets.

UNDERLYING REVENUE [1]	UNDERLYING OPERATING LOSS [1]	EMPLOYEES (FTE AT YEAR END)
£2m	**£(70)m**	**>570**
2020: £5m	2020: £(45)m	

VALUE R&D SPEND £68M

Rolls-Royce SMR: 23%

Rolls-Royce Electrical: 77%

[1] The underlying results 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.

2021 market overview

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 three critical areas of the global economy – transport, power, and the built environment – and capture the economic opportunity this transition represents. We are 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 in new markets.

Nuclear power is central to producing the sustainable zero carbon power the world needs, both on grid and as a standalone power source. Our small modular reactors (SMRs) enable this power to be generated in a broader array of locations around the world, with a faster construction time and lower financing costs compared with the conventional nuclear power stations that exist today. Off grid end markets for small nuclear power stations include hydrogen and synthetic fuel production, data centres, desalination plants and electrolyser factories.

Electrification will contribute to decarbonisation of aviation and electrical technologies and capabilities can also be leveraged for civil, defence and marine applications. Smaller, all-electric aircraft will enable more efficient, quieter and zero-emission air mobility, while hybrid-electric systems increase range and enable more stainable solutions for larger regional aircraft. The emerging market of advanced air mobility, which includes electrical vertical take-off (eVTOL) aircraft as well more conventional electric commuter aircraft, is aiming to enable a new way of using air mobility on urban and regional routes.

The potential new market opportunities are significant. Our New Markets businesses, Rolls-Royce Electrical and Rolls-Royce SMR, are well positioned to address these opportunities.

Financial performance

£ million	2021	Organic Change [1]	FX	2020 [2]	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 [2]	Change
Trading cash flow	**(56)**	(55)	(1)

[1] 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.

[2] The underlying results 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.

- **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.

Business review *continued*

Operational and strategic review

Our investment in SMRs and electrical propulsion create net zero solutions and seize the opportunities in new end markets, as we aim to maximise the future market potential for our technological and industrial solutions and products.

Rolls-Royce SMR takes our existing technology and experience in nuclear power, established over 60 years of powering the UK's fleet of nuclear-powered submarines, and applies this to the demand for affordable clean energy on and off grid. Rolls-Royce Electrical applies new technology and innovation to deliver all-electric and hybrid-electric power and propulsion. Both these businesses are supported by our extensive experience and long track record of delivering advanced technology in highly regulated markets.

Rolls-Royce Electrical achieved a number of key milestones in 2021:

- Spirit of Innovation became the world's fastest all-electric aircraft with a world speed record of 345.4 mph;
- we joined together with Tecnam and Widerøe to deliver the Tecnam P-Volt, an all-electric passenger aircraft for the commuter market, ready for revenue service in 2026;
- Vertical Aerospace, in which we have a minority investment, took $5.4bn pre-orders for VX4, their urban air mobility vehicle powered by a Rolls-Royce Electrical system;
- we announced our intention to take a minority position in Embraer spin-out Eve Urban Air Mobility Solutions (EVE) as they move to deliver eVTOL aircraft to a global market;
- we launched an £80m investment into energy storage systems that will enable aircraft to undertake zero emissions flights of over 100 miles on a single charge; and
- our power generation system (PGS1) for regional aircraft achieved more than 1 MW of power in 2021 on our newly renovated Testbed 108 in Bristol.

Rolls-Royce SMR was established as a special purpose vehicle in 2021, five years after the programme began. As a result of a successful equity raise, in which £230m was agreed in exchange for approximately 30% of the company to be received in tranches over the coming years, as well as £210m UK Research and Innovation (UKRI) grant funding and additional investment from Rolls-Royce, the programme has £490m of investment to help fund phase two of its development plan. Rolls-Royce SMR will now proceed rapidly with a range of parallel delivery activities, including entry to the UK GDA process and identifying sites for the factories which will manufacture the modules that enable on-site assembly of the power plants.

The development of SMRs is a core part of the UK Government's 10-point plan for a green industrial revolution. A Rolls-Royce SMR power station will have the capacity to generate 470MW of low carbon energy on a site around one tenth of the size of a conventional nuclear station. Costs will be competitive with sources of renewable energy and will not be subject to the intermittency challenges associated with other low carbon technologies.

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.

Principal risks

Our risk management system

The Company follows the procedures established by the Rolls-Royce Holdings plc Board (the RRH Board) to manage risk and oversee the risk management system (RMS). The RRH Board has also established procedures to determine the nature and extent of the principal and emerging risks the Group is willing to take in order to optimise its commercial opportunities and achieve its long-term strategic objectives.

The ET, led by the Chief Executive, reviews the Group's internal financial controls which form a subset of the broader set of controls. Financial reporting controls are identified and subject to periodic review by the Group's internal control team. The RRH Audit Committee, on behalf of the RRH Board, performs an annual review of the RMS and its effectiveness. During the year, the ET and RRH Board completed an assessment of both our principal and emerging risks.

Our RMS is designed to identify and manage, rather than eliminate, the risk of failure to achieve business objectives and to provide reasonable, but not absolute, assurance against material misstatement or loss.

How we manage risk

Risks are identified by individuals across all businesses and functions and at many layers of the organisation by considering what could stop us achieving our strategic, operational or compliance objectives or impact the sustainability of our business model.

Risk owners assess the risk's likelihood and impact, taking into account current mitigating control activities, identifying where additional activities may be needed to bring the risk within our risk appetite.

Risk owners consider the effectiveness of current mitigating control activities in their assessment, supported by different assurance providers including internal audit. These considerations are recorded using a variety of systems and tools depending on the risk area. In managing the identified risks, judgement is necessary to evaluate the risks facing the Group in achieving its objectives, determine the risks that are considered acceptable, determine the likelihood of those risks materialising, assess the Group's ability to reduce the impact of risks that do materialise and ensure the costs of operating particular controls are proportionate to the benefit provided.

Risk owners bring the results of their assessment, current risk status and action plans to business, function and other management review forums as often as is required depending on the nature of the risk, for support, challenge and oversight. These forums include the monthly ET and regular RRH Board and its Committees' meetings.

At least once a year the ET conducts a review of the effectiveness of RMS, and where required, identifies areas for improvement. For key compliance and safety risks, the Group has a set of mandatory policies and training which set out the expectations on employees and the controls in place. Every employee is required, annually, to complete training and confirm that they will comply with the mandatory policies. The consequences of non-compliance are addressed via performance management systems that are linked to remuneration.

During the year, we continued to embed the lessons learned from COVID-19, in particular a focus on improving the quality of our risk assessments and management activities in relation to our restructuring programmes and investment review processes. We will build on this work next year with a focus on improving our internal control environment for financial and non-financial controls, continuing to strengthen our second line assurance of key controls and focused actions to improve the effectiveness of our RMS.

Principal risks

Our principal risks are identified and managed in the same way as other risks. Principal risks are owned by at least one member of the ET and subject to a review at an ET meeting at least once each year, before a review by the RRH Board or one of its Committees.

We have reviewed our principal risks over the course of the year and have updated them to reflect changes to the external environment and our strategy.

Changes in our principal risk levels

Last year we concluded that the risk levels for several of our principal risks had increased as a result of the direct impact of COVID-19 and changes to our ways of working. This year we have concluded that many of those risks remain at that heightened level with the exception of those set out below.

Increased risk: Business continuity

The global supply chain disruption described as impacting in particular our Power Systems business in 2021, (see page 26) will continue to have an impact in 2022. Additionally, as described above, physical climate change risks are considered as part of business continuity which captures the acute risks to our supply chain and operational facilities that may arise because of climate change. As climate change causes global temperatures to rise, the physical risks to our business from climate change will increase, with disruptions likely to be more frequent and severe if global temperature rise is not limited to 1.5^{0}C.

Increased risk: Climate change

Climate change risks are managed and assessed in the same way as all other 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. These risks are captured as part of this principal risk, with opportunities included as part of our strategic transformation principal risk. Physical risks are considered as part of business continuity which captures the acute risks to our supply chain and operational facilities that may arise because of climate change. The focus and scrutiny of all stakeholders including investors, governments, organisations and consumers on the potential impact, likelihood and timing of climate change has increased in the last year. We believe we have a critical role to play in leading the decarbonisation of complex power applications and our strategic transformation risk sets out the importance to the Group of capturing these opportunities.

Principal risks *continued*

Risks include demand for our existing products and services reducing at a quicker rate than demand for new net zero carbon sources increases. In addition, the global nature of our supply chain and customer base means that operational disruptions may become more common. Carbon taxes may increase. A failure to decarbonise could result in products' in-service life being reduced (e.g. through early retirement), our equity and debt becoming less attractive to investors, or our R&D projects becoming less attractive to third-party partners, increasing our cost of capital. Our transition to net zero and TCFD reporting (included in the Sustainability section on page 43 of the RRH Annual Report 2021) sets out further considerations, scenarios and the most material transitional and physical risk factors for the Group.

In light of these changes, we have concluded that the level of our principal climate change risk as described in the table below has increased.

New and retired risks: Restructuring retired and strategic transformation introduced

As set out in the Chief Executive's Review (see page 4) and the Financial Review (see page 14), we have made good progress against our 2021 and 2022 restructuring targets, with our disposal programme expected to be completed in 2022 and cost savings delivering their expected benefits. As we look forward, it is therefore appropriate to retire the near-term restructuring risk and introduce a new risk focused on achieving our longer-term objectives, as we realign our strategy to take advantage of the many opportunities we see, particularly as we look to lead the transition to net zero carbon and meet our strategic targets designed to pivot climate change from an existential threat to an opportunity to refocus and grow.

Other specific risks

Human capital: our approach to human capital risks forms part of care promise, and human trafficking and slavery.

Our current principal risks, together with how we manage them, how we assure them (by activities and functions other than internal audit), how the RRH Board and its Committees provide oversight and how the risk levels have changed over the course of the year, are set out in the table on pages 32 to 34.

Emerging risks

We continue to review additional emerging risks that could significantly impact or challenge our current strategy and business model and these were considered by the RRH Board in February 2022. Any emerging risks identified have been recorded in our RMS and are being managed and monitored alongside our existing risks. Our approach this year looked at Political, Economic, Social, Technological, Legal and Environmental factors (PESTLE) to identify emerging risks and was complemented by a review of the technology risks lead by the Chief Technology Officer and shared with the RRH Science & Technology Committee.

Principal risks

How we manage principal risks

<table>
<tr><th>RISK</th><th>CONTROLS</th><th>ASSURANCE ACTIVITIES AND PROVIDERS</th><th>OVERSIGHT FORUM</th><th>CHANGE</th></tr>
<tr><td rowspan="2">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.</td><td>Product
• Our product safety management system includes activities designed to reduce our safety risks as far as is reasonably practicable and to meet or exceed relevant company, legal, regulatory and industry requirements.
• We verify and approve product design.
• We test adherence to quality standards during manufacturing.
• We validate conformance to specification for our own products and those of our suppliers.
• We mandate safety awareness training.
• We use engine health monitoring to provide early warning of product issues.
• We take out relevant and appropriate insurance.</td><td>Product
Product safety assurance team

Technical product life cycle audits</td><td>RRH Safety, Ethics & Sustainability Committee

Product safety boards</td><td rowspan="2">Static</td></tr>
<tr><td>People
• Our HSE management system includes activities designed to reduce our safety risks as far as is reasonably practicable and to meet or exceed relevant company, legal, regulatory and industry requirements.
• We reinforce our journey to Zero Harm.
• We use our crisis management framework.</td><td>Safety case interventions

HSE audit team</td><td>RRH Safety, Ethics & Sustainability Committee</td></tr>
<tr><td>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 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.</td><td>• Regular market assessments.
— Financial modelling, scenario planning and sensitivity analysis.
— Allocating capital in accordance with our strategic objectives.</td><td>Strategy and business performance reviews</td><td>RRH Board</td><td>New risk</td></tr>
<tr><td>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.</td><td>• We invest in capacity, equipment and facilities, dual sources of supply and in researching alternative materials.
• We provide supplier finance in partnership with banks to enable our suppliers to access funds at low interest rates.
• We hold safety stock.
• We plan and practice IT disaster recovery, business continuity and crisis management exercises.
• We undertake supplier diligence.
• We take out relevant and appropriate insurance.</td><td>Investment reviews

Supplier strategy and sourcing reviews

Group security and resilience team</td><td>RRH Audit Committee</td><td>Increased</td></tr>
</table>

Principal risks *continued*

RISK	CONTROLS	ASSURANCE ACTIVITIES AND PROVIDERS	OVERSIGHT FORUM	CHANGE
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.	• We invest in i) reducing carbon impact of existing products; and ii) zero carbon technologies to replace our existing products. • We balance our portfolio of products, customers, and revenue streams to reduce our dependence on any one product, customer, or carbon emitting fuel source. • We acknowledge and communicate our role in the problem and the solution, and the actions we are taking to enact a credible plan of action in line with societal expectations.	Strategic reviews Technology reviews Investment reviews Group sustainability team	RRH Board and its Committees	Increased
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 a new project or product 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.	• We review product life cycles. • We make investment choices to improve the quality, delivery and durability of our existing products and services and to develop new technologies and service offering to differentiate us competitively. • We protect our intellectual property (e.g. through patents). • We monitor our performance against plans. • We scan the horizon for emerging technology and other competitive threats, including through patent searches.	Strategic reviews Technology reviews Investment reviews	RRH Board RRH Science & Technology Committee	Static
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; anti-bribery 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.	• We continuously develop and communicate a comprehensive suite of mandatory policies and processes throughout the Group. • We undertake third party due diligence. • We encourage, facilitate, and investigate speak up cases. • We investigate potential regulatory matters. • Our financial control framework activities are designed to reduce financial reporting risks. • We classify data to meet internal and external requirements and standards.	Compliance teams	RRH Safety, Ethics & Sustainability Committee	Static

Principal risks *continued*

RISK	CONTROLS	ASSURANCE ACTIVITIES AND PROVIDERS	OVERSIGHT FORUM	CHANGE
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.	• We deploy web gateways, filtering, firewalls, intrusion, advanced persistent threat detectors, and integrated reporting. • We train our employees on cyber threats including phishing. • We test software. • We use our crisis management framework.	Group cyber security team and security operations centre	RRH data security committee	Static
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.	• Our financial control framework activities are designed to reduce financial reporting risks. • Group strategic planning process. • We incorporate trends, demand and other dependencies in our financial forecasts. • We analyse currency and credit exposures and include in sourcing and funding decisions. • We develop, review, and communicate treasury policies that are designed to hedge residual risks using financial derivatives (covering foreign exchange, interest rates and commodity price risk). • We raise finance through debt and equity programmes. • We hedge with reference to volatility in external financial markets.	Strategic reviews Finance risk committee	RRH Audit Committee	Static
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.	• We monitor trends, market demand, and future market forecasts and make investment choices to maximise the related opportunities. • We incorporate trends, demand and other dependencies in our financial forecasts. • We balance our portfolio with the sale of original equipment and aftermarket services, providing a broad product range and addressing diverse markets that have differing business cycles. • We executive our short, medium and longer-term plans.	Strategy reviews Technology reviews	RRH Board	Static
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.	• We develop Group and country strategies and consider associated dependencies. • We review the external environment for political implications and dependencies. • We include diversification considerations in our investment and procurement choices.	Strategy reviews Technology reviews Supplier sourcing and strategy reviews Government relations teams	RRH Board	Static
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.	• We undertake succession planning and monitor the talent pipeline. • We survey employee opinion. • We develop, implement, and review strategic resourcing plans.	People leadership team	RRH Nominations & Governance Committee	Static

Section 172 and stakeholder engagement

Our Directors are briefed on their Companies Act 2006 duties during their induction. Our section 172 (s172) statement below sets out how the Directors have discharged their s172 duty. The Directors recognise the responsibility to all our different but interrelated stakeholder groups and wider society. We recognise that effective engagement with a broad range of our stakeholders is essential for the long-term success of the business and we aim to create value for our stakeholders every day by maintaining levels of business conduct that are aligned to our values and our purpose.

The likely consequences of any decision in the long-term

During the year the Directors considered the Group's strategic direction, which is set out on page 8, to enable the Group to lead the transition to net zero. The long-term success of our business depends on the effects of our business activities on wider society. See our SMR case study on page 36.

The interests of the Company's employees

The Directors recognise that the success of our business depends on attracting, retaining and motivating talented people. The Directors consider and assess the implications of decisions on our people, where relevant and feasible. The Directors seek to ensure that the Company remains a responsible employer, including with respect to pay and benefits, health and safety issues and the workplace environment.

The need to foster the Company's business relationships with suppliers, customers, and others

Delivering our strategy requires a strong, mutual and beneficial relationship with suppliers, customers, governments and joint venture partners. The Directors receive updates on engagement across the Group. An example of supplier engagement can be found in the case study on page 37.

The impact of the Company's operations on the community and the environment

This aspect is inherent in our strategic priorities. The Directors receive information through Group-level reviews on various topics to help it make decisions relating to net zero ambitions and proposals to divest or invest, such as the SMR programme. Further information on the divestments made during the year to meet our 2020 commitments, can be found on page 110.

The desirability of the Company maintaining a reputation for high standards of business conduct

The Directors periodically review and approve our ethics and compliance frameworks. Our Code of Conduct, supplier code and modern slavery statements ensure high standards are approved. This, in conjunction with the Directors being informed and monitoring compliance with governance standards, helps to ensure that Board-level decisions and the actions of our subsidiaries promote high standards of business conduct.

The need to act fairly between members of the Company

After weighing up all relevant factors, the Directors consider which course of action best enables delivery of our strategy through the long-term, taking into consideration the effect on the Group's stakeholders.

Examples of engagement with our key stakeholder groups

People

The Directors recognise that it is through our people that we fulfil our potential, achieve our vision and execute our strategy. The RRH Board's Employee Champions, Irene Dorner, Beverly Goulet (for our North American colleagues) and Lee Hsien Yang (for our Asia-Pacific colleagues), ensure the voice of our people is heard in the boardroom. The Employee Champions, supported by an employee stakeholder engagement group, provide regular feedback to the Board on topics of interest and/or concern. This provides a valuable link between our people and the Directors. We believe that these methods of engagement with our people are effective in building and maintaining trust and communication whilst providing our people with a forum to influence change in relation to matters that affect them.

During 2021, Irene visited, virtually, the Solihull Control Systems site, which provided an insight into activities undertaken throughout COVID-19. Irene was also able to meet a diverse group of employees through an open discussion/listening session. D&I was a theme throughout the year with two virtual meetings taking place and all three Champions involved to bring together employees to discuss topics they had identified they would like to raise with the Employee Champions. On International Women's Day, Irene opened a week of activities via an online event, where she also answered employee questions. In September, Irene discussed issues with the Board regarding the flexible working arrangements in Derby and returning to work that had been raised by employees with her.

In May, two Meet the Board virtual events took place, led by Beverly, on the topic of sustainability. Employees were able to ask their questions of the RRH Board and this was filmed and shared with all employees on the internal intranet. In September, the RRH Board, together with the Company's Directors, met in person with representatives from the UK employee resource groups (ERGs) to discuss issues of importance to them and their members. Also in September, the RRH Board participated in several engagement activities in both Derby and Bristol, including meetings with the business leadership teams, tours of the manufacturing and service operations and discussions on product safety. In November, Beverly participated in a meeting of the finance continuing education committee, chaired by the Group's tax director.

Customers

The Directors recognise that the quality of the Group's customer relationships is based on mutual trust as well as our engineering expertise. We recognise that as we recover from the impact of the COVID-19 pandemic, we must retain and strengthen our focus on playing a leading role in the transition to a net zero carbon global economy by creating the sustainable power that our customers require.

The Directors regularly receive operational updates, including customer metrics and feedback, from each of the businesses and were kept updated on the Group's plans for COP26 in Glasgow.

Section 172 and stakeholder engagement *continued*

Suppliers and partners

The Group's global supply chain is a vital contribution to its performance, with significant investment in resources to ensure the complex global supply chain is resilient and efficient.

The interests of both our suppliers and partners are considered as part of the Director's discussions on manufacturing strategy and when reviewing specific projects. Our ET who work collaboratively with our suppliers and partners to continue to improve operational performance through various means.

Communities

The Directors recognise the importance of our communities and understands that everything we do can have an impact on our local and global communities.

The ET received updates during 2021 on the status of the STEM education programmes, with new technologies supporting the transition to net carbon zero. The ACCEL programme, accelerating the electrification of flight, provides engaging material for STEM events and programmes, and we are exploring options to develop more educational materials around sustainable transport and energy including SMRs. Global charitable contributions totalled £6.1m in 2021. These charitable contributions and social sponsorships support our community investment and education outreach programmes globally.

Governing bodies and regulators

The Directors recognise the importance of governments and regulators as stakeholders. Not only are governments across the world customers but they also support the Group's investment in infrastructure and technology. See page 10 for our business model.

The Directors are updated on the Group's engagement with the tax authorities and the related regulatory landscape is discussed by the Directors. In addition, meetings with ministers and senior officials are held as relevant throughout the year. The General Counsel provides regular updates to the Directors on compliance with regulators as well as receiving updates on the continuing dialogue and co-operation with prosecutors, regulators, and government agencies.

The UK Prime Minister and Secretary of State for Defence visited our Defence Bristol site, UK, in October, during which they engaged with several of our people.

Case studies

Small modular reactor programme (SMR)

During the year, the Directors were regularly updated on the status of the SMR programme. The decision to support the SMR programme is strongly aligned with our net zero ambition and strategy. See page 6 for further information on our strategy.

Key events

2021:

– Equity raise process ongoing across the financial community.

September 2021:

– Grant funding negotiations completed successfully with UK Government.

November 2021:

– Director approval on the final deal terms relating to the SMR business.
– Signing of Grant Funding Award with UK Government and incoming joint venture shareholders – special purpose vehicle (SPV) established.

People

– Transferred 160 employees through the TUPE process to the SPV, Rolls-Royce SMR.
– Colleagues provided with regular SMR CEO briefings, town halls and video messages to give progress updates on the establishment of the SPV.
– People and places working group was established to understand colleague needs through the transition process.

Governing bodies and regulators

– Global government engagement to promote the SMR business and better understand the developing policy landscape at a civil service level and through ministerial engagement.
– Entry into the UK Generic Design Assessment regulatory process.

Customers

– Rolls-Royce and Rolls-Royce SMR management engaged with overseas governments, embassies and across UK Government to highlight the benefits of the SMR programme.
– Entry into a detailed pre-feasibility study with a host government that led to follow-up meetings between government ministries and Rolls-Royce leadership.
– Engaged with signed MOUs or submitted RFIs to potential customers globally.

Investors

– Successfully established an SPV by securing third-party investment alongside Rolls-Royce and UK Government grant funding. This process was enabled and supported by the ET.
– Rolls-Royce SMR is now engaged with capital markets on fleet deployment, building on the recognition of the need for deployable SMR nuclear, following COP26 and the need to meet global net zero challenges.

Section 172 and stakeholder engagement *continued*

Civil Aerospace supply chain engagement

An estimated 75% of components that go into making a Civil Aerospace widebody aircraft engine come from an external supply chain made up of 700 live suppliers with an annual spend of £1.6bn during 2021 (2020: £1.9bn). As such, the Directors and ET clearly recognise the importance of our supply chain to the successful delivery of engines to our customers, and that the success of our business is intertwined with that of our suppliers. As a result, they have made engagement with our suppliers a priority in 2021, with some examples outlined below.

'Zero defects' supplier expo

Rolls-Royce hosted two supplier expos built around our drive for zero defects, highlighting how quality remains of critical importance across the supply chain.

February 2021 – two-day broadcast

- 3,000 attendees including key customers, senior leaders and Rolls-Royce people.
- Broadcast to the global supply chain which focused on our collective drive to zero escapes, the target of zero concessions by 2024 and how we can rebuild from the COVID-19 pandemic whilst enhancing the focus on quality.

September 2021 – Chief Executive talk and live Q&A

- Our Chief Executive addressed the whole supply chain regarding business performance and priorities. In addition, the Chief Executive shared his personal perspective on why quality and sustainability are critical to the Group's future.
- Leading suppliers shared examples of their zero defects journey and best practices to inspire further advancements across the supply chain.

High Performing Supplier Group (HPSG)

- HPSG contains 24 globally diverse suppliers across the value chain that lead the way in delivering consistently high performance.
- HPSG was established to increase collaboration and engagement with these suppliers to explore opportunities for growth and to work together on potential strategic initiatives.
- In 2021, we awarded £2.2bn of business to members of the HPSG.
- In October 2021, we held a discussion with our Chief Executive and Chief Financial Officer to give visibility and insight into our business performance and strategic direction and address supplier questions.

Strategic supplier engagement – Schaeffler

- One of our HPSG members, Schaeffler, a German bearings manufacturer, was awarded the Supplier Best Practice award in 2021 as recognition for leading the way with its zero defects programme, which underpins high-quality performance.
- Our relationship with Schaeffler strengthens through Chief Executive to chief executive engagement, which has been key in aligning senior-level engagement as we developed a new strategic partnership and collaborations around technology and innovative high performance manufacturing methods that reduce production lead times, tackle product cost challenges, and reduce supply chain risk.
- Collaborative efforts also led to the advancement of repair and refurbishment capabilities for bearings that reduce the demand for spare parts by around 90%. This supports our sustainability goals through increasing the circular economy of bearings within aero-engines and reducing the need to utilise virgin material to be used to make spare parts.

Net zero and COP26

During 2021, the Directors regularly received updates on the status of the Group's net zero report. The Directors were kept updated on the Group's plans for COP26 in Glasgow, UK which formed part of the demonstration of the Group's commitment to a net zero strategy and the creation of a policy environment for our climate change technologies.

Global consistency and collaboration in climate policy are critical to our ability to deliver our decarbonisation strategy. Therefore, engagement and collaboration across all parts of our value chain, and in particular with national governments, policy makers and trade associations, is a crucial part of our pathway to net zero.

As an important milestone on the global journey to net zero, COP26 was a strategic opportunity to engage with these stakeholders and encourage a technology-led approach to setting ambitious national climate commitments.

Key events

June 2021:

- Publication of the Rolls-Royce net zero report.

September 2021:

- Net zero and future technologies showcase in London joined by UK Government officials and representatives along with Directors.

October/November 2021:

- Rolls-Royce stand in the green zone at COP26 and summit-wide profile of Rolls-Royce's net zero objectives alongside UK Government stakeholders, including the announcement of the Rolls-Royce / Qatar Foundation Climate Tech partnership. These generated international attention for the Group's net zero ambition.

Governing bodies and industry groups

- Direct engagement with UK Government on our net zero strategy through a range of briefing activities and events, including site visits to see our developing technology and investments, for example the Spirit of Innovation all-electric aircraft.
- Broad policy engagement through speaking opportunities at net zero events at COP26 that had a global reach through online streaming and social media.
- Consultation with UK Government on content and materials for use in the official UN facing 'Blue Zone' at COP26.
- Advocating at COP26 events organised by the UK Department for International Trade, the European Commission, We Mean Business Coalition and UN High Level Climate Champions through the Marrakesh partnership.

Section 172 and stakeholder engagement *continued*

- Engagement with industry groups to collaborate on sector wide solutions to achieving net zero including: the UK Government organised jet zero council; the international coalition for aviation, air transport action group; the international civil aviation organisation; and the European mechanical engineering industry association, VDMA.

People and communities

- Employee engagement through a series of COP26 related internal communications including a 'live at COP26' interview with the senior leadership team including the Chief Executive and Chief Technology Officer.
- Public outreach through our stand in the public facing 'Green Zone' at COP26 focused on showcasing the Group's net zero technology portfolio.
- Engagement with 16- to 35-year-olds as a partner for the Global Youth Engineering Climate Conference.

Customers and investors

- Signed up to a strategic partnership with Qatar Foundation to invest, develop and scale up global hub for climate technology in the UK and Qatar generating high-skilled jobs.
- Announced the establishment of Rolls-Royce SMR.

Strategic Report approved by the Board on 24 February 2022 and signed on its behalf by:

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Panos Kakoullis

Director

DIRECTORS' REPORT

The Directors present their Directors' Report on the Rolls-Royce plc Group (the Group), together with the audited financial statements for the year ended 31 December 2021.

Directors

The Directors who held office during the year and up to the date of signing the Financial Statements were as follows:

Current Directors

Warren East CBE, Chief Executive

Appointed 3 May 2021:
Panos Kakoullis, Chief Financial Officer

Former Directors

Stepped down 19 March 2021:
Stephen Daintith, Chief Financial Officer

Stepped down 3 May 2021:
Sir Ian Davis, Chairman
Lewis Booth CBE, Non-Executive Director
Sir Frank Chapman, Non-Executive Director
George Culmer, Non-Executive Director
Irene Dorner, Non-Executive Director
Beverly Goulet, Non-Executive Director
Lee Hsien Yang, Non-Executive Director
Nick Luff, Non-Executive Director
Sir Kevin Smith, Senior Independent Director
Jasmin Staiblin, Non-Executive Director
Dame Angela Strank, Non-Executive Director

Directors' indemnities

The Directors have the benefit of an indemnity provision contained in the Articles. In addition, the Directors have been granted a qualifying third-party indemnity provision which was in force throughout the financial year and remains in force. Also, throughout the year, the Company purchased and maintained Directors' and Officers' liability insurance in respect of the Company and its subsidiaries and for their directors and officers.

Dividends

The Directors do not recommend the payment of a dividend (2020: £nil).

Corporate governance

The Directors are responsible for the direction, management, performance and long-term sustainable success of the Company. The Board of RRH sets the group's strategy and objectives and oversees and monitors internal controls, risk management, principal risks and governance. It has established certain principal committees to assist in fulfilling its oversight responsibilities, providing dedicated focus on particular areas. RRH is subject to the principles and provisions of the UK Corporate Governance Code 2018 (the 'Code').

The Company operates in compliance with the group's policies (including the diversity policy), procedures and governance framework. Details of RRH's compliance with the Code and the group's policies, procedures and governance framework are set out in the RRH Annual Report 2021.

Risk management and internal control

The RRH Audit Committee oversees the Group's financial reporting, focusing on accounting policies, judgements and estimates; disclosures; compliance with regulations; and whether the Annual Report is fair, balanced and understandable.

The RRH Audit Committee monitor the effectiveness of the Group's risk management and internal control environment and review concerns of financial fraud.

In addition, the RRH Audit Committee provides oversight in respect of the scope, resources, results, and effectiveness of internal audit. It is responsible for the relationship with, and the effectiveness of, the external auditors as well as approving their terms of engagement and fees.

Financial reporting

The Group has complex long-term contract accounting and every year the RRH Audit Committee spends much of its time reviewing the accounting policies and judgements implicit in the Group's financial results. In 2021, in addition to its scheduled workload, the RRH Audit Committee continued to focus on the assumptions in respect of the recovery of civil aviation from the impacts of COVID-19, in particular the implications of changes in Civil Aerospace engine flying hours (EFHs), and all areas impacted by this. It also reviewed the accounting judgements associated with the targeted disposals being made to meet the Group's stated commitments. In addition, during 2021, the RRH Audit Committee considered the impact of the Group's climate strategy on the assumptions and scenarios used by management.

The Directors have ensured that the disclosures in respect of all key areas of judgement are appropriate and balanced. They have continued to provide additional information with regard to the sensitivity of the estimates to changes in key assumptions which are summarised in note 1 of the Consolidated Financial Statements on page 45.

Risk management and the internal control environment

The ET focused on the effectiveness of risk mitigation, understanding our appetite for taking many of the risks as described on page 30, including in respect of business continuity activities following consideration of the lessons learned through COVID-19. The ET will continue to focus on risk mitigation effectiveness and appetite in 2022, embedding these more firmly as part of our routine processes and decision making, including in relation to strategic planning.

Corporate governance *continued*

The ET also satisfied itself that the processes for identifying and managing risks are appropriate and that all principal risks and mitigating actions had been subject, during the year, to a detailed review. Based on this and on its other activities, including consideration of the work of internal and external audit and attendance at the RRH Audit Committee by business and functional risk owners, the RRH Audit Committee reported to the RRH Board that a robust assessment of the principal risks facing RRH and the Group had been undertaken. Details of our principal risks are set out on pages 30 to 34.

Internal financial control

The RRH Audit Committee specifically reviews the Group's internal financial controls. During 2020, it reviewed the results of self-attestation and testing performed by the internal control and internal audit teams to confirm the effective operation of key financial controls across the Group. It monitored progress against the 2021 financial controls programme to strengthen the financial reporting and compliance controls, with a particular focus on foreign exchange reporting and IT access. It confirmed completion of key activities identified as a result. It also considered the external auditor's observations on the financial control environment.

Effectiveness of risk management and internal control systems

The RRH Audit Committee conducted a review of the effectiveness of the Group's risk management and internal control systems, including those relating to the financial reporting process. Where opportunities for improvement were identified, action plans have been put in place and progress is monitored by the RRH Audit Committee.

Employment of disabled persons

We give full and fair consideration to all employment applications from people with disabilities. If an employee becomes disabled whilst working for us we take steps to support their continued working including, wherever possible, making adjustments to ways of working. All employees can take advantage of our learning programmes, often available online, and promotion opportunities are open to all employees regardless of any disabilities.

Employee engagement

Employee engagement continues to be a priority and is a key measure in our incentive plans. We believe that positive engagement is the result of excellent leadership and a working environment where everyone can be at their best. Our approach remains a mix of locally-driven and Group-wide global engagement. We provide a variety of channels to communicate and engage our employees and their representatives including employee newsletters, magazines and team briefings, as well as our digital communication channels, such as Yammer. Our ET has continued to hold regular 'YamJams' this year where all employees can direct questions to our leaders who will provide a response live, or as a follow up, posted on Yammer. We also work closely with elected employee representatives through well-established frameworks, including our European Works Council. Our incentive schemes and share programmes are made available to all our people.

This year, we ran our fourth Q12 employee engagement survey since partnering with Gallup in 2019. This simple survey provides our measure of engagement and a tool for our managers to implement local improvements. We also focused on providing more data and tools to our leaders to enable them to plan and lead their teams effectively. We achieved an increased participation of 76% and a Group grand mean score of 3.73 out of 5.00. This increase of +0.05 since 2020 and +0.21 since 2019, shows we remain on target to achieve top quartile scores by the end of 2023.

Financial instruments and risk management

Details of financial instruments and risk management are set out in note 19 to the Consolidated Financial Statements.

Post balance sheet events

Details of important events affecting the Group which have occurred since the end of the financial year are set out in note 1 to the Consolidated Financial Statements.

Related party transactions

Details of related party transactions are set out in note 25 to the Consolidated Financial Statements.

Disclosures in the Strategic Report

The Board has taken advantage of section 414C(11) of the Act to include disclosures in the Strategic Report including:

- the future development, performance and position of the Group;
- research and development activities; and
- engagement with suppliers, customers and others.

Disclosures in the Rolls-Royce Holdings plc Annual Report

The following disclosures are provided in the Company's parent entity annual report:

- greenhouse gas emissions (page 212 of RRH Annual Report 2021); and
- political donations (page 219 of RRH Annual Report 2021).

Management report

The Strategic Report and the Directors' Report together are the management report for the purposes of Rule 4.1.8R of the DTRs.

Going concern and viability statements

Going concern

Overview

The Group operates an annual planning process. The Group's plans, and risks to their achievement are reviewed by the Rolls-Royce plc 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 30 to 34. 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.

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 Dec 2021	31 Aug 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.

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.

Going concern and viability statements *continued*

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.

Viability statement

The viability assessment considers liquidity over a longer period than the going concern assessment. Our downside scenario uses the same assumptions as the going concern statement and in 2024 to 2026 assumes a slower recovery back to 2019 level than assumed in our base case.

Consistent with previous years, we have assessed our viability over a five-year period which is in line with our five-year forecasting process. We continue to believe that this is the most appropriate time period to consider as, inevitably, the degree of certainty reduces over any longer period.

In making the assessment, we have used the same base case, the same severe but plausible downside scenario and have then extended our assessment over five years. We have created severe but plausible scenarios that estimate the potential impact of our principal risks arising over the assessment period (descriptions of our principal risks and the controls in place to mitigate them can be found on pages 30 to 34). We have selected those principal risks that could have the most material impact to liquidity in the next five years in a severe but plausible scenario. In addition to the downside (market shock) scenario, the risks chosen and scenarios used are as follows: business continuity, the loss of a key element of our supply chain resulting in an inability to fulfil civil widebody orders for 12 months. Compliance, a compliance breach resulting in fines (greater than those agreed as part of our DPA) and loss of new business with governments and state-owned companies. Political risk, a trade war between major trading blocs resulting in supply chain disruption and a loss of sales into impacted markets for six months. Climate change, the impact of climate change increasing our costs, reducing sales volumes and disrupting our supply chains (this scenario is discussed in more detail in our TCFD section (included in the Sustainability section on page 43 of the RRH Annual Report 2021)); and safety, a significant Civil Aerospace product safety event resulting in additional costs, penalties and lower service revenues.

The cash flow impacts of these scenarios were overlaid on the five-year forecast to assess how the Group's liquidity would be affected.

The scenarios assume an appropriate management response to the specific event which could be undertaken and also consider specific activities to improve liquidity such as raising additional funds, reducing expenditure and divesting parts of our business.

Reverse stress testing has also been performed to assess the severity of scenarios that would have to occur to exceed liquidity headroom, the assumptions used in these stress tests were not considered plausible.

On the basis described above, the Board confirms that it has a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over the next five years. In making this statement, the Directors have made the following key assumptions:

- the Group is able to refinance maturing debt facilities and draw-down existing available facilities as required. Debt maturities over the assessment period are as follows:
  - The £1,000m Bank Loan Facility maturing 2024
  - The €550m Bond maturing in 2024
  - The £2,500m Revolving Credit Facility maturing in 2025
  - The $1,000m Bond maturing in 2025
  - The £2,000m UKEF loan (currently drawn) maturing in 2025
  - The £1,000m UKEF loan (currently undrawn) maturing in 2026
  - The €750m Bond maturing in 2026
  - The £375m Bond maturing in 2026
- the Group has access to global debt markets and expects to be able to refinance these debt facilities on commercially acceptable terms;
- the Group's medium and long-term financing plans are designed to allow for periods of adverse conditions in world capital markets but not a prolonged period (e.g. 12 months) where debt markets were effectively closed to the Group;
- that implausible scenarios do not occur. Implausible scenarios include either multiple risks impacting at the same time or where management actions do not mitigate an individual risk to the degree assumed; and
- that in the event of one or more risks occurring (which has a particularly severe effect on the Group) all potential actions (such as but not limited to restricting capital and other expenditure to only committed and essential levels, reducing or eliminating discretionary spend, reinstating pay deferrals, raising additional funds through debt or equity raises, executing disposals and undertaking further restructuring) would be taken on a timely basis.

The Group believes it has the early warning mechanisms to identify the need for such actions and, as demonstrated by our decisive actions over the course of the pandemic, has the ability to implement them on a timely basis if necessary.

Responsibility statements

Statement of Directors' responsibilities in respect of the Financial Statements

The Directors are responsible for preparing the Annual Report and the Financial Statements in accordance with applicable law and regulation.

Company law requires the Directors to prepare financial statements for each financial year. Under that law, the Directors have prepared the Group Financial Statements in accordance with UK-adopted international accounting standards and the Company Financial Statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 Reduced Disclosure Framework, and applicable law).

Under company law, Directors must not approve the Financial Statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and Company and of the profit or loss of the Group for that period. In preparing the Financial Statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- state whether applicable UK-adopted international accounting standards have been followed for the Group Financial Statements and United Kingdom Accounting Standards, comprising FRS 101 have been followed for the Company Financial Statements, subject to any material departures disclosed and explained in the Financial Statements;
- make judgements and accounting estimates that are reasonable and prudent; and
- prepare the Financial Statements on the going concern basis unless it is inappropriate to presume that the Group and Company will continue in business.

The Directors are responsible for safeguarding the assets of the Group and Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are also responsible for keeping adequate accounting records that are sufficient to show and explain the Group's and Company's transactions and disclose with reasonable accuracy at any time the financial position of the Group and Company and enable them to ensure that the Financial Statements and the Directors' Remuneration Report comply with the Companies Act 2006.The Directors are responsible for the maintenance and integrity of the parent company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

The Directors are responsible for the maintenance and integrity of the Company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Directors' confirmations

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's position and performance, business model and strategy.

Each of the Directors, whose names and functions are listed in the Directors' Report confirm that, to the best of 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 and financial position of the Company; and
- the Strategic Report includes a fair review of the development and performance of the business and the position of the Group and Company, together with a description of the principal risks and uncertainties that it faces.

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 the 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 and Company's auditors are aware of that information.

Directors' Report approved by the Board on 24 February 2022 and signed on its behalf by:

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Panos Kakoullis

Director

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CONSOLIDATED INCOME STATEMENT

For the year ended 31 December 2021

	Notes	2021 £m	Restated [1] 2020 £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	11	**45**	190
Operating profit/(loss)		**513**	(1,972)
Gain/(loss) arising on acquisition and disposal of businesses	26	**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	26	**36**	(68)
Costs of disposal of discontinued operations	26	**(39)**	–
Loss for the year from discontinued operations		**(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)

[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 26.

[2] Cost of sales includes a charge for expected credit losses of £124m (2020: £119m). Further details can be found in note 13.

[3] Included within financing costs are fair value changes on derivative contracts. Further details can be found in notes 2, 4 and 19.

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 on post-retirement schemes	21	**254**	(590)
Revaluation to fair value of other investments	11	**(2)**	–
Share of OCI of joint ventures and associates	11	**1**	(1)
Related tax movements	5	**(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	26	**(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	11	**44**	(4)
Related tax movements	5	**(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		**161**	(3,435)

CONSOLIDATED BALANCE SHEET

As at 31 December 2021

	Notes	2021 £m	2020 £m
ASSETS			
Intangible assets	8	**4,041**	5,145
Property, plant and equipment	9	**3,917**	4,515
Right-of-use assets	10	**1,203**	1,405
Investments – joint ventures and associates	11	**404**	394
Investments – other	11	**36**	19
Other financial assets	19	**361**	687
Deferred tax assets	5	**2,249**	1,826
Post-retirement scheme surpluses	21	**1,148**	907
Non-current assets		**13,359**	14,898
Inventories	12	**3,666**	3,690
Trade receivables and other assets	13	**5,717**	5,786
Contract assets	14	**1,473**	1,510
Taxation recoverable		**90**	117
Other financial assets	19	**46**	107
Short-term investments	19	**8**	–
Cash and cash equivalents	15	**2,621**	3,452
Current assets		**13,621**	14,662
Assets held for sale	26	**2,028**	288
TOTAL ASSETS		**29,008**	29,848
LIABILITIES			
Borrowings and lease liabilities	16	**(279)**	(1,272)
Other financial liabilities	19	**(664)**	(580)
Trade payables and other liabilities	18	**(6,017)**	(6,654)
Contract liabilities	14	**(3,599)**	(4,187)
Current tax liabilities		**(101)**	(154)
Provisions for liabilities and charges	20	**(475)**	(826)
Current liabilities		**(11,135)**	(13,673)
Borrowings and lease liabilities	16	**(7,497)**	(6,058)
Other financial liabilities	19	**(2,715)**	(3,046)
Trade payables and other liabilities	18	**(1,575)**	(1,922)
Contract liabilities	14	**(6,710)**	(6,245)
Deferred tax liabilities	5	**(451)**	(494)
Provisions for liabilities and charges	20	**(1,107)**	(1,119)
Post-retirement scheme deficits	21	**(1,373)**	(1,580)
Non-current liabilities		**(21,428)**	(20,464)
Liabilities associated with assets held for sale	26	**(723)**	(228)
TOTAL LIABILITIES		**(33,286)**	(34,365)
NET LIABILITIES		**(4,278)**	(4,517)
EQUITY			
Called-up share capital	22	**338**	338
Share premium account		**631**	631
Cash flow hedging reserve		**(45)**	(94)
Merger reserve		**650**	650
Translation reserve		**342**	524
Accumulated losses		**(6,220)**	(6,588)
Equity attributable to ordinary shareholders		**(4,304)**	(4,539)
Non-controlling interests (NCI)		**26**	22
TOTAL EQUITY		**(4,278)**	(4,517)

The Financial Statements on pages 45 to 114 were approved by the Board on 24 February 2022 and signed on its behalf by:

Warren East
Chief Executive

Panos Kakoullis
Chief Financial Officer

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	26	**(43)**	(109)
Operating profit/(loss) [1]		**470**	(2,081)
Profit on disposal of property, plant and equipment		**9**	37
Share of results of joint ventures and associates	11	**(45)**	(191)
Dividends received from joint ventures and associates	11	**27**	60
Amortisation and impairment of intangible assets	8	**290**	902
Depreciation and impairment of property, plant and equipment		**462**	821
Depreciation and impairment of right-of-use assets	10	**257**	732
Adjustment of amounts payable under residual value guarantees within lease liabilities [2]		**(4)**	(102)
Impairment of and other movements on investments	11	**7**	24
Decrease in provisions		**(394)**	(801)
(Increase)/decrease in inventories		**(169)**	588
Movement in trade receivables/payables and other assets/liabilities		**(506)**	(2,653)
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 loss before financing	21	**23**	(68)
Cash funding of defined benefit post-retirement schemes	21	**(162)**	(80)
Share-based payments	23	**28**	25
Net cash outflow from operating activities before taxation		**(73)**	(2,776)
Taxation paid		**(185)**	(231)
Net cash outflow from operating activities		**(258)**	(3,007)
Cash flows from investing activities			
Movement in other investments	11	**(26)**	(5)
Additions of intangible assets		**(231)**	(365)
Disposals of intangible assets	8	**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	26	**99**	23
Movement in investments in joint ventures and associates and other movements on investments	11	**–**	(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)
Transactions with non-controlling interests (NCI) [6]		**30**	–
NCI on formation of subsidiary		**3**	–
Dividends to NCI		**(1)**	(1)
Movement on balances with parent company		**(4)**	1,887
Net cash (outflow)/inflow from financing activities		**(89)**	3,031
Change in cash and cash equivalents		**(775)**	(986)
Cash and cash equivalents at 1 January		**3,496**	4,426
Exchange (losses)/gains on cash and cash equivalents		**(82)**	56
Cash and cash equivalents at 31 December [7]		**2,639**	3,496

1 During the year, the Group has received £11m (2020: £47m) from the British Government as part of the UK furlough scheme. This has been 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 £2,000m loan (supported by an 80% guarantee from UK Export Finance). Further detail is provided in note 16.

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 consolidated cash flow statement, movement in balance sheet 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 – see note 25.

CONSOLIDATED CASH FLOW STATEMENT *CONTINUED*

For the year ended 31 December 2021

	2021 £m	2020 £m
Reconciliation of movements in cash and cash equivalents to movements in net debt		
Change in cash and cash equivalents	**(775)**	(986)
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)**	(2,548)
New leases and other non-cash adjustments to lease liabilities in the year	**(86)**	(38)
Exchange (losses)/gains on net debt	**(51)**	143
Fair value adjustments	**170**	(126)
Debt disposed of on disposal of business/(assumed on acquisition of business)	**8**	(24)
Reclassifications	**19**	11
Movement on net debt excluding the fair value of swaps	**(1,367)**	(2,582)
Net debt at 1 January excluding the fair value of swaps	**(3,827)**	(1,245)
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)

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 £m	Funds flow £m	Net funds on acquisition/ disposal £m	Exchange differences £m	Fair value adjustments £m	Reclassi- fications [1] £m	Other movements £m	At 31 December £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 the fair value of swaps	**(3,827)**	**(1,427)**	**8**	**(51)**	**170**	**19**	**(86)**	**(5,194)**
Fair value swaps hedging fixed rate borrowings [2]	**251**	**(6)**	**–**	**(35)**	**(173)**	**–**	**–**	**37**
Net debt [3]	**(3,576)**	**(1,433)**	**8**	**(86)**	**(3)**	**19**	**(86)**	**(5,157)**
2020								
Cash at bank and in hand	816	172	–	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)	4,434	(987)	–	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)	4,426	(986)	–	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 swaps	(1,245)	(2,548)	(24)	143	(126)	11	(38)	(3,827)
Fair value swaps hedging fixed rate borrowings [2]	243	(50)	–	(42)	114	(14)	–	251
Net debt [3]	(1,002)	(2,598)	(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 draw down 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 and 2020: £(42)m).

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

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2021

The following describes the nature and purpose of each reserve within equity:
Share capital – The nominal value of ordinary shares of 20p each in issue.
Share premium – Proceeds received in excess of the nominal value of ordinary shares issued, less the costs of issue.
Cash flow hedging reserve – Cumulative gains and losses on hedging instruments deemed effective in cash flow hedges.
Merger reserve – The premium on issuing shares to acquire a business where merger relief in accordance with the Companies Act 2006 applies.
Translation reserve – Gains and losses arising on retranslating the net assets of overseas operations into sterling.
Accumulated losses – All other net gains and losses and transactions with owners not recognised elsewhere and ordinary shares held for the purpose of share-based payment plans.
Non-controlling interests – The share of net assets or liabilities of subsidiaries held by third parties.

		Attributable to ordinary shareholders								
	Notes	Share capital £m	Share premium £m	Cash flow hedging reserve £m	Merger reserve	Translation reserve	Accum-ulated losses	Total £m	Non-controlling interests (NCI) £m	Total equity £m
At 1 January 2021		**338**	**631**	**(94)**	**650**	**524**	**(6,588)**	**(4,539)**	**22**	**(4,517)**
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	26	**–**	**–**	**–**	**–**	**(1)**	**–**	**(1)**	**–**	**(1)**
Movement on post-retirement schemes	21	**–**	**–**	**–**	**–**	**–**	**254**	**254**	**–**	**254**
Movement on fair values debited to cash flow hedge reserve		**–**	**–**	**(32)**	**–**	**–**	**–**	**(32)**	**–**	**(32)**
Reclassified to income statement from cash flow hedge reserve		**–**	**–**	**39**	**–**	**–**	**–**	**39**	**–**	**39**
Revaluation to fair value of other investments	11	**–**	**–**	**–**	**–**	**–**	**(2)**	**(2)**	**–**	**(2)**
OCI of joint ventures and associates	11	**–**	**–**	**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**
Share-based payments – direct to equity [1]		**–**	**–**	**–**	**–**	**–**	**28**	**28**	**–**	**28**
Dividends to NCI		**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(1)**	**(1)**
Transactions with NCI [2]		**–**	**–**	**–**	**–**	**–**	**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		**–**	**–**	**–**	**–**	**–**	**74**	**74**	**3**	**77**
At 31 December 2021		**338**	**631**	**(45)**	**650**	**342**	**(6,220)**	**(4,304)**	**26**	**(4,278)**
At 1 January 2020		338	631	(96)	650	397	(3,056)	(1,136)	22	(1,114)
Loss for the year		–	–	–	–	–	(3,170)	(3,170)	1	(3,169)
Foreign exchange translation differences on foreign operations		–	–	–	–	121	–	121	–	121
Reclassified to income statement on disposal of businesses		–	–	–	–	6	–	6	–	6
Movement on post-retirement schemes	21	–	–	–	–	–	(590)	(590)	–	(590)
Movement on fair values debited to cash flow hedge reserve		–	–	(16)	–	–	–	(16)	–	(16)
Reclassified to income statement from cash flow hedge reserve		–	–	26	–	–	–	26	–	26
OCI of joint ventures and associates	11	–	–	(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)
Share-based payments – direct to equity [1]		–	–	–	–	–	27	27	-	27
Transactions with NCI		–	–	–	–	–	–	–	(1)	(1)
Related tax movements	5	–	–	–	–	–	5	5	–	5
Other changes in equity in the year		–	–	–	–	–	32	32	(1)	31
At 31 December 2020		338	631	(94)	650	524	(6,588)	(4,539)	22	(4,517)

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

[2] Relates to NCI investment received in the year in respect of Rolls-Royce SMR Limited. Further detail can be found on page 48.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1 Accounting policies

The Company

Rolls-Royce plc (the 'Company') is a public company limited by shares incorporated under the Companies Act 2006 and domiciled in England in the United Kingdom. The Consolidated Financial Statements of the Company for the year ended 31 December 2021 consist of the audited consolidation of the Financial Statements of the Company and its subsidiaries (together referred to as the Group) together with the Group's interest in jointly controlled and associated entities.

Basis of preparation and statement of compliance

The Company has elected to prepare its individual Company Financial Statements under FRS 101 *Reduced Disclosure Framework*. They are set out on pages 115 to 141 with the associated accounting policies from page 117.

The Consolidated Financial Statements have been prepared in accordance with UK adopted International Accounting Standards (IAS) and interpretations issued by the IFRS Interpretations Committee (IFRS IC) applicable to companies reporting under UK adopted IFRS.

The Consolidated Financial Statements have been prepared on a going concern basis as described on page 41. The historical cost basis has been used except where IFRS require the revaluation of financial instruments to fair value and certain other assets and liabilities on an alternative basis, most significantly post-retirement scheme obligations are valued on the basis required by IAS 19 *Employee Benefits*.

The Consolidated Financial Statements are presented in sterling which is the Company's functional currency.

The preparation of Consolidated Financial Statements requires management to make judgements and estimates that affect the reported amounts of assets and liabilities at the date of the Consolidated Financial Statements and the reported amounts of revenue and expenses during the reporting period. Actual future outcomes could differ from those estimates.

Going concern

The Directors have undertaken a comprehensive going concern review over an 18-month period to August 2023, as part of the RRH Group, considering the forecast cash flows of the Group and the liquidity headroom available over the corresponding period, taking into account the Group's principal risks and uncertainties. The Directors have considered the impact that the COVID-19 pandemic continues to have on the Group and the uncertainty that remains in the short term over the timing of recovery of demand, in particular in relation to the civil aviation industry. 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.

In addition, 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. Although 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.

Further details are given in the Going Concern Statement on pages 41 to 42. After due consideration, 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 Consolidated Financial Statements the Directors have considered the potential impact of climate change, particularly in the context of the disclosures included in the Strategic Report this year and the stated decarbonisation commitments. 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. Further investment required to deliver these technologies is included in the forecasts that support the Financial Statements.

1 Accounting policies continued

Climate change (continued)

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 its 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.

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 its 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 to 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 (page 64) 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 re-assess 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 8.

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 5), 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. These items are included within the key areas of judgement and key sources of estimation uncertainty summarised on page 54 and explained in detail throughout the significant accounting policies.

Items that may be impacted by climate-related risks, but which are not considered to be key areas of judgements or sources of estimation uncertainty in the current financial year are outlined below:

Useful lives of assets – The useful lives of assets could be reduced by climate-related matters, for example as a result of physical risks, obsolescence or legal restrictions. The change in useful lives would have a direct impact on the amount of depreciation or amortisation recognised each year from the date of reassessment. The Directors' review of useful lives has taken into consideration the impacts of the Group's decarbonisation commitments and has not had a material impact on the results for the year.

Inventory valuation – Climate-related matters may affect the value of inventories as they could become obsolete as a result of a decline in selling prices or a reduction in demand. After consideration of the typical stock-turns of the inventory in relation to the rate of change in the market the Directors consider that inventory is appropriately valued.

1 Accounting policies *continued*

Climate change (continued)

Recoverability of trade receivables and contract assets – The impact of climate-related matters could have an impact on the Group's customers in the future, especially those customers in the Civil Aerospace business. No material climate related issues have arisen during the year that have impacted our assessment of the recoverability of receivables. The Group's ECL provision uses credit ratings which inherently will include the market's assessment of the climate change impact on credit risk of the counter parties. Given the maturity time of trade receivables and the majority of contract assets, climate change is unlikely to have a material increase on counter party credit risk in that time.

Share-based payments – Executive leadership remuneration packages will be impacted and measured against a new sustainability metric from the 2023 financial year. This could impact the future amount and timing of the recognition of the share-based payment expense in the income statement once these metrics are included within the performance condition criteria of the share-based payment plans. This change has had no impact on the 2021 financial statements.

Defined benefit pension plans – Climate-related risks could affect the financial position of defined benefit pension plans. As a result, this could have implications on the expected return on plan assets and measurement of defined benefit liabilities in future years.

Presentation of underlying results

The Group measures financial performance on an underlying basis and discloses this information as an alternative performance measure. This is consistent with the way that financial performance is measured by management and reported to the Board in accordance with IFRS 8 *Operating Segments*. The Group believes this is the most appropriate basis to measure the in-year performance as underlying results reflect the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which economically hedge net foreign currency cash flows at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges where the reasons are outside of normal operating activities, exceptional items, and certain other items which are market driven and outside of the control of management. Further details are given in note 2. A reconciliation of alternative performance measures to the statutory equivalent is provided on pages 162 and 163.

Revision to IFRS applicable in 2021

In April 2021, the IFRS IC 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.

No new standards and interpretations issued by the IASB had a significant impact on the Consolidated Financial Statements.

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 judgements and key sources of estimation uncertainty at the balance sheet date, that have a significant risk of causing material adjustment to the carrying amounts of assets and liabilities within the next financial year, are summarised below. Further details, together with sensitivities for key sources of estimation uncertainty where appropriate and practicable, are included within the significant accounting policies section of this note.

Area	Key judgements	Key sources of estimation uncertainty	Page
Revenue recognition and contract assets and liabilities	Whether Civil Aerospace Original Equipment (OE) and aftermarket contracts should be combined. How performance on long-term aftermarket contracts should be measured. Whether any costs should be treated as wastage. Whether sales of spare engines to joint ventures are at fair value. When revenue should be recognised in relation to spare engine sales to related entities.	Estimates of future revenue and costs of long-term contractual arrangements including the impact of climate change.	56
Risk and revenue sharing arrangements	Determination of the nature of entry fees received.		58
Taxation		Estimates necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets.	58
Discontinued operations and assets held for sale	Whether the ITP Aero business and associated consolidation adjustments meet the criteria to be classified as held for sale and a discontinued operation.		59

1 Accounting policies *continued*

Area	Key judgements	Key sources of estimation uncertainty	Page
Research and development	Determination of the point in time where costs incurred on an internal programme development meet the criteria for capitalisation or ceasing capitalisation. Determination of the basis for amortising capitalised development costs.		61
Leases	Determination of the lease term.	Estimates of the payments required to meet residual value guarantees at the end of engine leases.	62
Impairment of non-current assets	Determination of cash-generating units for assessing impairment of goodwill.	Estimates of cash flow forecasts to support the carrying value of intangible assets (including programme-related assets).	62
Provisions	Whether any costs 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 of the expenditure required to settle the obligation relating to Trent 1000 claims and to settle Trent 1000 long-term contracts assessed as onerous. Estimates of the future revenues and costs to fulfil onerous contracts.	63
Post-retirement benefits		Estimates of the assumptions for valuing the defined benefit obligation.	64

Significant accounting policies

The Group's significant accounting policies are set out below. These accounting policies have been applied consistently to all periods presented in these Consolidated Financial Statements.

Basis of consolidation

The Consolidated Financial Statements include the Company Financial Statements and its subsidiary undertakings together with the Group's share of the results in joint arrangements and associates made up to 31 December.

A subsidiary is an entity controlled by the Company. Control exists when the Company has power over an entity, exposure to variable returns from its involvement with an entity and the ability to use its power over an entity so as to affect the Company's returns. Subsidiaries are consolidated in accordance with IFRS 10 *Consolidated Financial Statements*.

A joint arrangement is an entity in which the Group holds a long-term interest and which is jointly controlled by the Group and one or more other investors under a contractual arrangement. Joint arrangements may be either joint ventures or joint operations. Joint ventures are accounted for using the equity method of accounting and joint operations are accounted for using proportionate accounting.

An associate is an entity that is neither a subsidiary nor a joint arrangement, in which the Group holds a long-term interest and where the Group has a significant influence. The results of associates are accounted for using the equity method of accounting.

All intra-group transactions, balances, income and expenses are eliminated on consolidation. Adjustments are made to eliminate the profit or loss arising on transactions with joint arrangements and associates to the extent of the Group's interest in the entity. Transactions with non-controlling interests are recorded directly in equity.

Any subsidiary undertaking, joint arrangement or associate sold or acquired during the year are included up to, or from, the date of change of control. Details of transactions in the year are set out in note 26.

1 Accounting policies *continued*

Revenue recognition and contract assets and liabilities

Revenue recognised comprises sales to the Group's customers after discounts and amounts payable to customers. Revenue excludes value added taxes. The transaction price of a contract is typically clearly stated within the contract, although the absolute amount may be dependent on escalation indices and long-term contracts require the key estimates highlighted below. Refund liabilities where sales are made with a right of return are not typical in the Group's contracts. Where they do exist, and consideration has been received, a portion based on an assessment of the expected refund liability is recognised within other payables. The Group has elected to use the practical expedient not to adjust revenue for the effect of financing components where the expectation is that the period between the transfer of goods and services to customers and the receipt of payment is less than a year.

Sales of standard OE, spare parts and time and material overhaul services are generally recognised on transfer of control to the customer. This is generally on delivery to the customer unless the specific contractual terms indicate a different point. The Directors consider whether there is a need to constrain the amount of revenue to be recognised on delivery based on the contractual position and any relevant facts, however, this is not typically required.

Sales of OE and services that are specifically designed for the contract (most significantly in the Defence business) are recognised by reference to the progress towards completion of the performance obligation, using the cost method described in the key judgements, provided the outcome of contracts can be assessed with reasonable certainty.

The Group generates a significant portion of its revenue on aftermarket arrangements arising from the installed OE fleet. As a consequence, in particular in the Civil Aerospace large engine business, the Group will often agree contractual prices for OE deliveries that take into account the anticipated aftermarket arrangements. Sometimes this may result in losses being incurred on OE. As described in the key judgements, these contracts are not combined. The consideration in the OE contract is therefore allocated to OE performance obligations and the consideration in the aftermarket contract to aftermarket performance obligations.

Key areas of the accounting policy are:

- Future variable revenue from long-term contracts is constrained to take account of the risk of non-recovery of resulting contract balances from reduced utilisation e.g. engine flying hours, based on historical forecasting experience and the risk of aircraft being parked by the customer.
- A significant amount of revenue and cost related to long-term contract accounting is denominated in currencies other than that of the relevant Group undertaking, most significantly US dollar transactions in sterling and euro denominated undertakings. These are translated at estimated long-term exchange rates.
- The assessment of stage of completion is generally measured for each contract. However, in certain cases, such as for CorporateCare agreements where there are many contracts covering aftermarket services each for a small number of engines, the Group accounts for a portfolio of contracts together as the effect on the Consolidated Financial Statements would not differ materially from applying the standard to the individual contracts in the portfolio. When accounting for a portfolio of long-term service arrangements the Group uses estimates and assumptions that reflect the size and composition of the portfolio.
- A contract asset/liability is recognised where payment is received in arrears/advance of the revenue recognised in meeting performance obligations.
- Where material, wastage costs (see key judgements below) are recorded as an exceptional non-underlying expense.

If the expected costs to fulfil a contract exceed the expected revenue, a contract loss provision is recognised for the excess costs.

The Group pays participation fees to airframe manufacturers, its customers for OE, on certain programmes. Amounts paid are initially treated as contract assets and subsequently charged as a reduction to the OE revenue when the engines are transferred to the customer.

The Group has elected to use the practical expedient to expense as incurred any incremental costs of obtaining or fulfilling a contract if the amortisation period of an asset created would have been one year or less. Where costs to obtain a contract are recognised in the balance sheet, they are amortised over the performance of the related contract (two to ten years).

1 Accounting policies *continued*

Key judgement – Whether Civil Aerospace OE and aftermarket contracts should be combined
In the Civil Aerospace business, OE contracts for the sale of engines to be installed on new aircraft are with the airframers, while the contracts to provide spare engines and aftermarket goods and services are with the aircraft operators, although there may be interdependencies between them. IFRS 15 *Revenue from Contracts with Customers* includes guidance on the combination of contracts, in particular that contracts with unrelated parties should not be combined. Notwithstanding the interdependencies, the Directors consider that the engine contract should be considered separately from the aftermarket contract. In making this judgement, they also took account of industry practice.

Key judgement – How performance on long-term aftermarket contracts should be measured
The Group generates a significant proportion of its revenue from aftermarket arrangements. These aftermarket contracts, such as TotalCare and CorporateCare agreements in the Civil Aerospace business, cover a range of services and generally have contractual terms covering more than one year. Under these contracts, the Group's primary obligation is to maintain customers' engines in an operational condition and this is achieved by undertaking various activities, such as maintenance, repair and overhaul, and engine monitoring over the period of the contract. Revenue on these contracts is recognised over the period of the contract and the basis for measuring progress is a matter of judgement. The Directors consider that the stage of completion of the contract is best measured by using the actual costs incurred to date compared to the estimated costs to complete the performance obligations, as this reflects the extent of completion of the activities to be performed.

Key judgement – Whether any costs should be treated as wastage
In rare circumstances, the Group may incur costs of wasted material, labour or other resources to fulfil a contract where the level of cost was not reflected in the contract price. The identification of such costs is a matter of judgement and would only be expected to arise where there has been a series of abnormal events which give rise to a significant level of cost of a nature that the Group would not expect to incur and hence is not reflected in the contract price. Examples include technical issues that: require resolution to meet regulatory requirements; have a wide-ranging impact across a product type; and cause significant operational disruption to customers. Similarly, in these rare circumstances, significant disruption costs to support customers resulting from the actual performance of a delivered good or service may be treated as a wastage cost. Provision is made for any costs identified as wastage when the obligation to incur them arises – see note 20.

Key judgement – Whether sales of spare engines to joint ventures are at fair value
The Civil Aerospace business maintains a pool of spare engines to support its customers. Some of these engines are sold to, and held by, joint venture companies. The assessment of whether the sales price reflects fair value is a key judgement. The Group considers that based upon the terms and conditions of the sales, and by comparison to the sales price of spare engines to other third parties, the sales made to joint ventures reflect the fair value of the goods sold. See note 25 for value of sales to joint ventures during the year.

Key judgement – When revenue should be recognised in relation to spare engine sales to related entities
The Group recognises revenue when a performance obligation is settled. A judgement has been made on whether the Group relinquishes control of these spare engines at the point of legal sale, as the customer, in some instances, is contracted to provide some future spare engine capacity to the Group to support its installed fleet. The customer in the engine sale has responsibility for generating revenue from the engines and exposure to periods of non-utilisation; exposure to risk of damage or loss, risk from residual value movements, and will determine if and when profits will be made from disposal. The spare engines that will be made available to the Group in the future do not consist of identified assets and the provider retains a substantive right to substitute the asset through the Group's period of use. It is therefore appropriate to recognise revenue from the sale of the spare engines at the point that title transfers.

Key estimate – Estimates of future revenue and costs on long-term contractual arrangements
The Group has long-term contracts that fall into different accounting periods and which can extend over significant periods (generally up to 25 years) the most significant of these are long-term service arrangements (LTSAs) in the Civil Aerospace business with an average remaining term of around ten years. The estimated revenue and costs are inherently imprecise and significant estimates are required to assess: engine flying hours (EFHs), time-on-wing and other operating parameters; the pattern of future maintenance activity and the costs to be incurred; lifecycle cost improvements over the term of the contracts; and escalation of revenue and costs. The impact of climate change on EFH and costs is also considered when making these estimates. Industry and customer data on expected levels of utilisation is included in the forecasts used. Across the length of the current Civil LTSA contracts, allowance has been made for around a 1% projected cost increase resulting from carbon pricing and commodity price changes.

The sensitivities below demonstrate how changes in assumptions (including as a result of climate change) could impact the level of revenue recognised were assumptions to change. The Directors believe that the estimates used to prepare the financial statements take account of the inherent uncertainties, constraining the expected level of revenue as appropriate.

The ongoing COVID-19 pandemic continues to result in uncertainty over the recovery of demand across the civil aviation industry. Further details have been included in the going concern disclosure on page 41. Estimates of future LTSA revenue within Civil Aerospace are based upon future EFH forecasts, influenced by assumptions over the recovery of the civil aviation industry. Finally, many of the revenues and costs are denominated in currencies other than that of the relevant Group undertaking. These are translated at an estimated long-term exchange rate, based on historical trends and economic forecasts.

During the year, changes to the estimate in relation to the Civil LTSA contracts resulted in favourable catch-up adjustments to revenue of £214m.

Based upon the stage of completion of all widebody LTSA contracts within Civil Aerospace as at 31 December 2021, the following reasonably possible changes in estimates would result in catch-up adjustments being recognised in the period in which the estimates change (at underlying rates):

- 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 catch-up adjustment 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.

1 Accounting policies *continued*

Risk and revenue sharing arrangements (RRSAs)
Cash entry fees received are initially deferred on the balance sheet within trade payables and other liabilities. They are then recognised as a reduction in cost of sales incurred. Individual programme amounts are allocated pro rata to the estimated number of units to be produced. Amortisation commences as each unit is delivered and then charged on a 15-year straight-line basis.

The payments to suppliers of their shares of the programme cash flows for their production components are charged to cost of sales when OE sales are recognised or as LTSA costs are incurred.

The Group also has arrangements with third parties who invest in a programme and receive a return based on its performance, but do not undertake development work or supply parts. Such arrangements (financial RRSAs) are financial instruments as defined by IAS 32 *Financial Instruments: Presentation* and are accounted for using the amortised cost method.

Key judgement – Determination of the nature of entry fees received
RRSAs with key suppliers (workshare partners) are a feature of the civil aviation industry business. Under these contractual arrangements, the key commercial objectives are that: (i) during the development phase the workshare partner shares in the risks of developing an engine by performing its own development work, providing development parts and paying a non-refundable cash entry fee; and (ii) during the production phase it supplies components in return for a share of the programme cash flows as a 'life of type' supplier (i.e. as long as the engine remains in service).

The non-refundable cash entry fee is judged by the Group to be a contribution towards the development expenditure incurred. These receipts are deferred on the balance sheet and recognised against the cost of sales over the estimated number of units to be delivered on a similar basis to the amortisation of development costs – see 61.

Royalty payments
Where a government or similar body has previously acquired an interest in the intellectual property of a programme, royalty payments are matched to the related sales.

Government grants
Government grants received are varied in nature and are recognised in the income statement so as to match them with the related expenses that they are intended to compensate. Where grants are received in advance of the related expenses, they are initially recognised as liabilities within trade payables and other liabilities and released to match the related expenditure. Non-monetary grants are recognised at fair value.

Interest
Interest receivable/payable is credited/charged to the income statement using the effective interest method. Where borrowing costs are attributable to the acquisition, construction or production of a qualifying asset, such costs are capitalised as part of the specific asset.

Taxation
The tax charge/credit on the profit or loss for the year comprises current and deferred tax:

- Current tax is the expected tax payable for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.
- Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of the assets and liabilities for financial reporting purposes and the amounts used for tax purposes and is calculated using the enacted or substantively enacted rates that are expected to apply when the asset or liability is settled. In the UK, the deferred tax liability on the pension scheme surplus is recognised consistently with the basis for recognising the surplus i.e. at the rate applicable to refunds from a trust.

Tax is charged or credited to the income statement or OCI as appropriate, except when it relates to items credited or charged directly to equity in which case the tax is also dealt with in equity.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and joint arrangements, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax is not recognised on taxable temporary differences arising on the initial recognition of goodwill or for temporary differences arising from the initial recognition of assets and liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised. Further details on the Group's tax position can be found on page 160.

1 Accounting policies *continued*

Taxation (continued)

Key estimate – Estimates necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets

Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary difference can be utilised. Further details are included in note 5.

In addition to taking into account a severe but plausible downside forecast (see below), the climate-related estimates and assumptions (set out on pages 52 to 54) 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 our most likely estimates. Under this scenario some older products would see a reduction in profits, but additional opportunities exist for our newer products such as the Trent XWB.

While carbon and commodity pricing may put pressure on costs, decarbonisation and new supplier and customer contracts offer the opportunity to receive value for more efficient and sustainable products.

The ongoing COVID-19 pandemic continues to result in uncertainty over the recovery of demand across the civil aviation industry. As explained in note 5, a 25% probability of there being a severe but plausible downside forecast in relation to the civil aviation industry has been taken into account in the assessment of the recovery of the UK deferred tax assets.

The estimates take account of the inherent uncertainties constraining the expected level of profit as appropriate. Changes in these estimates will affect future profits and therefore the recoverability of deferred tax assets. The following sensitivities have been modelled to demonstrate the impact of changes in assumptions on the recoverability of deferred tax assets.

- A 5% change in margin in the main Civil Aerospace widebody programmes.
- A 5% change in the number of shop visits driven by EFHs.
- Assumed future cost increases from climate change expected to flow through to customers at 100%, are restricted to 90% pass through.

All of these could be driven by a number of factors including the impact of climate change and changes to carbon and commodity pricing.

A 5% change in margin or shop visits would result in an increase/decrease in the deferred tax asset of around £150m.

If only 90% of assumed future cost increases are passed on to customers, this would result in a decrease in the deferred tax asset of around £40m, and if carbon prices were to double, this would be £110m.

Foreign currency translation

Transactions denominated in currencies other than the functional currency of the transacting Group undertaking are translated into the functional currency at the average monthly exchange rate when the transaction occurs. Monetary assets and liabilities denominated in foreign currencies are translated into the relevant functional currency at the rate prevailing at the year end. Exchange differences arising on foreign exchange transactions and the retranslation of monetary assets and liabilities into functional currencies at the rate prevailing at the year end are included in profit/(loss) before taxation.

The trading results of Group undertakings are translated into sterling at the average exchange rates for the year. The assets and liabilities of overseas undertakings, including goodwill and fair value adjustments arising on acquisition, are translated at the exchange rates prevailing at the year end. Exchange adjustments arising from the retranslation of the opening net assets, and from the translation of the profits or losses at average rates, are recognised in OCI.

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 income statement 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 will be recovered through sale rather than through continuing use.

Key judgement – Whether the ITP Aero business and associated consolidation adjustments meet the criteria to be classified as a held for sale and a discontinued operation

In identifying the assets and liabilities that form part of the disposal group held for sale in relation to the ITP Aero business, the Group has considered whether the associated consolidation adjustments meet the criteria to be classified within the disposal group. The consolidation adjustments allocated to the disposal group are those that relate to the carrying value of the disposal group's assets and liabilities. Further detail can be found in note 26.

Financial instruments – Classification and measurement

Financial assets primarily include trade receivables, cash and cash equivalents, short-term investments, derivatives (foreign exchange, commodity and interest rate contracts), and unlisted investments.

- Trade receivables are classified either as held to collect and measured at amortised cost, or as held to collect and sell and measured at fair value, with movements in fair value recognised through other comprehensive income (FVOCI). The Group may sell trade receivables due from certain customers before the due date. Any trade receivables from such customers that are not sold at the reporting date are classified as 'held to collect and sell'.
- Cash and cash equivalents (consisting of balances with banks and other financial institutions, money-market funds, short-term deposits) and short-term investments are subject to low market risk. Cash balances, short-term deposits and short-term investments are measured at amortised cost. Money market funds are measured at fair value, with movements in fair value recognised in the income statement as a profit or loss (FVPL).
- Derivatives and unlisted investments are measured at FVPL. During the year, the Company elected to measure its listed investment at FVOCI.

1 Accounting policies *continued*

Financial instruments – Classification and measurement (continued)
Financial liabilities primarily consist of trade payables, borrowings, derivatives and financial RRSAs.

- Derivatives are classified and measured at FVPL.
- All other financial liabilities are classified and measured at amortised cost.

Financial instruments – Impairment of financial assets and contract assets
IFRS 9 *Financial Instruments* sets out the basis for the accounting of expected credit losses (ECLs) on financial assets and contract assets resulting from transactions within the scope of IFRS 15 *Revenue from Contracts with Customers*. The Group has adopted the simplified approach to provide for ECLs, measuring the loss allowance at a probability weighted amount that considers reasonable and supportable information about past events, current conditions and forecasts of future economic conditions of customers. These are incorporated in the simplified model adopted by using credit ratings which are publicly available, or through internal risk assessments derived using the customer's latest available financial information. The ECLs are updated at each reporting date to reflect changes in credit risk since initial recognition. ECLs are calculated for all financial assets in scope, regardless of whether or not they are overdue.

Financial instruments – Hedge accounting
Forward foreign exchange contracts and commodity swaps (derivative financial instruments) are held to manage the cash flow exposures of forecast transactions denominated in foreign currencies or in commodities respectively. Derivative financial instruments qualify for hedge accounting when: (i) there is a formal designation and documentation of the hedging relationship and the Group's risk management objective and strategy for undertaking the hedge at the inception of the hedge; and (ii) the hedge is expected to be effective.

In general, the Group has chosen to not apply hedge accounting in respect of these exposures. Prior to its acquisition in 2017, ITP Aero adopted hedge accounting for its equivalent exposures. It has continued to do so, although the value of the derivatives is not significant relative to those held by the rest of the Group and are now classified as held for sale.

The Group economically hedges the fair value and cash flow exposures of its borrowings. Cross-currency interest rate swaps are held to manage the fair value or cash flow exposures of borrowings denominated in foreign currencies and are designated as fair value hedges or cash flow hedges as appropriate. Interest rate swaps are held to manage the interest rate exposures of fixed and floating rate borrowings and may be designated as fair value hedges or cash flow hedges as appropriate. If the swaps are not designated as fair value or cash flow hedges, the economic effect is included in the underlying results – see note 2.

Changes in the fair values of derivatives that are designated as fair value hedges are recognised directly in the income statement. The fair value changes of effective cash flow hedge derivatives are recognised in OCI and subsequently recycled in the income statement in the same period or periods during which the hedged cash flows affect profit or loss. Any ineffectiveness in the hedging relationship is included in the income statement.

Hedge accounting is discontinued when the hedging instrument expires or is sold, terminated, exercised, or no longer qualifies for hedge accounting. At that time, for cash flow hedges and, if the forecast transaction remains probable, any cumulative gain or loss on the hedging instrument recognised in SOCIE is retained until the forecast transaction occurs. If a hedged transaction is no longer expected to occur, the net cumulative gain or loss is recycled to the income statement.

Financial instruments – Replacement of benchmark interest rates
In August 2020, Phase 2 of IBOR reform was published, effective from 1 January 2021. The amendments address issues that arise from the implementation of the reforms including the replacement of one benchmark with an alternative one. The Phase 2 amendments provide additional temporary reliefs from applying specific IAS 39 *Financial Instruments: Recognition and Measurement* and IFRS 9 *Financial Instruments* hedge accounting requirements to hedging relationships directly affected by IBOR reform.

During 2021, the Group carried out 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. 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.

Business combinations and goodwill
Goodwill recognised represents the excess of the fair value of the purchase consideration over the fair value to the Group of the net of the identifiable assets acquired and the liabilities assumed. On transition to IFRS on 1 January 2004, business combinations were not retrospectively adjusted to comply with UK-adopted international accounting standards and goodwill was recognised based on the carrying value under the previous accounting policies. Goodwill in respect of the acquisition of a subsidiary is recognised as an intangible asset. Goodwill arising on the acquisition of joint arrangements and associates is included in the carrying value of the investment.

Customer relationships
The fair value of customer relationships recognised as a result of a business combination relate to the acquired company's established relationships with its existing customers that result in repeat purchases and customer loyalty. Amortisation is charged on a straight-line basis over its useful economic life, up to a maximum of 15 years.

1 Accounting policies *continued*

Certification costs

Costs incurred in respect of meeting regulatory certification requirements for new Civil Aerospace aero-engine/aircraft combinations including payments made to airframe manufacturers for this are recognised as intangible assets to the extent that they can be recovered out of future sales. They are charged to the income statement over the programme life. Individual programme assets are allocated pro rata to the estimated number of units to be produced. Amortisation commences as each unit is delivered and then charged on a 15-year straight-line basis.

Research and development

Expenditure incurred on research and development is distinguished as relating either to a research phase or to a development phase. All research phase expenditure is charged to the income statement. Development expenditure is recognised as an internally generated intangible asset (programme asset) only if it meets strict criteria, relating in particular to technical feasibility and generation of future economic benefits.

More specifically, development costs are capitalised from the point at which the following conditions have been met:

- the technical feasibility of completing the programme and the intention and ability (availability of technical, financial and other resources) to complete the programme asset and use or sell it;
- the probability that future economic benefits will flow from the programme asset; and
- the ability to measure reliably the expenditure attributable to the programme asset during its development.

Capitalisation continues until the point at which the programme asset meets its originally contracted technical specification (defined internally as the point at which the asset is capable of operating in the manner intended by management).

Subsequent expenditure is capitalised where it enhances the functionality of the programme asset and demonstrably generates an enhanced economic benefit to the Group. All other subsequent expenditure on programme assets is expensed as incurred.

Individual programme assets are allocated pro rata to the estimated number of units to be produced. Amortisation commences as each unit is delivered and then charged on a 15-year straight-line basis. In accordance with IAS 38 *Intangible Assets*, the basis on which programme assets are amortised is assessed annually.

Key judgement – Determination of the point in time where costs incurred on an internal programme development meet the criteria for capitalisation

The Group incurs significant research and development expenditure in respect of various development programmes. Determining when capitalisation should commence and cease is a critical judgement, as is the determination of when subsequent expenditure on the programme assets should be capitalised. During the year, £104m of development expenditure was capitalised.

Within the Group, there is an established Product Introduction and Lifecycle Management process (PILM) in place. Within this process, the technical feasibility, the commercial viability and financial assessment of the programme is assessed at certain milestones. When these are met, development expenditure is capitalised. Prior to this, expenditure is expensed as incurred.

The Group continues to invest in new technologies as a result of the Group's decarbonisation commitments. As these are new technologies, there is a higher level of uncertainty over potential outcomes and therefore, this could impact the level of expenditure that is capitalised or recognised in the income statement in future years.

Subsequent expenditure after entry into service which enhances the performance of the engine and the economic benefits to the Group is capitalised. This expenditure is referred to as enhanced performance and is governed by the PILM process referred to above. All other development costs are expensed as incurred.

Key judgement – Determination of the basis for amortising capitalised development costs

The economic benefits of the development costs are primarily those cash inflows arising from long-term service agreements, which are expected to be relatively consistent for each engine within a programme. Amortisation of development costs is recognised on a straight-line basis over the estimated period of operation of the engine by its initial operator.

Software

Software that is not specific to an item of property, plant and equipment is classified as an intangible asset, recognised at its acquisition cost and amortised on a straight-line basis over its useful economic life, up to a maximum of five years. The cost of internally developed software includes direct labour and an appropriate proportion of overheads.

Other intangible assets

These principally include intangible assets arising on acquisition of businesses, such as technology, patents and licences which are amortised on a straight-line basis over a maximum of 15 years and trademarks which are not amortised.

Property, plant and equipment

Property, plant and equipment are stated at acquisition cost less accumulated depreciation and any provision for impairment in value. The cost of self-constructed assets includes the cost of materials, direct labour and an appropriate proportion of overheads and, where appropriate, interest.

Depreciation is provided on a straight-line basis to write off the cost, less the estimated residual value, of property, plant and equipment over their estimated useful lives. No depreciation is recorded on assets in the course of construction. Estimated useful lives are reassessed annually and are as follows:

- Land and buildings, as advised by the Group's professional advisers:
  - freehold buildings - five to 50 years (average 25 years); and
  - no depreciation is provided on freehold land.
- Plant and equipment - two to 25 years (average 11 years).
- Aircraft and engines - five to 20 years (average 16 years).

1 Accounting policies *continued*

Leases

Assets and liabilities arising from a lease are initially measured on a present value basis.

Lease liabilities include the net present value of the following lease payments:

- fixed payments less any lease incentive receivable;
- variable lease payments that are based on an index or a rate;
- amounts expected to be payable by the Group under residual value guarantees;
- the exercise price of a purchase option if the Group is reasonably certain to exercise that option; and
- payments of penalties for termination of the lease, if the lease term reflects the Group exercising that option.

Where leases commenced after the initial IFRS 16 *Leases* transition date, the lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the Group's incremental borrowing rate is used, being the rate that the Group would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions. Where appropriate, lease liabilities are revalued at each reporting date using the spot exchange rate.

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

- the amount of the initial measurement of lease liability or a revaluation of the liability;
- any lease payments made at or before the commencement date less any lease incentives received;
- any initial direct costs; and
- restoration costs.

Each right-of-use asset is depreciated over the shorter of its useful economic life and the lease term on a straight-line basis unless the lease is expected to transfer ownership of the underlying asset to the Group, in which case the asset is depreciated to the end of the useful life of the asset.

Short-term leases are leases with a lease term of 12 months or less. Payments associated with short-term leases and low-value leases are recognised on a straight-line basis as an expense in the income statement.

Key judgement – Determination of lease term

In determining the lease term, the Group considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated). Certain land and building leases have renewal options with renewal dates for the most significant property leases evenly spread between 2022–2028 and in 2041. The Group reviews its judgements on lease terms annually, including the operational significance of the site, especially where utilised for manufacturing activities.

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

Engine leases in the Civil Aerospace segment often include clauses that require the engines to be returned to the lessor with specific levels of useable life remaining or cash payments to the lessor. The costs of meeting these requirements are included in the lease payments. The amounts payable are calculated based upon an estimate of the utilisation of the engines over the lease term, whether the engine is restored to the required condition by performing an overhaul at our own cost or through the payments of amounts specified in the contract and any new contractual arrangements arising when the current lease contracts end. 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. During the year, adjustments to return conditions at the end of leases resulted in a credit of £4m to the income statement. 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

Impairment of non-current assets is considered in accordance with IAS 36 *Impairment of Assets*. Where the asset does not generate cash flows that are independent of other assets, impairment is considered for the cash-generating unit (CGU) to which the asset belongs. Goodwill, indefinite life intangible assets and intangible assets not yet available for use are tested for impairment annually. Other intangible assets (including programme-related intangible assets), property, plant and equipment and investments are assessed for any indications of impairment annually. If any indication of impairment is identified, an impairment test is performed to estimate the recoverable amount.

If the recoverable amount of an asset (or CGU) is estimated to be below the carrying value, the carrying value is reduced to the recoverable amount and the impairment loss is recognised as an expense. The recoverable amount is the higher of value in use or fair value less costs to dispose if this is readily available. The value in use is the present value of future cash flows using a pre-tax discount rate that reflects the time value of money and the risk specific to the asset. The relevant local statutory tax rates have been applied in calculating post-tax to pre-tax discount rates.

1 Accounting policies *continued*

Impairment of non-current assets (continued)

Key judgement – Determination of cash-generating units for assessing impairment of goodwill
The Group conducts impairment reviews at the CGU level. As permitted by IAS 36 *Impairment of Assets*, impairment reviews for goodwill are performed at the groups of CGUs level, representing the lowest level at which the Group monitors goodwill for internal management purposes and no higher than the Group's operating segments. The main CGUs for which goodwill impairment reviews have been performed are Rolls-Royce Deutschland Ltd & Co KG and at an aggregated Rolls-Royce Power Systems AG level.

Key estimate – Estimates of cash flow forecasts to support the carrying value of intangible assets (including programme related intangible assets)
The assessment of the recoverable value of development expenditure, certification costs, and customer relationships recognised as intangible assets (31 December 2021: £2,274m, 2020: £3,220m) is dependent on estimates of cash flows generated by the relevant programme, the discount rate used to calculate a present value and assumptions on foreign exchange rates. The estimates of cash flows generated by a programme comprise: future market share; product performance related estimates (including EFHs and time-on-wing); pricing and cost for uncontracted business; assumptions over the recovery from COVID-19 of the industries in which we operate; and climate-related matters including assessment of future contractual terms with suppliers and customers in relation to the cost of carbon (with details set out in notes 1 and 8).

A weaker than expected recovery from the impacts of COVID-19 or a reduction in OE volumes, for example due to reduced customer demand and an increase in costs as a result of climate change, could result in a deterioration in future cash flow forecasts.

- 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 concluded that it would not.

Inventories
Inventories are valued on a first-in, first-out basis, at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those direct and indirect overheads, including depreciation of property, plant and equipment, that have been incurred in bringing the inventories to their present location and condition. Net realisable value represents the estimated selling prices less all estimated costs of completion and costs to be incurred in marketing, selling and distribution. All inventories are classified as current as it is expected that they will be used in the Group's operating cycle, regardless of whether this is expected to be within 12 months of the balance sheet date.

Cash and cash equivalents
Cash and cash equivalents include cash at bank and in hand, investments in money-market funds and short-term deposits with a maturity of three months or less on inception. The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement. Where the Group operates pooled banking arrangements across multiple accounts, these are presented on a net basis when it has both a legal right and intention to settle the balances on a net basis.

The Group offers a supply chain financing (SCF) programme in partnership with banks to enable suppliers, including joint ventures, who are on our standard 75 day or more payment terms to receive their payment sooner. The election to utilise the programme is the sole decision of the supplier. As the Group continues to have a contractual obligation to pay its suppliers under commercial terms which are unaffected by any utilisation of the programme, and it does not retain any ongoing involvement in the SCF, the related payables are retained on the Group's balance sheet and classified as trade payables. Further details are disclosed in note 18.

Provisions
Provisions are recognised when the Group has a present obligation as a result of a past event, and it is probable that the Group will be required to settle that obligation. Provisions are discounted to present value where the effect is material.

The principal provisions are recognised as follows:

- Trent 1000 in-service issues when wastage costs are identified as described on page 57;
- contract losses based on an assessment of whether the direct costs to fulfil a contract are greater than the expected revenue;
- warranties and guarantees based on an assessment of future claims with reference to past experience and recognised at the earlier of when the underlying products and services are sold and when the likelihood of a future cost is identified; and
- restructuring when the Group has approved a detailed and formal restructuring plan, and the restructuring has either commenced or has created a valid expectation to those affected.

1 Accounting policies *continued*

Provisions (continued)

Key judgement – Whether any costs should be treated as wastage
As described further on page 57, in rare circumstances, the Group may incur costs of wasted material, labour or other resources to fulfil a contract where the level of cost was not reflected in the contract price. The identification of such costs is a matter of judgement and would only be expected to arise where there has been a series of abnormal events which give rise to a significant level of cost of a nature that the Group would not expect to incur and hence is not reflected in the contract price. Provision is made for any costs identified as wastage when the obligation to incur them arises.

Specifically for the Trent 1000 wastage costs, provision has been made as the Group is an owner of an engine Type Certificate under which it has a present obligation to develop appropriate design changes to address certain engine conditions that have been noted in issued Airworthiness Directives. The Group is also required to ensure engine operators can continue to safely operate engines within the terms of their LTSAs, and this requires the engines to be compliant with the requirements of those issued Airworthiness Directives. These requirements cannot be met without the Group incurring significant costs in the form of replacement parts and customer claims. Given the significant activities of the Group in designing and overhauling aero engines it is very experienced in making the required estimates in relation to the number and timing of shop visits, parts costs, overhaul labour costs and customer claims.

Key estimate – Estimates of the time to resolve the technical issues on the Trent 1000, including the development of the modified HPT blade and estimates of the expenditure required to settle the obligation relating to Trent 1000 claims and to settle Trent 1000 long-term contracts assessed as onerous
The Group has provisions for Trent 1000 exceptional costs at 31 December 2021 of £157m (2020: £321m). These represent the Directors' best estimate of the expenditure required to settle the obligations at the balance sheet date. These estimates take account of information available and different possible outcomes.

The Group considers that at 31 December 2021 the Trent 1000 contract loss provisions and the Trent 1000 exceptional cost provision are most sensitive to changes in estimates. A 12-month delay in the availability of the modified HPT blade could lead to around a £60-100m increase in the Trent 1000 exceptional costs provision.

Key estimates – Estimates of the future revenues and costs to fulfil onerous contracts
The Group has provisions for onerous contracts at 31 December 2021 of £845m (2020: £808m).

An increase in Civil Aerospace widebody estimates of LTSA costs of 1% over the remaining term of the contracts could lead to around a £100-120m increase in the provision for contract losses across all programmes.

Post-retirement benefits

Pensions and similar benefits (principally healthcare) are accounted for under IAS 19 *Employee Benefits*.

For defined benefit plans, obligations are measured at discounted present value, using a discount rate derived from high-quality corporate bonds denominated in the currency of the plan, whilst plan assets are recorded at fair value. Surpluses in schemes are recognised as assets only if they represent economic benefits available to the Group in the future. Actuarial gains and losses are recognised immediately in OCI. The service and financing costs of such plans are recognised separately in the income statement:

- current service costs are spread systematically over the lives of employees;
- past-service costs and settlements are recognised immediately; and
- financing costs are recognised in the periods in which they arise.

UK pension obligations include the estimated impact of the obligation to equalise defined benefit pensions and transfer values for men and women – see note 21.

Payments to defined contribution schemes are charged as an expense as they fall due.

Key estimate – Estimates of the assumptions for valuing the defined benefit obligation
The Group's defined benefit pension schemes and similar arrangements are assessed annually in accordance with IAS 19 *Employee Benefits*. The valuations, which are based on assumptions determined with independent actuarial advice, resulted in a net deficit of £225m before deferred taxation being recognised on the balance sheet at 31 December 2021 (2020: deficit of £686m). The size of the net surplus/deficit is sensitive to the actuarial assumptions, which include the discount rate, price inflation, pension and salary increases, longevity and, in the UK, 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. Following consultation, the UK scheme closed to future accrual on 31 December 2020 and following conclusion on the final protections agreed in the year to 31 December 2021, the Group has trued up the estimate recognised at 31 December 2020.

A reduction in the discount rate of 0.25% from 1.90% 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.

It is assumed that 50% of employed deferred and 40% of deferred (2020: 40%) of members of the RR UK Pension Fund will transfer out of the fund on retirement. The change in this assumption is a result of actual experience. An increase of 5% in this assumption would increase the defined benefit obligation by £30m.

Further details and sensitivities are included in note 21.

1 Accounting policies *continued*

Share-based payments

The Group provides share-based payment arrangements to certain employees. These are principally equity-settled arrangements and are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value is expensed on a straight-line basis over the vesting period. The amount recognised as an expense is adjusted to reflect the actual number of shares or options that will vest, except where additional shares vest as a result of the total shareholder return (TSR) performance condition in the long-term incentive plan (LTIP), where no adjustment is required as allowance for this is included in the initial fair value.

Cash-settled share options (grants in the International ShareSave plan) are measured at fair value at the balance sheet date. The Group recognises a liability at the balance sheet date based on these fair values, taking into account the estimated number of options that will actually vest and the relative completion of the vesting period. Changes in the value of this liability are recognised in the income statement for the year.

The cost of shares of Rolls-Royce Holdings plc held by the Group for the purpose of fulfilling obligations in respect of employee share plans is deducted from equity in the consolidated balance sheet. See note 23 for a further description of the share-based payment plans.

Customer financing support

In connection with the sale of its products the Group will, on occasion, provide financing support for its customers. These arrangements fall into two categories: credit-based guarantees and asset-value guarantees. Credit-based guarantees are disclosed as commitments or contingent liabilities dependent on whether aircraft have been delivered or not. The Group considers asset-value guarantees to be non-financial liabilities and provides for amounts required. As described on page 103, the Directors consider the likelihood of crystallisation in assessing whether provision is required for any contingent liabilities.

The Group's contingent liabilities relating to financing arrangements are spread over many years and relate to a number of customers and a broad product portfolio and are reported on a discounted basis.

Revisions to IFRS not applicable in 2021

Standards and interpretations issued by the IASB are only applicable if endorsed by the UK. Other than IFRS 17 *Insurance Contracts* and Amendments to IAS 37 *Provisions, Contingent Liabilities and Contingent Assets – Onerous Contracts* described below, the Group does not consider that any standards, amendments or interpretations issued by the IASB, but not yet applicable will have a significant impact on the Consolidated Financial Statements.

The Group is not expecting to adopt the amendment to IFRS 16 *Leases*, effective in 2022, which provides a practical expedient to not treat COVID-19 rent concessions as lease modifications. The Group did not adopt the equivalent practical expedient during 2021.

IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*

Amendments to IAS 37 for Onerous Contracts – Cost of Fulfilling a Contract is effective from 1 January 2022. It clarifies the meaning of 'costs to fulfil a contract', explaining that the direct cost of fulfilling a contract comprises the incremental costs of fulfilling that contract (for example, direct labour and materials) and an allocation of other costs that relate directly to fulfilling contracts (for example, an allocation of the depreciation charge for an item of PPE used to fulfil the contract). The Group has assessed the impact of this amendment on its contracts (of which the most significant onerous contracts are in Civil Aerospace) and the inclusion of additional allocated costs is expected to increase the total contract loss provision by £0.7bn to £0.8bn. As required by the transition arrangements in relation to the amendment, there will be a corresponding impact to 2022 opening retained earnings.

IFRS 17 *Insurance Contracts*

IFRS 17 is effective from 1 January 2023. The new Standard establishes the principles for the recognition, measurement, presentation and disclosure of insurance contracts within the scope of the Standard. The objective of IFRS 17 is to ensure that an entity provides relevant information that faithfully represents those contracts.

The Group has performed an assessment to establish where an impact is expected and at this time the Group believes that the impact is restricted to its captive insurance company. The process of assessing the financial impact on the Consolidated Financial Statements will continue during 2022.

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 26.

2 Segmental analysis

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 (which 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, Defence, Power Systems 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 result 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. Unrealised 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.

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.

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.

2 Segmental analysis *continued*

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, 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
We exclude these 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 72 for the reconciliation between underlying performance and reported performance.

2 Segmental analysis *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 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
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 sale of 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**
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 sale of 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 Segmental analysis *continued*

Reconciliation to statutory results

	Total underlying £m	Underlying adjustments and adjustments to foreign exchange £m	Group statutory results £m
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 venture and associates	**91**	**(46)**	**45**
Operating profit	**414**	**99**	**513**
Gain arising on 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 for the year 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**
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 venture and associates	179	11	190
Operating (loss)/profit	(2,008)	36	(1,972)
Gain arising on 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 for the year from continuing operations	(4,039)	938	(3,101)
Discontinued operations [1]	42	(110)	(68)
(Loss)/profit 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 Segmental analysis *continued*

Disaggregation of revenue from contracts with customers

Analysis by type and basis of recognition

	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
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**
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, of which £214m relates to Civil LTSA contracts (2020: £(1,048)m, of which £(1,061)m relates to Civil LTSA contracts) 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
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 [1]	**10,947**	**271**	**11,218**
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 Segmental analysis *continued*

Analysis by geographical destination

The Group's revenue by destination of the ultimate operator is as follows:

	2021 £m	Restated 2020 £m
United Kingdom	**1,497**	1,132
Germany	**737**	807
Switzerland	**164**	258
Spain	**106**	281
France	**332**	224
Italy	**187**	185
Russia	**170**	102
Norway	**146**	110
Rest of Europe	**610**	730
Europe	**3,949**	3,829
United States	**3,525**	3,647
Canada	**235**	292
North America	**3,760**	3,939
South America	**170**	128
Central America	**76**	64
Saudi Arabia	**271**	353
Rest of Middle East	**364**	546
Middle East	**635**	899
China	**1,245**	1,058
Singapore	**105**	366
Japan	**233**	350
South Korea	**137**	130
India	**140**	77
Rest of Asia	**359**	101
Asia	**2,219**	2,082
Africa	**213**	257
Australasia	**196**	291
Other	**–**	2
	11,218	11,491

Order backlog

Contracted consideration, translated at the estimated long-term exchange rates, that is expected to be recognised as revenue when performance obligations are satisfied in the future (referred to as order backlog) is as follows:

	2021			Restated 2020		
	Within five years £bn	**After five years £bn**	**Total [1] £bn**	Within five years £bn	After five years £bn	Total [1] £bn
Civil Aerospace	**20.3**	**20.8**	**41.1**	17.6	24.8	42.4
Defence	**6.2**	**0.3**	**6.5**	7.1	0.4	7.5
Power Systems	**2.6**	**0.2**	**2.8**	2.2	0.2	2.4
Other businesses	**0.2**	**–**	**0.2**	0.6	–	0.6
	29.3	**21.3**	**50.6**	27.5	25.4	52.9

[1] There is no order backlog attributable to New Markets.

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

2 Segmental analysis continued

		2021				2020			
		Revenue £m	Profit/(loss) before financing £m	Net financing £m	Taxation [11] £m	Revenue £m	Profit/(loss) before financing £m	Net financing £m	Taxation [11] £m
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 to derivative contracts held for trading [2]	A	**–**	**(6)**	**(618)**	**110**	–	8	(85)	(182)
Unrealised net (gains)/losses on closing future over-hedged position [3]	A	**–**	**–**	**(8)**	**–**	–	–	1,503	(106)
Realised net (gains)/losses on closing 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 acquisitions 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/(loss)		**271**	**99**	**(485)**	**85**	61	36	1,172	(142)
Gains/(loss) 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 deferred tax assets		**–**	**–**	**–**	**30**	–	–	–	(276)
Total underlying adjustments		**271**	**155**	**(485)**	**444**	61	22	1,172	(256)
Statutory performance per 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 £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 costs and an associated reduction in expected contract losses. See note 20 for further details.

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 20.

7 The Group has assessed the carrying value of its assets. Further details are provided in notes 8, 9 and 10.

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

9 A 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 26.

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 Segmental analysis *continued*

Balance sheet analysis

	Civil Aerospace [1, 2] £m	Defence [2] £m	Power Systems [2] £m	New Markets [2] £m	Total reportable segments £m
Year ended 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	**(20,734)**	**(2,629)**	**(1,495)**	**(33)**	**(24,891)**
Net (liabilities)/assets	**(4,510)**	**146**	**2,052**	**57**	**(2,255)**
Investment in intangible assets, property, plant and equipment, right-of-use assets and joint ventures and associates	**323**	**97**	**187**	**15**	**622**
Depreciation, amortisation and impairment	**660**	**117**	**177**	**4**	**958**
Year ended 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	(22,317)	(3,072)	(1,346)	(17)	(26,752)
Net (liabilities)/assets	(5,332)	30	2,136	48	(3,118)
Investment in intangible assets, property, plant and equipment, right-of-use assets and joint ventures and associates	774	121	179	3	1,077
Depreciation, amortisation and impairment	1,914	125	266	5	2,310

[1] The financial position for Civil Aerospace for 31 December 2020 has been restated to reflect the changes to activity during 2021 as described on page 66.

[2] The financial positions 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.

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	**(1,921)**	(2,781)
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	**29,008**	29,848
Total reportable segment liabilities excluding held for sale	**(24,891)**	(26,751)
Other businesses	**(11)**	(10)
Corporate and Inter-segment	**2,138**	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	**(33,286)**	(34,364)
Net liabilities	**(4,278)**	(4,516)

[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 26.

2 Segmental analysis *continued*

The carrying amounts of the Group's non-current assets including investments but excluding financial instruments, deferred tax assets and post-employment benefit surpluses, by the geographical area in which the assets are located, are as follows:

	2021 £m	2020 £m
United Kingdom	**5,489**	5,823
Germany	**2,086**	2,269
Spain	**38**	1,267
United States	**1,282**	1,380
Other	**706**	739
	9,601	11,478

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 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 8 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 year 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-hedge 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 paid 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 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 from fair value movement to net 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 will occur over 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

(Credited)/charged in the income statement

	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 rates	**(327)**	(159)	**–**	–	**(327)**	(159)
Deferred tax	**(515)**	440	**(85)**	(285)	**(600)**	155
(Credited)/charged in the income statement	**(496)**	452	**78**	(150)	**(418)**	302

Other tax (charges)/credits

	OCI				Equity	
	Items that will not be reclassified		Items that may be reclassified			
	2021 £m	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m
Deferred tax:						
Movement in post-retirement schemes	**(79)**	195	**–**	–	**–**	–
Cash flow hedge	**–**	–	**(2)**	(4)	**–**	–
Net investment hedge	**–**	–	**(3)**	2	**–**	–
Share-based payments – direct to equity	**–**	–	**–**	–	**17**	5
Other tax (charges)/credits	**(79)**	195	**(5)**	(2)	**17**	5

5 Taxation *continued*

Tax reconciliation on continuing operations

	2021 £m	Restated 2020 £m
Loss before taxation	**(294)**	(2,799)
Less share of results of joint ventures and associates (note 11)	**(22)**	(132)
Loss before taxation from continuing operations excluding joint ventures and associates	**(316)**	(2,931)
Nominal tax credit at UK corporation tax rate 19% (2020: 19%)	**(60)**	(557)
UK tax rate differential [1]	**(33)**	33
Overseas rate differences [2]	**26**	(59)
Impairments	**–**	21
R&D credits	**(10)**	(10)
Exempt gain on disposal of businesses [3]	**(15)**	–
Other permanent differences	**13**	9
Benefit to deferred tax from previously unrecognised tax losses and temporary differences	**(47)**	–
Tax losses and other temporary differences not recognised in deferred tax [4]	**62**	588
Derecognition of deferred tax [5]	**–**	433
Adjustments in respect of prior years	**(27)**	3
Increase in deferred taxes resulting from a change in the UK tax rate [6]	**(327)**	(159)
	(418)	302
Underlying items (note 2)	**26**	46
Non-underlying items	**(444)**	256
	(418)	302

Tax on discontinued operations

	2021 £m	Restated 2020 £m
Tax credit on loss before taxation from discontinued operations	**(34)**	(43)

[1] The UK tax rate differential arises on the difference between the deferred tax rate and the UK current corporation tax rate.

[2] Overseas rate differences mainly relate to tax on profits or losses in countries such as the US and Germany which have higher tax rates than the UK. In 2020 the impact is negative because of the loss in Germany relating to the impairment of the business aviation programme intangible assets.

[3] The exempt gain mainly relates to the disposal of the Civil Nuclear Instrumentation and Control business.

[4] Tax losses and other temporary differences not recognised mainly relate to the UK.

[5] Derecognition of deferred tax assets in 2020 relates to foreign exchange and commodity financial assets and liabilities and UK losses.

[6] UK deferred tax was previously measured at 19%. The Spring Budget 2021 announced that the UK corporate tax rate will increase to 25% from 1 April 2023. The UK deferred tax balances have therefore been re-measured at 25%. The 2020 rate change relates to the Spring Budget 2020 announcement that the UK tax rate would remain at 19% rather than reducing to 17%.

Deferred taxation assets and liabilities

	2021 £m	Restated 2020 £m
At 1 January	**1,332**	1,269
Amount credited/(charged) to income statement	**636**	(107)
Amount (charged)/credited to other comprehensive income	**(82)**	197
Amount charged to cash flow hedge reserve	**(2)**	(4)
Amount credited to equity	**17**	5
On acquisition/disposal of businesses [1]	**(4)**	(20)
Transferred to assets held for sale [2]	**(85)**	(4)
Exchange differences	**(14)**	(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 the 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.

5 Taxation *continued*

The analysis of the deferred tax position is as follows:

	At 1 January £m	Recognised in income statement £m	Recognised in OCI £m	Recognised in equity £m	Disposals and acquisition related activity £m	Transferred to held for sale £m	Exchange differences £m	At 31 December £m
2021								
Intangible assets	**(567)**	**(102)**	**–**	**–**	**–**	**188**	**17**	**(464)**
Property, plant and equipment	**34**	**145**	**–**	**–**	**–**	**23**	**(9)**	**193**
Other temporary differences	**343**	**185**	**(12)**	**–**	**(4)**	**(49)**	**8**	**471**
Net contract liabilities	**56**	**17**	**–**	**–**	**–**	**–**	**–**	**73**
Pensions and other post-retirement scheme benefits	**(8)**	**(47)**	**(79)**	**–**	**–**	**–**	**(6)**	**(140)**
Foreign exchange and commodity financial assets and liabilities	**187**	**165**	**7**	**–**	**–**	**1**	**2**	**362**
Losses	**850**	**254**	**–**	**17**	**–**	**(33)**	**(3)**	**1,085**
R&D credit	**274**	**20**	**–**	**–**	**–**	**(215)**	**(23)**	**56**
Advance corporation tax	**163**	**(1)**	**–**	**–**	**–**	**–**	**–**	**162**
	1,332	**636**	**(84)**	**17**	**(4)**	**(85)**	**(14)**	**1,798**
Recognised in:								
Continuing operations		**600**						
Discontinued operations		**36**						
2020								
Intangible assets	(726)	160	–	–	(20)	–	19	(567)
Property, plant and equipment	(138)	153	–	–	(2)	–	21	34
Other temporary differences	374	48	5	(1)	6	(4)	(85)	343
Net contract liabilities	55	1	–	–	–	–	–	56
Pensions and other post-retirement scheme benefits	(154)	(48)	195	–	–	–	(1)	(8)
Foreign exchange and commodity financial assets and liabilities	425	(251)	(7)	–	(6)	–	26	187
Losses	1,017	(178)	–	6	2	–	3	850
R&D credit	253	8	–	–	–	–	13	274
Advance corporation tax	163	–	–	–	–	–	–	163
	1,269	(107)	193	5	(20)	(4)	(4)	1,332
Recognised in:								
Continuing operations		(155)						
Discontinued operations		48						

Unrecognised deferred tax assets

	2021 £m	2020 £m
Advance corporation tax	**19**	19
UK losses	**1,563**	1,181
Foreign exchange and commodity financial assets and liabilities	**392**	369
Losses and other unrecognised deferred tax assets	**73**	68
Deferred tax not recognised on unused tax losses and other items on the basis that future economic benefit is uncertain	**2,047**	1,637

5 Taxation *continued*

Gross amount and expiry of losses and other deductible temporary differences for which no deferred tax asset has been recognised:

	2021				
	Total gross losses and deductible temporary differences £m	UK losses £m	Foreign exchange and commodity financial assets and liabilities £m	Other losses £m	Other deductible temporary differences £m
Expiry within 5 years	4	–	–	4	–
Expiry within 6 to 30 years	282	–	–	282	–
No expiry	7,992	6,251	1,567	66	108
	8,278	6,251	1,567	352	108

	2020				
	Total gross losses and deductible temporary differences £m	UK losses £m	Foreign exchange and commodity financial assets and liabilities £m	Other losses £m	Other deductible temporary differences £m
Expiry within 5 years	26	–	–	26	–
Expiry within 6 to 30 years	281	–	–	281	–
No expiry	8,381	6,214	1,940	44	183
	8,688	6,214	1,940	351	183

In addition to the gross balances shown above, advance corporation tax of £19m (2020: £19m) has not been recognised. Advance corporation tax has no expiry.

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 with more of the widebody engine programmes forecast at the upper end of that range. In the past few years there have been four new engines that have entered into service (Trent 1000–TEN, Trent 7000, Trent XWB-84 and Trent XWB-97).

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; and
- 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; and
- 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 Auditors' remuneration

	2021 £m	2020 £m
Fees payable to the Company's auditors and its associates for the audit of the Parent company and consolidated financial statements	**5.8**	4.9
Fees payable to the Company's auditor and its associates for the audit of the Company's subsidiaries pursuant to legislation	**5.7**	5.3
Total fees payable for audit services	**11.5**	10.2
Fees payable to the Company's auditor and its associates for other services:		
Audit related assurance services [1]	**1.7**	1.6
Other assurance services [2]	**0.2**	0.5
Total fees payable to the Company's auditor and its associates [3]	**13.4**	12.3
Fees payable in respect of the Group's pension schemes:		
Audit	**0.1**	0.1

[1] This includes £0.7m (2020: £1.0m) for the review of the half-year report, £0.8m (2020: £0.6m) in respect of the audit of grant claims and £0.2m (2020: nil) for a non-statutory audit of Bergen Engines.

[2] This includes £0.1m in respect levies payable to BEIS (Department of Business, Energy and Industrial Strategy) (2020: £0.5m in respect of the bond issuance).

[3] Audit fees for overseas entities are reported at the average exchange rate for the year.

7 Employee information

	2021 Number	2020 Number
United Kingdom	**19,700**	22,000
Germany	**9,500**	9,800
United States	**5,000**	5,400
Spain	**2,700**	3,000
Italy	**900**	800
Singapore	**900**	1,100
Nordics	**700**	700
Canada	**700**	800
India	**600**	1,000
France	**600**	700
Rest of world	**2,700**	2,900
Monthly average number of employees	**44,000**	48,200
Civil Aerospace [1]	**17,900**	23,300
Defence [1]	**11,100**	10,500
Power Systems [1]	**9,100**	8,900
New Markets [1]	**400**	300
Other businesses [2]	**1,400**	1,600
Corporate [1, 3]	**100**	100
Monthly average number of employees excluding discontinued operations	**40,000**	43,700
ITP Aero (classified as discontinued operation) [1]	**4,000**	4,500
Monthly average number of employees	**44,000**	48,200

	2021			2020		
	Continuing operations	**Discontinued operations**	**Total**	Continuing operations	Discontinued operations	Total
	£m	**£m**	**£m**	£m	£m	£m
Wages, salaries and benefits	**2,392**	**154**	**2,546**	2,404	164	2,568
Social security costs	**343**	**36**	**379**	392	41	433
Share-based payments (note 23)	**28**	**–**	**28**	25	–	25
Pensions and other post-retirement scheme benefits (note 21)	**250**	**3**	**253**	92	5	97
Group employment costs [4]	**3,013**	**193**	**3,206**	2,913	210	3,123

[1] Comparative information has been restated to reflect changes in segmental analysis. See note 2 for more detail.

[2] Other businesses are set out in note 2 on page 66.

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

[4] Remuneration of key management personnel is shown in note 25.

8 Intangible assets

	Goodwill £m	Certification costs £m	Development expenditure £m	Customer relationships £m	Software [4] £m	Other £m	Total £m
Cost							
At 1 January 2020	1,024	962	3,294	1,303	967	803	8,353
Additions	–	3	232	–	89	40	364
Acquisitions of businesses	57	–	3	41	–	36	137
Transferred to assets held for sale [1]	(3)	–	(33)	–	(12)	(4)	(52)
Disposals	–	(1)	–	–	(93)	(2)	(96)
Reclassifications [2]	4	(4)	(8)	–	15	(6)	1
Exchange differences	30	3	76	59	2	26	196
At 31 December 2020	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 2020	30	392	1,201	354	605	329	2,911
Charge for the year [3]	–	21	106	82	81	33	323
Impairment	8	17	481	31	5	37	579
Transferred to assets held for sale [1]	–	–	(20)	–	(12)	(4)	(36)
Disposals	–	(1)	–	–	(75)	(2)	(78)
Reclassifications [2]	–	–	(2)	–	2	–	–
Exchange differences	–	–	37	11	1	10	59
At 31 December 2020	38	429	1,803	478	607	403	3,758
Charge for the year [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							
At 31 December 2021	**1,026**	**508**	**1,633**	**133**	**328**	**413**	**4,041**
At 31 December 2020	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 held for sale at 31 December 2020 and have been sold during the year – see note 26.

[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.

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

At 31 December 2021, the Group had expenditure commitments for software of £49m (2020: £34m).

Goodwill

In accordance with the requirements of IAS 36 *Impairment of Assets*, goodwill is allocated to the Group's cash-generating units, or groups of cash-generating units, that are expected to benefit from the synergies of the business combination that gave rise to the goodwill as follows:

	Primary reporting segment	2021 £m	2020 £m
Rolls-Royce Power Systems AG	Power Systems	**760**	792
Rolls-Royce Deutschland Ltd & Co KG	Civil Aerospace	**229**	245
Other	Various	**37**	37
		1,026	1,074

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.

8 Intangible assets *continued*

- 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 included with a 20% weighting;
- Cash flows beyond the five-year forecasts that are assumed to grow at 2.0% (2020: 2.0%); and
- Pre-tax discount rate of 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.

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 included with a 25% weighting;
- Cash flows beyond the five-year forecasts that are assumed to grow at 2.0% (2020: 2.0%); and
- Pre-tax discount rate of 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 amounts and the residual life of the material intangible assets (excluding goodwill) for the Group are as follows:

	Residual life	Net book value	
		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 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 in the year.

9 Property, plant and equipment

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	In course of construction £m	Total £m
Cost					
At 1 January 2020	2,020	5,497	876	401	8,794
Additions	14	145	162	232	553
Acquisition of businesses	9	7	–	1	17
Transferred to assets held for sale [1]	(32)	(77)	–	(9)	(118)
Disposal of businesses	–	(19)	–	–	(19)
Disposals/write-offs	(52)	(264)	(19)	(24)	(359)
Reclassifications [2]	25	117	3	(150)	(5)
Exchange differences	10	36	3	–	49
At 31 December 2020	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					
At 1 January 2020	590	3,167	223	11	3,991
Charge for the year [3]	71	362	56	–	489
Impairment	71	137	97	27	332
Transferred to assets held for sale [1]	(29)	(74)	–	(8)	(111)
Disposal of businesses	–	(19)	–	–	(19)
Disposals/write-offs	(33)	(248)	(2)	(13)	(296)
Reclassifications [2]	10	(1)	–	(9)	–
Exchange differences	(1)	12	–	–	11
At 31 December 2020	679	3,336	374	8	4,397
Charge for the year [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**
At 31 December 2020	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, 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 held for sale at 31 December 2020 – see note 26.

[2] Includes reclassifications of assets under construction to the relevant classification in property, plant and equipment right-of-use assets and 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 8. 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 8. As a result of this assessment, there are no individually material impairment charges or reversals in the year.

Property, plant and equipment includes:

	2021 £m	2020 £m
Assets held for use in operating leases		
Cost	**808**	824
Depreciation	**(311)**	(277)
Net book value	**497**	547
Capital expenditure commitments	**121**	145
Cost of fully depreciated assets	**2,001**	1,853

The Group's share of equity accounted entities' capital commitments is £22m (2020: £8m).

10 Right-of-use assets

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	Total £m
Cost				
At 1 January 2020	504	128	1,767	2,399
Additions/modifications of leases	(27)	33	129	135
Acquisition of businesses	–	1	–	1
Transferred to assets held for sale [1]	(13)	(3)	–	(16)
Disposals	(18)	(10)	(67)	(95)
Exchange differences	1	1	4	6
At 31 December 2020	447	150	1,833	2,430
Additions/modifications 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 2020	55	29	306	390
Charge for the year	56	35	255	346
Impairment	66	9	311	386
Transferred to assets held for sale [1]	(5)	(2)	–	(7)
Disposals	(10)	(10)	(67)	(87)
Exchange differences	(3)	(1)	1	(3)
At 31 December 2020	159	60	806	1,025
Charge for the year	**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**
At 31 December 2020	288	90	1,027	1,405

Right-of-use assets held for use in operating leases where the Group is the lessor				
Cost	**2**	**1**	**1,785**	**1,788**
Depreciation	**(1)**	**(1)**	**(929)**	**(931)**
Net book value at 31 December 2021	**1**	**–**	**856**	**857**
Cost	2	1	1,833	1,836
Depreciation	(1)	(1)	(806)	(808)
Net book value at 31 December 2020	1	–	1,027	1,028

[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 held for sale at 31 December 2020 and have been sold during the year – see note 26.

[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 8. 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 8). 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.

11 Investments

Composition of the Group

The entities contributing to the Group's financial results are listed on pages 142 to 148.

Where the Group does not own 100% of the shares of a Group undertaking, there are a number of arrangements with the other shareholder(s) that give the Group the option or potential obligation to acquire the third parties' shares. These arrangements have been assessed and are not considered to have a significant value, individually or in aggregate.

The Group does not have any material non-wholly owned subsidiaries.

	Equity accounted			Other [1]
	Joint ventures £m	Associates £m	Total £m	£m
At 1 January 2020	402	–	402	14
Additions	19	–	19	5
Disposals [2]	(6)	–	(6)	–
Impairment [3]	(24)	–	(24)	–
Share of retained profit [4]	130	1	131	–
Reclassification of deferred profit to deferred income [5]	(96)	–	(96)	–
Transfer to subsidiary [2]	(4)	–	(4)	–
Exchange differences	(23)	–	(23)	–
Share of OCI	(5)	–	(5)	–
At 1 January 2021	393	1	394	19
Additions [6]	**2**	**1**	**3**	**27**
Disposals	**–**	**–**	**–**	**(1)**
Impairment [3]	**(2)**	**–**	**(2)**	**(5)**
Share of retained profit/(loss) [4]	**19**	**(1)**	**18**	**–**
Reclassification of deferred profit to deferred income [5]	**(24)**	**–**	**(24)**	**–**
Transfer to assets held for sale [7]	**(35)**	**–**	**(35)**	**–**
Repayment of loans	**(3)**	**–**	**(3)**	**–**
Revaluation of investments accounted for at FVOCI	**–**	**–**	**–**	**(2)**
Exchange differences	**8**	**–**	**8**	**(2)**
Share of OCI [8]	**45**	**–**	**45**	**–**
At 31 December 2021	**403**	**1**	**404**	**36**

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

[2] On 15 January 2020, the Group completed the acquisition of Qinous GmbH (increasing its shareholding from 24% to 100%). On the 6 July 2020, the Group completed the disposal of its 18% shareholding in Exostar LLC.

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

[7] 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 26.

[8] 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	2020 £m
Share of results of joint ventures and associates	**22**	132
Adjustments for intercompany trading [1]	**23**	58
Share of results of joint ventures and associates to the Group	**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 results 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 and subsidiary of Alpha Partners Leasing Limited. 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 Investments *continued*

The following joint ventures are considered to be individually material to the Group:

	Principal location	Activity	Ownership interest
Alpha Partners Leasing Limited (APL)	UK	Aero-engine leasing	50.0%
Hong Kong Aero Engine Services Limited (HAESL)	Hong Kong	Aero-engine repair and overhaul	50.0%
Singapore Aero Engine Services Pte Limited (SAESL)	Singapore	Aero-engine repair and overhaul	50.0%

Summarised financial information of the Group's individually material joint ventures is as follows:

	APL		HAESL		SAESL	
	2021 £m	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m
Revenue	**278**	330	**1,605**	1,995	**1,057**	1,178
(Loss)/profit and total comprehensive (expense)/income for the year	**(16)**	44	**51**	71	**20**	32
Dividends paid during the year	**–**	–	**(46)**	(62)	**–**	(14)
(Loss)/profit for the year included the following:						
Depreciation and amortisation	**(165)**	(165)	**(14)**	(15)	**(20)**	(21)
Interest expense	**(65)**	(83)	**(1)**	(2)	**(3)**	(5)
Income tax expense	**(77)**	(35)	**(10)**	(13)	**–**	(4)
Current assets	**314**	172	**533**	461	**676**	256
Non-current assets	**2,978**	3,191	**90**	102	**151**	164
Current liabilities	**(287)**	(201)	**(343)**	(287)	**(554)**	(156)
Non-current liabilities	**(2,401)**	(2,551)	**(73)**	(78)	**(65)**	(74)
Net assets	**604**	611	**207**	198	**208**	190
Included in the above:						
Cash and cash equivalents	**239**	64	**30**	29	**105**	47
Current financial liabilities [1]	**(217)**	(143)	**–**	(22)	**–**	–
Non-current financial liabilities [1]	**(2,048)**	(2,245)	**(67)**	(66)	**(65)**	(73)
Reconciliation to the carrying amount recognised in the Consolidated Financial Statements						
Ownership interest	**50.0%**	50.0%	**50.0%**	50.0%	**50.0%**	50.0%
Group share of net assets above	**302**	306	**104**	99	**104**	95
Goodwill	**–**	–	**34**	34	**78**	77
Adjustments for intercompany trading	**(302)**	(306)	**(1)**	(3)	**–**	–
Included in the balance sheet	**–**	–	**137**	130	**182**	172

1 Excluding trade payables and other liabilities.

The summarised aggregated results of the Group's share of equity accounted investments is as follows:

	Individually material joint ventures (above)		Other joint ventures [2]		Associates		Total	
	2021 £m	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m
Assets:								
Non-current assets	**1,610**	1,729	**205**	734	**–**	–	**1,815**	2,463
Current assets	**762**	444	**316**	514	**1**	1	**1,079**	959
Liabilities: [1]								
Current liabilities	**(592)**	(322)	**(232)**	(303)	**–**	–	**(824)**	(625)
Non-current liabilities	**(1,270)**	(1,351)	**(84)**	(758)	**–**	–	**(1,354)**	(2,109)
Group adjustment for goodwill	**112**	111	**–**	17	**–**	–	**112**	128
Adjustment for intercompany trading	**(303)**	(309)	**(121)**	(113)	**–**	–	**(424)**	(422)
	319	302	**84**	91	**1**	1	**404**	394
1 Liabilities include borrowings of:	**(1,198)**	(1,263)	**(534)**	(548)	**–**	–	**(1,732)**	(1,811)

2 The aggregate value of the Group's share of profit/(loss) and total comprehensive income of individually immaterial joint ventures is £39m (2020: £58m).

12 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
Inventories stated at net realisable value	**215**	305
Amount of inventory write-down	**92**	95
Reversal of inventory write-down	**26**	16

13 Trade receivables and other assets

	Current		**Non-current**		**Total**	
	2021 £m	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m
Trade receivables [1]	**2,140**	2,479	**52**	–	**2,192**	2,479
Receivables due on RRSAs	**702**	603	**67**	82	**769**	685
Amounts owed by joint ventures and associates	**598**	486	**1**	16	**599**	502
Amounts owed by parent undertaking	**335**	331	**–**	–	**335**	331
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
	5,150	5,187	**567**	599	**5,717**	5,786
Trade receivables and other assets are analysed as follows:						
Financial instruments (note 19):						
Trade receivable and similar items					**3,801**	3,915
Other non-derivative financial assets					**704**	740
Non-financial instruments					**1,212**	1,131
					5,717	5,786

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 includes 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 customer.

The expected credit losses for trade receivables and other assets have increased by £7m to £259m (31 December 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 assumptions and inputs used for the estimation of the expected credit losses are shown in the table below:

	2021			2020		
	Trade receivables and other financial assets £m	**Loss allowance £m**	**Average expected credit loss rate %**	Trade receivables and other financial assets £m	Loss allowance £m	Average expected credit loss rate %
Investment grade	**1,426**	**(27)**	**2%**	1,940	(33)	2%
Non-investment grade	**147**	**(2)**	**1%**	149	(7)	5%
Without credit rating	**3,191**	**(230)**	**7%**	2,816	(212)	8%
	4,764	**(259)**	**5%**	4,905	(252)	5%

13 Trade receivables and other assets *continued*

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 assets held for sale	**2**	–
Exchange differences	**23**	(13)
At 31 December	**(259)**	(252)

14 Contract assets and liabilities

	Current		Non-current [1]		Total [2]	
	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's 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).

	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

Contract assets are analysed as follows:	2021 £m	2020 £m
Financial instruments (note 19)	**264**	186
Non-financial instruments	**10,045**	10,246
	10,309	10,432

During the year £2,713m (31 December 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 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.

15 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 included within assets held for sale (note 26)	**25**	51
Overdrafts (note 16)	**(7)**	(7)
Cash and cash equivalents per cash flow statement (page 48)	**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.

16 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 liability – Land and buildings	**46**	44	**365**	392	**411**	436
Lease liability – Aircraft and engines	**198**	185	**1,053**	1,320	**1,251**	1,505
Lease liability – Plant and equipment	**26**	30	**56**	72	**82**	102
Total 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 as notes above 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.

17 Leases

Leases as lessee

The net book value of lease right-of-use assets at 31 December 2021 was £1,203m (2020: £1,405m), with a lease liability of £1,744m (2020: £2,043m), per notes 10 and 16 respectively. 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 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 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 right-of-use assets are used. The timing difference between the income statement charge and cash flow relates to costs incurred at the end of leases for residual value guarantees that are recognised within depreciation over the term of the lease, the most significant amounts relate to engine leases.

Leases as lessor

The Group acts as lessor for engines to Civil Aerospace customers when they require engines to support their fleets. Lease agreements with the lessees provide protection over our assets. Usage in excess of specified limits and damage to the engine while on lease are covered by variable lease payment structures. Lessee bankruptcy risk is managed through the Cape Town Convention on International Interests in Mobile Equipment (including a specific protocol relating to aircraft equipment), an international treaty that creates common standards for the registration of lease contracts and establishes various legal remedies for default in financing agreements, including repossession and the effect of particular states' bankruptcy laws. Engines are only leased once we confirm that appropriate insurance documentation is established that covers the engine assets to pre-agreed amounts. All such contracts where we are lessor are operating leases. The Group also leases out a small number of properties, or parts of properties, where there is excess capacity under operating leases.

	2021 £m	2020 £m
Operating lease income – credited within revenue from aftermarket services [1, 2]	80	194

[1] Includes variable lease payments received of £71m (2020: £179m) that do not depend on an index or a rate.
[2] Items of property, plant and equipment subject to an operating lease are disclosed in note 9.

Non-cancellable future operating lease rentals (undiscounted) are receivable as follows:

	2021 £m	2020 £m
Within one year	9	13
Between one and two years	7	12
Between two and three years	7	10
Between three and four years	7	6
Between four and five years	7	6
After five years	21	21
	58	68

In a limited number of circumstances the Group sublets property that are treated as a finance lease when the arrangement transfers substantially all the risks and rewards of ownership of the asset. At 31 December 2021, the total undiscounted lease payments receivable is £19m (2020: £22m) on annual lease income of £2m (2020: £3m). The discounted finance lease receivable at 31 December 2021 is £17m (2020: £19m). There was nil (2020: nil) finance income recognised during the year.

18 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 RRSAs	**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 RRSA 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]	**761**	765	**300**	515	**1,061**	1,280
	6,017	6,654	**1,575**	1,922	**7,592**	8,576

	2021 £m	2020 £m
Trade payables and other liabilities are analysed as follows:		
Financial instruments (note 19):		
Trade payables and similar items	**4,045**	4,128
Other non-derivative financial liabilities	**2,403**	3,021
Non-financial instruments	**1,144**	1,427
	7,592	8,576

[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 90-120 days. The Group offer reduced payment terms for smaller suppliers, so that they are paid in 30 days. In line with civil aviation industry practice, the Group offer a supply chain financing (SCF) programme in partnership with banks to enable suppliers 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 (2020: £582m).

19 Financial instruments

Carrying values and fair values of financial instruments

	Notes	Basis for determining fair value	Assets: Fair value through profit or loss £m	Assets: Fair value through OCI £m	Assets: Amortised cost £m	Liabilities: Fair value through profit or loss £m	Liabilities: Other £m	Total £m
2021								
Other non-current asset investments	11	A	**36**	**–**	**–**	**–**	**–**	**36**
Trade receivables and similar items	13	B/C	**–**	**17**	**3,784**	**–**	**–**	**3,801**
Other non-derivative financial assets	13	B	**–**	**–**	**704**	**–**	**–**	**704**
Other assets		D	**28**	**–**	**–**	**–**	**–**	**28**
Derivative financial assets [1]		C	**379**	**–**	**–**	**–**	**–**	**379**
Short-term investments		B	**–**	**–**	**8**	**–**	**–**	**8**
Cash and cash equivalents	15	B	**49**	**–**	**2,572**	**–**	**–**	**2,621**
Borrowings	16	E/F	**–**	**–**	**–**	**–**	**(6,032)**	**(6,032)**
Lease liabilities	16	G	**–**	**–**	**–**	**–**	**(1,744)**	**(1,744)**
Derivative financial liabilities [1]		C	**–**	**–**	**–**	**(3,292)**	**–**	**(3,292)**
Financial RRSAs		H	**–**	**–**	**–**	**–**	**(12)**	**(12)**
Other liabilities		H	**–**	**–**	**–**	**–**	**(75)**	**(75)**
Trade payables and similar items	18	B	**–**	**–**	**–**	**–**	**(4,045)**	**(4,045)**
Other non-derivative financial liabilities	18	B	**–**	**–**	**–**	**–**	**(2,403)**	**(2,403)**
Contract liabilities	14	B	**–**	**–**	**–**	**–**	**(264)**	**(264)**
			492	**17**	**7,068**	**(3,292)**	**(14,575)**	**(10,290)**
2020								
Other non-current asset investments	11	A	19	–	–	–	–	19
Trade receivables and similar items	13	B/C	–	938	2,975	–	–	3,913
Other non-derivative financial assets	13	B	–	–	740	–	–	740
Other assets		D	28	–	–	–	–	28
Derivative financial assets [1]		C	766	–	–	–	–	766
Cash and cash equivalents [2]	15	B	669	–	2,783	–	–	3,452
Borrowings	16	E/F	–	–	–	–	(5,287)	(5,287)
Lease liabilities	16	G	–	–	–	–	(2,043)	(2,043)
Derivative financial liabilities [1]		C	–	–	–	(3,472)	–	(3,472)
Financial RRSAs		H	–	–	–	–	(81)	(81)
Other liabilities		H	–	–	–	–	(73)	(73)
Trade payables and similar items	18	B	–	–	–	–	(4,128)	(4,128)
Other non-derivative financial liabilities	18	B	–	–	–	–	(3,021)	(3,021)
Contract liabilities	14	B	–	–	–	–	(186)	(186)
			1,482	938	6,498	(3,472)	(14,819)	(9,373)

[1] In the event of counterparty default relating to derivative financial assets and liabilities, offsetting would apply and financial assets and liabilities held with the same counterparty would net off. If this occurred with every counterparty, total financial assets would be £nil (2020: £43m) and liabilities £2,913m (2020: £2,749m).

[2] Cash and cash equivalents for 2020 have been re-presented to exclude cash held for sale.

19 Financial instruments continued

Fair values equate to book values for both 2021 and 2020, with the following exceptions:

	Basis for determining fair value	2021 Book value £m	2021 Fair value £m	2020 Book value £m	2020 Fair value £m
Borrowings	E	**(4,038)**	**(4,106)**	(4,886)	(4,814)
Borrowings	F	**(1,994)**	**(2,122)**	(401)	(403)
Financial RRSAs	H	**(12)**	**(13)**	(81)	(89)

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.

A These primarily comprise unconsolidated companies where fair value approximates to the book value.
B Fair values 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. Money market funds are valued using level 1 methodology.
C Fair values of derivative financial assets and liabilities and trade receivables held to collect or sell are estimated by discounting expected future contractual cash flows using prevailing interest rate curves. For commodity derivatives forward commodity prices are used to determine expected future cash flows. 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*).
D Other assets are included on the balance sheet at fair value, derived from observable market prices or latest forecast (Level 2/Level 3 as defined by IFRS 13). At 31 December 2021, Level 3 assets totalled £16m (2020: £15m).
E 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).
F 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 by discounting contractual future cash flows. (Level 2 as defined by IFRS 13).
G 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).
H The fair value 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).

IFRS 13 defines a three level valuation hierarchy:
Level 1 – quoted prices for similar instruments;
Level 2 – directly observable market inputs other than Level 1 inputs; and
Level 3 – inputs not based on observable market data.

Carrying value of other financial assets and liabilities

	Derivatives: Foreign exchange contracts £m	Derivatives: Commodity contracts £m	Derivatives: Interest rate contracts [1] £m	Derivatives: Total derivatives £m	Financial RRSAs £m	Other £m	Total £m
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)**	**(664)**
Non-current liabilities	**(2,581)**	**–**	**(82)**	**(2,663)**	**(5)**	**(47)**	**(2,715)**
Liabilities	**(3,210)**	**–**	**(82)**	**(3,292)**	**(12)**	**(75)**	**(3,379)**
	(3,039)	**32**	**94**	**(2,913)**	**(12)**	**(47)**	**(2,972)**
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)	(580)
Non-current liabilities	(2,790)	(19)	(113)	(2,922)	(76)	(48)	(3,046)
Liabilities	(3,312)	(36)	(124)	(3,472)	(81)	(73)	(3,626)
	(2,871)	(11)	176	(2,706)	(81)	(45)	(2,832)

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

19 Financial instruments *continued*

Derivative financial instruments

The Group uses various financial instruments to manage its exposure to movements in foreign exchange rates. The Group uses commodity swaps to manage its exposure to movements in the price of commodities (jet fuel and base metals). To hedge the currency risk associated with a borrowing denominated in a foreign currency, the Group has currency derivatives designated as part of fair value or cash flow hedges. The Group uses interest rate swaps and forward rate agreements to manage its exposure to movements in interest rates.

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

	Foreign exchange instruments		Commodity instruments		Interest rate instruments – 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
At 1 January	**(2,871)**	(3,104)	**(11)**	12	**233**	229	**(57)**	14	**(2,706)**	(2,849)
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

The Group has financial liabilities arising from financial RRSAs. These financial liabilities are valued at each reporting date using the amortised cost method. This involves calculating the present value of the forecast cash flows of the arrangements using the internal rate of return at the inception of the arrangements as the discount rate.

Movements in the carrying values were as follows:

	Financial RRSAs		Other – assets		Other – liabilities	
	2021 £m	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m
At 1 January	**(81)**	(110)	**15**	16	**(73)**	(72)
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	**–**	(1)	**3**	18
Other	**–**	–	**–**	–	**1**	13
Reclassification to held for sale	**69**	2	**–**	–	**–**	–
At 31 December	**(12)**	(81)	**15**	15	**(75)**	(73)

[1] Included in financing.

19 Financial instruments *continued*

Effect of hedging instruments on the financial position and performance

To manage the risk of changes in the fair values of fixed rate borrowings (the hedged items) the Group has entered into fixed-to-floating interest rate swaps (the hedging instruments) which for accounting purposes are designated as fair value hedges. The impact of fair value hedges on the financial position and performance of the Group is as follows:

	Hedged item [1]				Hedging instrument [2]						
	Nominal £m	FV adjustment in the period £m	FV adjustment since inception £m	Carrying amount £m	Nominal £m	Carrying amount asset £m	Carrying amount liability £m	FV movement in the period £m	Hedge ineffectiveness in the period [3] £m	Weighted average FX rate	Weighted average interest rate [4]
At 31 December 2021											
Sterling	**(375)**	**27**	**(19)**	**(394)**	**375**	**19**	**–**	**(27)**	**–**	**1.00**	**SONIA +0.893**
US Dollar	**(658)**	**19**	**(125)**	**(781)**	**658**	**116**	**–**	**(20)**	**(1)**	**1.52**	**SONIA +1.4658**
Euro	**(968)**	**91**	**1**	**(965)**	**968**	**–**	**(21)**	**(90)**	**1**	**1.91**	**SONIA +0.9185**
At 31 December 2020											
Sterling	(375)	(10)	(46)	(420)	375	46	–	10	–	1.00	GBP LIBOR +0.893
US Dollar	(658)	(18)	(144)	(800)	658	136	–	14	(4)	1.52	GBP LIBOR +1.4658
Euro	(1,607)	(97)	(131)	(1,735)	1,607	111	–	90	(7)	1.15	GBP LIBOR +0.8301

1 Hedged items are included in borrowings in the balance sheet.

2 Hedging instruments are included in other financial assets or liabilities in the balance sheet.

3 Hedge ineffectiveness is included in net financing in the income statement.

4 In anticipation of the cessation of GBP LIBOR at the end of 2021, the Group confirmed its adherence to the ISDA 2020 IBOR Fallbacks Protocol. Therefore the interest rate applicable to these swaps has been updated to Fallback Rate (SONIA plus credit adjustment spread) as defined in supplement 70 to the 2006 ISDA definitions which will be applied from 2022 onwards.

To manage the foreign exchange rate risk in cash flows on fixed rate non-GBP borrowings (the hedged items) the Group has entered into fixed-to-fixed cross-currency interest rate swaps (the hedging instruments) to hedge the cashflows into GBP, which for accounting purposes are designated as cash flow hedges. The impact of cash flow hedges on the financial position and performance of the Group is as follows:

	Hedged item		Hedging instrument [1]						Cash flow hedge reserve		
	Nominal £m	FV movement in the period £m	Nominal £m	Carrying amount liability £m	FV movement in the period £m	Hedge ineffectiveness in the period £m	Weighted average FX rate	Weighted average interest rate	Amount recognised in OCI £m	Recycled to net financing £m	Closing cash flow hedge reserve £m
At 31 December 2021											
US Dollar	**(772)**	**(35)**	**772**	**(20)**	**35**	**–**	**1.29**	**5.3263**	**(36)**	**10**	**(10)**
Euro	**(677)**	**32**	**677**	**(37)**	**(32)**	**(1)**	**1.11**	**5.4463**	**39**	**(51)**	**(10)**
At 31 December 2020											
US Dollar	(772)	55	772	(55)	(55)	–	1.29	5.3263	55	(39)	16
Euro	(677)	5	677	(5)	(5)	–	1.11	5.4463	5	(3)	2

1 Hedging instruments are included in other financial assets or liabilities in the balance sheet.

19 Financial instruments *continued*

Risk management policies and hedging activities

The principal financial risks to which the Group is exposed are: foreign currency exchange rate risk; liquidity risk; credit risk; interest rate risk; and commodity price risk. The Board has approved policies for the management of these risks.

Foreign currency exchange rate risk – The Group has significant cash flows (most significantly USD, followed by the EUR) denominated in currencies other than the functional currency of the relevant trading entity. To manage its exposures to changes in values of future foreign currency cash flows, so as to maintain relatively stable long-term foreign exchange rates on settled transactions, the Group enters into derivative forward foreign currency transactions.

The Group economically hedges its GBP/USD exposure by forecasting highly probable net USD receipts up to ten years forward. Hedges are taken out within prescribed maximum and minimum hedge positions set out in the Group FX policy. The maximum and minimum policy bands decline gradually over the ten-year horizon and are calculated as a percentage of forecast net income. A similar policy is operated for the Group's EUR/USD exposure. For accounting purposes, these derivative contracts are not designated in hedging relationships with the exception of those taken out by the Group's Spanish subsidiary, ITP Aero, where they are designated in cash flow hedges. ITP Aero is exposed predominantly to net USD receipts that it hedges against EUR using foreign exchange forward contracts.

The Group also has exposures to cash flows on EUR and USD denominated fixed rate borrowings. To manage its exposures to changes in values of future foreign currency cash flows, the Group has entered into fixed-to -fixed cross-currency interest rate swaps which for accounting purposes are designated as cash flow hedges. The swaps have similar critical terms to the hedged items, such as the initial exchange amounts, payment dates and maturities. Therefore there is an economic relationship and the hedge ratio is established as 1:1. Possible sources of ineffectiveness in the cash flow hedge relationship are changes in the credit risk of either party to the interest rate swap. Another possible source of ineffectiveness would be if the notional of the borrowings is less than the notional of the derivative, for example in the event of a partial repayment of hedged debt prior to its maturity.

The Group regards its interests in overseas subsidiary companies as long-term investments. The Group aims to match its translational exposures by matching the currencies of assets and liabilities.

Liquidity risk – The Group's policy is to hold financial investments and maintain undrawn committed facilities at a level sufficient to ensure that the Group has available funds to meet its medium-term capital and funding obligations and to meet any unforeseen obligations and opportunities. The Group holds cash and short-term investments, which together with the undrawn committed facilities, enable the Group to manage its liquidity risk.

Credit risk – The Group is exposed to credit risk to the extent of non-payment by either its customers or the counterparties of its financial instruments. The effective monitoring and controlling of credit risk is a key component of the Group's risk management activities. The Group has credit policies covering both trading and financial exposures. Credit risks arising from treasury activities are managed by a central treasury function in accordance with the Group credit policy. The objective of the policy is to diversify and minimise the Group's exposure to credit risk from its treasury activities by ensuring the Group transacts strictly with 'BBB' or higher rated financial institutions based on pre-established limits per financial institution. At the balance sheet date, there were no significant concentrations of credit risk to individual customers or counterparties. The Group's revenue is generated from customers located across multiple geographical locations (see note 2), these customers are typically: airframers and airline operators relating to Civil Aerospace; government defence departments for the UK and US; multiple smaller entities for Power Systems; and aero engine manufacturers for ITP Aero. Whilst there are a limited number of customers related to Civil Aerospace and Defence, they are spread across various geographical locations. The maximum exposure to credit risk at the balance sheet date is represented by the carrying value of each financial asset, including derivative financial instruments.

Interest rate risk – The Group's interest rate risk is primarily in relation to its fixed rate borrowings (fair value risk), floating rate borrowings and cash and cash equivalents (cash flow risk). Interest rate derivatives are used to manage the overall interest rate profile of the Group. The fixed or floating rate interest rate decision on long-term borrowings is determined for each new agreement at the point it is entered into. The aggregate interest rate position of the Group is reviewed regularly and can be revised at any time in order to react to changes in market conditions or circumstances.

The Group also has exposures to the fair values of non-derivative financial instruments such as EUR, GBP and USD fixed rate borrowings. To manage the risk of changes in these fair values, the Group has entered into fixed-to-floating interest rate swaps and cross-currency interest rate swaps which for accounting purposes are designated as fair value hedges. The swaps have similar critical terms to the hedged items, such as the reference rate, reset dates, notional amounts, payment dates and maturities. Therefore there is an economic relationship and the hedge ratio is established as 1:1. Possible sources of ineffectiveness in the fair value hedge relationship are changes in the credit risk of either party to the interest rate swap and, for cross-currency interest rate swaps, the cross-currency basis risk as this risk is present in the hedging instrument only. Another possible source of ineffectiveness would be if the notional of the borrowings is less than the notional of the derivative, for example in the event of a partial repayment of hedged debt prior to its maturity.

The Group has exposure to changes in cash flows due to changes in interest rates. To manage this risk the Group has entered into floating-to-fixed interest rate swaps to hedge a proportion of its floating rate exposure to fixed rates. The swaps have similar critical terms to the floating leg of swaps that form part of the fair value hedges, such as the reference rate, reset dates, notional amounts, payment dates and maturities. For accounting purposes, these derivative contracts are generally not designated as hedging instruments.

ITP Aero, has also entered into a floating-to-fixed interest rate swap to hedge the cash flow risk on a floating rate borrowing which for accounting purposes is designated as a cash flow hedge.

Commodity risk – The Group has exposures to the price of jet fuel and base metals arising from business operations. To minimise its cash flow exposures to changes in commodity prices, the Group enters into derivative commodity transactions. The commodity hedging policy is similar to the Group FX policy, in that the Group forecasts highly probable exposures to commodities, and takes out hedges within prescribed maximum and minimum levels as set out in the policy. The maximum and minimum policy bands decline gradually over time. For accounting purposes, these derivative contracts are generally not designated in hedging relationships.

19 Financial instruments *continued*

Other price risk – The Group's cash equivalent balances represent investments in money-market instruments, with a term of up to three months. The Group does not consider that these are subject to significant price risk.

Derivative financial instruments

The nominal amounts, analysed by year of expected maturity, and fair values of derivative financial instruments are as follows:

		Expected maturity				Fair value	
	Nominal amount £m	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	Assets £m	Liabilities £m
At 31 December 2021							
Foreign exchange contracts:							
Non-hedge accounted	**28,767**	**6,975**	**8,139**	**12,471**	**1,182**	**171**	**(3,210)**
Interest rate contracts:							
Fair value hedges	**2,001**	**–**	**–**	**1,517**	**484**	**135**	**(21)**
Cash flow hedges	**1,449**	**–**	**–**	**677**	**772**	**–**	**(57)**
Non-hedge accounted	**2,001**	**–**	**–**	**1,517**	**484**	**41**	**(4)**
Commodity contracts:							
Non-hedge accounted	**179**	**85**	**60**	**34**	**–**	**32**	**–**
	34,397	**7,060**	**8,199**	**16,216**	**2,922**	**379**	**(3,292)**
At 31 December 2020							
Foreign exchange contracts:							
Cash flow hedges [1]	544	206	187	151	–	30	(4)
Non-hedge accounted	35,715	6,172	6,495	17,956	5,092	411	(3,308)
Interest rate contracts:							
Fair value hedges	2,640	639	–	1,142	859	293	–
Cash flow hedges	1,461	4	4	4	1,449	–	(60)
Non-hedge accounted	2,001	–	–	1,142	859	7	(64)
Commodity contracts:							
Cash flow hedges [1]	41	6	7	19	9	12	–
Non-hedge accounted	217	97	77	43	–	13	(36)
	42,619	7,124	6,770	20,457	8,268	766	(3,472)

[1] Cash flow hedges in ITP Aero on foreign exchange contracts and commodity contracts have been classified as held for sale since 30 June 2021.

As described above, all derivative financial instruments are entered into for risk management purposes, although these may not be designated into hedging relationships for accounting purposes.

Currency analysis

Foreign exchange contracts are denominated in the following currencies:

	Nominal amount of currencies purchased forward				
	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2021					
Currencies sold forward:					
Sterling	**–**	**5,479**	**–**	**250**	**5,729**
US dollar	**19,916**	**–**	**2,430**	**325**	**22,671**
Euro	**–**	**263**	**–**	**46**	**309**
Other	**2**	**41**	**14**	**1**	**58**
At 31 December 2020					
Currencies sold forward:					
Sterling	–	7,132	–	226	7,358
US dollar	23,857	–	3,910	486	28,253
Euro	5	306	–	161	472
Other	10	116	47	3	176

The nominal value of interest rate and commodity contracts are denominated in the following currencies:

	2021 £m	2020 £m
Sterling	**2,376**	2,376
US dollar	**1,600**	1,676
Euro	**1,654**	2,308

19 Financial instruments *continued*

Non-derivative financial instruments are denominated in the following currencies:

	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2021					
Other non-current investments	**12**	**23**	**1**	**–**	**36**
Trade receivables and similar items	**511**	**2,776**	**450**	**64**	**3,801**
Other non-derivative financial assets	**16**	**640**	**30**	**18**	**704**
Other assets	**–**	**28**	**–**	**–**	**28**
Short-term investments	**–**	**–**	**8**	**–**	**8**
Cash and cash equivalents	**700**	**673**	**1,135**	**113**	**2,621**
Assets	**1,239**	**4,140**	**1,624**	**195**	**7,198**
Borrowings	**(2,915)**	**(1,518)**	**(1,598)**	**(1)**	**(6,032)**
Lease liabilities	**(188)**	**(1,300)**	**(48)**	**(208)**	**(1,744)**
Financial RRSAs	**–**	**–**	**(12)**	**–**	**(12)**
Other liabilities	**(17)**	**(58)**	**–**	**–**	**(75)**
Trade payables and similar items	**(503)**	**(3,035)**	**(444)**	**(63)**	**(4,045)**
Other non-derivative financial liabilities	**(287)**	**(1,957)**	**(113)**	**(46)**	**(2,403)**
Contract liabilities	**–**	**(264)**	**–**	**–**	**(264)**
Liabilities	**(3,910)**	**(8,132)**	**(2,215)**	**(318)**	**(14,575)**
	(2,671)	**(3,992)**	**(591)**	**(123)**	**(7,377)**
At 31 December 2020					
Other non-current investments	1	15	3	–	19
Trade receivables and similar items	483	2,933	440	57	3,913
Other non-derivative financial assets	80	599	44	17	740
Other assets	–	28	–	–	28
Short-term investments	–	–	–	–	–
Cash and cash equivalents [1]	1,436	561	1,314	141	3,452
Assets	2,000	4,136	1,801	215	8,152
Borrowings	(1,266)	(1,526)	(2,494)	(1)	(5,287)
Lease liabilities	(211)	(1,559)	(67)	(206)	(2,043)
Financial RRSAs	–	–	(81)	–	(81)
Other liabilities	(16)	(57)	–	–	(73)
Trade payables and similar items	(682)	(2,707)	(554)	(185)	(4,128)
Other non-derivative financial liabilities	(333)	(2,540)	(125)	(23)	(3,021)
Contract liabilities	–	(186)	–	–	(186)
Liabilities	(2,508)	(8,575)	(3,321)	(415)	(14,819)
	(508)	(4,439)	(1,520)	(200)	(6,667)

[1] Cash and cash equivalents for 2020 have been re-presented to exclude cash held for sale.

Currency exposures

The Group's actual currency exposure on financial instruments after taking account of derivative foreign currency contracts, which are not designated as hedging instruments for accounting purposes are as follows:

Functional currency of Group operations	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2021					
Sterling	**–**	**1**	**1**	**(4)**	**(2)**
US dollar	**(8)**	**–**	**–**	**4**	**(4)**
Euro	**1**	**(4)**	**–**	**3**	**–**
Other	**82**	**14**	**51**	**2**	**149**
At 31 December 2020					
Sterling	–	–	–	(4)	(4)
US dollar	(11)	–	(2)	2	(11)
Euro	1	3	–	(17)	(13)
Other	78	9	59	–	146

19 Financial instruments *continued*

Ageing beyond contractual due date of financial assets

	Within terms £m	Up to three months overdue £m	Between three months and one year overdue £m	More than one year overdue £m	Total £m
At 31 December 2021					
Other non-current asset investments	**36**	**–**	**–**	**–**	**36**
Trade receivables and similar items	**3,084**	**369**	**211**	**137**	**3,801**
Other non-derivative financial assets	**698**	**–**	**5**	**1**	**704**
Other assets	**28**	**–**	**–**	**–**	**28**
Derivative financial assets	**379**	**–**	**–**	**–**	**379**
Short-term investments	**8**	**–**	**–**	**–**	**8**
Cash and cash equivalents	**2,621**	**–**	**–**	**–**	**2,621**
	6,854	**369**	**216**	**138**	**7,577**
At 31 December 2020					
Other non-current asset investments	19	–	–	–	19
Trade receivables and similar items	3,002	467	373	71	3,913
Other non-derivative financial assets	738	1	–	1	740
Other assets	28	–	–	–	28
Derivative financial assets	766	–	–	–	766
Short-term investments	–	–	–	–	–
Cash and cash equivalents [1]	3,452	–	–	–	3,452
	8,005	468	373	72	8,918

[1] Cash and cash equivalents for 2020 have been re-presented to exclude cash held for sale.

Contractual maturity analysis of non-derivative financial liabilities

	Gross values				
	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	Carrying value £m
At 31 December 2021					
Borrowings	**(259)**	**(265)**	**(4,806)**	**(1,849)**	**(6,032)**
Lease liabilities	**(322)**	**(261)**	**(724)**	**(852)**	**(1,744)**
Financial RRSAs	**(6)**	**(5)**	**(2)**	**–**	**(12)**
Other liabilities	**(27)**	**(9)**	**(24)**	**(15)**	**(75)**
Trade payables and similar items	**(3,815)**	**(18)**	**(94)**	**(118)**	**(4,045)**
Other non-derivative financial liabilities	**(1,812)**	**(83)**	**(207)**	**(301)**	**(2,403)**
Contract liabilities	**(264)**	**–**	**–**	**–**	**(264)**
	(6,505)	**(641)**	**(5,857)**	**(3,135)**	**(14,575)**
At 31 December 2020					
Borrowings	(1,174)	(183)	(1,722)	(3,041)	(5,287)
Lease liabilities	(320)	(373)	(746)	(1,091)	(2,043)
Financial RRSAs	(6)	(5)	(7)	(69)	(81)
Other liabilities	(25)	(8)	(23)	(17)	(73)
Trade payables and similar items	(3,969)	(53)	(23)	(83)	(4,128)
Other non-derivative financial liabilities	(2,260)	(228)	(176)	(357)	(3,021)
Contract liabilities	(186)	–	–	–	(186)
	(7,940)	(850)	(2,697)	(4,658)	(14,819)

19 Financial instruments *continued*

Expected maturity analysis of derivative financial instruments

	Gross values				
	Within one year £m	**Between one and two years £m**	**Between two and five years £m**	**After five years £m**	**Carrying value £m**
At 31 December 2021					
Derivative financial assets:					
Cash inflows	**840**	**1,051**	**3,145**	**456**	
Cash outflows	**(811)**	**(1,017)**	**(2,922)**	**(445)**	
Other net cash flows [1]	**26**	**27**	**43**	**2**	
	55	**61**	**266**	**13**	**379**
Derivative financial liabilities:					
Cash inflows	**6,246**	**7,198**	**11,441**	**1,987**	
Cash outflows	**(6,917)**	**(8,022)**	**(13,200)**	**(2,314)**	
Other net cash flows [1]	**(2)**	**(1)**	**–**	**–**	
	(673)	**(825)**	**(1,759)**	**(327)**	**(3,292)**
At 31 December 2020					
Derivative financial assets:					
Cash inflows	2,153	984	6,358	2,777	
Cash outflows	(2,038)	(937)	(6,122)	(2,634)	
Other net cash flows [1]	18	20	35	12	
	133	67	271	155	766
Derivative financial liabilities:					
Cash inflows	5,019	5,810	13,308	4,340	
Cash outflows	(5,557)	(6,398)	(15,189)	(4,993)	
Other net cash flows [1]	(36)	(27)	(40)	(4)	
	(574)	(615)	(1,921)	(657)	(3,472)

1 Derivative financial assets and liabilities that are settled on a net cash basis.

Interest rate risk

In respect of income-earning financial assets and interest-bearing financial liabilities, the following table indicates their effective interest rates. The value shown is the carrying amount, before taking account of swaps.

	2021			2020		
	Fixed rate £m	**Floating rate £m**	**Total £m**	Fixed rate £m	Floating rate £m	Total £m
Short-term investments	**–**	**8**	**8**	–	–	–
Cash and cash equivalents [1]	**–**	**2,621**	**2,621**	–	3,452	3,452
Borrowings	**(4,041)**	**(1,991)**	**(6,032)**	(4,576)	(711)	(5,287)
Lease liabilities	**(1,084)**	**(660)**	**(1,744)**	(1,224)	(819)	(2,043)
	(5,125)	**(22)**	**(5,147)**	(5,800)	1,922	(3,878)
Weighted average interest rates						
Borrowings	**3.7%**	**4.1%**		3.1%	1.3%	
Lease liabilities [2]	**4.0%**	**2.0%**		3.8%	2.4%	

1 Cash and cash equivalents comprises bank balances and term deposits and earn interest based on short-term floating market interest rates. Cash and cash equivalents for 2020 have been re-presented to exclude cash held for sale.

2 Interest rates for lease liabilities are considered to be the discount rates at the balance sheet date.

£8m (2020: £15m) of the Group's borrowings (including borrowings classified as held for sale) are subject to the Group meeting certain obligations, including customary financial covenants. If the Group fails to meet its obligations these arrangements give rights to the lenders, upon agreement, to accelerate repayment of the facilities. At 31 December 2021 none of these were in breach (2020: none). There are no rating triggers contained in any of the Group's facilities that could require the Group to accelerate or repay any facility for a given movement in the Group's credit rating.

£99m (2020: £166m) of the Group's lease liabilities include a customary loan-to-value covenant. The Group has several contractual cures available in the event the stipulated loan-to-value ratio is exceeded. The Group has several contractual cures available in the event the stipulated loan-to-value ratio is exceeded. Failure by the Group to satisfy its contractual obligations under the covenant gives rights to the lessor to terminate its lease and claim termination amounts for the outstanding lease balance. At 31 December 2021 none (2020: none) of these were in breach.

19 Financial instruments *continued*

Sensitivity Analysis

Sensitivities at 31 December (all other variables held constant) – impact on profit after tax and equity	2021 £m	2020 £m
Sterling 10% weaker against the US dollar	(1,687)	(1,992)
Sterling 10% stronger against the US dollar	1,382	1,642
Euro 10% weaker against the US dollar	(227)	(315)
Euro 10% stronger against the US dollar	185	258
Sterling 10% weaker against the Euro	(15)	(14)
Sterling 10% stronger against the Euro	12	12
Commodity prices 10% lower	(17)	(20)
Commodity prices 10% higher	17	20
Interest rates 50 basis points lower	(67)	(77)
Interest rates 50 basis points higher	65	82

20 Provisions for liabilities and charges

	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. In 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 the remaining provision reflects the single most likely outcome and is expected to be utilised over the period 2022 to 2024.

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 a 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 for contract losses 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 experiences. 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. At 31 December 2021, around 9,000 roles had been removed across the Group. 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 the payment is not probable as described on page 103.

20 Provisions for liabilities and charges *continued*

Customer financing (continued)

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 [1]	**(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.

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.

21 Post-retirement benefits

The Group operates a number of defined benefit and defined contribution schemes:

- The UK defined benefit scheme is funded, with the assets held in a separate trustee administered fund. Employees are entitled to retirement benefits based on either their final or career average salaries and length of service. On 31 December 2020, the scheme was closed to future accrual.
- Overseas defined benefit schemes are a mixture of funded and unfunded plans and provide benefits in line with local practice. Additionally, in the US, and to a lesser extent in some other countries, the Group's employment practices include the provision of healthcare and life insurance benefits for retired employees. These schemes are unfunded.

The valuations of the defined benefit schemes are based on the results of the most recent funding valuation, where relevant, updated by the scheme actuaries to 31 December 2021.

21 Post-retirement benefits *continued*

Changes to the 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.

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 has been recognised.

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	**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	**125**	**128**	**253**	(101)	198	97

[1] The past service credit recognised during the year comprises the changes in the UK schemes above 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.

The operating cost is charged as follows:

	Defined benefit		**Defined contribution**		**Total**	
	2021 £m	2020 £m	**2021 £m**	Restated 2020 £m	**2021 £m**	Restated 2020 £m
Cost of sales	**50**	170	**158**	115	**208**	285
Commercial and administrative costs	**(38)**	(271)	**32**	21	**(6)**	(250)
Research and development costs	**11**	33	**35**	23	**46**	56
	23	(68)	**225**	159	**248**	91
Discontinued operations	**–**	–	**2**	5	**2**	5
	23	(68)	**227**	164	**250**	96

Pension contributions to UK pension arrangements are generally paid via a salary sacrifice scheme under which employees agree to a reduction in gross contractual pay in return for the Group making additional pension contributions on their behalf. As a result, there is a decrease in wages and salaries and a corresponding increase in pension costs of £45m (2020: £46m) in the year.

Net financing comprises:

	2021			2020		
	UK schemes £m	**Overseas schemes £m**	**Total £m**	UK schemes £m	Overseas schemes £m	Total £m
Financing on scheme obligations	**137**	**41**	**178**	148	54	202
Financing on scheme assets	**(153)**	**(22)**	**(175)**	(174)	(27)	(201)
Net financing (income)/charge in respect of defined benefit schemes	**(16)**	**19**	**3**	(26)	27	1
Financing income on scheme surpluses	**(16)**	**(1)**	**(17)**	(26)	(2)	(28)
Financing cost on scheme deficits	**–**	**20**	**20**	–	29	29

21 Post-retirement benefits *continued*

Amounts recognised in OCI in respect of defined benefit schemes

	2021			2020		
	UK schemes £m	**Overseas schemes £m**	**Total £m**	UK schemes £m	Overseas schemes £m	Total £m
Actuarial gains and (losses) arising from:						
Demographic assumptions [1]	**(101)**	**(2)**	**(103)**	(85)	34	(51)
Financial assumptions [2]	**416**	**159**	**575**	(1,387)	(246)	(1,633)
Experience adjustments [3]	**(88)**	**12**	**(76)**	(157)	(7)	(164)
Return on scheme assets excluding financing income [2]	**(112)**	**(30)**	**(142)**	1,166	92	1,258
	115	**139**	**254**	(463)	(127)	(590)

[1] For the UK Scheme, this reflects latest available CMI mortality projections and an update of the post-retirement mortality assumptions based on an analysis prepared for the 31 March 2020 funding valuation.

[2] These arise primarily due to changes in interest rates and inflation.

[3] This reflects updated membership data available from the 31 March 2020 funding valuation, actual experience of options selected by members leaving employment under the voluntary severance arrangements (see above) offset by lower than expected pension and deferred pension increases.

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

	2021			2020		
	UK schemes £m	**Overseas schemes £m**	**Total £m**	UK schemes £m	Overseas schemes £m	Total £m
Present value of funded obligations	**(8,010)**	**(863)**	**(8,873)**	(8,879)	(895)	(9,774)
Fair value of scheme assets	**9,128**	**861**	**9,989**	9,762	894	10,656
Net asset/(liability) on funded schemes	**1,118**	**(2)**	**1,116**	883	(1)	882
Present value of unfunded obligations	**–**	**(1,341)**	**(1,341)**	–	(1,568)	(1,568)
Net asset/(liability) recognised in the balance sheet	**1,118**	**(1,343)**	**(225)**	883	(1,569)	(686)
Post-retirement scheme surpluses [1]	**1,118**	**30**	**1,148**	883	24	907
Post-retirement scheme deficits	**–**	**(1,373)**	**(1,373)**	–	(1,580)	(1,580)
Included in liabilities associated with assets held for sale	**–**	**–**	**–**	–	(13)	(13)

[1] The surplus in the UK scheme is recognised as on an 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.

Overseas schemes are located in the following countries:

	2021			2020		
	Assets £m	**Obligations £m**	**Net £m**	Assets £m	Obligations £m	Net £m
Canada	**245**	**(275)**	**(30)**	243	(293)	(50)
Germany	**2**	**(883)**	**(881)**	2	(1,016)	(1,014)
US pensions schemes	**614**	**(643)**	**(29)**	649	(669)	(20)
US healthcare schemes	**–**	**(400)**	**(400)**	–	(469)	(469)
Other	**–**	**(3)**	**(3)**	–	(16)	(16)
Net asset/(liability) recognised in the balance sheet	**861**	**(2,204)**	**(1,343)**	894	(2,463)	(1,569)

Defined benefit schemes

Assumptions

Significant actuarial assumptions for the UK schemes at the balance sheet date were as follows:

		2021	2020
Discount rate		**1.90%**	1.45%
Inflation assumption (RPI) [1]		**3.60%**	3.10%
Rate of increase in salaries [2]		**n/a**	2.55%
Transfer assumption (employed deferred/deferred)		**50%/40%**	40%/40%
BPO assumption		**25%**	30%
Life expectancy from age 65:	current male pensioner	**21.8 years**	21.8 years
	future male pensioner currently aged 45	**23.2 years**	23.2 years
	current female pensioner	**23.6 years**	23.6 years
	future female pensioner currently aged 45	**25.4 years**	25.4 years

[1] This is the assumption for the Retail Price Index. The Consumer Price Index is assumed to be on average 0.55% lower, taking account of the announcement in 2020 that from 2030, RPI will be replaced by CPIH (2020: 0.55% lower).

[2] Following the closure to future accrual during 2020, future salaries do not affect the defined benefit obligation. In 2020, this assumption (with zero increase in 2021) was made to determine the split between past-service credit arising from the closure included in the income statement and the actuarial gain or loss included in OCI.

Discount rates are determined by reference to the market yields on AA rated corporate bonds. The rate is determined by using the profile of forecast benefit payments to derive a weighted average discount rate from the yield curve.

21 Post-retirement benefits *continued*

The inflation assumption is determined by the market-implied assumption based on the yields on long-term index-linked government securities and increases in salaries are based on actual experience, allowing for promotion, of the real increase above inflation.

The mortality assumptions adopted for the UK pension schemes are derived from the SAPS S3 'All' actuarial tables, with future improvements in line with the CMI 2020 core projections updated to reflect use of an 'A' parameter of 0.25% for future improvements and long-term improvements of 1.25%. Where appropriate, these are adjusted to take account of the scheme's actual experience.

The assumption for transfers and the BPO has been updated based on actual experience and actuarial advice.

Other assumptions have been set on advice from the actuary, having regard to the latest trends in scheme experience and the assumptions used in the most recent funding valuation. The rate of increase of pensions in payment is based on the rules of the scheme, combined with the inflation assumption where the increase is capped.

Assumptions for overseas schemes are less significant and are based on advice from local actuaries. The principal assumptions are:

		2021 £m	2020 £m
Discount rate		**2.20%**	1.80%
Inflation assumption		**2.10%**	1.90%
Long-term healthcare cost trend rate		**4.75%**	4.73%
Male life expectancy from age 65:	current pensioner	**20.7 years**	20.8 years
	future pensioner currently aged 45	**22.5 years**	22.4 years

Changes in present value of defined benefit obligations

	2021			2020		
	UK schemes £m	**Overseas schemes £m**	**Total £m**	UK schemes £m	Overseas schemes £m	Total £m
At 1 January	**(8,879)**	**(2,463)**	**(11,342)**	(8,499)	(2,194)	(10,693)
Exchange differences	**–**	**49**	**49**	-	(5)	(5)
Current service cost	**(4)**	**(60)**	**(64)**	(147)	(65)	(212)
Past-service credit	**15**	**33**	**48**	308	(15)	293
Finance cost	**(137)**	**(41)**	**(178)**	(148)	(53)	(201)
Contributions by employees	**–**	**(2)**	**(2)**	(2)	(3)	(5)
Benefits paid out [1]	**768**	**101**	**869**	816	100	916
Disposal of businesses	**–**	**12**	**12**	-	-	-
Actuarial gains/(losses)	**227**	**169**	**396**	(1,629)	(225)	(1,854)
Transfers	**–**	**(2)**	**(2)**	-	(3)	(3)
Settlement	**–**	**–**	**–**	422	-	422
At 31 December	**(8,010)**	**(2,204)**	**(10,214)**	(8,879)	(2,463)	(11,342)
Funded schemes	**(8,010)**	**(863)**	**(8,873)**	(8,879)	(895)	(9,774)
Unfunded schemes	**–**	**(1,341)**	**(1,341)**	-	(1,568)	(1,568)

[1] Benefits paid out includes amounts paid to members transferring out of the scheme. This has increased in 2020 and 2021 as a result of the voluntary severance programme.

The defined benefit obligations are in respect of:						
Active plan participants [1]	**(3,451)**	**(1,193)**	**(4,644)**	(4,369)	(1,362)	(5,731)
Deferred plan participants	**(2,258)**	**(176)**	**(2,434)**	(2,750)	(197)	(2,947)
Pensioners	**(2,301)**	**(835)**	**(3,136)**	(1,760)	(904)	(2,664)
Weighted average duration of obligations (years)	**22**	**15**	**21**	23	16	22

[1] Although the UK scheme closed to future accrual on 31 December 2020, members who became deferred as a result of the closure and remain employed by the Group retain some additional benefits compared with other deferred members. The obligations for these members are shown as active plan participants.

Changes in fair value of scheme

	2021			2020		
	UK schemes £m	**Overseas schemes £m**	**Total £m**	UK schemes £m	Overseas schemes £m	Total £m
At 1 January	**9,762**	**894**	**10,656**	9,640	845	10,485
Exchange differences	**–**	**12**	**12**	–	(27)	(27)
Administrative expenses	**(6)**	**(1)**	**(7)**	(6)	(2)	(8)
Financing	**153**	**22**	**175**	174	27	201
Return on plan assets excluding financing	**(112)**	**(30)**	**(142)**	1,166	92	1,258
Contributions by employer	**99**	**63**	**162**	24	56	80
Contributions by employees	**–**	**2**	**2**	2	3	5
Benefits paid out	**(768)**	**(101)**	**(869)**	(816)	(100)	(916)
Acquisition of businesses	**–**	**–**	**–**	–	–	–
Settlement	**–**	**–**	**–**	(422)	–	(422)
At 31 December	**9,128**	**861**	**9,989**	9,762	894	10,656
Total return on scheme assets	**41**	**(8)**	**33**	1,340	119	1,459

21 Post-retirement benefits *continued*

Fair value of scheme assets at 31 December

	2021			2020		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Sovereign debt	5,756	217	5,973	7,220	276	7,496
Corporate debt instruments	3,122	389	3,511	2,878	521	3,399
Interest rate swaps	54	–	54	52	–	52
Inflation swaps	106	–	106	(55)	–	(55)
Cash and similar instruments [1]	(811)	144	(667)	(1,156)	10	(1,146)
Liability driven investment ('LDI') portfolio [2]	8,227	750	8,977	8,939	807	9,746
Listed equities	–	101	101	–	71	71
Unlisted equities	54	–	54	64	–	64
Synthetic equities [3]	43	4	47	41	12	53
Sovereign debt	–	4	4	–	–	–
Corporate debt instruments	802	–	802	709	–	709
Cash	–	2	2	–	6	6
Other	2	–	2	9	(2)	7
At 31 December	9,128	861	9,989	9,762	894	10,656

1 Cash and similar instruments include repurchase agreements on UK Government bonds amounting to £(1,087)m (2020: £(1,539)m). The latest maturity date for these short-term borrowings is September 2023.

2 A portfolio of gilt and swap contracts, backed by investment-grade credit instruments and LIBOR-generating assets, that is designed to hedge the majority of the interest rate and inflation risks associated with the schemes' obligations.

3 Portfolios of swap contracts designed to provide investment returns in line with global equity markets. The maximum exposure (notional value and accrued returns) on the portfolios was £550m (2020: £727m).

The investment strategy for the UK scheme is controlled by the Trustee in consultation with the Group. The scheme assets do not directly include any of the Group's own financial instruments, nor any property occupied by, or other assets used by, the Group. At 31 December 2021, there was no indirect holding of the Group's financial instruments (2020: none).

Future 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 set out on page 105. 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.

Sensitivities

The calculations of the defined benefit obligations are sensitive to the assumptions set out on pages 105 and 106. The following table summarises how the estimated impact of a change in a significant assumption would affect the UK defined benefit obligation at 31 December 2021, while holding all other assumptions constant. This sensitivity analysis may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

For the most significant funded schemes, the investment strategies hedge the risks from interest rates and inflation measured on a proxy solvency basis.

For the UK scheme, the interest rate and inflation hedging is currently based on UK Government bond yields without any adjustment for any credit spread. The sensitivity analysis set out below have been determined based on a method that estimates the impact on the defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

21 Post-retirement benefits *continued*

		2021 £m	2020 £m
Reduction in the discount rate of 0.25% [1]	Obligation	**(460)**	(530)
	Plan assets (LDI portfolio)	**484**	602
Increase in inflation of 0.25% [1]	Obligation	**(210)**	(290)
	Plan assets (LDI portfolio)	**147**	267
Increase of 1% in transfer value assumption	Obligations	**(55)**	(67)
Increase of 5% of transfers instead of BPO	Obligations	**(30)**	(45)
One year increase in life expectancy	Obligations	**(365)**	(455)

1 The differences between the sensitivities on obligations and plan assets arise largely due to differences in the methods used to value the obligations for accounting purposes and the adopted proxy solvency basis.

22 Share Capital

	Equity	
	Ordinary shares of 20p each Millions	**Nominal value £m**
Issued and fully paid		
At 1 January 2020 and 31 December 2020	1,691	338
At 31 December 2021	**1,691**	**338**

Rights, preferences and restrictions

Each member has one vote for each ordinary share held. Holders of ordinary shares are entitled to receive the Company's Annual Report; attend and speak at general meetings of the Company; to appoint one or more proxies or, if they are corporations, corporate representatives; and to exercise voting rights. The ordinary shares are not listed.

23 Share-based payments

Effect of share-based payment transactions on the Company's results

	2021 £m	2020 £m
Total expense recognised for equity-settled share-based payment transactions	**28**	27
Total credit recognised for cash-settled share-based payment transactions	**–**	(2)
Share-based payments recognised in the consolidated income statement	**28**	25
Liability for cash-settled share-based payment transactions	**–**	–

A description of the share-based payment plans is included below.

Movements in the Group's share-based payment plans during the year

	ShareSave		LTIP	DSBP
	Number Millions	**Weighted average exercise price Pence [1]**	**Number Millions**	**Number Millions**
Outstanding at 1 January 2020	31.9	693	13.2	0.4
Granted	–	–	23.0	0.3
Forfeited	(15.9)	237	(2.8)	–
Exercised	–	–	(3.2)	(0.2)
Changes as a result of the rights issue [1]	33.6	239	37.4	0.9
Outstanding at 1 January 2021	49.6	239	67.6	1.4
Granted	**56.8**	**97**	**33.8**	**0.1**
Forfeited	**(31.3)**	**239**	**(14.3)**	**(0.1)**
Exercised	**–**	**–**	**(10.1)**	**(0.6)**
Outstanding at 31 December 2021	**75.1**	**132**	**77.0**	**0.8**
Exercisable at 31 December 2021	**–**	**–**	**–**	**–**
Exercisable at 31 December 2020	–	–	–	–

1 The weighted average exercise price for share movements during 2020 was re-based following the rights issue in November 2020.

The weighted average share price at the date share options were exercised was 119p (2020: 203p). The closing price at 31 December 2021 was 123p (2020: 111p).

The weighted average remaining contractual life for the share options as at 31 December 2021 was two years (2020: two years).

23 Share-based payments *continued*

Fair values of share-based payment plans

The weighted average fair values per share of equity-settled share-based payment plans granted during the year, estimated at the date of grant are as follows:

	2021	2020
LTIP	**104p**	388p
LTIP (ELT & Board)	**n/a**	354p
ShareSave – three-year grant	**67p**	n/a
DSBP	**105p**	490p

LTIP

The fair value of shares awarded are calculated using a pricing model that takes account of the non-entitlement to dividends (or equivalent) during the vesting period and the market-based performance condition based on expectations about volatility and the correlation of share price returns in the group of FTSE 100 companies and which incorporates into the valuation the interdependency between share price performance and TSR vesting. This adjustment decreases the fair value of the award relative to the share price at the date of grant.

ShareSave

The fair value of the options granted is calculated using a pricing model that assumes that participants will exercise their options at the beginning of the six-month window if the share price is greater than the exercise price. Otherwise, it assumes that options are held until the expiration of their contractual term. This results in an expected life that falls somewhere between the start and end of the exercise window.

Deferred Share Bonus Plan (DSBP)

The fair value of shares awarded under DSBP is calculated as the share price on the date of the award, excluding expected dividends (or equivalent).

24 Contingent liabilities

Contingent liabilities in respect of customer financing commitments are described in note 20.

In January 2017, after full cooperation, the Group 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 Group 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.

25 Related party transactions

	2021 £m	2020 £m
Sale of goods and services to joint ventures and associates [1]	**3,548**	3,760
Purchases of goods and services from joint ventures and associates [1]	**(3,677)**	(4,288)
Lease payments to joint ventures and associates	**(225)**	(226)
Guarantees of joint arrangements' and associates' borrowings	**1**	3
Guarantees of non-wholly owned subsidiaries' borrowings	**3**	3
Dividends received from joint ventures and associates	**27**	60
Other income received from joint ventures and associates	**3**	3

[1] Sales of goods and services to joint ventures and associates and purchases of goods and services from joint ventures and associates are included at the average exchange rate, consistent with the statutory income statement.

Included in sales of goods and services to joint ventures and associates are sales of spare engines amounting to £157m (2020: £102m). Profit recognised in the period on such sales amounted to £47m (2020: £91m), including profit on current year sales and recognition of profit deferred on similar sales in previous years. Cash receipts relating to the sale of spare engines amounted to £181m (2020: £193m).

The aggregated balances with joint ventures and the parent company are shown in notes 13 and 18. Transactions with Group pension schemes are shown in note 21.

In the course of normal operations, related party transactions entered into by the Group have been contracted on an arms-length basis.

25 Related party transactions *continued*

Key management personnel are deemed to be the Directors and historically, members of the ET (both described on page 39). Remuneration for key management personnel is shown below:

	2021 £m	2020 £m
Salaries and short-term benefits	19	7
Post-retirement schemes	–	–
Share-based payments	4	1
	23	8

More detailed information regarding the Directors' remuneration, shareholdings, pension entitlements, share options and other long-term incentive plans is shown in the Directors' Remuneration Report of Rolls-Royce Holdings plc on pages 81 to 100. The charge for share-based payments above is based on when the award is charged to the income statement in accordance with IFRS 2 *Share-Based Payments*, rather than when the shares vest, which is the basis used in the Directors' Remuneration Report.

26 Disposals, assets 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
Disposal costs paid	(9)	(3)	(12)
Cash inflow per cash flow statement	39	68	107
Intangible assets	–	16	16
Property, plant and equipment	–	6	6
Right-of-use assets	–	7	7
Deferred tax assets	3	5	8
Inventory	81	17	98
Trade receivables and other assets	70	41	111
Current tax (liabilities)/assets	(1)	3	2
Lease liabilities	(3)	(5)	(8)
Trade payables and other liabilities	(99)	(74)	(173)
Provisions for liabilities and charges	(17)	(4)	(21)
Post-retirement scheme deficits	–	(12)	(12)
Less: Net assets disposed	34	–	34
Profit on disposal before disposal costs and continuing obligations	14	71	85
Cumulative current translation (loss)/gain	(1)	2	1
Disposal costs	(20)	(3)	(23)
(Loss)/profit before taxation	(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 2021-2023). 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.

26 Disposals, assets held for sale and discontinued operations *continued*

Reconciliation of profit/(loss) to 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.

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 £m	**Other [1] £m**	**Total £m**	**Bergen Engines £m**	**Civil Nuclear £m**	**Total £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.

26 Disposals, assets held for sale and discontinued operations *continued*

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 [1]	**365**	333
Operating loss [1]	**(4)**	(109)
Profit/(loss) before taxation [1]	**2**	(111)
Income tax credit	**34**	43
Profit/(loss) for the year from discontinued operations on ordinary activities	**36**	(68)
Costs of 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 gain/(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 internal margin, related consolidation adjustments and amortisation of intangible assets arising on previous acquisition (prior to classification to held for sale). In the year to 31 December 2020, results included a number of write-offs and programme impairments.

[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.

27 Derivation of summary funds flow statement

	2021		2020		
	£m	£m	£m	£m	Source
Underlying operating profit/(loss) (see note 2)		414		(2,008)	
Operating loss from discontinued operations (see note 26)		(43)		(109)	
Amortisation and impairment of intangible assets	290		902		Cash flow statement (CFS)
Depreciation and impairment of property, plant and equipment	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 11
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 and amortisation and impairment		971		1,048	
Additions of intangible assets		(185)		(316)	CFS less exceptional restructuring (see below)
Purchases of property, plant and equipment		(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	(468)		(2,295)		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 LTSAs (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		(574)		(1,634)	
Movement on provisions		(136)		(195)	CFS adjusted for the impact of exceptional programme charges and anticipated recoveries, exceptional restructuring and FX contracts held
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		(48)	Principally disposals of non-current assets, joint venture trading and the effect of share-based payments
Trading cash flow		(1,164)		(4,111)	
Trading cash flow from continuing operations		(1,211)		(4,198)	
Contributions to defined benefit schemes (in excess of)/less than underlying operating profit charge		(92)		160	CFS
Tax		(185)		(231)	CFS
Free cash flow		(1,441)		(4,182)	
Free cash flow from continuing operations		(1,484)		(4,252)	

27 Derivation of summary funds flow statement *continued*

	2021		2020		
	£m	£m	£m	£m	Source
Free cash flow		**(1,441)**		(4,182)	
Net cash flow from changes in borrowings and lease liabilities	**666**		1,630		CFS excluding repayment of debt acquired. See below.
(Decrease)/increase in short-term investments	**(8)**		6		CFS
Movement in net funds from cash flows		**658**		1,636	
Exclude: Capital element of lease repayments	**374**		284		CFS
Movement in net funds from cash flows (excluding lease liabilities)		**1,032**		1,920	
Movement on balances with parent company		**(4)**		1,887	CFS
Dividend to NCI		**(1)**		(1)	CFS
Acquisition of businesses	**–**		(130)		CFS including repayment of debt acquired
Disposal of businesses	**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)	
Exceptional restructuring costs		**(231)**		(323)	£168m related to severance costs and £63m capital expenditure (2020: £268m and £55m respectively)
Payments of financial penalties		**(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)**		(986)	

The comparative information for the year ended 31 December 2020 has been re-presented to be on a comparable basis with the presentation adopted for the year ended 31 December 2021. There is no change to trading or group free cash flow. In summary foreign exchange transactions have been re-presented 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 amounts spent or received on activity related to business acquisitions, financial penalties paid, exceptional restructuring costs, foreign exchange changes on net funds and movements on balances with parent company. 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.

COMPANY BALANCE SHEET
As at 31 December 2021

	Notes	2021 £m	2020 £m
ASSETS			
Intangible assets	3	**2,148**	2,159
Property, plant and equipment	4	**1,782**	1,896
Right-of-use assets	5	**163**	160
Investments - subsidiary undertakings	6	**1,442**	2,040
- joint ventures and associates	6	**8**	73
- other	6	**34**	16
Loan receivable from subsidiary undertaking	6	**1,866**	1,857
Other financial assets	11	**347**	643
Deferred tax assets	16	**1,562**	1,077
Post-retirement schemes surpluses	17	**1,118**	883
Non-current assets		**10,470**	10,804
Inventories	7	**1,729**	1,690
Trade receivables and other assets	8	**6,693**	7,102
Contract assets	9	**1,081**	879
Taxation recoverable		**2**	2
Other financial assets	11	**97**	98
Cash and cash equivalents	10	**2,047**	2,812
Assets held for sale		**730**	–
Current assets		**12,379**	12,583
TOTAL ASSETS		**22,849**	23,387
LIABILITIES			
Borrowings and lease liabilities	12	**(34)**	(1,016)
Other financial liabilities	11	**(662)**	(586)
Trade payables and other liabilities	14	**(9,385)**	(10,682)
Contract liabilities	9	**(2,289)**	(2,580)
Current tax liabilities		**(4)**	(7)
Provisions for liabilities and charges	15	**(204)**	(506)
Current liabilities		**(12,578)**	(15,377)
Borrowings and lease liabilities	12	**(6,183)**	(4,386)
Other financial liabilities	11	**(2,729)**	(2,990)
Trade payables and other liabilities	14	**(1,479)**	(1,637)
Contract liabilities	9	**(4,939)**	(4,381)
Deferred tax liabilities	16	**(391)**	(309)
Provisions for liabilities and charges	15	**(961)**	(906)
Non-current liabilities		**(16,682)**	(14,609)
TOTAL LIABILITIES		**(29,260)**	(29,986)
NET LIABILITIES		**(6,411)**	(6,599)
EQUITY			
Called-up shared capital	18	**338**	338
Share premium		**631**	631
Merger reserve		**650**	650
Other reserves		**186**	158
Accumulated losses		**(8,216)**	(8,376)
TOTAL EQUITY		**(6,411)**	(6,599)
Profit/(loss) for the year		**54**	(2,184)

The Company has elected to take the exemption under section 408 of the Companies Act 2006 from presenting the parent company income statement.

The Financial Statements on pages 115 to 148 were approved by the Board on 24 February 2022 and signed on its behalf by:

Warren East
Chief Executive

Panos Kakoullis
Chief Financial Officer

Company's registered number: 01003142

COMPANY STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2021

	Notes	2021 £m	2020 £m
Profit/(loss) for the year		**54**	(2,184)
Other comprehensive income (OCI)			
Actuarial movement in post-retirement schemes	17	**115**	(463)
Revaluation to fair value of other investments		**(2)**	–
Related tax movements		**(40)**	162
Items that will not be reclassified to profit or loss		**73**	(301)
Movement on fair values credited/(debited) to cash flow hedge reserve		**3**	(43)
Reclassified to income statement from cash flow hedge reserve		**35**	25
Related tax movements		**(10)**	3
Items that will be reclassified to profit or loss		**28**	(15)
Total other comprehensive income/(expense)		**101**	(316)
Total comprehensive income/(expense) for the year		**155**	(2,500)

COMPANY STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2021

		Non-distributable reserves					
	Note	Share capital £m	Share premium £m	Merger reserves £m	Other reserves [1] £m	Accumulated losses £m	Total equity £m
At 1 January 2020		338	631	650	173	(5,919)	(4,127)
Loss for the year		–	–	–	–	(2,184)	(2,184)
Movement on post-retirement schemes	17	–	–	–	–	(463)	(463)
Reclassified to income statement from cash flow hedge reserve		–	–	–	25	–	25
Movement on fair values debited to cash flow hedge reserve		–	–	–	(43)	–	(43)
Related tax movements		–	–	–	3	162	165
Total comprehensive expense for the year		–	–	–	(15)	(2,485)	(2,500)
Share-based payments – direct to equity [2]		–	–	–	–	23	23
Related tax movements		–	–	–	–	5	5
Other changes in equity in the year		–	–	–	–	28	28
At 31 December 2020		338	631	650	158	(8,376)	(6,599)
At 1 January 2021		**338**	**631**	**650**	**158**	**(8,376)**	**(6,599)**
Profit for the year		**–**	**–**	**–**	**–**	**54**	**54**
Movement on post-retirement schemes	17	**–**	**–**	**–**	**–**	**115**	**115**
Reclassified to income statement from cash flow hedge reserve		**–**	**–**	**–**	**35**	**–**	**35**
Movement on fair values credited to cash flow hedge reserve		**–**	**–**	**–**	**3**	**–**	**3**
Revaluation to fair value of other investments	6	**–**	**–**	**–**	**–**	**(2)**	**(2)**
Related tax movements		**–**	**–**	**–**	**(10)**	**(40)**	**(50)**
Total comprehensive income for the year		**–**	**–**	**–**	**28**	**127**	**155**
Share-based payments – direct to equity [2]	19	**–**	**–**	**–**	**–**	**16**	**16**
Related tax movements		**–**	**–**	**–**	**–**	**17**	**17**
Other changes in equity in the year		**–**	**–**	**–**	**–**	**33**	**33**
At 31 December 2021		**338**	**631**	**650**	**186**	**(8,216)**	**(6,411)**

[1] Other reserves includes a translational reserve of £4m (2020: £4m).

[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 own shares and cash received on share-based schemes vesting.

NOTES TO THE COMPANY FINANCIAL STATEMENTS

1 Accounting policies

The Company

Rolls-Royce plc (the 'Company') is a public company limited by shares incorporated under the Companies Act 2006 and domiciled in England in the United Kingdom. The Company's registered number is 01003142 and its registered address is at Kings Place, 90 York Way, London, N1 9FX, United Kingdom.

Basis of preparation

The financial statements of the Company have been prepared in accordance with Financial Reporting Standards 101 *Reduced Disclosure Framework* on the historical cost basis. In accordance with the Companies Act 2006, the Company Financial Statements have been prepared in accordance with UK-adopted international accounting standards. Where necessary, amendments are made in these Financial Statements in order to comply with Companies Act 2006 and to take advantage of the exemptions available under FRS 101 in respect of the following disclosures:

- a cash flow statement and related notes;
- IFRS 2 *Share Based Payments* in respect of group settled share-based payments;
- disclosures in respect of transactions with wholly owned subsidiaries;
- IFRS 7 *Financial Instruments: Disclosures;*
- comparative period reconciliations for share capital, investments, property, plant and equipment and intangible assets; and
- disclosures in respect of the compensation of key management personnel.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Financial Statements.

The Financial Statements are presented in sterling, which is the Company's functional currency.

As permitted by Section 408 of the Companies Act 2006, a separate income statement for the Company has not been included in these Financial Statements. As permitted by the audit fee disclosure regulations, the disclosure of non-audit fees information is not included in respect of the Company.

These financial statements have been prepared on a going concern basis. Further details are given in the Going Concern Statement on pages 41 to 42. After due consideration, the Directors consider that the Company 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.

In preparing the Company Financial Statements, the Directors have considered the potential impact of climate change, please see pages 52 to 54 for further details.

Revision to IFRS applicable in 2021

In April 2021, the IFRS IC 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 Company in respect of the current period or prior periods.

IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*

Amendments to IAS 37 for Onerous Contracts – Cost of Fulfilling a Contract is effective from 1 January 2022. It clarifies the meaning of 'costs to fulfil a contract', explaining that the direct cost of fulfilling a contract comprises the incremental costs of fulfilling that contract (for example, direct labour and materials) and an allocation of other costs that relate directly to fulfilling contracts (for example, an allocation of the depreciation charge for an item of PPE used to fulfil the contract). The Company has assessed the impact of this amendment on its contracts (of which the most significant onerous contracts are in Civil Aerospace) and the inclusion of additional allocated costs is expected to increase the total contract loss provision by £0.7bn to £0.8bn. As required by the transition arrangements in relation to the amendment, there will be a corresponding impact to 2022 opening retained earnings.

IFRS 17 *Insurance Contracts*

IFRS 17 is effective from 1 January 2023. The new Standard establishes the principles for the recognition, measurement, presentation and disclosure of insurance contracts within the scope of the Standard. The objective of IFRS 17 is to ensure that an entity provides relevant information that faithfully represents those contracts.

There are no amendments to accounting standards, no new standards or IFRIC interpretations that are effective for the year ended 31 December 2021 that have a material impact on the Company's financial statements.

Significant accounting policies

The Company's significant accounting policies are set out below. These accounting policies have been applied consistently to all periods presented in these Financial Statements.

1 Accounting policies *continued*

Revenue recognition

Revenue recognised comprises sales to the Company's customers after discounts and amounts payable to customers. Revenue excludes value added taxes. The transaction price of a contract is typically clearly stated within the contract, although the absolute amount may be dependent on escalation indices and long-term contracts require the key estimates highlighted below. Refund liabilities where sales are made with a right of return are not typical in the Company's contracts. Where they do exist, and consideration has been received, a portion, based on an assessment of the expected refund liability is recognised within other payables. The Company has elected to use the practical expedient not to adjust revenue for the effect of financing components, where the expectation is that the period between the transfer of goods and services to customers and the receipt of payment is less than a year.

Sales of standard OE, spare parts and time and material overhaul services are generally recognised on transfer of control to the customer. This is generally on delivery to the customer unless the specific contractual terms indicate a different point. The Directors consider whether there is a need to constrain the amount of revenue to be recognised on delivery based on the contractual position and any relevant facts, however, this is not typically required.

Sales of OE and services that are specifically designed for the contract (most significantly in the Defence business) are recognised by reference to the progress towards completion of the performance obligation, using the cost method described in the key judgements, provided the outcome of contracts can be assessed with reasonable certainty.

The Company generates a significant portion of its revenue and profit on aftermarket arrangements arising from the installed OE fleet. As a consequence, in particular in the Civil Aerospace large engine business, the Company will often agree contractual prices for OE deliveries that take into account the anticipated aftermarket arrangements. Sometimes this may result in losses being incurred on OE. As described in the key judgements, these contracts are not combined. The consideration in the OE contract is therefore allocated to OE performance obligations and the consideration in the aftermarket contract to aftermarket performance obligations. Key areas of accounting policy are:

- Future variable revenue from long-term contracts is constrained to take account of the risk of non-recovery of resulting contract balances from reduced utilisation e.g. engine flying hours (EFHs), based on historical forecasting experience and the risk of aircraft being parked by the customer.
- A significant amount of revenue and cost related to long-term contract accounting is denominated in currencies other than that of the Company, most significantly US dollar transactions in sterling and euro denominated undertakings. These are translated at estimated long-term exchange rates.
- A contract asset/liability is recognised where payment is received in arrears/advance of the costs incurred to meet performance obligations.
- Where material, wastage costs (see key judgements below) are recorded as an exceptional expense.

If the expected costs to fulfil a contract exceed the expected revenue, a contract loss provision is recognised in the excess costs.

The Company pays participations fees to airframe manufacturers, its customers for OE, on certain programmes. Amounts paid are initially treated as contract assets and subsequently charged as a reduction to the OE revenue when the engines are transferred to the customer.

The Company has elected to use the practical expedient to expense as incurred any incremental costs of obtaining or fulfilling a contract if the amortisation period of an asset created would have been one year or less. Where costs to obtain a contract are recognised in the balance sheet, they are amortised over the performance of the related contract (nine years).

Key judgement – Whether Civil Aerospace OE and aftermarket contracts should be combined

In the Civil Aerospace business, OE contracts for the sale of engines to be installed on new aircraft are with the airframers, while the contracts to provide spare engines and aftermarket goods and services are with the aircraft operators, although there may be interdependencies between them. IFRS 15 *Revenue from Contracts with Customers* includes guidance on the combination of contracts, in particular that contracts with unrelated parties should not be combined. Notwithstanding the interdependencies, the Directors consider that the engine contract should be considered separately from the aftermarket contract. In making this judgement, they also took account of industry practice.

Key judgement – How performance on long-term aftermarket contracts should be measured

The Company generates a significant proportion of its revenue from aftermarket arrangements. These aftermarket contracts, such as TotalCare and CorporateCare agreements in the Civil Aerospace business, cover a range of services and generally have contractual terms covering more than one year. Under these contracts, the Company's primary obligation is to maintain customers' engines in an operational condition and this is achieved by undertaking various activities, such as maintenance, repair and overhaul, and engine monitoring over the period of the contract. Revenue on these contracts is recognised over the period of the contract and the basis for measuring progress is a matter of judgement. The Directors consider that the stage of completion of the contract is best measured by using the actual costs incurred to date compared to the estimated costs to complete the performance obligations, as this reflects the extent of completion of the activities to be performed.

Key judgement – Whether any costs should be treated as wastage

In rare circumstances, the Company may incur costs of wasted material, labour or other resources to fulfil a contract where the level of cost was not reflected in the contract price. The identification of such costs is a matter of judgement and would only be expected to arise where there has been a series of abnormal events which give rise to a significant level of cost of a nature that the Company would not expect to incur and hence is not reflected in the contract price. Examples include technical issues that: require resolution to meet regulatory requirements; have a wide-ranging impact across a product type; and cause significant operational disruption to customers. Similarly, in these rare circumstances, significant disruption costs to support customers resulting from the actual performance of a delivered good or service may be treated as a wastage cost. Provision is made for any costs identified as wastage when the obligation to incur them arises – see note 15.

1 Accounting policies *continued*

Revenue recognition (continued)

Key estimate – Whether sales of spare engines to joint ventures are at fair value
The Civil Aerospace business maintains a pool of spare engines to support its customers. Some of these engines are sold to, and held by, joint venture companies. The assessment of whether the sales price reflects fair value is a key judgement. The Company considers that based upon the terms and conditions of the sales, and by comparison to the sales price of spare engines to other third parties, the sales made to joint ventures reflect the fair value of the goods sold. See note 21 for value of sales to joint ventures during the year.

Key judgement – When revenue should be recognised in relation to spare engine sales to related entities
The Company recognises revenue when a performance obligation is settled. A judgement has been made on whether the Company relinquishes control of these spare engines at the point of legal sale, as the customer, in some instances, is contracted to provide some future spare engine capacity to the Company to support its installed fleet. The customer in the engine sale has responsibility for generating revenue from the engines and exposure to periods of non-utilisation; exposure to risk of damage or loss, risk from residual value movements, and will determine if and when profits will be made from disposal. The spare engines that will be made available to the Company in the future do not consist of identified assets and the provider retains a substantive right to substitute the asset through the Company's period of use. It is therefore appropriate to recognise revenue from the sale of the spare engines at the point that title transfers.

Key estimate – Estimates of future revenues and costs on long-term contractual arrangements
The Company has long-term contracts that fall into different accounting periods and which can extend over significant periods (generally up to 25 years) the most significant of these are long-term service arrangements (LTSAs) in the Civil Aerospace business with an average remaining term of around 10 years. The estimated revenue and costs are inherently imprecise and significant estimates are required to assess: EFH's, time-on-wing and other operating parameters; the pattern of future maintenance activity and the costs to be incurred; lifecycle cost improvements over the term of the contracts; and escalation of revenue and costs. The impact of climate change on EFH and costs is also considered when making these estimates. Industry and customer data on expected levels of utilisation is included in the forecasts used. Across the length of the current Civil LTSA contracts, allowance has been made for around a 1% projected cost increase resulting from carbon pricing and commodity price changes.

The sensitivities below demonstrate how changes in assumptions (including as a result of climate change) could impact the level of revenue recognised were assumptions to change. The Directors believe that the estimates used to prepare the financial statements take account of the inherent uncertainties, constraining the expected level of revenue as appropriate.

The ongoing COVID-19 pandemic continues to result in uncertainty over the recovery of demand across the civil aviation industry. Further details have been included in the going concern disclosure on pages 41 to 42. Estimates of future LTSA revenue within Civil Aerospace are based upon future EFH forecasts, influenced by assumptions over the recovery of the civil aviation industry. Finally, many of the revenues and costs are denominated in currencies other than that of the relevant Group undertaking. These are translated at an estimated long-term exchange rate, based on historical trends and economic forecasts.

During the year, changes to the estimate in relation to long-term contracts resulted in catch-up adjustments to revenue of £(80)m.

Based upon the stage of completion of all widebody LTSA contracts within Civil Aerospace as at 31 December 2021, the following reasonably possible changes in estimates would result in catch-up adjustments being recognised in the period in which the estimates change (at underlying rates):

- 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 a catch-up adjustment of around £6m to £9m. This would be expected to be seen as a change in revenue with a modest proportion relating to onerous contracts which would be a reported 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 lead to a revenue catch-up adjustment in the next 12 months of around £25m.

Risk and revenue sharing arrangements (RRSAs)
Cash entry fees received are initially deferred on the balance sheet within trade payables and other liabilities. They are then recognised as a reduction in cost of sales incurred. Individual programme amounts are allocated pro rata to the estimated number of units to be produced. Amortisation commences as each unit is delivered and then charged on a 15-year straight-line basis.

The payments to suppliers of their shares of the programme cash flows for their production components are charged to cost of sales when OE sales are recognised or as LTSA costs are incurred.

The Company also has arrangements with third parties who invest in a programme and receive a return based on its performance, but do not undertake development work or supply parts. Such arrangements (financial RRSAs) are financial instruments as defined by IAS 32 *Financial Instruments: Presentation* and are accounted for using the amortised cost method.

Key judgement – Determination of the nature of entry fees received
RRSAs with key suppliers (workshare partners) are a feature of the civil aviation industry business. Under these contractual arrangements, the key commercial objectives are that: (i) during the development phase the workshare partner shares in the risks of developing an engine by performing its own development work, providing development parts and paying a non-refundable cash entry fee; and (ii) during the production phase it supplies components in return for a share of the programme cash flows as a 'life of type' supplier (i.e. as long as the engine remains in service).

The non-refundable cash entry fee is judged by the Company to be a contribution towards the development expenditure incurred. These receipts are deferred on the balance sheet and recognised against the cost of sales over the estimated number of units to be delivered on a similar basis to the amortisation of development costs – see 122.

1 Accounting policies *continued*

Royalty payments
Where a government or similar body has previously acquired an interest in the intellectual property of a programme, royalty payments are matched to the related sales.

Government grants
Government grants received are varied in nature and are recognised in the income statement so as to match them with the related expenses that they are intended to compensate. Where grants are received in advance of the related expenses, they are initially recognised as liabilities within trade payables and other liabilities and released to match the related expenditure. Non-monetary grants are recognised at fair value.

Interest
Interest receivable/payable is credited/charged to the income statement using the effective interest method. Where borrowing costs are attributable to the acquisition, construction or production of a qualifying asset, such costs are capitalised as part of the specific asset.

Taxation
The tax charge/credit on the profit or loss for the year comprises current and deferred tax:

- Current tax is the expected tax payable for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.
- Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of the assets and liabilities for financial reporting purposes and the amounts used for tax purposes and is calculated using the enacted or substantively enacted rates that are expected to apply when the asset or liability is settled. The deferred tax liability on the pension scheme surplus is recognised consistently with the basis for recognising the rate applicable to refunds from a trust.

Tax is charged or credited in the income statement or OCI as appropriate, except when it relates to items credited or charged directly to equity in which case the tax is also dealt with in equity.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and joint arrangements, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax is not recognised on taxable temporary differences arising on the initial recognition of goodwill or for temporary differences arising from the initial recognition of assets and liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised. Further details on the Company's tax position can be found on pages 136 to 137.

Key estimate – Estimates necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets
Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary difference can be utilised. Further details are included in note 16.

In addition to taking into account a severe but plausible downside forecast (see below), the climate related estimates and assumptions (set out on pages 52 to 54) 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 Company 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 our most likely estimates. Under this scenario some older products would see a reduction in profits, but additional opportunities exist for our newer products such as the Trent XWB.

While carbon and commodity pricing may put pressure on costs, decarbonisation and new supplier and customer contracts offer the opportunity to receive value for more efficient and sustainable products.

The ongoing COVID-19 pandemic continues to result in uncertainty over the recovery of demand across the civil aviation industry. As explained in note 16, a 25% probability of there being a severe but plausible downside forecast in relation to the civil aviation industry has been taken into account in the assessment of the recovery of the UK deferred tax assets.

The estimates take account of the inherent uncertainties constraining the expected level of profit as appropriate. Changes in these estimates will affect future profits and therefore the recoverability of deferred tax assets. The following sensitivities have been modelled to demonstrate the impact of changes in assumptions on the recoverability of deferred tax assets.

- A 5% change in margin in the main Civil Aerospace widebody programmes.
- A 5% change in the number of shop visits driven by EFHs.
- Assumed future cost increases from climate change expected to flow through to customers at 100%, are restricted to 90% pass through.

All of these could be driven by a number of factors including the impact of climate change as explained on pages 52 to 54.

A 5% change in margin or shop visits would result in an increase/decrease in the deferred tax asset of around £150m.

If only 90% of assumed future cost increases are passed on to customers, this would result in a decrease in the deferred tax asset of around £40m, and if carbon prices were to double, this would be £110m.

1 Accounting policies *continued*

Foreign currency translation

Transactions denominated in currencies other than the function currency of the Company are translated into the functional currency at the average monthly exchange rate when the transaction occurs. Monetary assets and liabilities denominated in foreign currencies are translated into sterling at the rate prevailing at the year end. Exchange differences arising on foreign exchange transactions and the retranslation of assets and liabilities into sterling at the rate prevailing at the year-end are included in profit/(loss) before taxation.

The trading results of the Company are translated into sterling at the average exchange rates for the year. The assets and liabilities of overseas undertakings, including fair value adjustments arising on acquisition, are translated at the exchange rates prevailing at the year end. Exchange adjustments arising from the retranslation of the opening net assets, and from the translation of the profits or losses at average rates, are recognised in OCI.

Financial instruments – Classification and measurement

Financial assets primarily include trade receivables, cash and cash equivalents, short-term investments, derivatives (foreign exchange, commodity and interest rate contracts), and other investments.

- Trade receivables are classified either as held to collect and measured at amortised cost or as held to collect and sell and measured at fair value, with movements in fair value recognised through other comprehensive income (FVOCI).
- Cash and cash equivalents (consisting of balances with banks and other financial institutions, money-market funds and short-term deposits) and short-term investments are subject to low market risk. Cash balances and short-term investments are measured at fair value through profit and loss (FVPL). Money market funds and short-term deposits are measured at FVOCI.
- Derivatives and other investments are measured at FVPL. During the year, the Company elected to measure its listed investment at FVOCI.

Financial liabilities primarily consist of trade payables, borrowings, derivatives, and financial RRSAs.

- Derivatives are classified and measured at FVPL.
- All other financial liabilities are classified and measured at amortised cost.

Financial instruments – Impairment of financial assets and contract assets

IFRS 9 *Financial Instruments* sets out the basis for the accounting of expected credit losses (ECLs) on financial assets and contract assets resulting from transactions within the scope of IFRS 15 *Revenue from Contracts with Customers*. The Company has adopted the simplified approach to provide for ECLs, measuring the loss allowance at a probability weighted amount that considers reasonable and supportable information about past events, current conditions and forecasts of future economic conditions of customers. These are incorporated in the simplified model adopted by using credit ratings which are publicly available or through internal risk assessments derived using customer's latest available financial information. The ECLs are updated at each reporting date to reflect changes in credit risk since initial recognition. ECLs are calculated for all financial assets in scope, regardless of whether or not they are overdue.

Financial instruments – Hedge accounting

Forward foreign exchange contracts and commodity swaps (derivative financial instruments) are held to manage the cash flow exposures of forecast transactions denominated in foreign currencies or in commodities respectively. Derivative financial instruments qualify for hedge accounting when: (i) there is a formal designation and documentation of the hedging relationship and the Company's risk management objective and strategy for undertaking the hedge at the inception of the hedge; and (ii) the hedge is expected to be effective.

In general, the Company has chosen to not apply hedge accounting in respect of these exposures.

The Company economically hedges the fair value and cash flow exposures of its borrowings. Cross-currency interest rate swaps are held to manage the FX or cash flow exposures of borrowings denominated in foreign currencies and are designated as fair value hedges or cash flow hedges as appropriate. Interest rate swaps are held to manage the interest rate exposures of fixed and floating rate borrowings and may be designated as fair value hedges, cash flow hedges or FVPL as appropriate.

Changes in the fair values of derivatives that are designated as fair value hedges are recognised directly in the income statement. The fair value changes of effective cash flow hedge derivatives are recognised in OCI and subsequently recycled in the income statement in the same period or periods during which the hedged cash flows affect profit or loss. Any ineffectiveness in the hedging relationships is included in the income statement.

Hedge accounting is discontinued when the hedging instrument expires or is sold, terminated, exercised, or no longer qualifies for hedge accounting. At that time, for cash flow hedges and, if the forecast transaction remains probable, any cumulative gain or loss on the hedging instrument recognised in SOCIE is retained until the forecast transaction occurs. If a hedged transaction is no longer expected to occur, the net cumulative gain or loss is recycled to the income statement.

Financial instruments – Replacement of benchmark interest rates

In August 2020, Phase 2 of IBOR reform was published, effective from 1 January 2021. The amendments address issues that arise from the implementation of the reforms including the replacement of one benchmark with an alternative one. The Phase 2 amendments provide additional temporary reliefs from applying specific IAS 39 *Financial Instruments: Recognition and Measurement* and IFRS 9 *Financial Instruments* hedge accounting requirements to hedging relationships directly affected by IBOR reform.

During 2021, the Company carried out 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. The Company'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 Company has made amendments to the contractual terms of IBOR-referenced floating-rate debt, GBP and EUR LIBOR-referenced agreements with Group undertakings, swaps and foreign exchange contracts, and updated the relevant hedge designations.

1 Accounting policies *continued*

Financial instruments – Replacement of benchmark interest rates (continued)
A number of the Company'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.

Certification costs
Costs incurred in respect of meeting regulatory certification requirements for new Civil Aerospace aero-engine/aircraft combinations including payments made to airframe manufacturers for this are recognised as intangible assets to the extent that they can be recovered out of future sales. They are charged to the income statement over the programme life. Individual programme assets are allocated pro rata to the estimated number of units to be produced. Amortisation commences as each unit is delivered and then charged on a 15-year straight-line basis.

Research and development
Expenditure incurred on research and development is distinguished as relating either to a research phase or to a development phase. All research phase expenditure is charged to the income statement. Development expenditure is recognised as an internally generated intangible asset (programme asset) only if it meets strict criteria, relating in particular to technical feasibility and generation of future economic benefits.

More specifically, development costs are capitalised from the point at which the following conditions have been met:

- the technical feasibility of completing the programme and the intention and ability (availability of technical, financial and other resources) to complete the programme asset and use or sell it;
- the probability that future economic benefits will flow from the programme asset; and
- the ability to measure reliably the expenditure attributable to the programme asset during its development.

Capitalisation continues until the point at which the programme asset meets its originally contracted technical specification (defined internally as the point at which the asset is capable of operating in the manner intended by management).

Subsequent expenditure is capitalised where it enhances the functionality of the programme asset and demonstrably generates an enhanced economic benefit to the Company. All other subsequent expenditure on programme assets is expensed as incurred.

Individual programme assets are allocated pro rata to the estimated number of units to be produced. Amortisation commences as each unit is delivered and then charged on a 15-year straight-line basis. In accordance with IAS 38 *Intangible Assets*, the basis on which programme assets are amortised is assessed annually.

Key judgement – Determination of the point in time where costs incurred on an internal programme development meet the criteria for capitalisation or ceasing capitalisation
The Company incurs significant research and development expenditure in respect of various development programmes. Determining when capitalisation should commence and cease is a critical judgement, as is the determination of when subsequent expenditure on the programme assets should be capitalised. During the year, £83m of development expenditure was capitalised.

Within the Company there is an established Product Introduction and Lifecycle Management process (PILM), in place. Within this process, the technical feasibility, the commercial viability and financial assessment of the programme is assessed at certain milestones. When these are met, development expenditure is capitalised. Prior to this, expenditure is expensed as incurred.

The Company continues to invest in new technologies as a result of the Company's decarbonisation commitments. As these are new technologies, there is a higher level of uncertainty over potential outcomes and therefore, this could impact the level of expenditure that is capitalised or recognised in the income statement in future years.

Subsequent expenditure after entry into service, which enhances the performance of the engine and the economic benefits to the Company is capitalised. This expenditure is referred to as enhanced performance and is governed by the PILM process referred to above. All other development costs are expensed as incurred.

Key judgement – Determination of the basis for amortising capitalised development costs
The economic benefits of the development costs are primarily those cash inflows arising from LTSAs, which are expected to be relatively consistent for each engine within a programme. Amortisation of development costs is recognised on a straight-line basis over the period of operation of the engine by its initial operator.

Software and other intangibles
Software that is not specific to an item of property, plant and equipment is classified as an intangible asset, recognised at its acquisition cost and amortised on a straight-line basis over its useful economic life, up to a maximum of five years. The cost of internally developed software includes direct labour and an appropriate proportion of overheads.

Property, plant and equipment
Property, plant and equipment are stated at acquisition cost less accumulated depreciation and any provision for impairment in value. The cost of self-constructed assets includes the cost of materials, direct labour and an appropriate proportion of overheads and, where appropriate, interest.

Depreciation is provided on a straight-line basis to write off the cost, less the estimated residual value, of property, plant and equipment over their estimated useful lives. No depreciation is recorded on assets in the course of construction. Estimated useful lives are reassessed annually and are as follows:

- Land and buildings, as advised by the Company's professional advisors:
  - freehold buildings – five to 40 years (average 28 years);
  - no depreciation is provided on freehold land.
- Plant and equipment – three to 25 years (average 11 years).
- Aircraft and engines – five to 20 years (average 11 years).

1 Accounting policies *continued*

Leases

Assets and liabilities arising from a lease are initially measured on a present value basis.

Lease liabilities include the net present value of the following lease payments:

- fixed payments less any lease incentive receivable;
- variable lease payments that are based on an index or a rate;
- amounts expected to be payable by the Company under residual value guarantees;
- the exercise price of a purchase option if the Company is reasonably certain to exercise that option; and
- payments of penalties for termination of the lease, if the lease term reflects the Company exercising that option.

Where leases commence after the initial IFRS 16 *Leases* transition date, the lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the Company's incremental borrowing rate is used, being the rate that the Company would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions. Where appropriate, lease liabilities are revalued at each reporting date using the spot exchange rate.

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

- the amount of the initial measurement of lease liability or a revaluation of the liability;
- any lease payments made at or before the commencement date less any lease incentives received;
- any initial direct costs; and
- restoration costs.

Each right-of-use asset is depreciated over the shorter of its useful economic life and the lease term on a straight-line basis unless the lease is expected to transfer ownership of the underlying asset to the Company, in which case the asset is depreciated to the end of the useful life of the asset.

Short-term leases are leases with a lease term of 12 months or less. Payments associated with short-term leases and low value leases are recognised on a straight-line basis as an expense in the income statement.

Key judgement – Determining the lease term
In determining the lease term, the Company considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated). Certain land and building leases have renewal options with renewal dates for the most significant property leases in 2025 and 2028. The Company reviews its judgements on lease terms annually, including the operational significance of the site, especially where utilised for manufacturing activities.

Impairment of non-current assets

Impairment of non-current assets is considered in accordance with IAS 36 *Impairment of Assets*. Where the asset does not generate cash flows that are independent of other assets, impairment is considered for the cash-generating unit (CGU) to which the asset belongs. Intangible assets not yet available for use are tested for impairment annually. Other intangible assets (including programme-related intangible assets), property, plant and equipment and investments are assessed for any indications of impairment annually. If any indication of impairment is identified, an impairment test is performed to estimate the recoverable amount.

If the recoverable amount of an asset (or CGU) is estimated to be below the carrying value, the carrying value is reduced to the recoverable amount and the impairment loss recognised as an expense. The recoverable amount is the higher of value in use or fair value less costs of disposal, if this is readily available. The value in use is the present value of future cash flows using a pre-tax discount rate that reflects the time value of money and the risk specific to the asset. The relevant local statutory tax rates have been applied in calculating post-tax to pre-tax discount rates.

Key estimate – Estimates of cash flow forecasts to support the carrying value of intangible assets (including programme-related intangible assets)
The assessment of the recoverable value of development expenditure and certification costs recognised as intangible assets (31 December 2021: £1,731m, 2020: £1,715m) is dependent on estimates of cash flows generated by the relevant programme, the discount rate used to calculate a present value and assumptions on foreign exchange rates. The estimates of cash flows generated by a programme comprise: future market share; product performance related estimates (including EFHs and time-on-wing); pricing and cost for uncontracted business; assumptions over the recovery from COVID-19 of the industries in which we operate; and climate-related matters including assessment of future contractual terms with suppliers and customers in relation to the cost of carbon (with details set out on pages 52 and 54).

A weaker than expected recovery from the impacts of COVID-19 or a reduction in OE volumes, for example due to reduced customer demand and an increase in costs as a result of climate change, could result in a deterioration in future cash flow forecasts.

- 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 Company has considered whether an increase in costs of up to 10% would lead to an additional impairment and concluded that it would not.

Inventories

Inventories are valued on a first-in, first-out basis, at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those overheads, including depreciation of property, plant and equipment, that have been incurred in bringing the inventories to their present location and condition. Net realisable value represents the estimated selling prices less all estimated costs of completion and costs to be incurred in marketing, selling and distribution. All inventories are classified as current as it is expected that they will be used in the Company's operating cycle, regardless of whether this is expected to be within 12 months of the balance sheet date.

1 Accounting policies *continued*

Cash and cash equivalents

Cash and cash equivalents include cash at bank and in hand, investments in money-market funds and short-term deposits with a maturity of three months or less on inception. Where the Company operates pooled banking arrangements across multiple accounts, these are presented on a net basis when it has both a legal right and intention to settle the balances on a net basis.

The Company offers a supply chain financing (SCF) programme in partnership with banks to enable suppliers, including joint ventures, who are on our standard 75 day or more payment terms to receive their payment sooner. The election to utilise the programme is the sole decision of the supplier. As the Company continues to have a contractual obligation to pay its suppliers and it does not retain any ongoing involvement in the SCF, the related payables are retained on the Company's balance sheet and classified as trade payables. Further details are disclosed in note 14.

Provisions

Provisions are recognised when the Company has a present obligation as a result of a past event, and it is probable that the Company will be required to settle that obligation and are discounted to present value where the effect is material.

The principal provisions are recognised as follows:

– Trent 1000 in-service issues when wastage costs are identified as described on page 134;
– contract losses based on an assessment of whether the direct costs to fulfil a contract are greater than the expected revenue;
– warranties and guarantees based on an assessment of future claims with reference to past experience and recognised at the earlier of when the underlying products and services are sold and when the likelihood of a future cost is identified; and
– restructuring when the Company has approved a detailed and formal restructuring plan, and the restructuring has either commenced or has created a valid expectation to those affected.

Key judgement – Whether any costs should be treated as wastage
As described further on page 134, in rare circumstances, the Company may incur costs of wasted material, labour or other resources to fulfil a contract where the level of cost was not reflected in the contract price. The identification of such costs is a matter of judgement and would only be expected to arise where there has been a series of abnormal events which give rise to a significant level of cost of a nature that the Company would not expect to incur and hence is not reflected in the contract price. Provision is made for any costs identified as wastage when the obligation to incur them arises.

Specifically for the Trent 1000 wastage costs, provision has been made as the Company is an owner of an engine Type Certificate under which it has a present obligation to develop appropriate design changes to address certain engine conditions that have been noted in issued Airworthiness Directives. The Company is also required to ensure engine operators can continue to safely operate engines within the terms of their LTSAs, and this requires the engines to be compliant with the requirements of those issued Airworthiness Directives. These requirements cannot be met without the Company incurring significant costs in the form of replacement parts and customer claims. Given the significant activities of the Company in designing and overhauling aero engines it is very experienced in making the required estimates in relation to the number and timing of shop visits, parts costs, overhaul labour costs and customer claims.

Key estimates – Estimates of the time to resolve the technical issues on the Trent 1000, including the development of the modified HPT blade and estimates of the expenditure required to settle the obligation relating to Trent 1000 claims and to settle Trent 1000 long-term contracts assessed as onerous
The Company has provisions for Trent 1000 exception costs at 31 December 2021 of £157m (2020: £321m). These represent the Directors' best estimate of the expenditure required to settle the obligations at the balance sheet date. These estimates take account of information available and different possible outcomes.

The Company considers that at 31 December 2021 the Trent 1000 contract loss provisions and the Trent 1000 exceptional cost provision are most sensitive to changes in estimates. A 12-month delay in the availability of the modified HPT blade could lead to around a £60 - 100m increase in the Trent 1000 exceptional costs provision.

Key estimates – Estimates of the future revenues and costs to fulfil onerous contracts
The Company has provisions for onerous contracts at 31 December 2021 of £899m (2020: £843m).

An increase in Civil Aerospace widebody estimates of LTSA costs of 1% over the remaining term of the contracts could lead to around a £100-120m increase in the provision for contract losses across all programmes.

Post-retirement benefits

Pensions and similar benefits are accounted for under IAS 19 *Employee Benefits*.

For defined benefit plans, obligations are measured at discounted present value whilst plan assets are recorded at fair value. Surpluses in schemes are recognised as assets only if they represent economic benefits available to the Company in the future. Surpluses in schemes are recognised as assets only if they represent economic benefits available to the Company in the future. Actuarial gains and losses are recognised immediately in OCI. The service and financing costs of such plans are recognised separately in the income statement.

– current service costs are spread systematically over the lives of employees;
– past-service costs and settlements are recognised immediately; and
– financing costs are recognised in the periods in which they arise.

In 2018 and 2020, following clarification provided by the UK High Court judgements on the Lloyds Banking Group on 26 October 2018 and 23 November 2020, the Company recognised the estimated impact of the obligation to equalise defined benefit pensions and transfer values respectively for men and women as a past-service cost – see note 17.

Payments to defined contribution schemes are charged as an expense as they fall due.

1 Accounting policies *continued*

Post-retirement benefits (continued)

Key estimate – Estimates of the assumptions for valuing the defined benefit obligation
The Company's defined benefit pension schemes and similar arrangements are assessed annually in accordance with IAS 19 *Employee Benefits*. The valuations, which are based on assumptions determined with independent actuarial advice, resulted in a net surplus of £1,118m before deferred taxation being recognised on the balance sheet at 31 December 2021 (2020: surplus of £883m). The size of the net surplus/deficit is sensitive to the actuarial assumptions, which include the discount rate, price inflation, pension and salary increases, longevity and, in the UK, 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. Following consultation, the UK scheme closed to future accrual on 31 December 2020 and following conclusion on the final protections agreed in the year to 31 December 2021, the Company has trued up the estimate recognised at 31 December 2020.

A reduction in the discount rate of 0.25% from 1.90% 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.

It is assumed that 50% of employed deferred and 40% of deferred (2020: 40%) of members of the RR UK Pension Fund will transfer out of the fund on retirement. The change in this assumption is a result of actual experience An increase of 5% in this assumption would increase the defined benefit obligation by £30m.

Further details and sensitivities are included in note 17.

Share-based payments
The Company provides share-based payment arrangements to certain employees, which are settled in Rolls-Royce Holdings plc shares. These are principally equity-settled arrangements and are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value is expensed on a straight-line basis over the vesting period. The amount recognised as an expense is adjusted to reflect the actual number of shares or options that will vest, except where additional shares vest as a result of the total shareholder return (TSR) performance condition in the long-term incentive plan (LTIP), where no adjustment is required as allowance for this is included in the initial fair value.

Customer financing support
In connection with the sale of its products, the Company will, on occasion, provide financing support for its customers. These arrangements fall into two categories: credit-based guarantees and asset-value guarantees. Credit-based guarantees are disclosed as commitments or contingent liabilities dependent on whether aircraft have been delivered or not. The Company considers asset-value guarantees to be non-financial liabilities and provides for amounts required. As described on page 135, the Directors consider the likelihood of crystallisation in assessing whether provision is required for any contingent liabilities.

The Company's contingent liabilities relating to financing arrangements are spread over many years and relate to a number of customers and a broad product portfolio and are reported on a discounted basis.

Investment in subsidiaries
Investments in subsidiaries are held at cost less accumulated impairment losses.

Joint arrangements
The Company accounts for joint operations by consolidating their results on a proportional basis, rather than holding them at their investment value.

Post balance sheet events
The Company 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 Company 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 6.

2 Emoluments of Directors

The total amount of remuneration paid to Directors for the year ended 31 December 2021 was £6,088,000 (2020: £2,691,000). £3,838,000 of this was attributed to the highest paid Director (2020: £889,000). A cash allowance in lieu of company contributions to a pensions scheme was also paid to three Directors (2020: two), which totalled £186,000 (2020: £364,000). No Directors exercised share options during the year (2020: none) nor received vested shares under the Long-Term Incentive Plan (2020: none).

3 Intangible assets

	Development costs £m	Certification costs £m	Software and other [3] £m	Total £m
Cost				
At 1 January 2021	**1,860**	**922**	**1,065**	**3,847**
Additions	**83**	**2**	**69**	**154**
Disposal of businesses [1]	**–**	**–**	**(1)**	**(1)**
Disposals	**–**	**(21)**	**(35)**	**(56)**
Reclassifications	**–**	**–**	**6**	**6**
At 31 December 2021	**1,943**	**903**	**1,104**	**3,950**
Accumulated amortisation and impairment				
At 1 January 2021	**654**	**413**	**621**	**1,688**
Charge for the year [2]	**50**	**19**	**92**	**161**
Impairment	**–**	**–**	**1**	**1**
Disposals	**–**	**(21)**	**(33)**	**(54)**
Reclassifications	**–**	**–**	**6**	**6**
At 31 December 2021	**704**	**411**	**687**	**1,802**
Net book value				
At 31 December 2021	**1,239**	**492**	**417**	**2,148**
At 31 December 2020	1,206	509	444	2,159

[1] As part of the footprint review and reorganisation of the Company's Civil Aerospace activities announced in 2020, all activities carried out at Rolls-Royce's Hucknall site in the UK transferred to ITP Aero in May 2021 along with certain fabrication supply chain activities. During the year to 31 December 2021, the Company transferred certain intangible assets from the Hucknall site previously held by Rolls-Royce plc to ITP Aero. The assets were transferred at net book value.

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

[3] Includes £113m (2020: £110m) of software under course of construction of which is not amortised.

At 31 December, the Company had expenditure commitments for software of £38m (2020: £25m).

The carrying amounts and the residual life of the material intangible assets for the Company are as follows:

	Residual life	Net book value 2021 £m	Net book value 2020 £m
Trent programme intangible assets [1]	7-15 years	**1,787**	1,770

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

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, 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.

The Company believe 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 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 on pages 52 and 54.

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; and
- 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.

4 Property, plant and equipment

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	In course of construction £m	Total £m
Cost or valuation					
At 1 January 2021	**844**	**2,599**	**274**	**230**	**3,947**
Additions	**3**	**123**	**18**	**68**	**212**
Disposal of businesses [1]	**(44)**	**(83)**	**–**	**(4)**	**(131)**
Reclassifications [2]	**119**	**89**	**–**	**(214)**	**(6)**
Disposals	**(27)**	**(112)**	**(8)**	**–**	**(147)**
At 31 December 2021	**895**	**2,616**	**284**	**80**	**3,875**
Accumulated depreciation					
At 1 January 2021	**285**	**1,666**	**93**	**7**	**2,051**
Charge for the year [3]	**33**	**178**	**15**	**–**	**226**
Impairment [4]	**–**	**8**	**–**	**–**	**8**
Disposal of businesses [1]	**(13)**	**(45)**	**–**	**–**	**(58)**
Reclassifications [2]	**–**	**(6)**	**–**	**–**	**(6)**
Disposals	**(23)**	**(105)**	**–**	**–**	**(128)**
At 31 December 2021	**282**	**1,696**	**108**	**7**	**2,093**
Net book value					
At 31 December 2021	**613**	**920**	**176**	**73**	**1,782**
At 31 December 2020	559	933	181	223	1,896

[1] As part of the footprint review and reorganisation of the Company's Civil Aerospace activities announced in 2020, all activities carried out at Rolls-Royce's Hucknall site in the UK transferred to ITP Aero in May 2021 along with certain fabrication supply chain activities. During the year to 31 December 2021, the Company transferred certain property, plant and equipment from the Hucknall site previously held by Rolls-Royce plc to ITP Aero. The assets were transferred at net book value.

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

[3] Depreciation is charged to cost of sales or 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 3. 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 3. As a result of this assessment, there are no individually material impairment charges or reversals in the year.

Property, plant and equipment includes:

Assets held for use in leases where the Company is the lessor:	**2021 £m**	2020 £m
Cost	**3**	3
Depreciation	**(3)**	(3)
Net book value	**–**	–

	2021 £m	2020 £m
Capital expenditure commitments	**60**	84
Cost of fully depreciated assets	**984**	883

5 Right-of-use assets

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	Total £m
Cost				
At 1 January 2021	**145**	**92**	**6**	**243**
Additions/modifications of leases	**4**	**9**	**14**	**27**
Disposal of businesses [1]	**–**	**(2)**	**–**	**(2)**
Disposals	**(2)**	**(8)**	**(3)**	**(13)**
At 31 December 2021	**147**	**91**	**17**	**255**
Accumulated depreciation and impairment				
At 1 January 2021	**42**	**36**	**5**	**83**
Charge for the year	**13**	**17**	**2**	**32**
Impairment [2]	**(3)**	**(6)**	**–**	**(9)**
Disposal of businesses [1]	**–**	**(1)**	**–**	**(1)**
Disposals	**(2)**	**(8)**	**(3)**	**(13)**
At 31 December 2021	**50**	**38**	**4**	**92**
Net book value				
At 31 December 2021	**97**	**53**	**13**	**163**
At 31 December 2020	103	56	1	160
Right-of-use assets held for use in operating leases				
Cost	**2**	**1**	**17**	**20**
Depreciation	**(1)**	**(1)**	**(4)**	**(6)**
Net book value at 31 December 2021	**1**	**–**	**13**	**14**

[1] As part of the footprint review and reorganisation of the Company's Civil Aerospace activities announced in 2020, all activities carried out at Rolls-Royce's Hucknall site in the UK transferred to ITP Aero in May 2021 along with certain fabrication supply chain activities. During the year to 31 December 2021, the Company transferred certain right-of-use assets from the Hucknall site previously held by Rolls-Royce plc to ITP Aero. The assets were transferred at net book value.

[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 3. 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 3). As a result of this assessment, an impairment reversal of £9m 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.

6 Investments

	Subsidiary undertakings [1]		Joint ventures and associates [1]			Other investments
	Shares at cost £m	Loans * £m	Shares at cost £m	Loans * £m	Total £m	
At 1 January 2021	**2,040**	**1,857**	**24**	**49**	**73**	**16**
Additions [2, 3]	**64**	**–**	**–**	**–**	**–**	**27**
Disposal	**–**	**–**	**–**	**–**	**–**	**(1)**
Repayment of loan and interest [4]	**–**	**9**	**–**	**3**	**3**	**–**
Revaluation of investments accounted for at FVOCI [5]	**–**	**–**	**–**	**–**	**–**	**(2)**
Impairment	**–**	**–**	**–**	**–**	**–**	**(5)**
Exchange differences	**–**	**–**	**–**	**–**	**–**	**(1)**
Reclassification to asset held for sale [6]	**(662)**	**–**	**(21)**	**(47)**	**(68)**	**–**
At 31 December 2021	**1,422**	**1,866**	**3**	**5**	**8**	**34**

[1] Subsidiary and joint venture undertakings and associates are listed on pages 142 to 148.

[2] On 30 April 2021, the Company agreed and paid a capital injection of £37m in subsidiary EMA. On 8 November 2021, the Company invested £27m in Rolls-Royce SMR Limited, further investment alongside other investors is expected over the next three years. The Company has uncalled share capital in Nightingale Insurance Limited, one of its subsidiaries at 31 December 2021 of £30m (2020: £30m).

[3] On 18 May 2020, the Company increased its shareholding in Reaction Engines Limited from 2% to 10.1% for £20m which was payable (and the associated shares acquired) in instalments. During the year, the Company paid the remaining instalments for the Reaction Engines investment. On 17 December 2021, the Company also acquired a 1% investment in Vertical Aerospace for consideration of £9m.

[4] The Company has an interest-bearing outstanding loan to Vinters International Limited, one of its subsidiaries. The loan is classified as a loan receivable from subsidiary undertakings within non-current assets as the loan is considered to be part of the capital funding of the subsidiary undertaking. During the year, Vinters International Limited made no repayments of the loan and interest (2020: made a part repayment of £84m). Of interest accrued during the year, £9m of the £11m (2020: £3m) has been capitalised and is shown within repayment of loan and interest for the year.

[5] The Company has elected to value the investment in Vertical Aerospace at fair value through other comprehensive income (FVOCI).

[6] On 13 September 2021, the Company signed an agreement with Equitix Investment Management Limited to dispose its 23.1% shareholding in AirTanker Holdings Ltd. The sale completed on 9 February 2022. In accordance with IFRS 5, the Company has classified £47m of the AirTanker assets as held for sale at 31 December 2021. On 27 August 2020, the Group announced its intention to sell ITP Aero and as at 30 June 2021, it was assessed that ITP Aero met the criteria to be held for sale. Consequently, in accordance with IFRS 5, the investment in subsidiary has been classified as a non-current asset held for sale. On 27 September 2021, the Company signed an agreement for the sale of ITP Aero to Bain Capital for £1.3bn and consequently, in accordance with IFRS 5, the investment in subsidiary has been classified as a non-current asset held for sale at 31 December 2021. The investment of ITP Aero has been assessed for impairment in line with the requirements of IFRS 5 and no impairment is required at 31 December 2021.

* Loan interest is added to the loan balance where it is not expected to be repaid in the short-term.

Investments in subsidiaries are recorded at cost, which is the fair value of the consideration paid.

7 Inventories

	2021 £m	2020 £m
Raw materials	**8**	29
Work in progress	**471**	398
Finished goods	**1,237**	1,246
Payments on account	**13**	17
	1,729	1,690
Inventories stated at net realisable value	**155**	238
Amount of inventory write-down	**16**	2
Reversal of inventory write-down	**18**	11

Inventories are stated after provisions for impairment of £218m (2020: £231m).

8 Trade receivables and other assets

	Current		**Non-current**		**Total**	
	2021 £m	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m
Trade receivables [1]	**1,225**	1,430	**52**	–	**1,277**	1,430
Receivables due on RRSAs	**706**	607	**67**	82	**773**	689
Amounts owed by:						
Subsidiary undertakings	**2,099**	2,893	**227**	–	**2,326**	2,893
Joint ventures [1]	**561**	413	**–**	–	**561**	413
Parent undertaking	**335**	331	**–**	–	**335**	331
Costs to obtain contracts with customers [2]	**2**	5	**3**	4	**5**	9
Prepayments	**491**	338	**374**	425	**865**	763
Other taxation and social security receivable	**141**	123	**–**	–	**141**	123
Other receivables [3]	**394**	432	**16**	19	**410**	451
	5,954	6,572	**739**	530	**6,693**	7,102

[1] In 2021, the Company has no trade receivables classified as held to collect or sell. In 2020, this amount included £483m of trade receivables held to collect or sell and £361m receivables from joint ventures and associates held to collect or sell. Non-current trade receivables of £52m (2020: nil) 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 £3m (2020: £3m) 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 Company reassessed which trade receivables are held to collect or sell. The Company's intent is to no longer utilise invoice discounting and consequently, balances are generally not classified as held to collect or sell.

All amounts owed by subsidiary undertakings (except those listed below) are unsecured, interest free, have no fixed date of repayment and are repayable on demand.

- $294m (£218m) balance receivable from Rolls-Royce Overseas Investments Limited. This incurs interest at USD LIBOR +0.5% and has a repayment date of 14 December 2024.
- €11m (£9m) receivable from Aerospace Transmission Technologies GmbH. This incurs interest at EURO LIBOR +2% and has a repayment date of 31 December 2037.

The expected credit losses on parent and group undertakings amounts to £15m (2020: £17m). The assumptions and inputs used for the estimation of the allowance takes into account the market credit ratings.

The expected credit losses for trade receivables and other assets have decreased by £11m to £142m (31 December 2020: £153m). This decrease is mainly driven by the Civil Aerospace business of £14m, of which £3m relates to specific customers and £11m relates to updates to the recoverability of other receivables.

The Company 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 assumptions and inputs used for the estimation of the expected credit losses are shown in the table below:

	2021			2020		
	Trade receivables and other financial assets £m	**Loss allowance £m**	**Average expected credit loss rate %**	Trade receivables and other financial assets £m	Loss allowance £m	Average expected credit loss rate %
Investment grade	**639**	**(6)**	**1%**	925	(9)	1%
Non-investment grade	**133**	**(2)**	**2%**	141	(7)	5%
Without credit rating	**2,388**	**(134)**	**6%**	2,081	(137)	7%
	3,160	**(142)**	**4%**	3,147	(153)	5%

8 Trade receivables and other assets *continued*

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

	2021 £m	2020 £m
At 1 January	**(153)**	(72)
Increases in loss allowance recognised in the income statement during the year	**(69)**	(71)
Loss allowance utilised	**32**	4
Releases of loss allowance previously provided	**28**	1
Other net movements	**20**	(15)
At 31 December	**(142)**	(153)

9 Contract assets and liabilities

	Current		Non-current		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
Contract assets						
Contract assets with customers	**381**	181	**532**	517	**913**	698
Participation fee contract assets	**15**	27	**153**	154	**168**	181
	396	208	**685**	671	**1,081**	879

[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 is 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 mainly consist of LTSA balances. The main driver of the increase in the Company balance is revenue recognised in Civil Aerospace in the year as performance obligations have been completed exceeding amounts received, partly reduced by £(22)m relating to performance obligations satisfied in previous years, together with FX movements.

Participation fee contract assets have reduced as balances are amortised. No impairment losses (2020: none) of contract assets have arisen during the year.

The absolute value of expected credit losses for contract assets has increased by £2m to £15m (31 December 2020: £13m).

	Current		Non-current		Total	
	2021 £m	2020 £m	2021 £m	2020 £m	2021 £m	2020 £m
Contract liabilities	**2,289**	**2,580**	**4,939**	4,381	**7,228**	6,961

During the year £1,366m (2020: £1,265m) of the opening contract liability was recognised as revenue.

Contract liabilities have increased by £267m. The main drivers of the change is as a result of increases in relation to the Civil Aerospace LTSA liabilities of £327m as revenue billed has been ahead of revenue recognised in the period, with £2m of revenue recognised relating to performance obligations satisfied in previous years. 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.

10 Cash and cash equivalents

	2021 £m	2020 £m
Cash at bank and in hand	**254**	339
Money-market funds	**33**	660
Short-term deposits	**1,760**	1,813
Cash and cash equivalents	**2,047**	2,812
Overdrafts (note 12)	**(3)**	(2)

Balances are presented on a net basis when the Company 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.

11 Other financial assets and liabilities

Details of the Company's policies on the use of financial instruments are given in the accounting policies on pages 121 and 122.

The fair values of other financial instruments held by the Company are as follows:

	Foreign exchange contracts £m	Commodity contracts £m	Interest rate contracts £m	Total Derivative financial instruments £m	Financial RRSAs £m	Other £m	Total £m
2021							
Current assets	**76**	**21**	**–**	**97**	**–**	**–**	**97**
Non-current assets	**160**	**11**	**176**	**347**	**–**	**–**	**347**
Current liabilities	**(632)**	**(4)**	**–**	**(636)**	**(13)**	**(13)**	**(662)**
Non-current liabilities	**(2,583)**	**–**	**(82)**	**(2,665)**	**(64)**	**–**	**(2,729)**
	(2,979)	**28**	**94**	**(2,857)**	**(77)**	**(13)**	**(2,947)**
2020							
Current assets	51	4	43	98	–	–	98
Non-current assets	377	9	257	643	–	–	643
Current liabilities	(532)	(17)	(11)	(560)	(10)	(16)	(586)
Non-current liabilities	(2,794)	(19)	(113)	(2,926)	(64)	–	(2,990)
	(2,898)	(23)	176	(2,745)	(74)	(16)	(2,835)

Derivative financial instruments

The Company uses various financial instruments to manage its exposure to movements in foreign exchange rates. The Company uses commodity swaps to manage its exposure to movements in the price of commodities (jet fuel and base metals). To hedge the currency risk associated with a foreign currency borrowing, the Company has currency derivatives designated as part of a fair value hedge. The Company uses interest rate swaps to manage its exposure to movements in interest rates.

Movements in the fair values of derivative financial instruments were as follows:

	Foreign exchange instruments £m	Commodity instruments £m	Hedge accounted interest rate instruments £m	Non-hedge accounted interest rate instruments £m	Total £m
At 1 January 2020	(3,050)	6	229	14	(2,801)
Movements in fair value hedges	–	–	139	–	139
Movements in cash flow hedges	–	–	(60)	–	(60)
Movements in other derivative contracts	(14)	(62)	–	(75)	(151)
Contracts settled	166	33	(75)	4	128
At 1 January 2021	**(2,898)**	**(23)**	**233**	**(57)**	**(2,745)**
Movements in fair value hedges	**–**	**–**	**(143)**	**–**	**(143)**
Movements in cash flow hedges	**–**	**–**	**(2)**	**–**	**(2)**
Movements in other derivative contracts	**(602)**	**56**	**–**	**80**	**(466)**
Contracts settled	**521**	**(5)**	**(31)**	**14**	**499**
At 31 December 2021	**(2,979)**	**28**	**57**	**37**	**(2,857)**

Where applicable, market values have been used to determine fair values. Where market values are not available, fair values have been calculated by discounting expected future cash flows at prevailing interest rates and translating at prevailing exchange rates.

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

The Company has financial liabilities arising from financial RRSAs. These financial liabilities are valued at each reporting date using the amortised cost method. This involves calculating the present value of the forecast cash flows of the arrangements using the internal rate of return at the inception of the arrangements as the discount rate.

Movements in carrying values were as follows:

	Financial RRSAs 2021 £m	**Other 2021 £m**	Financial RRSAs 2020 £m	Other 2020 £m
At 1 January	**(74)**	**(16)**	(114)	(42)
Cash paid	**4**	**3**	32	8
Additions	**–**	**–**	-	8
Changes in forecast payments	**–**	**–**	17	-
Financing charge	**(6)**	**–**	(8)	-
Exchange adjustments	**(1)**	**–**	(1)	-
Other	**–**	**–**	-	10
At 31 December	**(77)**	**(13)**	(74)	(16)

12 Borrowings and lease liabilities

	Current		Non-current		Total	
	2021 £m	2020 £m	**2021 £m**	2020 £m	2021 £m	2020 £m
Unsecured						
Overdrafts	**3**	2	**–**	–	**3**	2
Bank loans [1]	**–**	–	**1,975**	–	**1,975**	–
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
Total unsecured	**3**	982	**6,013**	4,206	**6,016**	5,188
Lease liability – Land and buildings	**15**	15	**118**	128	**133**	143
Lease liability – Aircraft and engines	**1**	1	**13**	5	**14**	6
Lease liability – Plant and equipment	**15**	18	**39**	47	**54**	65
Total lease liabilities	**31**	34	**170**	180	**201**	214
Total borrowings and lease liabilities	**34**	1,016	**6,183**	4,386	**6,217**	5,402

	Less than one year £m	**Between one and five years £m**	**After five years £m**	**Total £m**
At 31 December 2021				
Unsecured borrowings	**3**	**4,245**	**1,768**	**6,016**
Lease liabilities	**31**	**122**	**48**	**201**
	34	**4,367**	**1,816**	**6,217**
At 31 December 2020				
Unsecured borrowings	982	1,311	2,895	5,188
Lease liabilities	34	116	64	214
	1,016	1,427	2,959	5,402

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

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

2 On 17 March 2021, the Company 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 Company had undertaken to pay floating rates of GBP interest, which form a fair value hedge. On the 18 June 2021, the Company 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 Company 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 Company 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 Company 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 Company 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 Company has undertaken to pay fixed rates of GBP interest, which form a cash flow hedge.

During the year, the Company entered into a new £1,000m loan 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.

13 Leases

Leases as lessee

The net book value of lease right-of-use assets at 31 December 2021 was £163m (2020: £160m) (as per note 5), with a lease liability of £201m (2020: £214m) (as per note 12). Leases that have not yet commenced to which the Company is committed have a future liability of £26m. The financial statements include the following amounts relating to leases:

	2021 £m
Land and buildings depreciation and impairment reversals	(10)
Plant and equipment depreciation and impairment reversals	(11)
Aircraft and engines depreciation	(2)
Total depreciation and impairment charge for right-of-use assets	**(23)**

The total cash outflow for leases in 2021 was £56m (2020: £53m). Of this, £43m related to leases reflected in the lease liability, £13m to short-term leases where lease payments are expensed on a straight-line basis and nil 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.

Leases as lessor

The Company acts as lessor for engines to Civil Aerospace customers when they require engines to support their fleets. Lease agreements with the lessee provide protection over the Company's assets. Usage in excess of specified limits and damage to the engine while on lease are covered by variable lease payment structures. Lessee bankruptcy risk is managed through the Cape Town Convention on International Interests in Mobile Equipment (including a specific protocol relating to aircraft equipment), an international treaty that creates common standards for the registration of lease contracts and establishes various legal remedies for default in financing agreements, including repossession and the effect of particular states' bankruptcy laws. Engines are only leased once the Company can confirm that appropriate insurance documentation is established that covers the engine assets to pre-agreed amounts. All such contracts where the Company are lessor are operating leases. The Company also leases out a small number of properties, or parts of properties, where there is excess capacity under operating leases.

Non-cancellable future operating lease rentals receivables (undiscounted) are £1m (2020: £1m), these are predominantly due after five years.

In a limited number of circumstances, the Company sublets properties that are treated as a finance lease when the arrangement transfers substantially all the risks and rewards of ownership of the asset. At 31 December 2021, the total undiscounted lease payments receivable is £19m (2020: £22m) on annual lease income of £2m (2020: £3m). The discounted finance lease receivable at 31 December 2021 is £17m (2020: £19m). There was nil (2020: nil) finance income recognised during the year.

14 Trade payables and other liabilities

	Current		Non-current		Total	
	2021 £m	2020 £m	**2021 £m**	2020 £m	**2021 £m**	2020 £m
Trade payables	**582**	709	**–**	–	**582**	709
Payables due on RRSAs	**739**	697	**–**	–	**739**	697
Amounts owed to:						
Subsidiary undertakings	**4,810**	5,493	**–**	–	**4,810**	5,493
Joint ventures and associates	**476**	576	**–**	1	**476**	577
Customer concessions payable	**1,017**	1,534	**399**	514	**1,416**	2,048
Warranty credits	**201**	173	**161**	196	**362**	369
Accruals	**1,324**	1,205	**177**	101	**1,501**	1,306
Deferred receipts from RRSA workshare partners	**23**	16	**484**	500	**507**	516
Government grants [1]	**21**	2	**12**	20	**33**	22
Other taxation and social security	**–**	46	**–**	–	**–**	46
Other payables [2]	**192**	231	**246**	305	**438**	536
	9,385	10,682	**1,479**	1,637	**10,864**	12,319

[1] During the year £2m (2020: £6m) of government grants were recognised in the income statement.

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

All amounts due to subsidiary undertakings (except those outlined below) are unsecured, interest free and are repayable on demand.

The Company is part of the Rolls-Royce group banking arrangements and the Company's main bank accounts are subject to offset and pooling arrangements with cash balances acquired from other group entities. As a result of these arrangements the balances are presented as intercompany payables as funds are pooled by the Company on the last working day of the month with funds returned the next day. The amounts owed by the Company of £959m as at 31 December 2021 (2020: £265m) are interest bearing and repayable on demand.

14 Trade payables and other liabilities *continued*

Other intercompany payable balances outstanding as at 31 December 2021 were as follows:

- $35m (£26m) balance payable to Rolls-Royce Canada Limited (2020: US$60m (£44)). This incurs interest at the 3 month USD LIBOR rate +0.1% and is repayable on demand.
- CAD419m (£245m) balance payable to Rolls-Royce Canada Limited (2020: CAD344m (£198m)). This incurs interest at the 3 month CAD LIBOR rate +0.1% and is repayable on demand.
- £81m balance payable to Nightingale Insurance Limited (2020: £81m). This incurs interest at GBP LIBOR +0.1% and is repayable on demand.
- $139m (£103m) balance payable to Rolls-Royce North America (USA) Holdings Co (2020: US$20m (£15m)). This incurs interest at the 1 month USD LIBOR rate +0.1% and is repayable on demand.
- €633m (£532m) balance payable to Rolls-Royce Power Systems AG (2020: €375m (£337m)). This incurs interest at EURIBOR +0.1% and is repayable on demand.
- $49m (£36m) balance payable to Industria de Turbo Propulsores S.A (2020: US$55m (£40m)). This incurs interest at the 1 month USD LIBOR rate +0.1% and is repayable on demand.
- €139m (£117m) balance payable to Industria de Turbo Propulsores S.A (2020: €425m (£382m)). This incurs interest at EURIBOR +0.1% and is repayable on demand.
- €200m (£168m) balance payable to RR Deutschland Ltd & Co KG (2020: €200m (£180m)). This incurs interest at the 3 month EURIBOR rate +0.1% and is repayable on demand.

The carrying amounts of trade and other payables are considered to be the same as their fair values, due to their short-term nature.

The Company's payment terms with suppliers vary on the products and services being sourced, the competitive global markets we operate in and other commercial aspects of suppliers' relationships. Industry average payment terms vary between 90-120 days. The Company offers reduced payment terms for smaller suppliers, so that they are paid in 30 days. In line with civil aviation industry practice, the Company 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 our payment of suppliers. At 31 December 2021 suppliers had drawn £540m under the SCF scheme (31 December 2020: £582m).

15 Provisions for liabilities and charges

	At 1 January 2021 £m	Charged to income statement [1] £m	Reversed £m	Utilised £m	At 31 December 2021 £m
Trent 1000 exceptional costs	321	80	(45)	(199)	157
Contract losses	843	265	(189)	(20)	899
Warranties and guarantees	24	1	(1)	(3)	21
Customer financing	17	–	–	–	17
Restructuring	138	4	(108)	(27)	7
Tax related interest and penalties	3	–	–	(3)	–
Employer liability claims	8	–	(1)	(2)	5
Other	58	1	–	–	59
	1,412	351	(344)	(254)	1,165
Current liabilities	506				204
Non-current liabilities	906				961

[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 Company 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. In the year, the Company 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 the remaining provision reflects the single most likely outcome and is expected to be utilised over the period 2022 to 2024.

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 £265m 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 £189m 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 for contract losses 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 experiences. The provision generally covers a period of up to three years.

15 Provisions for liabilities and charges *continued*

Restructuring

In May 2020, the Company 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. During the year, £27m of the provision was utilised as part of these plans and £108m 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 Company has contingent liabilities for customer financing arrangements where they payment is not probable as described on page 125.

In connection with the sale of its products the Company will, on some occasions, provide financing support for its customers, generally in respect of civil aircraft. The Company'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 Company'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 Company'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 Company 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.

The discounted value of the total gross contingent liabilities relating to financing arrangements on all delivered aircraft less insurance arrangements and relevant provisions were:

	2021		2020	
	£m	**$m**	£m	$m
Gross commitments	**32**	**43**	38	52
Value of security [1]	**(10)**	**(13)**	(14)	(19)
Indemnities	**(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 this assumption.

Insurance

The Company's captive insurance company retains a portion of the exposures it insures on behalf of the remainder of the Company. 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. Provisions for outstanding claims are established to cover the outstanding expected liability as well as claims incurred but not yet reported.

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.

16 Deferred taxation

	2021 £m	2020 £m
At 1 January	**768**	1,073
Amount credited/(charged) to income statement	**436**	(475)
Amount (charged)/credited to statement of comprehensive income	**(50)**	165
Amount credited to equity	**17**	5
At 31 December	**1,171**	768
Deferred tax assets	**1,562**	1,077
Deferred tax liabilities	**(391)**	(309)
Deferred tax	**1,171**	768

The analysis of the deferred tax position is as follows:

	2021 £m	2020 £m
Property, plant and equipment	**131**	68
Intangible assets	**(343)**	(229)
Other temporary differences	**165**	45
Pensions and other post-retirement scheme benefits	**(391)**	(309)
Foreign exchange and commodity financial assets and liabilities	**339**	185
Losses	**1,054**	801
Advance corporation tax	**162**	163
Research and development expenditure credit withholding tax	**54**	44
	1,171	768

Unprovided deferred tax		
Other temporary differences	**14**	–
Foreign exchange and commodity financial assets and liabilities	**392**	369
Losses	**1,563**	1,181
	1,969	1,550

Gross amount of losses and other deductible temporary differences for which no deferred tax has been recognised on which there is no expiry		
Other temporary differences	**55**	–
Foreign exchange and commodity financial assets and liabilities	**1,567**	1,940
Losses	**6,251**	6,214
	7,873	8,154

Deferred tax assets of £1,562m include £1,054m (2020: £801m) relating to tax losses and £162m (2020: £163m) relating to advance corporation tax (ACT). 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 prepared by management, which are consistent with past experience and external sources on market conditions. These forecasts cover the next five years;
- the long-term forecast profit profile of certain of the major widebody engine programmes which is typically 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 Company 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 Company has not recognised any deferred tax assets in respect of 2021 UK tax losses.

16 Deferred taxation *continued*

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

The Company has also reassessed the recovery of other deferred tax assets, 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 reassess this area.

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, £257m 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.

17 Post-retirement benefits

Defined benefit schemes

The Company operates a funded UK defined benefit scheme, with the assets held in a separate trustee administered fund. Employees are entitled to retirement benefits based on either their final or career average salaries and length of service. On 31 December 2020, the scheme was closed to future accrual.

The valuation of the defined benefit scheme is based on the most recent funding valuation, where relevant, updated by the scheme actuaries to 31 December 2021.

Changes to the UK defined benefit scheme

On 20 May 2020, the Company announced its intention to reshape and resize the Company 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 Company 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 past-service credit of £67m was recognised. Following the confirmation of the scheme closure, the Company 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 past service credit which relates to the differences between the final details agreed and the obligation estimated at 31 December 2020.

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 past service credit was recognised.

Amounts recognised in OCI in respect of defined benefit schemes	**2021 £m**	2020 £m
Actuarial gains and losses arising from:		
Demographic assumptions [1]	**(101)**	(85)
Financial assumptions [2]	**416**	(1,387)
Experience adjustments [3]	**(88)**	(157)
Return on plan assets excluding financing income [2]	**(112)**	1,166
	115	(463)

[1] This reflects latest available CMI mortality projections and an update of the post-retirement mortality assumptions based on an analysis prepared for the 31 March 2020 funding valuation.

[2] These arise primarily due to changes in interest rates and inflation.

[3] This reflects updated membership data available from the 31 March 2020 funding valuation, actual experience of options selected by members leaving employment under the voluntary severance arrangements (see above) offset by lower than expected pension and deferred pension increases.

Amounts recognised in the balance sheet in respect of defined benefit schemes	**2021 £m**	2020 £m
Present value of funded obligations	**(8,010)**	(8,879)
Fair value of scheme assets	**9,128**	9,762
Net asset recognised in the balance sheet – Post retirement surplus [1]	**1,118**	883

[1] The surplus is recognised as, on an ultimate wind-up when there are no longer any remaining beneficiaries, 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.

17 Post-retirement benefits *continued*

Assumptions

Significant actuarial assumptions used at the balance sheet date were as follows:

		2021 £m	2020 £m
Discount rate		**1.90%**	1.45%
Inflation assumption (RPI) [1]		**3.60%**	3.10%
Rate of increase in salaries [2]		**n/a**	2.55%
Transfer assumption (active/deferred)		**50%/40%**	40%/40%
BPO assumption		**25.00%**	30.00%
Life expectancy from age 65:	current male pensioner	**21.8 years**	21.8 years
	future male pensioner currently aged 45	**23.2 years**	23.2 years
	current female pensioner	**23.6 years**	23.6 years
	future female pensioner currently aged 45	**25.4 years**	25.4 years

[1] This is the assumption for the Retail Price Index. The Consumer Price Index is assumed to be on average 0.55% lower, taking account of the announcement in 2020 that from 2030, RPI will be replaced by CPIH (2020: 0.55% lower).

[2] Following the closure to future accrual, future salaries do not affect the defined benefit obligation. In 2020, this assumption (with zero increase in 2021) was made to determine the split between past-service credit arising from the closure included in the income statement and the actuarial gain or loss included in OCI.

Discount rates are determined by reference to the market yields on AA rated corporate bonds. The rate is determined by using the profile of forecast benefit payments to derive a weighted average discount rate from the yield curve.

The inflation assumption is determined by the market-implied assumption based on the yields on long-term index-linked government securities and increases in salaries are based on actual experience, allowing for promotion, of the real increase above inflation.

The mortality assumptions adopted for the UK pension schemes are derived from the SAPS S3 'All' actuarial tables, with future improvements in line with the CMI 2019 core projections updated to reflect use of an 'A' parameter of 0.25% for future improvements and long-term improvements of 1.25%. Where appropriate, these are adjusted to take account of the scheme's actual experience.

The assumption for transfers and the BPO has been updated based on actual experience and actuarial advice.

Other assumptions have been set on advice from the actuary, having regard to the latest trends in scheme experience and the assumptions used in the most recent funding valuation. The rate of increase of pensions in payment is based on the rules of the scheme, combined with the inflation assumption where the increase is capped.

Changes in present value of defined benefit obligations	2021 £m	2020 £m
At 1 January	**(8,879)**	(8,499)
Current service cost	**(4)**	(147)
Past-service cost	**15**	308
Finance costs	**(137)**	(148)
Contributions by employees	**–**	(2)
Benefits paid out [1]	**768**	816
Actuarial losses	**227**	(1,629)
Settlement	**–**	422
At 31 December	**(8,010)**	(8,879)
Funded schemes	**(8,010)**	(8,879)
Unfunded schemes	**–**	–

[1] Benefits paid out includes amounts paid to members transferring out of the scheme. This has increased in 2020 and 2021 as a result of the voluntary severance programme.

The defined benefit obligations are in respect of:	2021 £m	2020 £m
Active participants [1]	**(3,451)**	(4,369)
Deferred plan participants	**(2,258)**	(2,750)
Pensioners	**(2,301)**	(1,760)
Weighted average duration of obligations (years)	**22**	23

[1] Although the UK scheme closed to future accrual on 31 December 2020, members who became deferred as a result of the closure and remain employed by the Company retain some additional benefits compared with other deferred members. The obligations for these members are shown as active plan participants.

17 Post-retirement benefits *continued*

Changes in fair value of scheme assets	2021 £m	2020 £m
At 1 January	**9,762**	9,640
Administrative expenses	**(6)**	(6)
Financing	**153**	174
Return on plan assets excluding financing	**(112)**	1,166
Contributions by employer [1]	**99**	24
Contributions by employees	**–**	2
Benefits paid out	**(768)**	(816)
Settlement	**–**	(422)
At 31 December	**9,128**	9,762
Total return on Scheme assets	**41**	1,340

1 During the year, contributions by the employer of £99m to the UK scheme were deferred payments paid during the year but related to pensionable service for the prior year.

Fair value of scheme assets	2021 £m	2020 £m
Sovereign debt	**5,756**	7,220
Corporate debt instruments	**3,122**	2,878
Interest rate swaps	**54**	52
Inflation swaps	**106**	(55)
Cash and similar instruments [1]	**(811)**	(1,156)
Liability driven investment (LDI) portfolios [2]	**8,227**	8,939
Listed equities	**–**	–
Unlisted equities	**54**	64
Synthetic equities [3]	**43**	41
Corporate debt instruments	**802**	709
Partial buy-in insurance policy	**–**	–
Other	**2**	9
At 31 December	**9,128**	9,762

1 Cash and similar instruments include repurchase agreements on UK Government bonds amounting to £(1,087)m (2020: £(1,539)m). The latest maturity date for these short-term borrowings is September 2023.

2 A portfolio of gilt and swap contracts, backed by investment grade credit instruments and LIBOR generating assets, that is designed to hedge the majority of the interest rate and inflation risks associated with the schemes' obligations.

3 Portfolios of swap contracts designed to provide investment returns in line with global equity markets. The maximum exposure (notional value and accrued returns) on the portfolios was £505m (2020: £650m).

The investment strategy is controlled by the Trustee in consultation with the Company. The scheme assets do not directly include any of the Company's own financial instruments, nor any property occupied by, or other assets used by, the Company. At 31 December 2021, there was no indirect holding of the Company's financial instruments (2020: none).

Future contributions

The Company does not expect to contribute to its defined benefit scheme in respect of 2022 (2021: £100m).

Cash funding is based on a statutory triennial funding valuation process. This process includes a negotiation between the Company and the Trustee on the actuarial assumptions used to value the liabilities (Technical Provisions); assumptions which may differ from those used for accounting set out on page 138. 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.

Sensitivities

The calculations of the defined benefit obligations are sensitive to the assumptions set out on page 138. The following table summarises how the estimated impact of a change in a significant assumption would affect the UK defined benefit obligation at 31 December 2021, while holding all other assumptions constant. This sensitivity analysis may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

The investment strategies are designed to hedge the risks from interest rates and inflation on an economic basis.

The interest rate and inflation hedging is currently based on UK Government bond yields without any adjustment for any credit spread. The sensitivity analysis set out below have been determined based on a method that estimates the impact on the defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

17 Post-retirement benefits *continued*

		2021 £m	2020 £m
Reduction in discount rate of 0.25% [1]	Obligation	**(460)**	(530)
	Plan assets (LDI portfolio)	**484**	602
Increase in inflation rate of 0.25% [1]	Obligation	**(210)**	(290)
	Plan assets (LDI portfolio)	**147**	267
Increase of 1% in transfer value assumption	Obligations	**(55)**	(67)
Increase of 5% of transfers instead of BPO	Obligations	**(30)**	(45)
One year increase in life expectancy	Obligations	**(365)**	(455)

[1] The differences between the sensitivities on obligations and plan assets arise largely due to differences in the methods used to value the obligations for accounting purposes and the adopted proxy solvency basis.

Defined contribution schemes

The Company operates a number of defined contribution schemes. The total expense recognised in the income statement was £125m (2020: £80m).

18 Share Capital

	Equity ordinary shares of 20p each Millions	Nominal value £m
Authorised		
At 1 January and 31 December 2021	**2,000**	**400**
Issued and fully paid		
At 1 January 2021 and 31 December 2021	**1,691**	**338**

Rights, preferences and restrictions

Each member has one vote for each ordinary share held. Holders of ordinary shares are entitled to receive the Company's Annual Report; attend and speak at general meetings of the Company; to appoint one or more proxies or, if they are corporations, corporate representatives; and to exercise voting rights. The ordinary shares are not listed.

19 Share-based payments

Effect of share-based payment transactions on the Company's results

	2021 £m	2020 £m
Total expense recognised for equity-settled share-based payment transactions	**16**	22

Share-based payment plans in operation during the year

During the year, the Company participated in the following share-based payment plans operated by Rolls-Royce Holdings plc:

Long-Term Incentive Plan (LTIP)

These plans involve the award of shares to participants subject to performance conditions. Vesting of the performance shares is based on the achievement of both non-market based conditions (EPS and cash flow per share) and a market based performance condition (Total Shareholder Return -TSR) over a three-year period.

ShareSave share option plan

Based on a three or five-year monthly savings contract, eligible employees are granted share options with an exercise price of up to 20% below the share price when the contract is entered into. Vesting of the options is not subject to the achievement of a performance target. The plan is HM Revenue & Customs approved.

Deferred Share Bonus Plan (DSBP)

The fair value of shares awarded under DSBP is calculated as the share price on the date of the award, excluding expected dividends (or equivalent).

The related weighted average share price at the time of exercise was 119p (2020: 203p) per share.

The closing price at 31 December 2021 was 123p (2020: 111p). The number of shares and, where relevant, the exercise prices were adjusted to reflect the impact of the rights issue of Rolls-Royce Holdings plc which completed on 12 November 2020.

The weighted average remaining contractual life for the cash settled options as at 31 December 2021 was three years (2020: two years).

19 Share-based payments *continued*

Share options outstanding at the end of the year have the following expiry dates and exercise prices:

Grant - vest	Expiry date (31 January)	Exercise price in pence per share option	ShareSave share options (m) 2021	2020
2015 – 2021	2021	212	–	3.6
2017 – 2021	2021	260	–	2.7
2017 – 2023	2023	260	**1.4**	3.5
2019 – 2023	2023	232	**2.3**	6.7
2019 - 2025	2025	232	**2.1**	5.6
2021 - 2025	2025	97	**35.9**	–
			41.7	22.1

20 Contingent liabilities

Contingent liabilities in respect of customer financing commitments are described in note 15.

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 Company for matters relating to misconduct in relation to historical matters. The Company is responding appropriately. Action may be taken by further authorities against the Company or individuals. In addition, the Company 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 Company 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 Company has, in the normal course of business, entered into arrangements in respect of export finance, performance bonds, countertrade obligations and minor miscellaneous items. Various Company 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 Company is no longer fully insured against known and potential claims from employees who worked for certain of the Company's UK based businesses for a period prior to the acquisition of those businesses by the Company. 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 Company

Where the Company enters into financial guarantee contracts to guarantee the indebtedness of other companies within its Group, the Company considers these to be insurance arrangements, and accounts for them as such. In this respect, the Company treats the guarantee contract as a contingent liability until such time as it becomes probable that the Company will be required to make a payment under the guarantee. At 31 December 2021, these guarantees amounted to £940m (2020: £1,354m). At 31 December 2021, there were Company guarantees in respect of joint ventures' lending amounting to £1m (2020: £3m).

The Company participates in a Cash Pooling Arrangement. Under the Pooling Arrangement the Company benefits from more favourable interest rates than would be available outside of the Pooling Arrangement as well as more streamlined treasury functions. As part of the Pooling Arrangement, the Company cross-guarantees the borrowings of other pooling participants. At 31 December 2021, these guarantees amounted to £4m (2020: £4m).

21 Related party transactions

	2021 £m	2020 £m
Sale of goods and services to joint ventures and associates	**3,432**	3,479
Purchases of goods from joint ventures and associates	**(3,359)**	(4,059)
Guarantees of joint arrangements' and associates' borrowings	**1**	3
Guarantees of non-wholly owned subsidiaries' borrowings	**3**	3

The Company is a wholly owned subsidiary of its ultimate parent Rolls-Royce Holdings plc, and is included within the consolidated results of Rolls-Royce Holdings plc and therefore has taken advantage of the exemption in FRS 101 not to disclose related party transactions with its parent company and other wholly owned group companies. The aggregated balances with joint ventures are shown in notes 8 and 14.

22 Parent and ultimate parent company

The direct parent of the Company is Rolls-Royce Group Limited and the ultimate holding company is Rolls-Royce Holdings plc, incorporated in Great Britain. The Financial Statements for Rolls-Royce Holdings plc may be obtained from the Company Secretary, Rolls-Royce Holdings plc, Kings Place, 90 York Way, London, N1 9FX, United Kingdom.

Subsidiaries

As at 31 December 2021, the companies listed below and on the following pages are indirectly held by Rolls-Royce plc except those companies indicated which are directly held by Rolls-Royce plc. The financial year end of each company is 31 December unless otherwise indicated.

Company name	Address	Class of shares	% of class held
Aeromaritime America, Inc.	M&H Agent Services, Inc., 1850 North Central Avenue, Suite 2100, Phoenix, Arizona 85004, United States	Common	100
Aeromaritime Mediterranean Limited	7 Industrial Estate, Hal Far, Birzebbuga, BBG 3000, Malta	Ordinary	100
Aerospace Transmission Technologies GmbH*,[1]	Adelheidstrasse 40, D-88046, Friedrichshafen, Germany	Capital Stock	50
Amalgamated Power Engineering Limited [2]	London [3]	Deferred Ordinary	100 100
Bristol Siddeley Engines Limited *,[2]	London [3]	Ordinary	100
Brown Brothers & Company Limited [2]	Taxiway, Hillend Industrial Estate, Dalgety Bay, Dunfermline, Fife, KY11 9JT, Scotland	Ordinary	100
C.A. Parsons & Company Limited [2]	London [3]	Ordinary	100
Derby Specialist Fabrications Limited [2]	London [3]	Ordinary	100
Europea Microfusioni Aerospaziali S.p.A. *	Zona Industriale AS1, 83040 Morra de Sanctis, Avellino, Italy	Ordinary	100
Heaton Power Limited [2]	London [3]	Ordinary	100
Industria de Tuberías Aeronáuticas México S.A. de C.V.	Acceso IV, No.6B, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A	100
Industria de Tuberías Aeronáuticas S.A.U.	Pabellón Industrial, Torrelarrgoiti, Parcela 5H, Naves 7 a 10, Zamudia, Vizcaya, Spain	Ordinary	100
Industria de Turbo Propulsores S.A.U. *	Parque Technológico Edificio 300, 48170 Zamudio, Vizcaya, Spain	Ordinary	100
ITP Aero UK Limited	The Whittle Estate, Cambridge Road, Whetstone, Leicester, LE8 6LH, England	Ordinary	100
ITP Engines UK Limited	The Whittle Estate, Cambridge Road, Whetstone, Leicester, LE8 6LH, England	Ordinary	100
ITP Externals India Private Ltd	Plot 60/A, IDA Gandhi Nagar, Hyderabad, 500037, India	Ordinary	100
ITP Externals S.L.U.	Pabellón Industrial, Polígono Ugaldeguren I, PIIIA, Pab 1–2 Zamudio, Vizcaya, Spain	Ordinary	100
ITP Ingeniería y Fabricación S.A. de C.V.	Acceso IV, No.6D, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A Class B	100 100
ITP México Fabricación S.A. de C.V.	Acceso IV, No.6, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A	100
ITP México S.A. de C.V.	Acceso IV, No.6, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Fixed capital B Variable capital B	100 100
ITP Next Generation Turbines S.L.U. *	Parque Technológico Edificio 300, 48170 Zamudio, Vizcaya, Spain	Ordinary	100
John Thompson Cochran Limited [2]	Taxiway, Hillend Industrial Estate, Dalgety Bay, Dunfermline, Fife, KY11 9JT, Scotland	6% Cumulative Preference Ordinary	100 100
Karl Maybach-Hilfe GmbH	Maybachplatz 1, 88045, Friedrichshafen, Germany	Capital Stock	100
Kinolt FZE [4]	Warehouse Number FZLIU10BD09, Liu 10, BD09 Jafza South Jebel Ali Free Zone, PO Box 263346, Dubai, United Arab Emirates	Ordinary	100
Kinolt Immo SA	Rue de l'Avenir 61, 4460, Grace-Hollogne, Belgium	Ordinary	100
Kinolt Immobilien SA	Rue de l'Avenir 61, 4460, Grace-Hollogne, Belgium	Ordinary	100
Kinolt LLC [4]	Electrozavodskaya str, 33, bld.5, floor 4, room VII, office 12, Moscow, 107076, Russia	Ordinary	100

* Directly held by the Company

1 Though the interest held is 50%, the Company controls the entity (see note 1 to the Consolidated Financial Statements) and, as a result, consolidates the entity and records a non-controlling interest.

2 Dormant entity.

3 Kings Place, 90 York Way, London, N1 9FX, England.

4 Entity in liquidation.

5 Though the interest held is 49%, the Company controls the entity (see note 1 to the Consolidated Financial Statements) and, as a result, consolidates the entity and records a non-controlling interest.

6 Reporting year end is 31 March.

7 Moor Lane, Derby, Derbyshire, DE24 8BJ, England.

8 Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19809, United States.

9 Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ended 31 December 2021. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.

10 Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ending 31 March 2022. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.

11 The entity is not included in the consolidation as the Company does not have a beneficial interest in the net assets of the entity.

12 The entity is accounted for as a joint operation (see note 1 to the Consolidated Financial Statements).

Subsidiaries *continued*

Company name	Address	Class of shares	% of class held
Kinolt Trading and Contracting LLC [5]	REGUS Service Office, Office No. 1034, Shoumoukh Tower, 10th Floor, Tower B, C-Ring Road, Al Sadd, PO Box 207207, Doha, Qatar	Ordinary	49
Kinolt Sistemas de UPS Limitada	Alameda dos Maracatins 780-2502, Indianopolis 04089-001, Sao Paulo, Brazil	Ordinary	100
Kinolt Sistemas de UPS SpA	Bucarest No 17 Oficina, No 33, Previdencia, Santiago, Chile	Ordinary	100
Kinolt UK Limited	101/102 Cirencester Business Park, Love Lane, Cirencester, GL7 1XD, United Kingdom	Ordinary	100
LLC Rolls-Royce Solutions Rus	Shabolovka Street 2, 119049, Moscow, Russian Federation	Ordinary	100
Manse Opus Management Company Limited [6]	Third Floor Queensberry House, 3 Old Burlington Street, London, United Kingdom, W1S 3AE	Limited by guarantee	33
MTU India Private Limited [6]	6th Floor, RMZ Galleria, S/Y No. 144 Bengaluru, Bangalore, Kamataka 560,064, India	Ordinary	100
MTU Polska Sp. z o.o.	Ul. Lekka 3., Lokal U4. Raum, PLZ: 01-910, Ort: Warszawa, Poland	Ordinary	100
NEI International Combustion Limited [2]	London [3]	Ordinary	100
NEI Mining Equipment Limited [2]	London [3]	Ordinary	100
NEI Nuclear Systems Limited [2]	London [3]	Ordinary	100
NEI Parsons Limited [2]	London [3]	Ordinary	100
NEI Peebles Limited [2]	London [3]	Ordinary	100
NEI Power Projects Limited [2]	London [3]	Ordinary	100
Nightingale Insurance Limited	PO Box 33, Dorey Court, Admiral Park, St Peter Port, GY1 4AT, Guernsey	Ordinary	100
No-Break Power Limited [2]	Unit 29 Birches Industrial Estate, East Grinstead, England, RH19 1XZ	Ordinary	100
Power Jets (Research and Development) Limited [2]	The Whittle Estate, Cambridge Road, Whetstone, Leicester, LE8 6LH, England	Ordinary	100
Powerfield Limited [2]	Derby [7]	Ordinary	100
Precision Casting Bilbao S.A.U.	Calle El Barracón 1, Baracaldo, Vizcaya, 48910, Spain	Ordinary	100
PT Rolls-Royce	Secure Building Blok B, Jl. Raya Protokol Halim, Perdanakusuma, Jakarta, 13610, Indonesia	Ordinary	100
PT Rolls Royce Solutions Indonesia	Secure Building Blok B, Jl. Raya Protokol Halim, Perdanakusuma, Jakarta, 13610, Indonesia	Ordinary	100
Rolls-Royce (Ireland) Unlimited Company [2]	Ulster International Finance, 1st Floor IFSC House, IFSC, Dublin 1, Ireland	Ordinary	100
Rolls-Royce (Thailand) Limited	4, 4.5 Level 12, Suite 1299, Rajdamri Road, Pathumwan, Bangkok, 10330, Thailand	Ordinary	100
Rolls-Royce Aero Engine Services Limited [*,2]	London [3]	Ordinary	100
Rolls-Royce Australia Pty Limited	Level 1, 60 Martin Place, Sydney NSW 2000, Australia	Ordinary	100
Rolls-Royce Australia Services Pty Limited	Level 1, 60 Martin Place, Sydney NSW 2000, Australia	Ordinary	100
Rolls-Royce Brasil Limitada *	Rua Jose Versolato, No. 111, Torre B, Sala 2502, Centro, São Bernando do Campo, Sao Paulo, CEP 09750-730, Brazil	Quotas	100
Rolls-Royce Canada Limited	9500 Côte de Liesse, Lachine, Québec H8T 1A2, Canada	Common Stock	100
Rolls-Royce Chile SpA	Alcantra 200 office 601, Piso 6, C.O, 7550159 Las Condes, Santiago, Chile	Ordinary	100
Rolls-Royce China Holding Limited *	305 Indigo Building 1, 20 Jiuxianqiao Road, Beijing, 100016, China	Registered Capital	100
Rolls-Royce Commercial Aero Engines Limited [*,2]	London [3]	Ordinary	100
Rolls-Royce Control Systems Holdings Co [2]	Wilmington [8]	Common Stock	100
Rolls-Royce Controls and Data Services Limited [*,2]	London [3]	Ordinary	100
Rolls-Royce Controls and Data Services (NZ) Limited	c/o Deloitte, 80 Queen Street, Auckland Central, Auckland 1010, New Zealand	Ordinary	100
Rolls-Royce Controls and Data Services (UK) Limited *	Derby [7]	Ordinary	100
Rolls-Royce Corporation	Wilmington [8]	Common Stock	100
Rolls-Royce Crosspointe LLC	Wilmington [8]	Partnership (no equity)	100

Subsidiaries *continued*

Company name	Address	Class of shares	% of class held
Rolls-Royce Defense Products and Solutions, Inc.	Wilmington [8]	Common Stock	100
Rolls-Royce Defense Services, Inc.	Wilmington [8]	Common Stock	100
Rolls-Royce Deutschland Ltd & Co KG	Amtsgericht Potsdam, Blankenfelde-Mahlow, Germany	Ordinary	100
Rolls-Royce Electrical Norway AS *	Jarleveien 8A, 7041, Trondheim 500, Norway	Ordinary	100
Rolls-Royce Energy Angola, Limitada [2]	Rua Rei Katyavala, Edificio Rei Katyavala, Entrada B, Piso 8, Luanda, Angola	Quota	100
Rolls-Royce Energy Systems Inc. [2]	Wilmington [8]	Common Stock	100
Rolls-Royce Engine Services Holdings Co.	Wilmington [8]	Common Stock	100
Rolls-Royce Engine Services Limitada Inc. [4]	Bldg. 06 Berthaphil Compound, Jose Abad Santos Avenue, Clark Special Economic Zone, Clark, Pampanga, Philippines	Capital Stock	100
Rolls-Royce Erste Beteiligungs GmbH *	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Capital Stock	100
Rolls-Royce Finance Company Limited [2]	London [3]	Deferred Ordinary	100
Rolls-Royce Finance Holdings Co.	Wilmington [8]	Common Stock	100
Rolls-Royce Fuel Cell Systems Limited *,[9]	Derby [7]	Ordinary	100
Rolls-Royce General Partner (Ireland) Limited *	29 Earlshot Terrace, Dublin 2, Ireland	Ordinary	100
Rolls-Royce General Partner Limited *,[2]	London [3]	Ordinary	100
Rolls-Royce High Temperature Composites, Inc.	Corporation Service Company, 2710 Gateway Oaks Drive, Suite 150N, Sacramento, California 95833, United States	Ordinary	100
Rolls-Royce Holdings Canada Inc. *	9500 Côte de Liesse, Lachine, Québec H8T 1A2, Canada	Common C	100
Rolls-Royce Hungary Kft *	Gizella U. 51–57, 1143 Budapest, Hungary	Cash shares	100
Rolls-Royce India Limited [2,6,10]	Derby [8]	Ordinary	100
Rolls-Royce India Private Limited [6]	Birla Tower West, 2nd Floor 25, Barakhamba Road, New Delhi, 110001, India	Equity	100
Rolls-Royce Industrial & Marine Power Limited [2]	London [3]	Ordinary	100
Rolls-Royce Industrial Power (India) Limited [2,6]	Derby [7]	Ordinary	100
Rolls-Royce Industrial Power Engineering (Overseas Projects) Limited	Derby [7]	Ordinary	100
Rolls-Royce Industries Limited *,[9]	Derby [7]	Ordinary	100
Rolls-Royce International Limited *	Derby [7]	Ordinary	100
Rolls-Royce Japan Co., Limited	31st Floor, Kasumigaseki Building, 3-2-5 Kasumigaseki, Chiyoda-Ku, Tokyo, 100-6031, Japan	Ordinary	100
Rolls-Royce Leasing Limited *	Derby [7]	Ordinary	100
Rolls-Royce Malaysia Sdn. Bhd.	C-2-3A TTDI Plaza, Jalan Wan Kadir 3, Taman Tun Dr Ismail, 6000 Kuala Lumpur, Malaysia	Ordinary	100
Rolls-Royce Marine North America, Inc.	Wilmington [8]	Common Stock	100
Rolls-Royce Military Aero Engines Limited *,[2,6,10]	London [3]	Ordinary	100
Rolls-Royce New Zealand Limited	c/o Deloitte, 80 Queen Street, Auckland Central, Auckland 1010, New Zealand	Ordinary	100
Rolls-Royce North America (USA) Holdings Co.	Wilmington [8]	Common Stock	100
Rolls-Royce North America Holdings, Inc.	Wilmington [8]	Common Stock	100
Rolls-Royce North America Ventures, Inc.	Wilmington [8]	Common Stock	100
Rolls-Royce North America, Inc.	Wilmington [8]	Common Stock	100

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1 Though the interest held is 50%, the Company controls the entity (see note 1 to the Consolidated Financial Statements) and, as a result, consolidates the entity and records a non-controlling interest.
2 Dormant entity.
3 Kings Place, 90 York Way, London, N1 9FX, England.
4 Entity in liquidation.
5 Though the interest held is 49%, the Company controls the entity (see note 1 to the Consolidated Financial Statements) and, as a result, consolidates the entity and records a non-controlling interest.
6 Reporting year end is 31 March.
7 Moor Lane, Derby, Derbyshire, DE24 8BJ, England.
8 Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19809, United States.
9 Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ended 31 December 2021. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.
10 Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ending 31 March 2022. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.
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12 The entity is accounted for as a joint operation (see note 1 to the Consolidated Financial Statements).

Subsidiaries *continued*

Company name	Address	Class of shares	% of class held
Rolls-Royce North American Technologies, Inc.	Wilmington [8]	Common Stock	100
Rolls-Royce Oman LLC	Bait Al Reem, Business Office #131, Building No 81, Way No 3409, Block No 234, Al Thaqafa Street, Al Khuwair, PO Box 20, Postal Code 103, Oman	Ordinary	100
Rolls-Royce Operations (India) Private Limited [2, 6]	Birla Tower West, 2nd Floor, 25 Barakhamba Road, New Delhi,	Ordinary	100
Rolls-Royce Overseas Holdings Limited *	Derby [7]	Ordinary Ordinary A	100 100
Rolls-Royce Overseas Investments Limited	Derby [7]	Ordinary	100
Rolls-Royce Placements Limited	London [3]	Ordinary	100
Rolls-Royce Power Engineering plc *	Derby [7]	Ordinary	100
Rolls-Royce Power Systems AG	Maybachplatz 1, 88045, Friedrichshafen, Germany	Ordinary	100
Rolls-Royce Retirement Savings Trust Limited *[2,6]	Derby [7]	Ordinary	100
Rolls-Royce Saudi Arabia Limited	PO Box 88545, Riyadh, 11672, Saudi Arabia	Cash shares	100
Rolls-Royce Singapore Pte. Limited	6 Shenton Way, #33-00 OUE, Downtown Singapore 068809, Singapore	Ordinary	100
Rolls-Royce SMR Limited *	Derby [7]	Ordinary	91.2
Rolls-Royce Solutions (Suzhou) Co. Ltd	9 Long Yun Road, Suzhou Industrial Park, Suzhou 215024, Jiang Su, China	Ordinary	100
Rolls-Royce Solutions Africa (Pty) Limited	36 Marconi Street, Montague Gardens, Cape Town, 7441, South Africa	Capital Stock	100
Rolls-Royce Solutions America Inc.	Wilmington [8]	Ordinary	100
Rolls-Royce Solutions Asia Pte. Limited	10 Tukang Innovation Drive, Singapore 618302	Ordinary	100
Rolls-Royce Solutions Augsburg GmbH	Dasinger Strasse 11, 86165, Augsburg, Germany	Capital Stock	100
Rolls-Royce Solutions Benelux B.V	Merwedestraat 86, 3313 CS, Dordrecht, Netherlands	Oridnary	100
Rolls-Royce Solutions Berlin GmbH	Villa Rathenau, Wilhelminenhofstrasse 75, 12459 Berlin, Germany	Common Seed Preferred Series A Preferred	47.7 100 100
Rolls-Royce Solutions Brasil Limitada	Via Anhanguera, KM 29203, 05276-000 Sao Paulo – SP, Brazil	Ordinary	100
Rolls-Royce Solutions Enerji Deniz Ve Savunma Hatira	Sokak, No. 5, Ömerli Mahellesi, 34555 Arnavutköy, Istanbul, Turkey		
Rolls-Royce Solutions France S.A.S.	Immeuble Colorado, 8/10 rue de Rosa Luxembourg-Parc des Bellevues 95610, Erangy-sur-Oise, France	Ordinary	100
Rolls-Royce Solutions GmbH	Maybachplatz 1, 88045, Friedrichshafen, Germany	Capital Stock	100
Rolls-Royce Solutions Hong Kong Limited	No.8 Hart Avenue, Unit D, 8th Floor, Tsim Sha Tsui, Kowloon, Hong Kong	Ordinary	100
Rolls-Royce Solutions Ibérica s.l.u	Calle Copérnico 26–28, 28823 Coslada, Madrid, Spain	Ordinary	100
Rolls-Royce Solutions Israel Limited	4 Ha'Alon Street, South Building, Third Floor, 4059300 Kfar Neter, Israel	Ordinary	100
Rolls-Royce Solutions Italia S.r.l.	Via Aurelia Nord, 328, 19021 Arcola (SP), Italy	Capital Stock	100
Rolls-Royce Solutions Japan Co. Limited	Resorttrust Building 4-14-3, Nishitenma Kita-ku, Osaka 530-0047, Japan	Ordinary	100
Rolls-Royce Solutions Korea Limited	22nd Floor, Olive Tower, 41 Sejongdaero 9 gil, Junggu, 100-737 Seoul, Republic of Korea	Ordinary	100
Rolls-Royce Solutions Liège Holding S.A.	Rue de l'Avenir 61, 4460, Grace-Hollogne, Belgium	Ordinary	100
Rolls-Royce Solutions Liège S.A.	Rue de l'Avenir 61, 4460, Grace-Hollogne, Belgium	Ordinary	100
Rolls-Royce Solutions Magdeburg GmbH	Friedrich-List-Strasse 8, 39122 Magdeburg, Germany	Capital Stock	100
Rolls-Royce Solutions Middle East FZE	S3B5SR06, Jebel Ali Free Zone, South P.O. Box 61141, Dubai, United Arab Emirates	Ordinary	100
Rolls-Royce Solutions Ruhstorf GmbH	Rotthofer Strasse 8, 94099 Ruhstorf a.d. Rott, Germany	Capital Stock	100
Rolls-Royce Solutions South Africa (Pty) Limited	36 Marconi Street, Montague Gardens, Cape Town, 7441, South Africa	Ordinary	100
Rolls-Royce Solutions UK Limited	Derby [7]	Ordinary	100
Rolls-Royce Solutions Willich GmbH	Konrad-Zuse-Str. 3, 47877, Willich, Germany	Ordinary	100

Subsidiaries *continued*

Company name	Address	Class of shares	% of class held
Rolls-Royce Sp z.o.o. *	Opolska 100 31-323, Krakow, Poland	Ordinary	100
Rolls-Royce Submarines Limited *	Atlantic House, Raynesway, Derby, DE21 7BE, Derbyshire, England	Ordinary	100
Rolls-Royce Technical Support Sarl	Centreda I, Avenue Didier Daurat, 31700 Blagnac, Toulouse, France	Ordinary	100
Rolls-Royce Total Care Services Limited *,9	Derby 7	Ordinary	100
Rolls Royce Turkey Güç Çözümleri San. ve Tic. Ltd.Şti.	Levazim Mahellesi, Koru Sokagi, Zorlu Center, No. 2 Teras Evler T2 D:204, Zincirlikuyu, Besiktas, Istanbul 34340, Turkey	Cash shares	100
Rolls-Royce UK Pension Fund Trustees Limited *,2	Derby 7	Ordinary	100
Rolls-Royce Zweite Beteiligungs GmbH *	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Capital Stock	100
Ross Ceramics Limited	Derby 7	Ordinary	100
Servowatch Systems Limited	Endeavour House, Benbridge Industrial Estate, Holloway Road, Heybridge, Maldon, Essex, CM9 4ER, United Kingdom	Ordinary	100
Sharing in Growth UK Limited 11	Derby 7	Limited by guarantee	100
Spare IPG 20 Limited 2	London 3	Ordinary	100
Spare IPG 21 Limited 2	London 3	Ordinary	100
Spare IPG 24 Limited 2	London 3	Ordinary	100
Spare IPG 32 Limited 2	London 3	7.25% Cumulative Preference Ordinary	100
Spare IPG 4 Limited 2	London 3	Ordinary	100
The Bushing Company Limited 2	London 3	Ordinary	100
Timec 1487 Limited 2	London 3	Ordinary	100
Turbine Surface Technologies Limited *,11	Derby 7	Ordinary A Ordinary B	Nil 100
Turborreactores S.A. de C.V.	Acceso IV, No.6C, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A Class B	100
Vessel Lifter, Inc. 2	Corporation Service Company, 1201 Hays Street, Tallahassee, Florida 32301, United States	Common Stock	100
Vinters Defence Systems Limited 2	London 3	Ordinary	100
Vinters Engineering Limited	Derby 7	Ordinary	100
Vinters International Limited 9	Derby 7	Ordinary	100
Vinters Limited *,9	Derby 7	Ordinary	100
Vinters-Armstrongs (Engineers) Limited 2	London 3	Ordinary	100
Vinters-Armstrongs Limited 2	London 3	Ordinary B	100
Yocova PTE. Ltd. *	6 Shenton Way, #33-00 OUE, Downtown Singapore 068809, Singapore	Ordinary	100

* Directly held by the Company
[1] Though the interest held is 50%, the Company controls the entity (see note 1 to the Consolidated Financial Statements) and, as a result, consolidates the entity and records a non-controlling interest.
[2] Dormant entity.
[3] Kings Place, 90 York Way, London, N1 9FX, England.
[4] Entity in liquidation.
[5] Though the interest held is 49%, the Company controls the entity (see note 1 to the Consolidated Financial Statements) and, as a result, consolidates the entity and records a non-controlling interest.
[6] Reporting year end is 31 March.
[7] Moor Lane, Derby, Derbyshire, DE24 8BJ, England.
[8] Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19809, United States.
[9] Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ended 31 December 2021. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.
[10] Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ending 31 March 2022. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.
[11] The entity is not included in the consolidation as the Company does not have a beneficial interest in the net assets of the entity.
[12] The entity is accounted for as a joint operation (see note 1 to the Consolidated Financial Statements).

Joint ventures and Associates

Company name	Address	Class of shares	% of class held	Group interest held %
Aero Gearbox International SAS *,[12]	18 Boulevard Louis Sequin, 92700 Colombes, France	Ordinary	50	50
Airtanker Holdings Limited	Airtanker Hub, RAF Brize Norton, Carterton, Oxfordshire, OX18 3LX, England	Ordinary	23	23
Airtanker Services Limited *	Airtanker Hub, RAF Brize Norton, Carterton, Oxfordshire, OX18 3LX, England	Ordinary	23.5	23.5
Alpha Leasing (US) (No.2) LLC	Wilmington [8]	Partnership (no equity	–	50
Alpha Leasing (US) (No.4) LLC	Wilmington [8]	Partnership (no equity	–	50
Alpha Leasing (US) (No.5) LLC	Wilmington [8]	Partnership (no equity	–	50
Alpha Leasing (US) (No.6) LLC	Wilmington [8]	Partnership (no equity	–	50
Alpha Leasing (US) (No.7) LLC	Wilmington [8]	Partnership (no equity	–	50
Alpha Leasing (US) (No.8) LLC	Wilmington [8]	Partnership (no equity held)	–	50
Alpha Leasing (US) LLC	Wilmington [8]	Partnership (no equity held)	–	50
Alpha Partners Leasing Limited	1 Brewer's Green, London, SW1H 0RH, England	Ordinary A	100	50
CFMS Limited	43 Queen Square, Bristol, BS1 4QP, England	Limited by guarantee	–	50
Clarke Chapman Portia Port	Maritime Centre, Port of Liverpool, Liverpool, L21 1LA, England	Ordinary A	100	50
Consorcio Español para el Desarrollo Industrial del Helicóptero de Ataque Tigre, A.I.E.	Avda. de Aragón 404, 28022 Madrid, Spain	Partnership (no equity held)	–	50
Consorcio Español para el Desarrollo Industrial del Programa Eurofighter, A.I.E.	Paseo de John Lennon, s/n, edificio T22, 2ª planta, Getafe, Madrid, Spain	Partnership (no equity held)	–	50
Egypt Aero Management Services (in liquidation)	EgyptAir Engine Workshop, Cairo International Airport, Cairo, Egypt	Ordinary	50	50
EPI Europrop International GmbH *	Pelkovenstr. 147, 80992 München, Germany	Capital Stock	44	44
Eurojet Turbo GmbH *	Lilienthalstrasse 2b, 85399 Halbergmoos, Germany	Ordinary	46	46
Force MTU Power Systems Private Limited	Mumbai Pune Road, Akurdi, Pune, Maharashtra 411035, India	Capital Stock	49	49
Genistics Holdings Limited *	Derby [7]	Ordinary A	100	50
Global Aerospace Centre for Icing and Environmental Research Inc. [12]	1000 Marie-Victorin Boulevard, Longueuil Québec, J4G 1A1, Canada	Ordinary	50	50
Hong Kong Aero Engine	33rd Floor, One Pacific Place, 88 Queensway, Hong Kong	Ordinary	50	50
International Aerospace Manufacturing	Survey No. 3 Kempapura Village, Varthur Hobli, KA 560037, India Bangalore,	Ordinary	50	50
Light Helicopter Turbine Engine Company (unincorporated partnership)	Suite 119, 9238 Madison Boulevard, Madison, Alabama 35758, United States	Partnership (no equity held)	–	50
MEST Co., Limited	97 Bukjeonggongdan 2-gil, Yangsan-si, Gyeongsangnam-do, 50571, Republic of Korea	Normal	46.8	46.8
Metlase Limited *	Unipart House, Garsington Road, Cowley, Oxford, OX4 2PG, England	Ordinary B	100	20
MTU Cooltech Power Systems	Building No. 2, No. 1633 Tianchen Road, Qingpu District, Shanghai, China	Equity	50	50
MTU Power Systems Sdn. Bhd.	Level 10 Menara LGB, 1 Jalan Wan Kadir Taman Tun Dr Ismail 6000 Kuala Lumpur, Malaysia	Ordinary A	100	49
MTU Turbomeca Rolls-Royce ITP GmbH *	Am Söldnermoos 17, 85399 Hallbergmoos, Germany	Capital Stock	50	50

Joint ventures and Associates *continued*

Company name	Address	Class of shares	% of class held	Group interest held %
MTU Turbomeca Rolls-Royce GmbH *	Am Söldnermoos 17, 85399 Hallbergmoos, Germany	Capital Stock	33.3	33.3
MTU Yuchai Power Company Limited	No 7 Danan Road, Yuzhou, Yulin, Guangxi, China, 537005,	Capital Stock	50	50
N3 Engine Overhaul Services GmbH & Co KG	Gerhard-Höltje-Strasse 1, D-99310, Arnstadt, Germany	Capital Stock	50	50
N3 Engine Overhaul Services Verwaltungsgesellschaft Mbh	Gerhard-Höltje-Strasse 1, D-99310, Arnstadt, Germany	Capital Stock	50	50
Rolls Laval Heat Exchangers Limited [*,2]	Derby [7]	Ordinary	50	50
Rolls-Royce & Partners Finance (US) (No 2) LLC	Wilmington [8]	Partnership (no equity held)	–	50
Rolls-Royce & Partners Finance (US) LLC	Wilmington [8]	Partnership (no equity held)	–	50
SAFYRR Propulsion Limited [*,2]	Derby [7]	B Shares	100	50
Shanxi North MTU Diesel Co. Limited	No.97 Daqing West Road, Datong City, Shanxi Province, China	Ordinary	49	49
Singapore Aero Engine Services Private Limited	11 Calshot Road, 509932, Singapore	Ordinary	50	50
Taec Ucak Motor Sanayi AS	Buyukdere Caddesi, Prof. Ahmet Kemal Aru, Sokagi Kaleseramik, Binasi Levent No. 4, Besiktas, Istanbul, Turkey	Cash Shares	49	49
Techjet Aerofoils Limited [12]	Tefen Industrial Zone, PO Box 16, 24959, Israel	Ordinary A Ordinary B	50 50	50
Texas Aero Engine Services LLC [2]	The Corporation Trust Company, 1209, Orange Street, Wilmington, Delaware 19801, United States	Partnership (no equity held)	–	50
TRT Limited *	Derby [7]	Ordinary B	100	50
Turbo-Union GmbH *	Lilienthalstrasse 2b, 85399 Halbergmoos, Germany	Capital Stock	40.0	40.0
United Battery Management GmbH	Wilhelminenhofstr. 76/77, 12459, Berlin, Germany	Ordinary	30	25.7
Xian XR Aero Components Co., Limited [*,11]	Xujiawan, Beijiao, Po Box 13, Xian 710021, Shaanxi, China	Ordinary	49	49

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2 Dormant entity.
3 Kings Place, 90 York Way, London, N1 9FX, England.
4 Entity in liquidation.
5 Though the interest held is 49%, the Company controls the entity (see note 1 to the Consolidated Financial Statements) and, as a result, consolidates the entity and records a non-controlling interest.
6 Reporting year end is 31 March.
7 Moor Lane, Derby, Derbyshire, DE24 8BJ, England.
8 Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19809, United States.
9 Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ended 31 December 2021. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.
10 Entity to take advantage of s479A Companies Act 2006 (s479A) audit exemption for the financial year ending 31 March 2022. The Company will issue a guarantee pursuant to s479A in relation to the liabilities of the entity.
11 The entity is not included in the consolidation as the Company does not have a beneficial interest in the net assets of the entity.
12 The entity is accounted for as a joint operation (see note 1 to the Consolidated Financial Statements).

Independent auditors' report to the members of Rolls-Royce plc

Report on the audit of the financial statements

Opinion

In our opinion:

- Rolls-Royce plc's consolidated financial statements and company financial statements (the "financial statements") give a true and fair view of the state of the group's and of the company's affairs as at 31 December 2021 and of the group's profit and the group's cash flows for the year then ended;
- the consolidated financial statements have been properly prepared in accordance with UK-adopted international accounting standards;
- the company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements, included within the Annual Report, which comprise: the consolidated and company balance sheets as at 31 December 2021; the consolidated income statement, the consolidated and company statement of comprehensive income, the consolidated cash flow statement, and the consolidated and company statements of changes in equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Our opinion is consistent with our reporting to the Audit Committee of Rolls-Royce Holdings plc (the company's ultimate parent company).

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

During the period, we identified that we had been involved in the administrative preparation and filing of a subsidiary company's annual return under local company law, which is a prohibited service under paragraph 5.40 of the FRC's Ethical Standard. The service related to an immaterial subsidiary that did not form part of our evidence in respect of the group audit.

We confirm that based on our assessment of the breach, nature and scope of the service and the subsequent action taken, the provision of this service has not compromised our professional judgement or integrity and as such believe that an objective, reasonable and informed third party in possession of these facts would conclude that our integrity and objectivity has not been impaired and accordingly we remain independent for the purposes of the audit.

Other than the matter referred to above, to the best of our knowledge and belief, we declare that no non-audit services prohibited by the FRC's Ethical Standard were provided to the group or the company.

Other than those disclosed in note 6 to the consolidated financial statements, we have provided no non-audit services to the company or its controlled undertakings in the period under audit.

Our audit approach

Context

There is significant interest from stakeholders including members about how climate change will affect the group's businesses and its future financial performance. The Sustainability section of the Rolls-Royce Holdings plc Strategic report describes the group's decarbonisation strategy and explains how climate change could have a significant impact on the group's businesses but also provides a number of significant opportunities. Rolls-Royce Holdings plc has publicly set out its 2030 net carbon zero from operations (excluding product testing and development) and net zero 2050 commitments and has a strategy aligned to meeting these albeit the pathway to the 2050 net zero target is not fully developed.

A number of financial risks could arise from both the physical and transitional risks due to climate change. Management, assisted by an independent expert, has evaluated these as disclosed in the Sustainability section of the Rolls-Royce Holdings plc Strategic report. This, with further analysis has then informed the evaluation of financial risks that have been reflected by management in the preparation of the financial statements, or where appropriate allowed it to conclude there is no material impact. The future financial impacts are clearly uncertain given the timeframe involved and their dependency on how Governments, global markets, corporations and society respond to the issue of climate change. Accordingly, financial statements cannot capture all possible future outcomes as these are not yet known.

As part of our audit we understood the process management and its expert on climate change undertook to support the disclosures made within the Sustainability section of the Rolls-Royce Holdings plc Strategic report (including its TCFD disclosures) and its assessment of the impact on the financial statements. Using our knowledge of the business and with assistance from our internal climate and valuation experts, we evaluated management's risk assessment, its estimates as described in note1 of the consolidated financial statements and resulting disclosures where significant.

The key areas of the financial statements where management evaluated that climate change has a potential significant impact, taking into account the group's 2030 and 2050 commitments, are:

- Long term contract accounting in the UK Civil business (including contract loss provisions);
- The recoverability of deferred tax assets in the UK; and
- The recoverability of the carrying value of goodwill and certain intangible assets.

Where significant further details of how climate change has been considered in the above areas and our audit response is given in the key audit matters that follow. The impact of climate change in respect of the impairment assessments for goodwill and certain intangible assets did not give rise to an impairment or result in the assessment being sensitive to reasonably possible changes in key assumptions in those assessments including a sensitivity to reflect the impact of the group's 1.5^{0}C scenario aligned to the Paris Agreement that has been used in the Rolls-Royce Holdings plc TCFD disclosures. We also considered the impact of climate change in the Directors' assessments of going concern and viability and the associated disclosures in the going concern and viability statements within the Directors' report.

Overview

Audit scope

- Following our assessment of the risks of material misstatement of the consolidated financial statements we subjected 37 individual components (including three joint ventures) to full scope audits for group purposes, which following an element of sub-consolidation, equates to 16 group reporting opinions. In addition, targeted specified procedures were performed for eight components.
- In addition, the group engagement team audited the company and other centralised functions including those covering the group treasury operations, corporate costs, corporate taxation, post-retirement benefits, and certain goodwill and intangible asset impairment assessments. The group engagement team performed audit procedures over the group consolidation and financial statements disclosures and performed group level analytical procedures over out of scope components.
- The components on which full scope audits, targeted specified procedures and centralised work was performed accounted for 93% of revenue from continuing and discontinued operations, 82% of loss before tax from continuing and discontinued operations and 86% of total assets.
- Central audit testing was performed where appropriate for reporting components in group audit scope who are supported by the group's Finance Service Centres (FSCs).
- As part of the group audit supervision process, the group engagement team performed 13 virtual file reviews, which included meetings on approach and conclusions with the component teams and review of their audit files and final deliverables. In person site visits to component teams in the UK and US and a virtual site visit to a component team in Germany were also performed.
- As the company comprises a number of the UK components that were in scope for the group audit we leveraged that work for the purposes of the company audit and performed additional testing on how the company related components were combined, with appropriate eliminations made, to form the company financial statements. Our work performed accounted for 98% of the total assets of the company.

Key audit matters

- Long-term contract accounting and associated provisions (group and company)
- Deferred tax asset recognition and recoverability (group and company)
- Translation of foreign-currency denominated transactions and balances (group and company)
- Presentation and accuracy of underlying results and disclosure of other one-off items (including exceptional items) (group)
- Determination of ITP Aero disposal group (group)
- Accounting treatment and related consolidation adjustments for Civil engine sales to related entities (group and company).

Materiality

- Overall group materiality: £80m (2020: £70m) based on approximately 0.6% of four year average underlying revenues from continuing and discontinued operations.
- Overall company materiality: £76m (2020: £66m) based on approximately 1.0% of four year average revenues.
- Performance materiality: £60m (2020: £53m) (group) and £57m (2020: £50m) (company).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

This is not a complete list of all risks identified by our audit.

Determination of the ITP Aero disposal group and the accounting treatment and related consolidation adjustments for Civil engine sales to related entities are new key audit matters this year. Recoverability of accounts receivable and contract assets, recoverability of intangible programme assets, ability of the group and company to continue as a going concern and impact of the COVID-19 pandemic, which were key audit matters last year, are no longer included because of developments in the industry and the outlook since 2020. The group recorded £481m of impairments to development expenditure in the year ended 31 December 2020 which included those programmes most sensitive to changes in forecasts. Following additional liquidity raised by the group in the year and the timing of the next debt maturity, we did not consider the ability of the company or group to continue as a going concern to be a key audit matter.

Notwithstanding this, we audited management's assessment as detailed in the relevant section below. We have captured the impact of COVID-19, where applicable, separately in the individual key audit matters below. Otherwise, the key audit matters below are consistent with last year.

Key audit matter	How our audit addressed the key audit matter
Long-term contract accounting and associated provisions (group and company) *Note 1 to the consolidated and company financial statements – Accounting policies – Revenue recognition* The Civil Aerospace and Defence businesses operate primarily with long-term customer contracts that span multiple periods. These long-term contracts require a number of assumptions to be made in order to determine the expected lifetime revenue and costs of the contract and the amounts of revenue and profit that are recognised in each reporting period. Small adjustments can have a significant impact on the results of an individual financial year. In addition, changes to the operating condition of engines such as changes in route structure can result in different performance assumptions and hence cost profiles which impact the expected profitability of a contract. For Defence, long term contracts tend to be for a fixed price or based on a cost plus or target cost reimbursement for qualifying costs and there are also some flying hours arrangements. For Civil Aerospace aftermarket contracts, cash is earned based on engine flying hours, which requires management to estimate future engine flying hours (EFH) and associated pricing in order to arrive at the total income expected over the life of a contract. There remains uncertainty over the speed and shape of recovery in EFH for large engines. The group expects international passenger traffic to reach 2019 levels in late 2024. In addition, the profitability of aftermarket contracts typically assumes that there will be cost improvements over the lifetime (15–25 years) of the programmes. Significant judgement needs to be applied in determining time-on-wing, whether incremental costs should be treated as wastage or are part of the ongoing cost of servicing a contract, future exchange rates used to translate foreign currency income and costs and other operating parameters used to calculate the projected life cycle. These future costs are also risk adjusted to take into account forecasting accuracy which represents an additional judgement. At the development stage of a programme, agreements are entered into with certain Civil suppliers to share in the risk and rewards of the contracts (Risk and Revenue Sharing Partners – 'RRSP'). This can involve upfront participation fees from the RRSP that are amortised over the engine production phase. In addition, specified revenue and costs are recorded in the consolidated income statement net of the RRSP's share. The nature of the Civil Aerospace business gives rise to a number of contractual guarantees, warranties and potential claims, including the in-service issues of the Trent 1000 programme. The accounting for these can be complex and judgemental and may impact the results of the group and company immediately or over the life of the contract. The valuation of provisions for the associated amounts may be judgemental and needs to be considered on a contract by contract basis. Management has engaged a third party expert to model the potential impact of climate change on its forecasts and has incorporated these estimates into the long-term	We focused our work on a number of contracts where we consider there to be the highest degree of management judgement or estimation and designed specific procedures over the long-term contract accounting targeted at the associated risks. We also sample tested the remaining population of contracts. This approach was applied in the Civil Aerospace and Defence businesses and was substantive in nature. The audit procedures performed included: – We attended meetings with Civil Aerospace and Defence engine programme and customer contract managers in order to understand the operational matters impacting the performance of specific contracts and any amendments to contractual arrangements required by changes to underlying expectations of performance; – We obtained and read the relevant sections of a sample of contracts to understand the key terms including performance obligations and pricing structures; – We assessed how management had forecast the speed and shape of the recovery of engine flying hours including by considering the downside scenarios modelled and comparing the assumptions to industry data; – We challenged management's judgments and associated risk adjustments relating to the risk of customer default and insolvency, the risk of airlines parking more mature aircraft as a result of COVID-19 and climate change concerns and the ability for contractual protection clauses to be enforced across the customer portfolio; – We re-performed the calculations used to determine the degree of completion for a sample of contracts and this was also used in assessing the magnitude of any catch-up adjustments; – We compared the previously forecast results of a sample of contracts with the actual results to assess the performance of the contract and the historical accuracy of forecasting; – We verified a sample of costs incurred to third party documentation in order to test the assessment of the forecast costs to complete; – We assessed the assumptions relating to life cycle cost reductions to determine the likelihood of realisation and where relevant the speed at which they would be achieved, including the impact on the number of shop visits, validating these assumptions directly with the senior programme engineers; – We obtained support for the risk adjustments made in respect of future costs and challenged management's assumptions through assessment against historical performance, known technical issues and the stage of completion of the programme; – Where disruption has resulted in payments to customers we validated the settlement to contractual agreements, considered the terms of previous settlements, correspondence with customers, the forecast period of further aircraft being on the ground and the completeness of this liability; – We challenged the assessment of provisions for loss making or onerous contracts to determine the

Key audit matter	How our audit addressed the key audit matter
contract models. This included an assessment of the impact on aviation demand, the potential impact of carbon prices on the group's direct emissions and those of its suppliers, and the potential impact of climate change on commodity prices in cost estimates. The impact of climate change on long-term contracts is highly uncertain and requires estimates on carbon prices, the cost and speed of decarbonisation, the ability of the group and its suppliers to pass on incremental costs.	completeness of the unavoidable costs to fulfil the contractual obligations including an assessment of the discount rates used and how management has considered the potential impact of climate change; – We assessed the sensitivity of the Trent 1000 provision to reasonable changes in estimates, particularly in respect of the repair and overhaul facility capacity, technical cost creep on the known issues and cost outturns against previous provisions, in determining whether the provision was sufficient; – We read and understood the key terms of a sample of RRSP contracts to assess whether revenue and costs had been appropriately reflected, net of the share attributable to the RRSP; – With assistance from our valuation experts, we considered the appropriateness of the key assumptions used by management's expert to model the impact of climate change, including the reasonableness of the carbon and commodity price forecasts. We validated management's assertions on the ability of suppliers and the group to pass on incremental costs by reviewing a sample of supplier and customer contracts for price change mechanisms. Where appropriate we performed independent sensitivity analysis to determine to what extent reasonably possible changes in these assumptions could result in material changes to the revenue recorded in the year and assessed the appropriateness of the associated disclosures; – We considered whether there were any indicators of management override of controls or bias in arriving at their reported position; and – We also assessed the adequacy of disclosures in note 1 of the key judgements and estimates involved in long-term contract accounting. Based on the work performed, we concur that management's estimates for long-term contract accounting and associated provisions and its disclosures of the key estimates and judgements involved are materially appropriate.
Deferred tax asset recognition and recoverability (group and company) *Note 1 to the consolidated and company financial statements – Accounting policies – Taxation and note 5 to the consolidated financial statements – Taxation* The recognition and recoverability of deferred tax assets in Rolls-Royce plc is a significant judgement. Rolls-Royce plc has recognised significant deferred tax assets on the basis of expected future levels of profitability. The magnitude of the assets recognised, which largely increased in the year as a result of the substantial enactment of the change in UK corporation tax rate from 19% to 25% from 1 April 2023, necessitates the need for a number of assumptions in assessing the future levels of profitability in the UK over an extended period. The additional UK loss recorded for 2021, along with the existence of tax losses brought forward and other deductible temporary differences in Rolls-Royce plc, combined with the impact of COVID-19 and climate change on future forecasts, presents a heightened risk that deferred tax assets previously recognised may not be recoverable. Since the recognised deferred tax asset is recoverable over a long period, management has reflected its assessment of the impact of climate change within the model forecasting probable taxable profits. This incorporates multiple	We evaluated management's methodology for assessing the recognition and recoverability of deferred tax assets, including the ability to offset certain deferred tax liabilities and deferred tax assets. Where recognition is supported by the availability of sufficient probable taxable profits in future periods against which the asset can be utilised in future periods, our evaluation of these future profits considered both the business model and the applicable UK tax legislation. We tested the increase in the opening UK deferred tax asset balance as a result of the increase in the UK corporation tax rate. We assessed the future profit forecasts and the underpinning assumptions including management's risk weighting of profit forecasts in Rolls-Royce plc and tested the reasonableness of the assumptions and forecasts for periods beyond the normal five year forecasting horizon. Where applicable we assessed the consistency of the forecasts used to justify the recognition of deferred tax assets to those used elsewhere in the business, including for long-term contract accounting, impairment assessments, or for the Directors' viability and going concern statements. We also assessed the risk adjustments applied by management to these profit forecasts to future periods that are significantly further in time than the group's normal five

<table>
<tr><th>Key audit matter</th><th>How our audit addressed the key audit matter</th></tr>
<tr><td>assumptions including future carbon prices, commodity prices, the impact on aviation demand, the cost and speed of decarbonisation and the ability of suppliers and Rolls-Royce plc to pass on price changes. To assess the impact of inherent uncertainty it has performed sensitivities over key estimates.</td><td>year forecasting process and considered whether these appropriately reflect the estimation risk in the longer term forecasts.

We challenged management to incorporate climate change as part of their probability weighted scenarios to forecast probable profit levels. As described in the long-term contract accounting and associated provisions key audit matter, this included deploying valuation experts to assess the reasonableness of carbon pricing and commodity assumptions as well as the comparison of forecast aviation demand to third party sources. We considered the likelihood that the group and its suppliers would be able to pass on incremental climate related costs in the short, medium and longer term and verified that management's forecasts included the costs arising from the group's stated commitment to reach net zero for direct emissions by 2030. We requested that management perform additional sensitivity analysis to understand whether reasonably possible changes to these assumptions could lead to a material change in the recognised asset and where appropriate ensured that adequate disclosure was provided.

We assessed the treatment of the losses that are realised or unrealised on the group's hedge book and whether they were treated appropriately and how they are recovered using the same profit forecasts.

We also assessed the adequacy of disclosures over this area, particularly the impact of changes in key estimates of the asset recognised and this has been disclosed in notes 1 and 5 of the consolidated financial statements and note 16 of the company financial statements.

We did not identify any material uncorrected exceptions from our audit work.</td></tr>
<tr><td>Translation of foreign-currency denominated transactions and balances (group and company)

Note 1 to the consolidated and company financial statements – Accounting policies – Foreign currency translation

Foreign exchange rate movements influence the reported consolidated income statement, the consolidated cash flow statement and the consolidated and company balance sheets. One of the company's primary accounting systems that is used by it and a number of its subsidiaries translates transactions and balances denominated in foreign currencies at a fixed budget rate for management information purposes. Foreign currency denominated transactions and balances are then re-translated to actual average and closing spot rates through manual adjustments. Due to the manual nature of the process and significance of the recurring adjustments needed there is a risk that transactions and balances denominated in foreign currencies are incorrectly translated in the consolidated and company financial statements.</td><td>In addition to our testing in other areas of the various financial statement line items, we performed the following specific audit procedures over this area:

– Obtained an understanding of the process employed by management to correctly record the translation of foreign currency balances and transactions;

– Tested on a sample basis the manual calculations of the adjustment needed to correctly record the translation of the foreign currency denominated transactions and balances;

– Sampled balances and transactions requiring adjustment by source currency and tested to source data and assessed the completeness of these balances and transactions;

– Created an independent expectation of the gain/loss on the translation of monetary assets and liabilities based on the movements in the group's key exchange rates and associated balances in the year;

– Agreed the exchange rates used in management's translation adjustments to an independent source; and

– For each adjustment sampled, assessed whether the foreign currency denominated balance or transaction was translated at the appropriate exchange rate depending on its nature.

There were no material uncorrected exceptions from our audit work.</td></tr>
</table>

Key audit matter	How our audit addressed the key audit matter
Presentation and accuracy of underlying results and disclosure of other one-off items (including exceptional items) (group) *Note 1 to the consolidated financial statements – Accounting policies – Presentation of underlying results, note 2 to the consolidated financial statements – Segmental analysis and note 27 to the consolidated financial statements – Derivation of summary of funds flow statement* In addition to the performance measures prescribed by International Financial Reporting Standards, the group also presents its results on an underlying basis, as the Directors believe this better reflects the performance of the group during the year. The group also presents a free cash flow metric which the Directors believe reflects the cash generated from underlying trading; this differs from the cash flows presented in the consolidated cash flow statement. The underlying results differ from the reported statutory results and are used extensively to explain performance to the shareholders. Alternative performance measures can provide investors with a better understanding of the group's performance if consistently calculated, properly used and presented. However, when improperly used and presented, these non-GAAP measures can mislead investors and may mask the real financial performance and position. There is judgement on whether items should be excluded from underlying profit or free cash flow. A key adjustment between the statutory results and the underlying results relates to the foreign exchange rates used to translate foreign currency transactions and balances. The underlying results reflect the achieved rate on foreign currency derivative contracts settled in the period and retranslates assets and liabilities at the foreign currency rates at which they are expected to be realised or settled in the future. As the group can influence which derivative contracts are settled in each reporting period it has the ability to influence the achieved rate and hence the underlying results. This risk is more limited for free cash flow as there are a small number of items that are excluded from free cash flows. During the year, the group excluded a number of items from underlying profit before tax including £105m of credits from the net release of onerous contracts and Trent-1000 provisions and a net £45m of credits associated with lower restructuring costs.	We considered the judgements taken by management to determine what should be treated as a one-off or exceptional item and the translation of foreign currency amounts and obtained corroborative evidence for these. We also considered whether there were items that were recorded within underlying profit that are exceptional in nature and should be reported as an exceptional item. No such material items were identified. As part of this assessment we challenged management's rationale for the designation of certain items as exceptional or one-off and assessed such items against the group's accounting policy, considering the nature and value of those items. Within underlying results, foreign currency transactions are presented at rates achieved on derivative contracts hedging the net operating cash flows of the group and monetary assets and liabilities are retranslated at rates forecast to be achieved on derivative contracts when the associated cash flows occur. We agreed these forecast rates to the profile of the derivatives that are expected to mature in the future and tested their application to the relevant monetary assets and liabilities. We audited the reconciling items between the underlying profit before tax and free cash flow disclosed in note 27 including verifying that the items adjusted for are consistent with the prior period. We also considered whether free cash flow contains material one-off items which require further disclosure. We assessed the appropriateness and completeness of the disclosures of the impact of one-off or non-underlying items primarily in notes 1, 2, 4 and 27 to the consolidated financial statements and found them to be appropriate. This included assessing the explanations management provided on the reconciling items between underlying performance and statutory performance in Note 2. We also assessed the appropriateness of excluding the results of ITP Aero from underlying profit, reflecting the internal reporting of the group and considered the associated disclosure explaining the change. Overall we found that the classification judgements made by management were in line with their policy for underlying results and exceptional items, had been consistently applied and there are no material uncorrected misstatements resulting from our testing.

Key audit matter	How our audit addressed the key audit matter
Determination of ITP Aero disposal group (group) *Note 1 to the consolidated financial statements – Accounting policies – Discontinued operations and note 26 to the consolidated financial statements – Assets held for sale and discontinued operations* Following the group's announcement of the planned sale of ITP Aero, the business was classified as a discontinued operation held for sale. This resulted in the assets and liabilities being recognised as held for sale within the consolidated balance sheet and the results being presented within the loss from discontinued operations line on the consolidated income statement. There remains significant trading between ITP Aero and the rest of the group which is required to be eliminated when arriving at the group's results. Whether these adjustments should be classified within balances held for sale is judgemental and dependent on the structure of the business post disposal. Further, additional adjustments were required to be recorded in 2021 to reflect commercial restructuring between ITP Aero and the rest of the group prior to disposal.	We assessed the appropriateness of classifying ITP Aero as a discontinued operation held for sale based on the progress of the sale. This included validating management's judgement on the likelihood of the disposal through reviewing the sales agreement and understanding the status of the transaction, including the required regulatory approval. We considered the restructuring made to contractual arrangements by the group prior to the sale of ITP Aero, including the transfer of businesses to the disposal group. We validated that these changes and the impact of intra-group trading had been appropriately eliminated in arriving at the consolidated results for the group. We also validated management's judgement that the impact of intra-group trading should be eliminated against the results of the discontinued operation, which most closely reflects the relationship the continuing group will have with ITP Aero following its sale. We assessed the adequacy of the disclosures in the notes to the consolidated financial statements explaining this change. We found them, along with the classifications, to be materially appropriate in the context of the consolidated financial statements when taken as a whole.
Accounting treatment and related consolidation adjustments for Civil engine sales to related entities (group and company) *Note 1 to the consolidated and company financial statements – Accounting policies – Revenue recognition* The group and company has historically made engine sales to related entities. In 2021, a new related entity was established, which will provide in some instances spare engine capacity to the group and company to support its installed fleet. A limited number of engine sales were made to this related entity in the year, which are expected to increase in the future. In order for revenue to be recognised on engine sales to related entities, these entities cannot be controlled by Rolls-Royce and control of the engines must have passed from the company and its subsidiaries to the related entity. There is significant judgement whether this is the case based on the terms of the sale, any ongoing arrangement and the structure of the entity. Accounting standards require the group's share of unrealised profit on sales to related entities to be eliminated and therefore the value of sales and the related unrealised profit need to be accurately reflected within the group's consolidation adjustments.	We considered management's assessment of whether the related entity was controlled by Rolls-Royce by reference to its articles of association, the indirect shareholding and the influence that Rolls-Royce has over the direction and strategy of the entity. We obtained and reviewed the engine sales contract and the capacity agreement setting out the ongoing arrangement between Rolls-Royce and the new related entity, as well as management's assessment of whether control of the engines and transfer of risks and reward of ownership, can be demonstrated. In assessing this, we considered: – The rights of the related entity to choose how engines are utilised and any commitments of the ongoing capacity agreement; – The commercial structure of the ongoing arrangement including commitments made and penalty arrangements; and – Whether Rolls-Royce remained exposed to risks associated with engine ownership following the sale including non-utilisation of engines, the risk to movements in the end of life engine value, the risk to damage or misuse to the engine and whether Rolls-Royce is committed to buy back the engines. We also considered whether there are any side agreements between Rolls-Royce and the related entity which may alter the main contract arrangements through our enquiries with management, review of meeting minutes and our audit procedures in other areas and did not identify any such arrangements. We verified that the group's share of unrealised profit from engine sales to related entities has been appropriately eliminated from the group's profit in the year. We reviewed the group's disclosure of the engine sales to related entities including the key judgement disclosed in note 1 and transactions with related parties disclosed in note 25 and found these to be appropriate.

Key audit matter	How our audit addressed the key audit matter
	As a result of our work we did not identify any material exceptions from the treatment or disclosure of engine sales to related entities.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the group and the company, the accounting processes and controls, and the industry in which they operate.

Our scoping is based on the group's consolidation structure. We define a component as a single reporting unit which feeds into the group consolidation. Of the group's 427 reporting components, 37 individual components (including three joint ventures) were subject to full scope audits for group purposes, which following an element of consolidation, equates to 16 group reporting opinions. In addition, targeted specified procedures were performed for eight components.

The group operates Finance Service Centres (FSCs) to bulk process financial transactions in Derby (UK), Indianapolis (US) and Bengaluru (India). Based on our assessment it is not possible to fully test revenue and profit centrally as certain key processes, such as long-term contracting, remain within the business due to their nature and are not handled by the FSCs.

Our group audit covered 93% of revenue from continuing and discontinued operations, 82% of loss before tax from continuing and discontinued operations and 86% of total assets. All entities that contribute in excess of 1% of the group's revenue were included in full scope.

Further specific audit procedures over central functions, the group consolidation and areas of significant judgement (including corporate costs, corporate taxation, certain goodwill and intangible asset impairment assessments, treasury and post-retirement benefits) were directly led by the group engagement team.

Where work was performed by component auditors, we determined the level of involvement we needed to have in the audit work at those reporting units to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the consolidated financial statements.

We issued formal written instructions to all component auditors setting out the audit work to be performed by each of them and maintained regular communication with the component auditors throughout the audit cycle. These interactions included attending certain component clearance meetings and holding regular conference calls, as well as reviewing and assessing any matters reported. The group engagement team also reviewed selected audit working papers for certain component teams to evaluate the sufficiency of audit evidence obtained and fully understand the matters arising from the component audits.

In addition, senior members of the group engagement team visited component teams across the UK, US and Germany. These visits were in-person for the UK and US and virtual in Germany due to COVID-19 pandemic related restrictions. They included meetings with the component auditor and attendance at component clearance meetings.

Our group audit scoping took into account the fact that the company financial statements comprise several of the UK components together with a central function, the group work is therefore leveraged for the audit of the company financial statements. Additional audit procedures were also performed by the group audit team on the combination of these UK components and central functions, together with appropriate eliminations, to form the company financial statements.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Financial statements - group	Financial statements - company
Overall materiality	£80m (2020: £70m).	£76m (2020: £66m).
How we determined it	*Based on approximately* 0.6% of four year average underlying revenues from continuing and discontinued operations	Based on approximately 1.0% of four year average revenues
Rationale for benchmark applied	We have consistently used underlying revenue to determine materiality as opposed to a profit based benchmark. This is because there is considerable volatility in profit before tax as a result of revenue recognition under IFRS 15 and from the fair value movement in the group's derivatives. Underlying revenue continues to be a key performance metric for the group and is much less volatile than the profit metric. However, from 2020 COVID-19 introduced additional volatility that impacted benchmarks. To mitigate this we have used a four year average underlying revenue measure to calculate materiality. ITP Aero, which is classified as a discontinued operation, contributed a full year's results and remained part of the group at 31 December 2021. Therefore, in our view, it is appropriate to continue to take the results of this business into account when determining our materiality.	We have consistently used revenue to determine materiality as opposed to a profit based benchmark. This is because there is considerable volatility in profit before tax as a result of revenue recognition under IFRS 15 and from the fair value movement in the company's derivatives. Revenue continues to be a key performance metric for the group and is much less volatile than the profit metric. However, from 2020 COVID-19 introduced additional volatility that impacted benchmarks. To mitigate this we have used a four year average revenue measure to calculate materiality.

For each component in the scope of our group audit, we allocated a materiality that is less than our overall group materiality. The range of materiality allocated across components was between £5m and £74m. Certain components were audited to a local statutory audit materiality that was also less than our overall group materiality.

We use performance materiality to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds overall materiality. Specifically, we use performance materiality in determining the scope of our audit and the nature and extent of our testing of account balances, classes of transactions and disclosures, for example in determining sample sizes. Our performance materiality was 75% (2020: 75%) of overall materiality, amounting to £60m (2020: £53m) for the group financial statements and £57m (2020: £50m) for the company financial statements.

In determining the performance materiality, we considered a number of factors - the history of misstatements, risk assessment and aggregation risk and the effectiveness of controls - and concluded that an amount at the upper end of our normal range was appropriate.

We agreed with the Audit Committee of Rolls-Royce Holdings plc that we would report to them misstatements identified during our audit above £3m (group audit) (2020: £3m) and £3m (company audit) (2020: £3m) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

Our evaluation of the directors' assessment of the group's and the company's ability to continue to adopt the going concern basis of accounting included:

- Testing the model used for management's going concern assessment which is primarily a liquidity assessment given there are no significant financial covenants in its committed debt facilities. Management's assessment covered the 18 months to August 2023. We focussed on this period and also considered the forecast liquidity in the subsequent four months to the end of 2023.
- Management's base case forecasts are based on its normal budget and forecasting process for each of its businesses for the next five years. We understood and assessed this process by business including the assumptions used for 2022 and 2023 and assessed whether there was adequate support for these assumptions. We also considered the reasonableness of the monthly phasing of cash flows. A similar assessment was performed of the downside cash flows, including understanding of the scenarios modelled by management, how they were quantified and the resultant monthly phasing of the downside cash flow forecasts.
- We read and understood the key terms of all committed debt facilities to understand any terms, covenants or undertakings that may impact the availability of the facility.
- Using our knowledge from the audit and assessment of previous forecasting accuracy we calculated our own sensitivities to apply to management's cash flow forecasts. We overlaid these on management's forecasts to arrive at our own view of management's downside forecasts. This included consideration of management's assessment of the impact of climate change and the likelihood of any downside risks crystallising in the period to August 2023.

- We assessed the adequacy of disclosures in the Going Concern statement and statements in note 1 of the consolidated and company financial statements and found these appropriately reflect the key areas of uncertainty identified.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group's and the company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

However, because not all future events or conditions can be predicted, this conclusion is not a guarantee as to the group's and the company's ability to continue as a going concern.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic report and Directors' report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on our work undertaken in the course of the audit, the Companies Act 2006 requires us also to report certain opinions and matters as described below.

Strategic report and Directors' report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic report and Directors' report for the year ended 31 December 2021 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

In light of the knowledge and understanding of the group and company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic report and Directors' report.

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of Directors' responsibilities in respect of the Financial Statements, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group's and the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or the company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below.

Based on our understanding of the group and industry, we identified that the principal risks of non-compliance with laws and regulations related to tax compliance legislation, the regulations of country aviation authorities such as the Civil Aviation Authority, import and export restrictions (including International Traffic in Arms Regulations), and the UK Bribery Act, and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the financial statements such as the Companies Act 2006, and tax legislation. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to : (1) posting inappropriate journal entries to manipulate financial results; (2) management bias in accounting estimates such as long-term contract accounting and associated provisions and deferred tax asset recognition; (3) the sale of Civil engines to related entities for no clear commercial purpose or above market prices; and (4) inappropriately including or excluding transactions from the group's underlying or free cash flow alternative performance metrics. The group engagement team

shared this risk assessment with the component auditors so that they could include appropriate audit procedures in response to such risks in their work. Audit procedures performed by the group engagement team and/or component auditors included:

- Discussions throughout the year with management, internal audit, the group's internal and external legal counsel, and the head of ethics and compliance, including consideration of known or suspected instances of non-compliance with laws and regulation and fraud;
- Reading the minutes of the Rolls-Royce Holdings plc Safety, Ethics & Sustainability committee and assessment of 'speak-up' matters reported through the Rolls-Royce Ethics Line and the results of management's investigation of such matters;
- Reading the minutes of Board meetings to identify any inconsistencies with other information provided by management;
- Reviewing legal expense accounts to identify significant legal spend that may be indicative of non-compliance with laws and regulations;
- Challenging assumptions and judgements made by management in determining significant accounting estimates (because of the risk of management bias), in particular in relation to long-term contract accounting and associated provisions and the recoverability of deferred tax assets (see related key audit matters above);
- Testing the purpose and the pricing of sales of spare engines to related entities;
- Understanding and evaluating changes in processes and controls as a result of the COVID-19 pandemic;
- Identifying and testing unusual journal entries, in particular journal entries posted with unusual account combinations, and testing all material consolidation journals; and
- Challenging why certain items are excluded or included from underlying profit or free cash flow.

There are inherent limitations in the audit procedures described above. We are less likely to become aware of instances of non-compliance with laws and regulations that are not closely related to events and transactions reflected in the financial statements. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Our audit testing might include testing complete populations of certain transactions and balances, possibly using data auditing techniques. However, it typically involves selecting a limited number of items for testing, rather than testing complete populations. We will often seek to target particular items for testing based on their size or risk characteristics. In other cases, we will use audit sampling to enable us to draw a conclusion about the population from which the sample is selected.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

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

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not obtained all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the company financial statements are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the Audit Committee of Rolls-Royce Holdings plc, we were appointed by the members on 3 May 2018 to audit the financial statements for the year ended 31 December 2018 and subsequent financial periods. The period of total uninterrupted engagement is four years, covering the years ended 31 December 2018 to 31 December 2021.

Other matter

As required by the Financial Conduct Authority Disclosure Guidance and Transparency Rule 4.1.14R, these financial statements form part of the ESEF-prepared annual financial report filed on the National Storage Mechanism of the Financial Conduct Authority in accordance with the ESEF Regulatory Technical Standard ('ESEF RTS'). This auditors' report provides no assurance over whether the annual financial report has been prepared using the single electronic format specified in the ESEF RTS.

Ian Chambers (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
25 February 2022

Other Financial Information

Foreign exchange

Foreign exchange rate movements influence the reported income statement, the cash flow and closing net funds balance. The average and spot rates for the principal trading currencies of the Group are shown in the table below:

£m		2021	2020	Change
USD per GBP	Year-end spot rate	**1.35**	1.36	-1%
	Average spot rate	**1.38**	1.28	+8%
EUR per GBP	Year-end spot rate	**1.19**	1.11	+7%
	Average spot rate	**1.16**	1.13	+3%

The Group's global corporate income tax contribution

The Group's total corporation tax payments in 2021 were £185m. Around 90% of this was paid in the US, Germany, UK, Singapore and Canada which reflects the fact that the majority of the Group's business is undertaken, and employees are based, in these countries. The balance was paid in around 40 other countries.

In common with most multinational groups, the total of all profits in respect of which corporate income tax is paid is not the same as the consolidated loss before tax reported on page 45. The main reasons for this are:

(i) the consolidated income statement is prepared under IFRS, whereas the corporate income tax profits and losses for each company are determined by local accounting rules;

(ii) accounting rules require certain income and costs relating to our commercial activities to be eliminated from, or added to, the aggregate of all the profits of the Group companies when preparing the consolidated income statement (consolidation adjustments); and

(iii) specific tax rules including exemptions or incentives as determined by the tax laws in each country.

In most cases, (i) and (ii) are only a matter of timing and therefore tax will be paid in an earlier or later year. The impact of (iii) will often be permanent depending on the relevant tax law. Further information on the tax position of the Group can be found as follows:

- Rolls-Royce Holdings plc Audit Committee Report (page 84 of the Rolls-Royce Holdings plc Financial Statements) – updates were given to the Audit Committee during the year which covered key sources of estimation uncertainty, in particular the recognition of deferred tax assets;
- note 1 to the Consolidated Financial Statements (page 59) – details of key areas of uncertainty and accounting policies for tax; and
- note 5 to the Consolidated Financial Statements (page 76) – details of the tax balances in the Consolidated Financial Statements together with a tax reconciliation. This explains the main drivers of the tax rate and the impact of our assessment on the recovery of UK deferred tax assets.

Information on the Group's approach to managing its tax affairs can be found at www.rolls-royce.com.

Investments and capital expenditure

The Group subjects all major investments and capital expenditure to a rigorous examination of risks and future cash flows to ensure that they create shareholder value. All major investments, including the launch of major programmes, require Board approval.

The Group has a portfolio of projects at different stages of their lifecycles. All of our major investments and projects are assessed using a range of financial metrics, including discounted cash flow and return on investment.

Financial risk management

The Board has established a structured approach to financial risk management. The Financial risk committee (Frc) is accountable for managing, reporting and mitigating the Group's financial risks and exposures. These risks include the Group's principal counterparty, currency, interest rate, commodity price, liquidity and credit rating risks outlined in more depth in note 19. The Frc is chaired by the Chief Financial Officer or group controller. The Group has a comprehensive financial risk policy that advocates the use of financial instruments to manage and hedge business operations risks that arise from movements in financial, commodities, credit or money markets. The Group's policy is not to engage in speculative financial transactions. The Frc sits quarterly to review and assess the key risks and agree any mitigating actions required.

Capital structure

£m	2021	2020
Total equity	**(4,278)**	(4,517)
Cash flow hedges	**45**	94
Group capital	**(4,233)**	(4,425)
Net debt	**(5,157)**	(3,576)

Operations are funded through various shareholders' funds, bank borrowings, bonds and notes. The capital structure of the Group reflects the judgement of the Board as to the appropriate balance of funding required. Funding is secured by the Group's continued access to the global debt markets. Borrowings are funded in various currencies using derivatives where appropriate to achieve a required currency and interest rate profile. The Board's objective is to retain sufficient financial investments and undrawn facilities to ensure that the Group can both meet its medium-term operational commitments and cope with unforeseen obligations and opportunities.

The Group holds cash and short-term investments which, together with the undrawn committed facilities, enable it to manage its liquidity risk.

Other Financial Information *continued*

During the year, the Group repaid £300m of commercial paper drawn under the Covid Commercial Finance Facility and a €750m bond at its maturity in June 2021. The Group also drew the £2,000m loan maturing 2025.

During 2021 the Group entered into a new £1,000m loan maturing 2026 (supported by an 80% guarantee from UK Export Finance).

The £2,500m revolving credit facility, the £1,000m UKEF-supported loan and £1,000m bank loan were undrawn at the period end.

At the year end, the Group retained aggregate liquidity of £7.1bn, including cash and cash equivalents of £2.6bn and undrawn borrowing facilities of £4.5bn.

The Group has no material debt maturities until 2024. The maturity profile of the borrowing facilities is regularly reviewed to ensure that refinancing levels are manageable in the context of the business and market conditions. There are no rating triggers in any borrowing facility that would require the facility to be accelerated or repaid due to an adverse movement in the Group's credit rating. The Group conducts some of its business through a number of joint ventures. A major proportion of the debt of these joint ventures is secured on the assets of the respective companies and is non-recourse to the Group. This debt is further outlined in note 11.

Credit rating

£m	Rating	Outlook
Moody's Investors Service	Ba3-	Negative
Standard & Poor's	BB-	Stable
Fitch	BB-	Stable

The Group subscribes to Moody's, Standard & Poor's and Fitch for independent long-term credit ratings with the ratings in the table above being applicable at the date of this report.

Accounting

The Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS), as adopted by the UK.

No new accounting standards had a material impact in 2021. Other than Amendments to IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* – Onerous Contracts described on page 65, the Group does not consider that any standards, amendments or interpretations issued by the IASB, but not yet applicable will have a significant impact on the Consolidated Financial Statements in 2022.

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 include 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 managements 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 26.

Revenue from continuing operations	Notes	**2021 £m**	2020 £m
Statutory revenue		**11,218**	11,491
Derivative & FX adjustments	2	**(271)**	(61)
Underlying revenue		**10,947**	11,430

Operating profit/(loss) from continuing operations	Notes	**2021 £m**	2020 £m
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)

Underlying results from discontinued operations

Results from discontinued operations	Notes	**2021 £m**	2020 £m
Profit/(loss) for the year from discontinued operations on ordinary activities	26	**36**	(68)
Costs of disposal on discontinued operations	26	**(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 114) 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 27.

	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 48 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 26. For further detail, see note 27.

	2021 £m	2020 £m
Statutory change in cash and cash equivalents	**(775)**	(986)
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)**	(2,622)
Exclude: capital element of lease payments	**(374)**	(284)
Movement on balances with parent company	**4**	(1,887)
Business acquisitions & disposals	**(49)**	119
Penalties paid on agreements with investigating bodies	**156**	135
Restructuring exceptional cash flow	**231**	323
Other underlying adjustments	**24**	34
Free cash flow	**(1,441)**	(4,182)
Discontinued operations free cash flow [1]	**(43)**	(70)
Free cash flow from continuing operations	**(1,484)**	(4,252)

[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	**(258)**	(3,007)
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**	33
Free cash flow	**(1,441)**	(4,182)
Discontinued operations free cash flow	**(43)**	(70)
Free cash flow from continuing operations	**(1,484)**	(4,252)

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.

Gross R&D expenditure from continuing operations	Notes	2021 £m	2020 £m
Statutory research and development costs		**(778)**	(1,204)
Amortisation and impairment of capitalised cost	3	**70**	560
Capitalised as intangible assets		**(105)**	(228)
Contributions and fees		**(366)**	(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. Further details are included in note 2 on page 71.

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)**	(1,225)
Contributions and fees	3	**366**	353
Self funded R&D	3	**(813)**	(872)
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
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

GLOSSARY

APM	alternative performance measure	IASB	International Accounting Standards Board
Articles	Articles of Association of Rolls-Royce plc	IFRS	International financial reporting standards
C&A	commercial and administrative	KPIs	key performance indicators
CEO	chief executive officer	LIBOR	London inter-bank offered rate
Our Code	Global Code of Conduct	LTIP	long-term incentive plan
the Code	UK Corporate Governance Code 2018	LTSA	long-term service agreement
Company	Rolls-Royce plc	M&A	mergers & acquisitions
D&I	diversity & inclusion	MW	megawatts
DoJ	US Department of Justice	OE	original equipment
DPAs	deferred prosecution agreements	PBT	profit before tax
DTR	the FCA's Disclosure Guidance and Transparency Rules	PPE	property, plant and equipment
EFH	engine flying hours	PSP	performance share plan
ERG	employee resource group	R&D	research and development
ESG	environment, social and governance	R&T	research and technology
EU	European Union	REACH	registration, evaluation, authorisation and restriction of chemicals
EUR	euro	RMS	risk management system
EVTOL	electric vertical take-off and landing	RRH	Rolls-Royce Holdings plc
FCA	Financial Conduct Authority	RRMS	Rolls-Royce management system
FX	foreign exchange	RRSAs	risk and revenue sharing arrangements
GBP	Great British pound or pound sterling	SAF	sustainable aviation fuel
GHG	greenhouse gas	SFO	UK Serious Fraud Office
Group	Rolls-Royce plc and its subsidiaries	SMR	small modular reactors
HPT	high pressure turbine	TCFD	Taskforce on Climate-related Financial Disclosures
HSE	health, safety and environment	TSR	total shareholder return
		USD/US$	United States dollar