

Group Financial Highlights

Free cash flow [△]

£873m

2018: £568m

Underlying revenue

£15,450m

2018: £15,067m

Underlying operating profit

£808m

2018: £616m

Underlying profit before tax

£583m

2018: £466m

Underlying earnings per share

15.9p

2018: 16.0p

Net funds [⊖]

£1,361m

2018: £840m

[△] Free cash flow is defined in note 28 on page 180.[⊖] Net funds (excluding lease liabilities) is defined on page 121.

Full year payment to shareholders

11.7p

2018: 11.7p

Reported revenue

£16,587m

2018: £15,729m

Reported operating (loss)

£(852)m

2018: £(1,161)m

Reported (loss) before tax

£(891)m

2018: £(2,947)m

Reported earnings per share

(69.1)p

2018: (129.2)p

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Front Cover:

The Rolls-Royce ionBird: a test airframe for our ACCEL project, which is developing the world's fastest all-electric aircraft.

Our Spirit of Innovation aircraft, developed with YASA and Electroflight and partly funded by Aerospace Technology Institute (ATI), will be powered by the world's most power-dense flying battery pack, with the aim of reaching speeds of over 300mph.

Use of underlying performance measures in the Annual Report

All figures in the narrative of the Strategic Report are underlying unless otherwise stated. We believe this is the most appropriate basis to measure our in-year performance as underlying results reflect 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, impairment charges and exceptional items. A full definition of underlying and the reconciliation to the reported figures are in note 2 of the Consolidated Financial Statements on page 134. All references to organic change are at constant translational currency and exclude M&A.

Forward-looking statements

This Annual Report contains forward-looking statements. Any statements that express forecasts, expectations and projections are not guarantees of future performance and guidance may be updated from time to time. This report is intended to provide information to shareholders, and is not designed to be relied upon by any other party or for any other purpose, and the Company and its Directors accept no liability to any other person other than that required under English law. Latest information will be made available on the Group's website. By their nature, these statements involve risk and uncertainty, and a number of factors could cause material differences to the actual results or developments.

GROUP AT A GLANCE

At Rolls-Royce, we pioneer the power that matters to connect, power and protect society.

Free cash flow

£873m

Underlying revenue

£15,450m

Underlying operating profit

£808m

Reported revenue

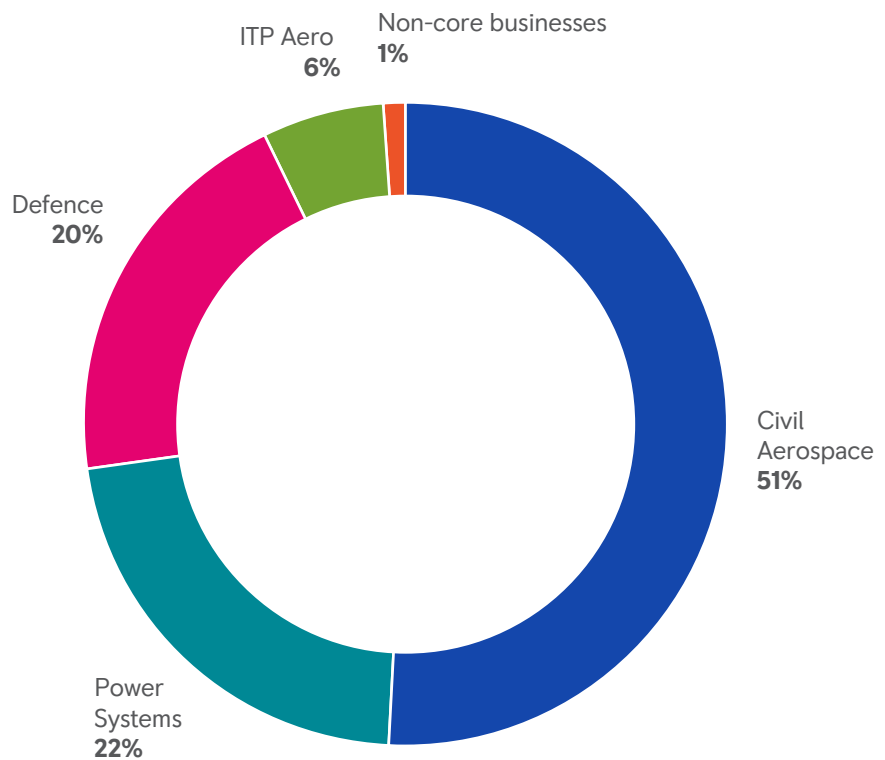
£16,587m

Reported operating (loss)

£(852)m

See note 2 on page 139 for a reconciliation between underlying and reported results.

Underlying revenue by business in 2019



Order backlog	Patents approved for filing	Gross R&D expenditure	Countries with Rolls-Royce presence	Employees (monthly average)
£60.9bn	830	£1.46bn	50	51,700

Our core businesses in 2019

CIVIL AEROSPACE



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

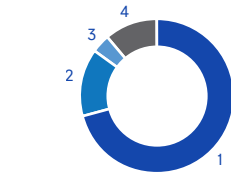
£8,107m

Underlying revenue

£44m

Underlying operating profit

Underlying revenue mix



- 1. Large Engines.....**71%**
- 2. Business Aviation.....**14%**
- 3. Regional.....**4%**
- 4. V2500.....**11%**

See page 24

POWER SYSTEMS



Power Systems is a leading provider of high-speed and medium-speed reciprocating engines, and complete propulsion and power generation systems. It serves the marine, defence, power generation and industrial markets and includes civil nuclear operations that supply safety-critical systems.

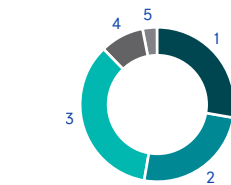
£3,545m

Underlying revenue

£357m

Underlying operating profit

Underlying revenue mix



- 1. Marine.....**28%**
- 2. Industrial.....**25%**
- 3. Power Generation.....**35%**
- 4. Defence.....**9%**
- 5. Civil Nuclear.....**3%**

See page 29

DEFENCE



Defence is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and helicopter applications. It has significant scale in naval and is the technical authority for through-life support of the nuclear power plant for the Royal Navy's submarine fleet.

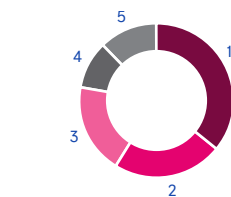
£3,250m

Underlying revenue

£415m

Underlying operating profit

Underlying revenue mix



- 1. Transport.....**36%**
- 2. Combat.....**23%**
- 3. Submarines.....**19%**
- 4. Naval.....**10%**
- 5. Other.....**12%**

See page 33

ITP AERO



ITP Aero is a global leader in aero-engine design, manufacture and maintenance. Alongside the development, manufacturing, assembly and testing of engines, it provides MRO services for regional airlines, business aviation, industrial and defence applications.

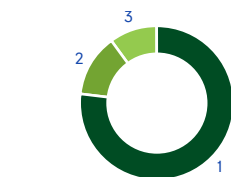
£936m

Underlying revenue

£111m

Underlying operating profit

Underlying revenue mix



- 1. Civil.....**77%**
- 2. Defence.....**13%**
- 3. In-Service Support.....**10%**

See page 37

CHAIRMAN'S STATEMENT



SIR IAN DAVIS, CHAIRMAN

This was a year of progress across the Group, despite the technical and operational challenge of the Trent 1000. Strategically, good progress is being made on new low carbon technologies and capabilities.

This was a year of progress across the Group, despite the challenges we experienced with the Trent 1000 engine. We took further significant strategic steps towards realising our long-term goal to be the world's leading industrial technology company while continuing our cultural transformation.

In our Civil Aerospace business, the technical and operational challenge of fixing the Trent 1000 has been both costly and resource intensive. Most importantly, it has led to significant and deeply regrettable disruption for our customers. But we have made progress and are taking further proactive steps to improve the situation in 2020. Ensuring engine availability and the service levels our customers expect are our highest short-term priorities.

Our Power Systems and Defence businesses sustained the financial and strategic momentum of previous years. Strategically, good progress is being made in the development of new technologies and capabilities with the focus on more efficient and environmentally friendly engines and propulsion systems.

2019 Review

We delivered a record number of widebody engines in 2019, almost double the number delivered five years ago. This has enabled the continuous growth of our installed engine base in the civil aerospace market which, because of the nature of our service contracts and business model, is the bedrock of our long-term future profits and cash flow. We are very encouraged by the sustained successful introduction and reliable performance of our crucial Trent XWB engine.

Our Power Systems business is performing well despite challenging external market conditions. In line with strategy, it continues to increase revenues and market share as it moves towards integrated systems and solutions and to new, more environmentally sustainable technologies. We are particularly pleased with the strong progress in China made by Power Systems and proud of the development of pioneering new hybrid-electric engines for the rail market.

Our Defence business performed strongly, achieving a record level of new orders, with particular strength in the US where we see significant future opportunities. I would like to single out the greatly improved customer service and delivery performance in our submarines propulsion unit.

Consistent with the long-term needs and nature of the business, we have sustained technology and R&D investments. The focus of these investments has been on new technologies and capabilities that will improve engine efficiency, significantly reduce carbon emissions and minimise adverse environmental impacts – including noise. I would highlight, as examples, the acquisition of Siemens' eAircraft business and our investments in electric propulsion more broadly. These include the pioneering development of an all-electric aircraft, the testing of a new hybrid-electric propulsion system, as well as microgrid technologies for power generation.

We are investing heavily in digital and artificial intelligence (AI) technologies. The industries we operate in are, and will increasingly be, at the centre of the data revolution and the integration of complex systems and technologies.

During the year, we faced unprecedented challenges with our Trent 1000 engine. We are working tirelessly to fix the problems and improve the engine's underlying

durability. We have seen signs of progress with the roll-out of fixes and have a detailed operational plan to mitigate the disruption to our customers. As a result of the cost of the programme, however, we recognised a significant exceptional charge in the year.

Despite progress on our restructuring and transformation programme, there remains a lot more to be done to reduce the cost base of the business, to simplify our processes and to provide a more agile culture. This is a competitive and investor necessity. It is essential to generate the cash flow, shareholder returns and investment funds required for the long-term health of the business. It is also a huge opportunity, and consistent with our long-term aspiration to be the world leading industrial technology company.

At the time of writing, there are macro risks to navigate in the coming year, notably the outbreak of the COVID-19 virus which is currently having an effect on world trade, travel, and supply chains. We are actively monitoring the situation, following international health advice and giving our people as much support as they need.

Purpose, strategy and governance

Purpose has been, and always will be, fundamental to any company with long-term aspirations or enduring ambition. We have spent significant time refining our purpose to ensure it is relevant to our stakeholders, not least our employees. At its core, our purpose is to connect, power and protect society. We will do this while minimising our impact on the environment.

Purpose manifests itself in strategy and behaviour. I hope this report will clarify our strategic intent and the actions we are taking to make our purpose real, and measurable, to all our stakeholders. Technology and capital allocation will be at its heart. We have to be at the forefront of technologies such as electrification, hybrid propulsion systems and microgrids that can dramatically reduce emissions. Long haul aviation is technologically challenging from a carbon emissions perspective. Improved engine efficiency will continue to play a very important role in emissions reduction as will alternative non-fossil fuels.

We are committed to reducing greenhouse gas emissions from our operations and facilities to zero by 2030. Beyond that, we are working hard to determine how we can mitigate the emissions impact of our product portfolio and product testing in order to get the whole of Rolls-Royce to a net zero emissions position by 2050. Large scale aviation is a potentially very challenging sector and to achieve this, we will have to continue to work in partnership with

governments, suppliers, customers, technology providers, fuel companies, non-governmental organisations (NGOs) and civil society. We cannot do it alone. Climate change is a risk to our business – indeed a principal risk – but more importantly, it is a real opportunity which could see us create disruptive new technologies and solutions.

We have continued to develop the governance innovations highlighted in previous reports. Irene Dörner, our Employee Champion on the Board, continued her sterling efforts during the year, while Beverly Goulet visited a number of our smaller sites as our North American Employee Champion and Lee Hsien Yang held a series of town hall meetings with employees and partners in China. We held further Meet the Board events and continued our Board apprentice programme. We have introduced a new tool to track employee engagement with increased focus on key topics such as engagement with our purpose and strategy. Statistically and culturally we still have a way to go on diversity, particularly at the most senior levels. But we are making good progress elsewhere from a talent pipeline perspective and I believe we are on the right path.

Finally, we continue to focus attention and oversight on ethical compliance and, above all, on safety. This is an ongoing challenge, particularly at times of disruption and stress, for all companies in our industries.

Shareholder payments

During the year, further steps were taken to simplify the portfolio and improve our net funds position. We completed the sale of our Commercial Marine business and finalised the transfer of a significant portion of our pension liabilities to Legal & General Assurance Society. This move will increase overall security for Rolls-Royce pensioners and reduce risk to our business.

Strengthening the balance sheet understandably remains a priority. The costs associated with the Trent 1000 have impacted investor confidence. Our firm intent is to turn this around. While we have made progress in delivering the sustainable free cash flow from our business that would be the foundation for increased shareholder payments, there is more to be done. As a consequence, we are not proposing an increase in the final shareholder payment for 2019. This will be held flat at 7.1p per share. Taken together with the interim payment, this brings the full payment to 11.7p per share. Despite the challenges of 2019, our underlying financial performance has shown improvement over the last few years. It remains our objective to progressively

rebuild distributions to shareholders while investing for the long-term.

Board developments

During the year, we announced the appointment of George Culmer as a Non-Executive Director. He joined at the start of 2020 and is a member of the Nominations & Governance Committee, the Audit Committee and the Safety, Ethics & Sustainability Committee. A chartered accountant, George was until recently chief financial officer at Lloyds Banking Group and is also the senior independent director at Aviva.

We were really sorry to see the departure of Ruth Cairnie as a Non-Executive Director at the end of the year following her appointment as chair of Babcock International Group. Ruth made extraordinary contributions to the Board and to the Group, not least in her role as Chairman of the Remuneration Committee.

Brad Singer, a partner and chief operating officer of ValueAct Capital, stepped down as a Non-Executive Director in December. Since joining us in 2016, Brad has been an active member of the Board, offering a valued external perspective and helping us to drive progress in our efforts to transform Rolls-Royce. My colleagues and I have greatly appreciated Brad's insight and commitment to the Company and it has been a pleasure to work alongside him.

We have recently announced the appointment of Dame Angela Strank as a Non-Executive Director. She will join the Board on 1 May 2020 and will be a member of the Nominations & Governance Committee, the Safety, Ethics & Sustainability Committee and the Science & Technology Committee. Dame Angela is currently chief scientist and head of downstream technology at BP and a member of their Executive Management Team. I am delighted to welcome her to our Board.

Looking forward

Our Group continues to operate in markets where the long-term trajectory is one of growing demand for power and the services that will support it. To capitalise on the opportunities, however, we must continue to focus on improving our cost competitiveness; pursue purposeful, disciplined capital allocation; and drive innovation in sustainable, lower carbon power solutions. We must also continue on the cultural transformation journey that helps accelerate our trajectory and attract and retain the talent on which we will depend.

Sir Ian Davis
Chairman

CHIEF EXECUTIVE'S REVIEW



WARREN EAST, CHIEF EXECUTIVE

Despite the challenges of the Trent 1000, the progress seen across the Group in the year gives me increased confidence that the changes we are implementing are creating a tangible and sustainable cultural and performance shift within our business.

Progress in 2019

To draw an analogy to describe the year that might be familiar to many of our aerospace customers: the journey is sometimes more important than the destination. In 2019, how we got to our destination – strong progress across the Group – gives me increased confidence that the changes we have been implementing over the past two years are creating a tangible and sustainable cultural and performance shift within our business.

We had a good end to the year including strong Civil Aerospace aftermarket performance, record widebody engine deliveries, and better trading in Power Systems despite tough market conditions. Defence performed well throughout the year with a record order intake and healthy cash performance. As a result, we delivered improved financial results including a 25% increase in underlying operating profit and further strong

improvement in Civil Aerospace. This contributed to strong Group free cash flow of £873m, another significant step towards achieving at least £1bn in 2020. We also continued to invest in the new technologies which are so vital to remaining competitive. This was all achieved despite the in-service challenges with the Trent 1000, which could have derailed our progress. The fact that they did not is thanks to the focus of our people on their roles in delivering for the business.

I spoke last year of needing to build beyond the breakthrough we could see occurring as we launched our restructuring and adopted our new operating structure. We have generated real momentum during 2019, not least in respect to costs, as we scrutinised our spending with intense rigour and really challenged ourselves to act differently. There is, however, no denying the fact that the durability issues with the Trent 1000 weighed heavily on 2019, in terms

of the financial cost of returning the fleet to the levels of service our customers expect and dealing with the unacceptable disruption we have caused them. As a result of the Trent 1000 and as announced in November, we are recognising a net exceptional charge of £1,361m within our financials, contributing to a reported operating loss of £(852)m.

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

Lower carbon power

We believe in the positive transforming potential of technology and have a passion for solving difficult problems. Today, one of our society's greatest technological challenges is the need for lower carbon power and we have a crucial role to play

2019 priorities

Customers

- Increase production volume
- Expand service network
- Mitigate disruption from in-service issues

People and culture

- Build a resilient business
- Continue restructuring programme
- Further simplify processes
- Diversity & inclusion

Technology

- Revitalise service
- Develop new engine architecture
- Advance electrification projects

Financial

- Continue improving free cash flow
- Further strengthen balance sheet
- Enhance capital allocation discipline

in decarbonising the sectors in which we operate. Firstly, we are committed to further reducing the environmental impacts of our products and services. We are following up our success as the developer of the world's most efficient civil large engine in service today, the Trent XWB, with our next generation UltraFan. We are also heavily involved in the drive for sustainable alternative fuels. Secondly, we are committed to developing new low emission technologies. During 2019, we made significant progress, including the acquisition of Siemens' eAircraft business and ground tests of our megawatt generator for the E-Fan X demonstrator with Airbus. Thirdly, we are working to reduce the greenhouse gas emissions from our own operations and facilities to zero by 2030.

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

Climate change is a risk for our business and playing a pivotal role in combating it presents us with a very significant

opportunity to become a disrupter. Inaction is not an option.

Progress on restructuring

In 2019, we made further progress on our restructuring programme. Since it was announced in mid-2018, we have implemented productivity improvements enabling us to achieve 2,900 of the planned 4,600 indirect headcount reduction and we remain on track to realise the full benefits of the programme by the end of 2020. Reducing our workforce is not a decision we take lightly, but we must fundamentally change the way we operate.

We have completed the majority of the changes within Civil Aerospace and Defence, including unwinding an overly complex corporate structure and introducing new automated tools and methods which have helped streamline processes. Progress within Power Systems was more limited as we completed planned strategic investments. Our Group Business Services operation, meanwhile, is now providing more effective and efficient transactional processing across the Group.

We have focused on driving value through reducing other indirect spend beyond salary costs and on improving the effectiveness of our cash management processes. These foundations will be developed further in 2020 to provide additional productivity improvements in the future.

Delivery on 2019 priorities

We set out four key priorities for the year:

Customers

During the year, we delivered a record 510 widebody engines from Civil Aerospace, increasing our installed base by 6% to more than 5,000 engines and growing engine flying hours by 7%. The Trent XWB became our second-largest Trent programme by volume, with the fleet having amassed more than five million flying hours and its leading engines already achieving our expectations for time-on-wing (see page 26). We revamped our Civil Aerospace services business and undertook a record number of scheduled major overhauls, in spite of increased check and repair visits driven by the Trent 1000.

During the year, we took the decision to accelerate the installation of fixes within a small proportion of the Trent 1000 fleet following an incident. As a result, we revised our target to reduce aircraft on ground (AOG) to single digits from the end of 2019 to the end of the second quarter of 2020. To help alleviate disruption, we took further action to increase our maintenance, repair and overhaul (MRO) capabilities and increased our pool of spare engines to get our customers flying again.

Our Power Systems business continued to capitalise on its extensive installed base of engines by increasing revenues from services, including through the introduction of digital monitoring tools, initially targeting the mining industry.

Defence had a very successful year, securing a record order intake of £5.3bn boosted by services. Notable wins included a five-year contract worth over \$1bn with the US Marine Corps to maintain the AE1107 engines that power the Bell Boeing V-22 Osprey. We delivered just under 500 aero engines and now have over 16,000 in service across more than 100 countries. We also made good progress on developing new technologies ahead of a number of attractive opportunities in coming years.

Technology

Technology is the lifeblood of our business and, during the year, we passed a number of significant milestones on our new engine programmes. We successfully tested all the composite elements of our advanced low pressure system (ALPS) – including fan blades and fan cases – which is a key component of our UltraFan engine design. In Defence, our work as part of Team Tempest in the UK continued. In the US, our dedicated defence development team, LibertyWorks, demonstrated an integrated power and thermal management system for high-power directed energy applications



FIXING THE TRENT 1000

Returning the Trent 1000 fleet to the level of service which our customers expect is the top priority of senior management and the Board. We believe 2019 was a pivotal year. We have now designed fixes for all but one of the significant technical challenges we have faced and have a clear path to resolving the final issue. We have announced actions to boost our maintenance capacity and add additional spare engines to reduce customer disruption. We also carried out an extensive review that resulted in greater certainty for customers and clarity for investors. Our focus is now on executing this clear plan.

We have been dealing with three significant technical issues affecting each of the three variants of the Trent 1000 (Package B, Package C and TEN). Of the nine fixes required, we have so far designed eight and certified seven which are now being incorporated into the fleet. A new high pressure turbine (HPT) blade for the Trent 1000 TEN variant is the final modification required. During the year, we carried out a detailed technical re-evaluation of our progress. Based upon that work and test activity, we reset our financial and operational expectations for the Trent 1000 TEN based on a revised estimate of final blade durability. This allowed us to be clearer with customers on the engine's long-term servicing requirements, giving them greater certainty when planning schedules. It also enabled us to assess the associated exceptional cost and provide investors with a clearer view of future costs (see page 19).

The Board continued to scrutinise the issue, receiving regular updates on progress. The Audit Committee reviewed the accounting treatment of the cost (see page 82) and the Board carried out a full technical review (see page 68). To underpin our target to reduce AOG to less than ten by mid-2020, we are increasing our stock of spare engines and accelerating growth in our MRO network. This comes on top of a tripling of MRO capacity over the past three years, the introduction of new servicing techniques and a 50% increase in our turbine blade manufacturing capacity.

and we refined our F130 engine for the competition to re-engine the US Air Force's (USAF) Boeing B-52s. Our efforts in electrification included the introduction of microgrids from Power Systems (see page 30) and breakthroughs in aviation including the roll-out of the all-electric plane we hope will set new speed records (see page 42).

People and culture

We have continued to embed our values and behaviours across the Group (see page 45). Improving diversity & inclusion remains a priority for us and during the year we refreshed our strategy and looked to accelerate its implementation. We have a lot of work to do if we are to hit our gender diversity target of 23% for our Executive Team. During the year, we reviewed our succession plans and increased the proportion of females from 35% to 44%.

Financial

We delivered significant financial progress with a strong level of free cash flow, despite £578m of in-service costs from the Trent 1000 which were partially offset by £173m of related insurance receipts. In Civil Aerospace, we reduced widebody OE losses and generated a healthy increase in the net cash flow driven by our widebody in-service fleet. We also saw an increase in margins in Power Systems, although Defence was lower as we had signalled, reflecting its OE product mix. After a poor first half performance, we delivered a material reduction in inventory as the year progressed, although further work is required here in 2020. We focused hard on costs, with good progress achieved in the second half of the year. We still have work to do in 2020, however, to further grow the quality and scale of our cash flow.

2020 priorities and longer-term outlook

Building on the strength of our performance in 2019, we enter 2020 with conviction and confidence. The momentum we saw as the year progressed must be maintained in 2020 in order to achieve at least £1bn in free cash flow. The fact that we have remained on course for this target despite the Trent 1000 situation is due to the determination, drive and resolve of our people. In the coming year, we will push for further improvements in execution, delivery and overall business performance.

25 YEARS CONNECTING THE WORLD

In 2020, our family of Trent engines will pass a major milestone: a quarter of a century powering commercial airlines around the world, connecting people and cultures and delivering goods and services.

Having completed more than 145 million engine flying hours since the very first engine, a Trent 700, went into service in 1995, our Trent engines are the bedrock of Rolls-Royce. We have been celebrating the vital role that these engines play in our growth and our future with our #poweroftrent campaign across all our digital channels.

More than a year since it entered service in November 2018, the latest member of the family, the Trent 7000, has performed well. This follows the smoothest entry into service of any widebody engine, the Trent XWB, which became our second largest Trent programme by volume during the year. The Trent XWB fleet has now flown more than five million flying hours since it took to the skies in early 2015. It remains the world's most efficient large aero engine in service today. In 2019, we won 64% of all new widebody engine orders and now hold 55% of the widebody industry order backlog.



Now that we are two years into our new simplified structure of business units – operating within a clear framework and supported by a lean centre – it is appropriate to set priorities which are solely Group level, from which we determine the priorities for our businesses and functions.





Our first priority is to deliver on our commitments to customers. Secondly, we must deliver the full benefit of our transformation by constantly seeking simpler, more efficient ways of working across the Group. While headcount reduction is a consequence, our transformation must primarily be about changing the way we operate. We have made good progress in 2018 and 2019, and during 2020 we must

push for even greater pace and simplicity. Thirdly, our financial target as a Group is clear: to generate at least £1bn of free cash flow in 2020. Sustainable and growing cash flow is the foundation upon which our long-term future, and returns to investors, will be built. Finally, our most important differentiator is our people and we must continue to embed the behaviours we need from everyone who works at Rolls-Royce in order to create the culture we need to continue to win.

I believe the coming year will mark another important step towards generating significant returns from the market positions Rolls-Royce has spent many years securing. The value embedded within our business,

most obviously within our installed base of widebody engines and order book, must be fully unlocked. Our sights are firmly set upon a mid-term ambition to exceed £1 of free cash flow per share, which translates to at least £1.9bn of free cash flow. To secure this in a sustainable way means reinforcing behavioural change across our business, driving pace and simplicity, developing a thirst for continuous improvement and ensuring disciplined investment in the new technologies we require to exploit the opportunities that we can see across all our markets. We will push harder and further in 2020, towards becoming the world's leading industrial technology company.

2020 priorities

Group priorities	Customers Exceed customer commitment metrics 	Operations Annual efficiency improvements of over £400m (from launch of restructuring) 	Financial Free cash flow of at least £1bn 	People and culture Improved employee engagement as measured through Gallup Q12 
	Safety Operate safely			
	Quality Trusted to deliver excellence			
	Ethics Act with integrity			

PURPOSE, VISION AND STRATEGY

We are one of the world's leading industrial technology companies. We pioneer the power that matters to connect, power and protect society. This requires us to anticipate the opportunities and challenges our customers will face.

OUR VISION

Pioneering the power that matters

Rolls-Royce pioneers cutting-edge technologies that deliver clean, safe and competitive solutions to meet our planet's vital power needs.

OUR STRATEGY

Our strategy reflects three horizons:

- Horizon 1 Maintain and defend core businesses
- Horizon 2 Nurture emerging businesses
- Horizon 3 Create genuinely new businesses

At the same time we need to manage the transition of technologies, capabilities, resources and value across business horizons.

Trends shaping our markets

We believe three key trends will define the world's future power needs: the growing demand for cleaner, more sustainable power; electrification; and digitalisation. As we move to a low carbon global economy, our engines will become part of broader, hybrid-electrical systems with lower emissions and environmental impact.

Our progress in 2019

Horizon 1

Vitalise existing capabilities

We are developing next-generation technologies to sustain and grow our current competitiveness; investing in our existing thermo-mechanical products to ensure that they provide clean, safe and competitive solutions for our customers.

Our installed base of Civil Aerospace widebody engines exceeded 5,000 in the year, up more than 50% over the past decade. The Trent XWB is meeting our expectations, with the first Trent XWB-84 engines now entering their fifth year in

service without requiring shop visits. The Trent 700, a leading member of the Trent family for almost 25 years, continued to perform well and received certification to power a small fleet of new Airbus BelugaXL aircraft. Our ambitions for the UltraFan demonstrator programme remain strong as we target engine maturity towards the end of the 2020s. During 2019, we successfully tested the composite elements of the ALPS, including fan blades and fan cases. In business aviation, we unveiled the Pearl 700 for the new Gulfstream G700 and the first member of the Pearl family, the Pearl 15, entered into service (see page 28).

In Power Systems, we secured an innovative ten-year service agreement with Svitzer that connects maintenance services to engine availability; and signed a new agreement for the supply of MTU engines with British luxury yacht manufacturer Sunseeker.

In Defence, we successfully completed early engine tests of the F130 which we are offering as a new engine for the USAF's Boeing B-52. We were also awarded a contract, alongside industry partners, to develop hypersonic propulsion by the UK's Ministry of Defence as part of a suite

of technologies being developed in parallel with Project Tempest. In the US, our LibertyWorks team saw the culmination of ten years of research and development by demonstrating an integrated power and thermal management system for defensive high-power directed energy applications. During the year, both our AE1107 engines on the Bell Boeing V-22 Osprey and RR300 engines on the Robinson R66 helicopter exceeded one million engine flying hours.

Horizon 2

Champion electrification

We are investing in new power solutions for our long-term success, building on our strong heritage in thermo-mechanical engineering to produce state-of-the-art electro-mechanical and hybrid power systems. It is just one of the steps we are taking towards the provision of lower carbon power (see page 42).

During the year, we secured orders from Irish Rail and Porterbrook, the UK's largest rolling stock leasing company, for our hybrid powerpacks. We also signed a global microgrid partnership to offer

energy-efficient solutions for utility and industrial companies, and opened a microgrid validation centre (see page 30).

In aviation, we completed the acquisition of Siemens' eAircraft business (see below) and carried out successful ground tests of a hybrid system using our M250 gas turbine, paving the way for test flights in 2021. We gained support for our hybrid-electric ambitions from the German State of Brandenburg and announced plans to work with partners, including the Brandenburg University of Technology to develop a hybrid-electric flight demonstrator based on the M250 system.

In the UK, where the government is already supporting the E-Fan X and ACCEL programmes (see page 42), it is also supporting us on Project Fresson, which plans to design, manufacture and integrate a hybrid-electric propulsion system into a small aircraft for island-hopping routes.

We also launched a joint programme to research zero-emissions aviation with Widerøe, the largest regional airline in Scandinavia, which plans to replace and electrify its regional fleet by 2030.

Reinvent with digital

We are using digital technologies across our activities to generate new insights, new solutions and new opportunities; increasingly partnering with start-ups and established players. We expanded the digital solutions team within Power Systems and set up a new data and analytics competence centre in the year. We announced that ferry company Förde Reederei Seetouristik will test a new electronic monitoring system that collects and analyses data from our engines and other systems at sea. We also unveiled plans to develop an autonomous machinery control system for naval vessels.

R² Data Labs continued to build its digital ecosystem through a tie-up with venture capital fund, BrightCap Ventures, to attract start-ups to work with us on solving industrial challenges using digital technologies. We also launched our first collaborative digital technology project with Singapore's Defence Science and Technology Agency (DSTA).

Horizon 3

Transform our business

We are advancing new opportunities that could capture substantial growth and value

for the Group in the future. We have received initial match funding from the UK government to progress a new type of compact smart nuclear power station based around our Small Modular Reactor (SMR) concept (see page 43). Power Systems signed a letter of intent for the construction of a demonstration plant that uses electric power generated in photovoltaic and wind power plants for the production of synthetic fuels. We also set up a power-to-x competence centre at the Brandenburg University of Technology, Germany, to explore the potential of synthetic fuels.

Build a balanced portfolio

We actively manage our portfolio of activities to focus on key activities that are aligned with our strategy and business model. As a result, during the year, we completed the sale of our Commercial Marine business and, in January 2020, completed the sale of our Civil Nuclear North America Services business.

ACCELERATING OUR ELECTRICAL STRATEGY

During the year, we took a significant stride towards meeting our strategic ambition to champion electrification with the completion of the acquisition of Siemens' eAircraft business.

This business has been developing a range of all-electric and hybrid-electric propulsion solutions. Around 180 specialist electrical designers and engineers based in Germany and Hungary, have now joined us.




Electrification is set to have as dramatic an impact on aviation as the replacement of piston engines by gas turbines. We are at the dawn of the third era of aviation, which will bring a new class of quieter and cleaner air transport to the skies.

The acquisition of eAircraft accelerates our ambitions in aerospace by adding vital skills and technology to our portfolio. It brings us increased scale and additional expertise as we develop a product range of hybrid power and propulsion systems.



BUSINESS MODEL

Our competitive advantage comes from:

<p>Cutting-edge technologies</p>  <p>We apply cutting-edge technologies to provide clean, safe and competitive solutions. Our technologies ensure that our customers have the vital power that meets their emerging needs.</p>	<p>System solutions</p>  <p>We package technologies into systems that provide complete solutions for our customers. Our solutions mean that our customers have power from a single, trusted partner.</p>	<p>System life</p>  <p>We care about the performance of our solutions throughout their lives. Our through-life capabilities maximise availability and enable us to meet changing customer needs.</p>
--	--	--



Principal risks

- | | | |
|----------------------------------|---|-------------------------------------|
| A Safety | E Compliance | H Market and financial shock |
| B Business continuity | F Cyber threat | I Political risk |
| C Climate change | G Major product programme delivery | J Strategic transformation |
| D Competitive environment | | K Talent and capability |

 [Principal Risks page 50.](#)

We believe we have a sustainable business model which will create value for all our stakeholders over the long term. See our viability statement on page 55.

1 Anticipate the needs of our customers

We maintain a high degree of customer intimacy in order to anticipate and understand the future power needs of our customers, building on our years of experience in delivering for our markets. Our strategic planning processes match customer expectations with market insight to forecast trends, opportunities and threats which we must adapt to meet.

2 Develop cutting-edge technologies

We act as a global technology sponsor, drawing upon expertise inside and outside our organisation. In 2019, we invested £1.46bn in gross R&D, supported by governments around the world, enabling our engineers to generate cutting-edge technologies, vital intellectual property, and 830 new patents approved for filing. We draw upon the skills of our 29 University Technology Centres and utilise the expertise of our partners, with over 500 companies within our digital ecosystem.

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. This activity is supported by the team within our data innovation catalyst R² Data Labs. We produce digital twins in order to test our hypotheses and then validate our results through a rigorous physical testing regime. Dynamic technology management enables us to leverage, attract and recycle capital for innovation.

4 Develop world-class production capability

We generate value from our cutting-edge technologies and innovative solution designs through effective and efficient delivery of final products. We use our production expertise and network of seven Advanced Manufacturing Research Centres, alongside our supply chain partners, to harness new manufacturing techniques and technologies.

5 Grow installed original equipment base

Increasing our installed base of products generates both in-year growth and the potential for our business to capture long-term service revenue. To give our business access to these growth opportunities, we strive to deliver new product introductions on time and on budget. In line with our strategic aim to vitalise existing capabilities, we also continually look for ways to reduce the time and resource expended on producing existing products, and roll-back new technologies from new programmes into legacy products as appropriate. Operational excellence is key throughout.

In our Civil Aerospace business, we have been growing our in-service fleet for over two decades and, towards the end of 2019, we had over 5,000 widebody engines in service, more than a 50% increase in a decade.

6 Capture through-life value of in-service products

Our customer relationships are our greatest strength. We offer our customers a combination of advanced technologies, in a complete systems solution, optimised throughout its life.

The service innovation we introduced with TotalCare into the Civil Aerospace widebody market gave us expertise which we drew upon to create innovative aftermarket solutions in other parts of the Group, generating returns over many years. These include CorporateCare in business aviation and MissionCare in Defence. Power Systems is now also leveraging the aftermarket potential of its installed base. In legacy products, we also offer more traditional aftermarket services, such as spare parts.

7 Generate stakeholder value

Our activities are global, complex and touch upon a wide variety of stakeholders. From investors, employees, customers, suppliers and partners, to communities, local and national authorities, regulatory bodies and armed forces, we aim to create trusted relationships. We must understand the needs of all our stakeholders and continue to deliver value, to build a resilient business.

Value creation for our stakeholders

Customers

We develop product solutions that improve the competitiveness of our customers.

Gross R&D expenditure

£1.46bn

 See Technology page 42.

Investors

We generate attractive returns for investors over the long term.

Three-year total shareholder return

11%


 See Remuneration Committee Report page 102.

Employees

We create an environment where our employees are able to be at their best.

Invested in training and development

£28.7m

 See People and Culture page 45 and Non-Financial KPIs page 15.

Partners

We create partnerships based on collaboration where each partner benefits from the relationship.

Spend with external suppliers

£8.3bn


Communities

We improve the communities that we impact locally, nationally and globally.

Hours of employee time volunteered

96,000

 See People and Culture page 45.

 See Stakeholder Engagement page 70.

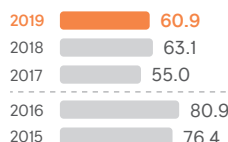
KEY PERFORMANCE INDICATORS

Financial key performance indicators *†

See Other Financial Information page 205 for additional commentary on our financial KPIs.

Order backlog

£60.9bn



How we define it

Total value of firm orders placed by customers for delivery of products and services. This KPI is the same as the statutory measure for order backlog.

Why it is important

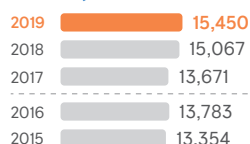
Order backlog provides visibility of future business activity.

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 the key financial metrics in both the annual bonus plan and long-term incentive plan (LTIP).

Underlying revenue

£15,450m



How we define it

Revenue generated from operations at actual rates of foreign exchange including achieved hedge rates in the year. See note 2 on page 139 for a reconciliation to statutory reported revenue.

Why it is important

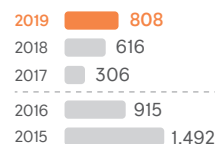
Underlying revenue provides a measure of business growth and activity.

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 annual bonus plan and LTIP.

Underlying operating profit

£808m



How we define it

Profit generated from operations at actual rates of foreign exchange including achieved hedge rates in the year. It excludes exceptional and one-off items. See note 2 on page 139 for a reconciliation to statutory reported operating profit.

Why it is important

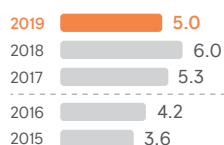
Underlying operating profit indicates how the effect of growing revenue and control of our costs delivers value for our shareholders.

Link to remuneration

Profit and EPS are key financial performance measures for our annual bonus plan and LTIP.

Capital expenditure as a proportion of underlying revenue

5.0%



How we define it

Cash purchases of property, plant and equipment in the year relative to underlying revenue. There is no statutory equivalent to this KPI.

Why it is important

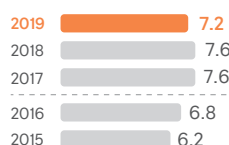
This measure demonstrates the balance between essential investments in infrastructure and delivering short-term shareholder returns.

Link to remuneration

Disciplined allocation of capital expenditure optimises in-year profit and cash flow performance without compromising longer-term growth. Metrics in our LTIP reward strong financial performance through EPS, CPS and TSR over the three-year life of the plan.

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

7.2%



How we define it

In-year self-funded cash expenditure on R&D before any capitalisation or amortisation relative to underlying revenue. There is no statutory equivalent to this KPI.

Why it is important

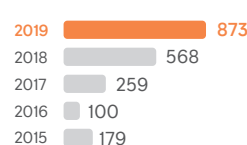
This measure demonstrates the balance between long-term strategic investments and delivering short-term shareholder returns.

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 metrics in our LTIP which reward strong financial performance through EPS, CPS and also relative returns to our shareholders through TSR over the three-year life of the plan.

Free cash flow

£873m



How we define it

Cash flow generated from our business activities in the year before M&A, SFO payments, foreign exchange and payments to shareholders. Cash flow is our statutory equivalent, see note 28 on page 179.

Why it is important

Free cash flow is the principal metric 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

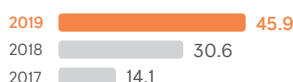
Free cash flow is our key financial metric in the annual bonus plan, accounting for 50% of the overall targets. CPS is a key driver for our LTIP.

* Following the adoption of IFRS 15 Revenue from Contracts with Customers in 2018, the 2017 figures have been restated. Dotted lines separate pre and post IFRS 15 figures on all affected KPIs.

† The adoption of IFRS 16 Leases in 2019 had no material impact on our financial KPIs, see page 181 for more information.

Free cash flow per share

45.9p

**How we define it**

Free cash flow in the year divided by the average number of shares in issue in the year. This measure was introduced in 2018. There is no statutory equivalent to this KPI.

Why it is important

Cash flow per share ensures alignment with shareholder interests and is a key measure of the economic performance of our business.

Link to remuneration

CPS is the largest driver of the LTIP at 60% of the total.

Cash return on invested capital (CROIC)

12%

**How we define it**

CROIC is calculated as free cash flow divided by invested capital in the year. See page 205 for a full definition of invested capital. This measure was introduced in 2018. There is no statutory equivalent to this KPI.

Why it is important

CROIC ensures we invest in programmes and projects which optimise returns for our shareholders with the correct balance between long-term and short-term value.

Link to remuneration

A key driver of CROIC is free cash flow, which is also an important financial performance measure for our annual bonus plan and LTIP.

Non-financial key performance indicators

Customer metric

38%*

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 aggregate outturn is used to determine the customer element of our bonus plan. See page 96 for more information.

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 12.5% of the target bonus in our annual bonus plan.

* Metric is 38% of target (100%), 19% of maximum (200%).

Employee engagement

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. See page 46 for more on our change of approach this year.

Why it is 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 12.5% of our annual bonus plan.

FINANCIAL REVIEW



STEPHEN DAINTITH, CHIEF FINANCIAL OFFICER

Although much remains to be done on our journey to transform and improve the Group, 2019 was a year of good progress and a critical step towards our 2020 and mid-term ambitions.

Overview 2019

After a challenging first half of the year, we had a good end to the year and generated a strong level of free cash flow of £873m, delivered on our restructuring plan and made good progress on the key value drivers in Civil Aerospace. These achievements were made despite the ongoing operational and financial headwinds caused by in-service issues with the Trent 1000.

Overall, Group revenue rose by 7% with Group operating profit of £808m, an increase of £192m versus 2018. We achieved or exceeded our revenue growth and profit margin guidance for each of our core businesses. Civil Aerospace achieved a record number of widebody engine deliveries and returned to profitability. Power Systems demonstrated resilient revenue growth and good margin expansion despite certain end-market challenges. Defence achieved an impressive 1.6x book-to-bill ratio and healthy cash performance while ITP Aero achieved good progress.

Although progress on inventory reduction fell short of our ambitions, we delivered further improvements on the fundamental drivers that underpin our improving cash flows and returns:

- in Civil Aerospace further steps were made in reducing OE unit losses on widebody engines, which fell by 14% to £1.2m, led by 22% progress on Trent XWB-84 unit losses;
- our large engine aftermarket cash margin improved by £0.3bn, led by the 7% growth in large engine flying hours allied to the strength in spare parts sales, which more than outstripped higher shop visit volumes; and
- we delivered a 4% reduction in commercial and administrative (C&A) costs and we maintained disciplined capital allocation with combined R&D and capital expenditure 11% lower at £1.9bn reflecting lower capital spend due to completion of several facility modernisation projects.

We achieved further progress on our restructuring plan, with a further 1,600 net reduction in headcount in 2019 across a variety of overhead functions. Our cumulative headcount reduction since the start of the programme has now reached 2,900 and we remain committed to our ambition of a total 4,600 reduction by the end of 2020.

Finance has embraced its own role in the drive to transform our organisation; we have rolled out new, more agile forecasting tools across our businesses, improved the quality of our finance data and management information and improved a number of key processes. An area of particular focus is simplifying the structure of our underlying systems and improving our data flow to enable better management information. We still have much to do and I am determined that we will build further on this in 2020.

We delivered another step in 2019 to improve the Group's net funds position, which reached £1.4bn (excluding lease liabilities), up from £0.8bn in 2018. We made further progress on refining our portfolio, completing the disposal of Commercial Marine, with net proceeds of £350m, and Power Development. We also announced the sale of two further small businesses. We completed the acquisition of Siemens' eAircraft business in October and since the year-end we have announced the acquisition of a majority stake in Qinous.

Both of these deals are helping us to accelerate our electrification and hybrid capabilities.

Although our credit rating currently sits below our aspiration of single A, we have strong levels of liquidity and, led by improving cash generation, we are confident in our ability to strengthen our rating over the coming 12 to 18 months. Our ambition is to return shareholder payments to a more appropriate level over time.

2020 outlook

Building on the strength of our performance in 2019, we are well positioned to deliver further progress in 2020. We expect around 15% growth in operating profit with at least £1bn of free cash flow. There are macro risks to navigate in 2020, notably the outbreak of the COVID-19 virus which is currently having an effect on world trade, travel, and supply chains. We are actively

Progress on restructuring

Headcount (# FTEs)	FY17 actual	FY18 actual	FY19 actual	FY20 (programme total)
Indirect & engineering	29,529	28,147	26,606	<25,000
<i>Net cumulative reduction</i>		~1,300	~2,900	~4,600
Run-rate savings at period end		£81m	£269m	£400m

monitoring the situation and taking appropriate actions. Our guidance excludes any material impact from COVID-19 as the situation is still evolving.

Longer-term outlook

We remain committed to delivering significantly higher levels of returns in terms of operating profit margin, free cash flow and cash flow return on invested capital (CROIC). Key drivers of this remain: further reduction in widebody OE engine losses in Civil Aerospace; future increases in our

aftermarket cash margin; and ongoing growth in Power Systems and Defence.

Improved returns must be achieved despite our ongoing investment in new, more efficient aero engines in Civil Aerospace and the pursuit of programme and market opportunities in Power Systems and Defence.

After our strong 2019 performance, we remain confident in our mid-term ambition to deliver free cash flow per share of over £1, more than £1.9bn, and to generate annual CROIC of 15% through the cycle.

DEFINING OUR ALTERNATIVE PERFORMANCE MEASURES

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. The tables to the right summarise the adjustments between reported and underlying results for revenue and operating profit. For more information on these reconciliations, see note 2 on page 139.

Similarly, you can find reconciliations to statutory measures for free cash flow in note 28 on page 179 and underlying EPS in note 26 on page 144.

Free cash flow

Cash flow generated from our business activities in the year before M&A, SFO payments, foreign exchange and payments to shareholders.

Underlying EPS

Underlying profit after tax in the year divided by the average number of shares in issue in the year.

Revenue

£m	2019	2018
Reported measure		
Reported revenue	16,587	15,729
Underlying performance measure		
Reported revenue	16,587	15,729
Derivative and FX adjustments	(1,137)	(781)
Other underlying adjustments	-	119
Underlying revenue	15,450	15,067

Profit

£m	2019	2018
Reported measure		
Reported operating (loss)	(852)	(1,161)
Underlying performance measure		
Reported operating (loss)	(852)	(1,161)
Business disposals	139	358
(Loss) before financing & taxation	(713)	(803)
Derivative & FX adjustments	(144)	24
Programme exceptional charges	1,409	976
Restructuring exceptional charges	136	317
Acquisition accounting & M&A	24	(183)
Impairments & asset write-offs	84	155
Other underlying adjustments	12	130
Underlying operating profit	808	616

Core trading summary

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

Summary income statement – Core businesses¹

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

¹ Core includes Civil Aerospace, Power Systems, Defence and ITP Aero.

² Underlying: for definition see note 2 on page 134.

³ The financial information for the prior period has been restated to reflect the treatment of our North America Civil Nuclear business as non-core. See note 1 on page 125 for more details.

⁴ Organic change at constant translational currency (constant currency) by applying FY 2018 average rates to 2019 and 2018 numbers excluding M&A. All commentary is provided on an organic basis unless otherwise stated.

Revenue up 6%

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

Gross profit up 4%

Gross profit was £2,342m, up 4%. Civil Aerospace gross profit improved by 25% reflecting several key factors:

- increased sales of spare parts and higher LTSA servicing activity;
- a material improvement in the net impact of contract catch-ups to LTSA profits at £33m in 2019 (2018: £(276)m), driven primarily by lower servicing costs in business aviation; and

- modestly lower LTSA underlying gross margins, reflecting shop visit mix, and around £70m of FX related headwind principally reflecting the revaluation of USD creditors and deposits.

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

C&A costs down 4%

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

Self-funded R&D cash spend up modestly; charge to profit 5% higher

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

Profit from joint ventures and associates

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

Operating profit up 25%

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

Financing costs

Financing costs increased from £(148)m in 2018 to £(223)m in 2019. Within financing costs, net interest payable of £(132)m increased by £60m largely due to the adoption of IFRS 16. Other financing costs were £(91)m in 2019, modestly higher than the previous year (2018: £(76)m). Other financing costs include charges relating to the factoring of receivables and the discounting of prior year provisions.

Taxation

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

Trent 1000

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

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

In November, we announced the outcome of recent testing and a thorough technical and financial review of the Trent 1000 TEN programme following the issues identified during 2019. This resulted in a revised timeline and durability estimate for the improved TEN HPT blade. As a result we expect total in-service cash costs across all Trent 1000 variants of around £2.4bn across 2017–2023, consistent with the trading update in November. In 2019, £578m of cash costs were incurred, partly offset by a £173m insurance receipt. We continue to expect cash costs of £450–£550m in 2020 and a similar level in 2021, before declining significantly thereafter. These primarily comprise the cost of replacing affected parts as well as customer disruption related compensation.

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

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

Exceptional restructuring programme

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

Strategic review of Bergen

As part of our ongoing efforts to evaluate our portfolio and create a simpler, more efficient Group, on 28 February 2020 we announced the decision to carry out a strategic review of Bergen, our medium-speed gas and diesel engine

business. Bergen formed part of Power Systems during 2019, but from 2020 (as a result of this review) it will be reclassified as non-core. Additionally, following a reassessment of the order book, an impairment review has been completed in the second half of the year and a charge of £58m has been recorded outside underlying results in 2019. In 2019, Bergen generated sales of £239m and an underlying operating loss of £(18)m.

A380 cessation costs

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

IFRS 16 Leases

IFRS 16 is effective for the year beginning 1 January 2019. Commitments for operating as well as finance leases are now recognised on the balance sheet. The impact of the standard is as follows:

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

Group trading summary

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

Group funds flow

Summary funds flow statement ¹

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

¹ The derivation of the summary funds flow statement above from the reported cash flow statement is included on note 28 on page 179.

² Disposed entities include Commercial Marine and Power Development in 2019 and both of these plus L'Orange in 2018.

³ Non-core businesses include the former Energy businesses not sold to Siemens and North America Civil Nuclear business.

Free cash flow

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

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

This was partly offset by a £(43)m increase in inventory (2018: £(616)m).

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

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

Depreciation and amortisation

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

Lease payments

Lease payments of £(319)m reflect the cash cost of leases in 2019. In 2018, prior to the adoption of IFRS 16, the equivalent lease payments were reflected within underlying operating profit. Under IFRS 16 the depreciation charge is recorded in underlying operating profit.

Expenditure on intangible assets

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

Capital expenditure on property, plant and equipment

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

Change in inventory

Inventory increased by £(43)m (2018: £(616)m) in 2019 due to volume growth in Civil Aerospace and Power Systems, with a significant improvement in the second half following a £(433)m increase in the first half. This inventory position was driven by a high level of assembled engines and aftermarket parts held in Civil Aerospace, as well as growth in Power Systems due to programme delays, production relocation projects, and product mix. Higher delivery volumes and greater focus on supply chain management in the second half of the year drove a significant reduction in inventory, with a strong improvement in Civil Aerospace in particular.

Change in receivables/payables

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

- higher trade and other payables due to increased trading activity led by Civil Aerospace;
- a number of customer deposits, notably in Defence driven by strong order intake; and
- an increase in trade and other receivables, which reflected volume-related growth partially offset by actions taken to reduce overdue customer receivables.

Movement in underlying Civil Aerospace net LTSA balance

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

Movement in provisions

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

Pensions

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

Taxation

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

Shareholder payments

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

Acquisitions and disposals

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

Payment of financial penalties

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

Balance sheet

Summary balance sheet

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

¹ Net working capital includes inventory, trade receivables and payables and similar assets and liabilities.

² Net funds includes £243m (2018: £293m) of the fair value of financial instruments which are held to hedge the fair value of borrowings.

Intangible assets

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

Property, plant and equipment

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

Right-of-use assets

IFRS 16 was adopted effective 1 January 2019 resulting in the recognition of leased assets with a value of £2.2bn. See notes 1 and 29 in the Consolidated Financial Statements for more information.

Investments in joint ventures and associates

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

Contract assets and liabilities

This represents deferred revenue and is a core part of our business model where we receive payments from our customers in respect of our long-term service and overhaul agreements. In 2019, this increased by £(1,671)m, of which £(1,211)m related to the Civil Aerospace LTSA balance. The remainder largely covered advance payments in several businesses. The movement in the Civil Aerospace LTSA balance of £(1,211)m included non-cash items of £557m, primarily related to foreign exchange and the cumulative negative impact of contract catch-ups to LTSA revenue. The change, net of these items, of £(654m) reflected invoiced engine flying hour receipts and customer deposits in excess of underlying revenue traded in the income statement.

Working capital

Working capital increased by £127m. This reflected a financial penalty payment of £102m related to agreements reached with investigating authorities in January 2017, and a £245m reduction in working capital from the settlement of deferred

consideration for the acquisition of ITP Aero. These factors offset the reduction in working capital seen in the funds flow.

Provisions

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

Net funds

Net funds have moved from a net cash position of £611m in at 31 December 2018 to a net debt position of £(993)m. This was driven by the adoption of IFRS 16, which increased lease liabilities by £(2,248)m. Excluding lease liabilities, net cash stood at £1,361m at 31 December 2019. For other movements see funds flow commentary in note 28.

Net financial assets and liabilities

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

Net post-retirement scheme deficits

The £(849)m movement was primarily driven by the buy-in agreement with Legal & General Assurance Society Limited, which

resulted in a decrease in the surplus of the UK pension plan of around £(600)m. There were also changes in financial and demographic assumptions.

USD hedge book

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

Group Reported Results

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

Consistent with past practice, we provide both reported and underlying figures. As the Group does not generally hedge account for forecast transactions in accordance

with IFRS 9 *Financial Instruments*, we believe underlying figures are more representative of the trading performance by excluding the impact of period-end mark-to-market adjustments. In particular, the USD:GBP hedge book has a significant impact on the reported results. In 2019, the GBP:USD rate

rose from 1.28 to 1.32 while the GBP:EUR rose from 1.12 to 1.18. The adjustments between the underlying income statement and the reported income statement are set out in note 2 to the Consolidated Financial Statements. This basis of presentation has been applied consistently.

Reconciliation between underlying and reported results

£m	Revenue		Profit before financing		Financing		Profit/(loss) before tax	
	2019	2018	2019	2018	2019	2018	2019	2018
Underlying*	15,450	15,067	808	616	(225)	(150)	583	466
1 Foreign exchange and derivatives	1,137	781	144	(24)	75	(1,984)	219	(2,008)
2 Exceptional programme charges	-	(119)	(1,409)	(976)	-	(15)	(1,409)	(991)
3 Impact of discount rate charges	-	-	-	-	(40)	-	(40)	-
4 Exceptional restructuring charges	-	-	(136)	(317)	-	-	(136)	(317)
5 M&A gains & effects of acquisition accounting	-	-	(24)	183	(8)	(8)	(32)	175
6 Impairments and asset write-offs	-	-	(84)	(155)	-	-	(84)	(155)
7 Net post-retirement scheme financing, pension equalisation & other	-	-	(12)	(130)	20	13	8	(117)
Reported	16,587	15,729	(713)	(803)	(178)	(2,144)	(891)	(2,947)

* See note 2 on page 139 for further details.

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

- Foreign exchange and derivatives included the impact of the following:
 - the impact of measuring revenue and profit before financing at spot rates rather than achieved hedge rates
 - mark-to-market adjustments on the Group's net hedge book of £(7)m (2018: £(2,145)m). At each period end, our foreign exchange hedge book is included in the balance sheet at fair value (mark-to-market) and the movement in the year included in reported financing costs; and
 - losses on derivatives settled during the period and the impact of valuation of assets and liabilities using the spot exchange rate rather than the exchange rate that is expected to be achieved by the use of the hedge book
- Exceptional programme charges relating to the Trent 1000 of £1,361m and Trent 900 of £48m are excluded from the underlying results. These have been explained in note 2.
- Included in discount rate changes is £30m relating to Trent 900 and £10m relating to Trent 1000
- Exceptional restructuring costs of £136m (2018: £317m). These are costs associated with the substantial closure or exit of a site, facility or activity related to the significant transformation project that the business is currently undertaking. A number of the projects within the transformation programme are for multiple years. Of the 2019 costs, £88m (2018: £223m) relate to the Group restructuring programme announced in June 2018.
- The loss before tax of £(32)m (2018: £175m profit) relates to the effects of acquisition accounting £171m (2018: £183m) that principally relate to the amortisation of intangible assets arising on the acquisition of Power Systems in 2013 and ITP Aero in 2017. The Group completed the sale of the Commercial Marine business to KONGSBERG on 1 April 2019 and recognised a profit of £106m in 2019. Rolls Royce Power Development Limited was sold on 15 April 2019 with a gain arising on disposal of £33m. In 2018, we recognised a gain on the sale of L'Orange of £358m. Together with the £183m acquisition accounting effect relating to ITP Aero, this resulted in the £175m profit before tax in 2018. Further details can be found in note 27.
- On 26 September 2019, the Group announced the sale of the North America Civil Nuclear business and recognised an impairment charge and asset write offs of £26m. Following a reassessment of the Bergen order book and subsequent impairment review, we have recorded a charge of £58m in 2019. Further details can be found in note 2. In our 2018 financial statements, we reported an impairment charge of £155m in relation to the Commercial Marine business being disclosed as held for sale.
- Following a High Court judgement in October 2018, the estimated costs of equalising UK pension benefits for men and women was recognised as a past-service charge. There is no equivalent charge in 2019.

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

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.

Progress against our 2019 Group priorities

Customers

- ▶ Delivered 510 widebody engines to customers (up from 469 in 2018).
- ▶ Accelerated efforts to return Trent 1000 fleet to full health, investing in additional spare engines and MRO capacity expansion.
- ▶ Successful transition to Trent 7000, smooth EIS and production ramp-up on plan.
- ▶ Launched the Pearl 700 engine on Gulfstream G700. Pearl 15 entered service on Bombardier Global 6500.

Technology

- ▶ UltraFan design freeze and successful tests of the composite fan system.
- ▶ Continued testing of the Advance3 demonstrator.
- ▶ Completed acquisition of Siemens' eAircraft business.
- ▶ Announced partnership with Widerøe to further zero carbon aviation.
- ▶ Invested in a new flying testbed for next-generation widebody and business jet engines.

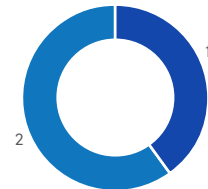
People and Culture

- ▶ Launched Civil Aerospace women's leadership programme targeting leaders who are in their early careers to help them build confidence and capability to succeed.
- ▶ Improvements to tools, methods and processes are delivering sustainable engineering efficiencies.
- ▶ Restructuring programme on track.

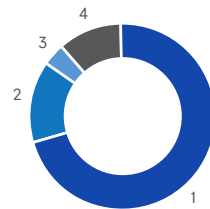
Financial

- ▶ Delivered operating profit of £44m.
- ▶ Reduced large engine OE unit loss by 14%, including Trent XWB-84 improvement of 22%.
- ▶ Increased large engine flying hours by 7%, despite in-service issues on Trent 1000.
- ▶ Provided investors with greater clarity on the Trent 1000 programme after detailed engineering and financial review.
- ▶ Growth in UltraFan and new technology investment.

Underlying revenue mix



1. OE.....40%
2. Services.....60%



1. Large Engines.....71%
2. Business Aviation.....14%
3. Regional4%
4. V250011%

Underlying revenue

£8,107m

2018: £7,378m

Underlying operating profit

£44m

2018: £(162)m

Order backlog

£48.5bn

2018: £52.3bn

Civil Aerospace overview 2019

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

Financial overview

Underlying revenue

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

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

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

Underlying operating result

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

Gross profit improved by £121m and gross margin by 90bps. This was driven by increased servicing activity, higher spare parts sales, and a material improvement in the net impact of contract catch-ups to LTSA profits. In 2019, catch-ups had a £33m positive impact on profit (2018: £(276)m).

Financial overview

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

Underlying revenue

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

Metrics

	2019	2018
Widebody engine deliveries	510	469
Average loss per widebody OE (£m)	1.2	1.4
Large engine in-service fleet	5,029	4,757
Large engine invoiced flying hours	15.3m	14.3m
Large engine LTSA major refurbis	306	286
Large engine LTSA check & repair	660	569

This was driven by improvements in servicing costs in business aviation, which was partly offset by a reassessment of costs and utilisation across various widebody programmes. Gross profit was negatively affected by a modestly lower LTSA underlying margin due to the mix of shop visits, circa £70m of FX related headwind principally relating to the revaluation of USD creditors and deposits, and a modest impact from higher customer charges. The profit contribution from spare engine sales was relatively stable year-on-year.

Self-funded R&D cash spend reduced by £18m to £(767)m reflecting lower investment in existing widebody and business aviation programmes and an increase in next generation technology, including the UltraFan demonstrator. Net R&D capitalisation was £60m lower, driven by widebody and

business aviation development programme maturity. Overall, the R&D charge to profit increased to £(374)m from £(332)m in 2018.

Underlying C&A costs were 11% lower year-on-year. Joint venture profit of £102m (2018: £21m) reflected increased servicing activity in overhaul bases and higher profit on disposal of engines in Rolls-Royce & Partners Finance Limited (our engine financing joint venture).

TESTING FOR THE FUTURE

Work continued during the year on our UltraFan demonstrator; a world-beating suite of technologies that will redefine the Rolls-Royce jet engine, delivering significant reductions in fuel burn, emissions and noise.

Successful worldwide tests of key technologies have already been completed, ready for flight and ground testing over the coming years.

Next generation engines require next generation testbeds. Testbed 80, the largest testbed in the world, is currently taking shape in Derby, UK. Equipped with precision x-ray equipment, state-of-the-art data systems and the ability to test engines using sustainable aviation fuels, it will allow us to monitor and validate our engines better than ever before. Testbed 80 will be commissioned in 2020.

We are also bolstering our test capabilities in the sky, with the addition of a new flying testbed. In October, we took delivery of a Boeing 747-400 from Qantas, which will now be transformed from a passenger aircraft into an airborne laboratory, capable of testing both widebody and business jet engines. It joins our existing flying testbed, a Boeing 747-200 based in Tucson, Arizona.



Trading cash flow

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

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

Operational and strategic review

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

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

Overall, the performance of our fleet continues to be very strong, with invoiced engine flying hours increasing by 7% to 15.3 million. The Trent 700, the largest part of our installed base at 32%, has crossed 55 million flying hours and continues to deliver excellent performance in fuel burn, reliability and durability. The Trent XWB became our second largest Trent programme by volume in 2019, and has now flown over 5 million hours. As we highlighted in November, fleet-leading Trent XWB-84 engines have reached our original expectations for time-on-wing. The Trent 7000 has made an excellent entry into service, with 80 engines now flying

and a dispatch reliability of 99.9%. The Trent 1000 is 13% of our widebody fleet and we continue to work to improve durability and reduce customer disruption. To this end, we announced actions to boost our maintenance capacity and add additional spare engines, with a significant investment in 2020 set to drive around 50% increase in our Trent 1000 spare engine pool. We also gave greater certainty to customers and clarity to investors following an extensive review of the programme. Our focus is now on executing the clear plan we have to reduce AOG and return the fleet to the level of service which our customers expect.

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

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

technologies, largely in engineering, simplification of processes and removal of duplication.

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

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

- in August, we began ground tests of our 2.5MW generator in Norway. This forms part of our E-Fan X project with Airbus,

the largest hybrid aircraft demonstrator in the world;

- in November, we announced a flight demonstrator based on our hybrid M250 propulsion system with APUS and the Brandenburg University of Technology, paving the way for experimental flights after 2021; and
- in December, we unveiled the plane which will seek to break the speed record for an all-electric aircraft in 2020 as part of our ACCEL programme (see page 42).

Civil Aerospace outlook

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

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

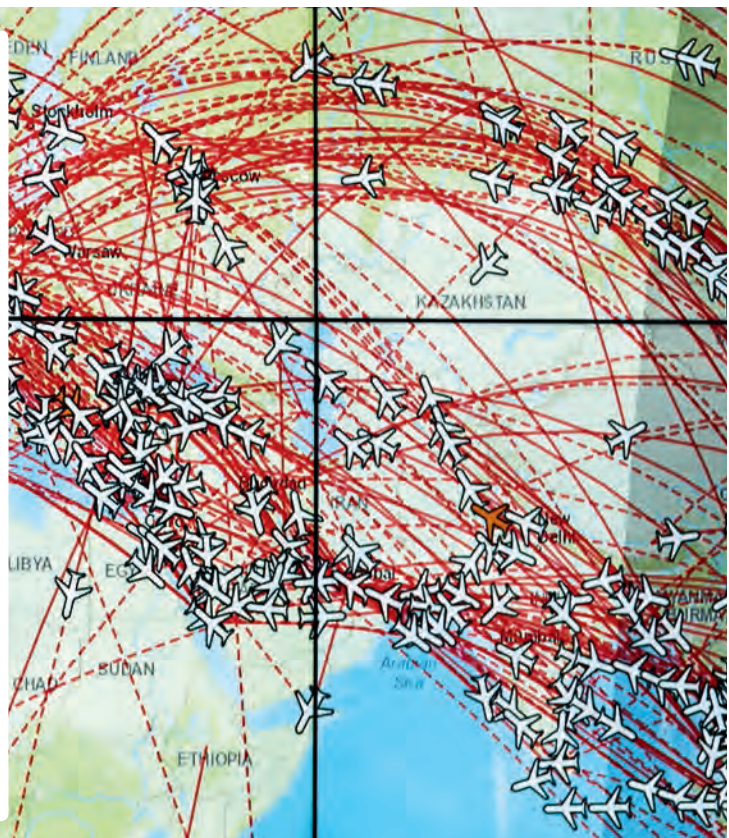
In 2020, we expect stable to low-single-digit sales growth in Civil Aerospace and operating margins 50-100bps higher year-on-year, despite a £100-150m reduction in the level of R&D capitalisation.

DELIVERING INTELLIGENT CARE

Our IntelligentEngine vision of a civil aerospace world in which our products and services are increasingly bound together by data, is spurring us on to develop new service innovations that harness digital capabilities to deliver intelligent care to our customers.

At the heart of this work is our aircraft availability centre, which proudly celebrated 15 years of providing 24-hour care during the year. We have evolved the capability of this centre during that period, further improving our ability to provide proactive support through advanced analytics and inspection techniques that help us ensure every Rolls-Royce powered engine takes off on time, every time.

In 2019, we announced further global expansion of our CareNetwork. This included the development of an additional network of overhaul bases and in-field maintenance, alongside the introduction of innovative repair providers who use new tooling and technology to provide more responsive services closer to customer operations.



PEARL TAKES TO THE SKY

The Pearl 15, the first member of the state-of-the-art Pearl engine family for business jets, officially entered service in September.

The engine, which was developed at our facility in Dahlewitz, Germany, is the exclusive engine option for the newest members of Bombardier's Global business jet family, the Global 5500 and the Global 6500.



Operating environment

Rolls-Royce key differentiators

Our continued development of advanced world-leading technology, culture of partnership with customers, and innovation in services are attributes that Civil Aerospace customers value and are difficult to imitate. These differentiators will maintain our position at the forefront of the civil aerospace industry.



Market dynamics

- Following a period of historically high growth rates, passenger air traffic reverted in 2019 to the long-run average of 4-5% growth per annum. This level is supportive of continued strong engine flying hour growth with utilisation across the Trent fleet remaining high during the year.
- Although currently subdued, we expect an improvement in widebody orders driven by a replacement cycle in the coming years.
- In business aviation, the long-term fundamental drivers of the large-class business aircraft market are good and will be sustained. In the short term, demand has softened in anticipation of customers awaiting new aircraft derivatives, and our airframers' current focus on ramping up deliveries of non-Rolls-Royce powered aircraft.
- 2019 has seen an increased focus on climate change across the world and within the airline industry. We are working with industry bodies towards more sustainable aviation through a number of initiatives.



Opportunities

- The business has a strong and growing market share on widebody aircraft produced by the world's two major aircraft manufacturers: Airbus and Boeing. We believe we are well placed to win a large share of these orders. Our current share of the widebody engine market is 38% of the in-service passenger fleet and is expected to approach 50% by the mid-2020s.

- We expect strong growth in our installed base leading to growth in services and widebody aftermarket cash margin. 90% of the current Rolls-Royce widebody fleet is covered by TotalCare service agreements.
- The Pearl family of engines won its second application with Gulfstream and, alongside the Bombardier aircraft, reinforces and secures our long-term position in the business aviation sector.
- China's COMAC and Russia's UAC joint venture, the China Russia Commercial Aircraft International Corporate (CRAIC) has been formally incorporated. CRAIC plans to develop the CR929, a long-haul widebody aircraft. Rolls-Royce is actively exploring this opportunity.



Business risks

- If our products do not achieve their required technical attributes and maturity, then customer satisfaction, unit costs and aftermarket costs may be impacted and could result in financial and reputational damage.
- If a major product failure in service is experienced, then this could result in loss of life and significant financial and reputational damage.
- If an external event or severe economic downturn significantly reduces air travel, then financial performance may be impacted.
- If aircraft manufacturers significantly reduce production rates or delay increases, or we cannot ramp up capacity to deliver planned production and services, then financial performance may be impacted.
- If our internal or external supply chain is not sufficiently resilient to events that affect our operations, then this could result in significant financial and reputational damage.
- If the business experiences significant pricing pressure in key markets, then financial performance may be impacted.
- If there are significant changes to the regulatory environment for the airline industry, then the market position of the Civil Aerospace business may be impacted.

BUSINESS REVIEW

Power Systems

Power Systems is a leading provider of high-speed and medium-speed reciprocating engines and complete propulsion and power generation systems. It serves the marine, defence, power generation and industrial markets, and includes civil nuclear operations that supply safety-critical systems.

Progress against our 2019 Group priorities

Customers

- ▶ Increased engine production by 8%.
- ▶ Continued uptake of long-term service agreements; LTSA revenue grew by 6%.
- ▶ Opened four new customer care centres and expanded digital service capability.
- ▶ Established a dedicated support centre for yacht customers.

Technology

- ▶ First off-grid microgrid contract secured.
- ▶ Strategic cooperation agreements signed with GETEC and ABB.
- ▶ First orders for hybrid-rail PowerPacks from Iarnród Éireann (Irish Rail) and Porterbrook.
- ▶ Partnership with Sunseeker International to introduce hybrid technology to the yacht market.
- ▶ Announced a cooperation with Mercedes Benz innovation lab to pilot fuel cell solutions.

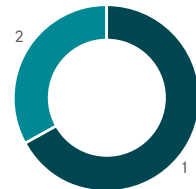
People and Culture

- ▶ Increased diversity in Power Systems senior leadership. Women now account for 30% of the senior management team.
- ▶ Launched our Pioneer Academy to build electrical engineering skills. A first cohort of 100 engineers have started a two-year training programme.
- ▶ Opened a new vocational training centre in Friedrichshafen and celebrated 100 years of Power Systems apprenticeships.

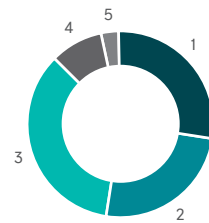
Financial

- ▶ OE revenue growth of 4% driven by strong demand in power generation.
- ▶ Services revenue growth of 4% reflecting growth in both spare parts and LTSAs.
- ▶ Book-to-bill of 1.0x despite challenging market conditions.
- ▶ 90bps improvement in operating profit margins to 10.1%.
- ▶ Increased spend on hybrid, gas, and hydrogen technology development.

Underlying revenue mix



1. OE.....67%
2. Services.....33%



1. Marine.....28%
2. Industrial.....25%
3. Power Generation.....35%
4. Defence.....9%
5. Civil Nuclear.....3%

Underlying revenue

£3,545m

2018: £3,434m*

Underlying operating profit

£357m

2018: £315m*

Order backlog

£2.9bn

2018: £3.1bn

* 2018 figure restated to exclude the North America Civil Nuclear business

Power Systems overview 2019

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

Financial overview

Underlying revenue

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

Services revenue rose 4%, reflecting higher spare parts sales and 6% growth in LTSAs. We continue our focus on generating greater value from our large installed base, both through a more proactive approach to

Financial overview ^

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

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

spare parts sales and a greater emphasis on LTSA sales which now account for circa 12% of total service revenues.

Underlying operating profit

Underlying operating profit rose by 15% to £357m, led by revenue growth. Gross profit was 6% higher at £909m, helped by a 50bps increase in gross margins to 25.6%, due to better product mix. C&A costs of £(374)m

were 4% higher year-on-year reflecting cost escalation, additional spend on digital solutions, and higher sales-related activities. The R&D charge reduced by £11m reflecting the timing of key projects, with cash spend modestly higher. In the coming years we expect R&D spend in Power Systems to increase as we ramp up activity on new programme investment and our electrification strategy.

PLUGGING INTO MICROGRIDS

Microgrids have a vital role to play in assisting the world's transition to lower carbon power, by providing security of supply from power generation systems that use renewable energy sources that can be intermittent.

Microgrids are small-scale local power networks in which various energy sources and storage systems – from solar cells, wind turbines and batteries to diesel or gas-powered generator sets – are integrated by means of a smart master controller.

To expand our knowledge of how microgrids function in power generation, during the year we commissioned a microgrid validation centre in Friedrichshafen, Germany, to carry out close-to-reality simulations of a variety of possible configurations.

We are already running our own microgrid at Plant 1 in Friedrichshafen. It consists of photovoltaic panels with 500 kW peak power capacity as well as gas-powered and diesel-powered gensets and an MTU battery container with 2 MWh capacity. It currently delivers 30% of the energy needed at Plant 1 during normal working hours and full coverage at weekends.



MILESTONE FOR INDIAN JOINT VENTURE

Force MTU Power Systems, the joint-venture between India's Force Motors Limited and Rolls-Royce, delivered its first Series 1600 genset to customer Perennial Technologies in 2019.

We have partnered with Force Motors to move the manufacturing of the entire line of MTU Series 1600 engines from Germany to a new manufacturing facility at Chakan, near Pune, India.

The construction of the facility is nearing completion and the first locally made engine is expected to be manufactured by mid-2020. On completion, the facility will produce MTU 10 and 12-cylinder Series 1600 units. These engines are already well-established in the market for power generation and rail applications.



Operational and strategic review

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

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

Power Systems has a key role to play in our drive towards low carbon power across the Group. A number of technologies that will have applications in civil aerospace markets, notably hybrid, electric, and fuel cells, are already being developed and adopted in Power Systems. Significantly, 2019 marked the last year in which Power Systems sold only fossil fuel based power solutions as we reached several important strategic milestones on this journey, including the signing of customer contracts and framework agreements to implement hybrid engine solutions for the rail sector, where we are

first to market, and the yacht market, building on our leadership position with the MTU Series engines.

Since October, Power Systems has been operating its own microgrid in Friedrichshafen, which provides over 30% of the energy required for the weekly running of the plant. We successfully received the first orders for our new battery container and microgrid solutions, delivering cleaner and decentralised energy. Together with Lab1886, an innovation lab within the Daimler Group, we started a pilot project to test the use of Mercedes-Benz fuel cell technology for backup power and the supply of energy to data centres. This technology will provide safe, sustainable and emission free energy to one of the world's most significant power consuming industries. Power Systems is also researching more sustainable fuels. During the year, we signed an agreement to construct a demonstration plant to produce synthetic fuels in Brandenburg, Germany.

Continuing our push into life-cycle services, we are placing increased focus on digital services and predictive maintenance. Our digital solutions team was expanded during the year and we established a data and analytics competence centre in Munich, Germany. We also expanded our service network for yachts in La Spezia, Italy. These actions have helped to drive a steady increase in LTSAs, including the signing of a ten-year

agreement with Svitzer, a global towage and marine services operator.

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

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

Power Systems outlook

As we enter 2020, the early indication is that conditions in a number of our end markets will remain challenging. However, we aim to out-perform our markets, driven by our strategy to increase services sales and the shift towards new technologies and

integrated solutions. We are also continuing our efforts to gain market share in Asia, where Power Systems has previously been underexposed. As a result, we expect to deliver low-single-digit organic revenue growth in 2020 despite this challenging backdrop. We expect margins to improve again in 2020, increasing by 0–100bps as we take another step towards our

medium-term target of mid-teens. The outbreak of COVID-19 represents a near term macro risk. In 2019, approximately 10% of Power Systems revenues were derived from the greater China region.

As part of our ongoing efforts to evaluate our portfolio and create a simpler, more efficient Group, we have taken the decision

to carry out a strategic review of Bergen, our medium-speed gas and diesel engine business. In 2019, Bergen generated revenues of £239m with an operating loss of £(18)m. From 2020, Bergen will be reported within non-core businesses and has therefore been excluded from our guidance.

Operating environment

Rolls-Royce key differentiators

Power Systems will retain its strong position through technology leadership and a reputation for market-leading product performance and innovation; combined with a systems approach that allows high levels of customisation, supplemented by full lifecycle solutions.



Market dynamics

- Power Systems' presence in a diversity of end markets has helped the business navigate successfully against the backdrop of an increasingly challenging macroeconomic environment; negatively influenced by political developments leading to deferment in investment.
- Uncertainty in the resource markets, especially US fracking, after a strong 2018 dampened the opportunity for new equipment sales, however high utilisation continued to drive aftermarket service opportunities.
- Government regulations with regard to diesel engine emissions in most markets are driving the industry towards innovation. The focus is shifting towards hybrid, hydrogen and electric power solutions as well as renewable energy solutions.
- The civil nuclear market continues to have mixed fortunes, strengthening in areas with set energy policy and financing mechanisms but weakening in other areas where greenhouse gas reductions or security of supply are not being prioritised.



Opportunities

- Rising energy demand in emerging economies, particularly India and China (both large markets despite some recent softening) continue to grow and present significant opportunities for Power Systems.
- Tightening emission regulations in several regions are beneficial to the competitive position of Power Systems' high-end products, such as our Series 4000.
- The trend towards intermittent renewables such as solar and wind as part of a 'green grid' is creating demand for flexible,

low-emission gas reciprocating engines. Increasing interest in flexible local energy solutions to reduce carbon emissions also presents significant new opportunities for adjacent growth in areas such as energy storage and microgrids.

- As digital information becomes essential to many economies, the data centre market is witnessing strong growth. Due to its reliability, Power Systems back-up solutions are highly regarded and the opportunity to integrate new product and service offerings into this market is significant.
- Power Systems is well placed to respond to increasing customer demand for new service offerings and propositions such as ValueCare agreements supported by decades of experience in service model innovation.
- Nuclear energy demand remains significant but large-scale projects are proving problematic to finance and construct. Industry interest in new nuclear technology is increasing and we are well placed to respond to this trend.



Business risks

- If the macroeconomic environment worsens (for example a trade war between the US and China), then this could have a material impact on the business.
- If requirements on export licenses and/or local content increase, then this may affect our ability to export to certain markets.
- If other players in the industry consolidate, then they may generate synergies or capabilities that outpace the ability of the business to get new products and services to market.
- If the CO₂ price rises above our expectations and/or the demand for fossil-free power develops faster than anticipated, then this may affect demand for Power Systems products and/or affect margins.
- If new technologies or alternative propulsion concepts emerge, then this may lead to partial substitution or downsizing of diesel engines in certain applications.
- If there is not clarity on UK energy policy and the willingness of UK Government to continue support of SMR development, then continued investment may be called into question.

BUSINESS REVIEW

Defence

Defence is a market leader in aero engines for military transport and patrol aircraft with strong positions in combat and helicopter applications. It has significant scale in naval and is the technical authority for through-life support of the nuclear power plant for the Royal Navy’s submarine fleet.

Progress against our 2019 Group priorities

Customers

- ▶ Ramped up LiftSystem production to meet Lockheed Martin F-35B programme demand.
- ▶ Increased output from our submarines primary components operations by 300% since 2015; zero arrears in 2018 and 2019.
- ▶ Maiden flight of Boeing MQ-25 unmanned tanker, powered by the AE 3007.
- ▶ Developing cyber and digital solutions for Boeing B-52 re-engining competition.

Technology

- ▶ Launch of a new foreign object debris recording app for NAVAIR and the US Marine Corps.
- ▶ Development of aerothermal and electrical power take-off capability in support of Tempest, the UK-led next-generation fighter programme.
- ▶ MAPS (Military High Mach Advanced Propulsion System) contract signed with the UK MOD.
- ▶ Development of an integrated power and thermal management system for defensive directed energy applications.

People and Culture

- ▶ Launch of Defence diversity & inclusion charter.
- ▶ Signed up to the UK’s Women in Defence Charter.
- ▶ UK Armed Services Covenant Gold Award.
- ▶ Approximately 1,400 employees involved in social projects as part of Indianapolis community care week.

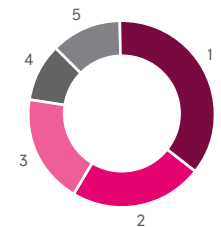
Financial

- ▶ Record order intake, with book-to-bill ratio of 1.6x, including propulsion system contract for the Royal Navy’s four Dreadnought class submarines.
- ▶ Revitalisation of Indianapolis, US facilities nearing completion, on-time and on-budget.
- ▶ Continued footprint optimisation with closure of Oakland, US facility.
- ▶ R&D investment increased by 5% to support future growth opportunities.

Underlying revenue mix



1. OE.....	45%
2. Services.....	55%



1. Transport.....	36%
2. Combat.....	23%
3. Submarines.....	19%
4. Naval.....	10%
5. Other.....	12%

Underlying revenue

£3,250m

2018: £3,124m

Underlying operating profit

£415m

2018: £427m

Order backlog

£8.6bn

2018: £6.8bn

Defence overview 2019

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

Financial overview

Underlying revenue

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

Financial overview

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

Underlying operating profit

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

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

Operational and strategic review

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

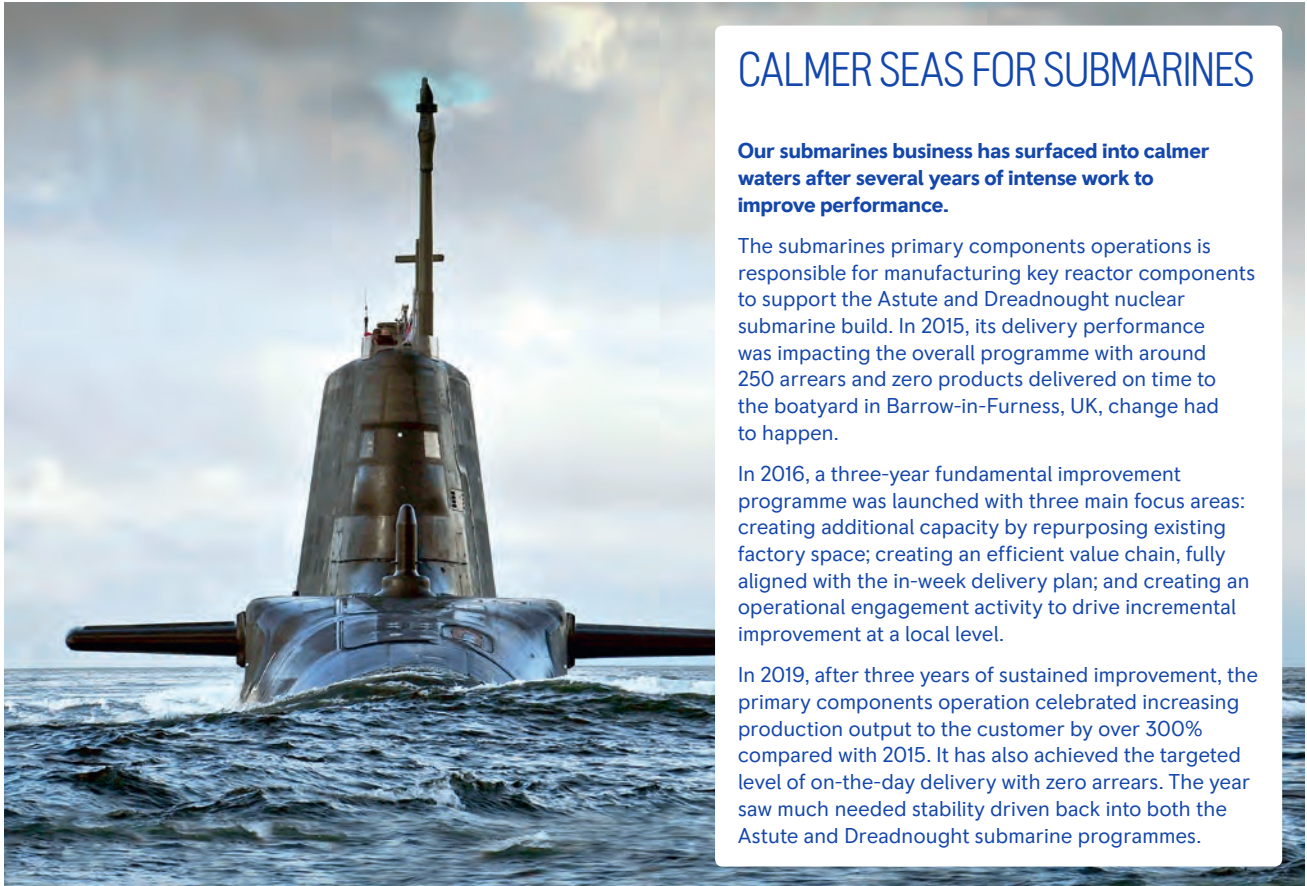
Our markets remained stable in 2019. The US continues to represent nearly half of the addressable defence spend globally, while the UK and Europe also remain key markets. We expect higher growth in Asia and the Middle East, driven by regional tensions. While the budget backdrop in our markets

TEMPEST GAINING STRENGTH

Rolls-Royce is playing an integral role in Team Tempest following its launch at the Farnborough Air Show in 2018, with international momentum gathering in 2019 as both Sweden and Italy signed agreements with the UK Government to partner on future combat air requirements.

The programme enables us to continue as pioneers in the combat market, building on technology developments already being demonstrated through successful tests and trials. As part of Tempest, we will deliver a power and propulsion system capability which will provide fully integrated power and thermal management capabilities. The gas turbine remains at the forefront of our contribution and the use of advanced composite materials, additive layer manufacturing techniques and new technologies will deliver a lightweight, more power dense configuration capable of operating at higher temperatures. This enhanced integrated system will result in a more intelligent, more powerful and more electric system, capable of delivering the future power needs of the air vehicle.





CALMER SEAS FOR SUBMARINES

Our submarines business has surfaced into calmer waters after several years of intense work to improve performance.

The submarines primary components operations is responsible for manufacturing key reactor components to support the Astute and Dreadnought nuclear submarine build. In 2015, its delivery performance was impacting the overall programme with around 250 arrears and zero products delivered on time to the boatyard in Barrow-in-Furness, UK, change had to happen.

In 2016, a three-year fundamental improvement programme was launched with three main focus areas: creating additional capacity by repurposing existing factory space; creating an efficient value chain, fully aligned with the in-week delivery plan; and creating an operational engagement activity to drive incremental improvement at a local level.

In 2019, after three years of sustained improvement, the primary components operation celebrated increasing production output to the customer by over 300% compared with 2015. It has also achieved the targeted level of on-the-day delivery with zero arrears. The year saw much needed stability driven back into both the Astute and Dreadnought submarine programmes.

is relatively stable, we see a number of exciting programme opportunities in the coming years, notably in the Tempest combat programme in the UK and in multiple upcoming campaigns in the US market.

Defence had a record order intake of £5.3bn, driving 26% growth in the order book. Book-to-bill in 2019 was 1.6x, taking the cumulative book-to-bill ratio over the last five years to 1.2x. The strength in 2019 was led by services, highlighting the demand driven by our installed base of over 16,000 engines. Key highlights included a five-year contract worth over \$1bn to maintain AE1107 engines for the US Marine Corps, which have now reached the service milestone of over one million flying hours. Two UK MOD support contracts were signed; one for Spey naval engines, and one for the maintenance of the EJ200. A multi-year spare parts order was additionally confirmed for our Adour engines in India. OE orders grew, including four Dreadnought powerplants in submarines and a LiftFan OE order for LRIP 12 of the F-35 programme. We continued to leverage our existing installed base with the Series 3.5 upgrade kit for the T56 engine, which secured further orders from the USAF. Fewer than 5% of the C-130 aircraft in service with the US Air Force

currently have the Series 3.5 upgrade kit fitted, presenting a significant opportunity for future orders.

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

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

R&D investment stepped up in 2019 ahead of a period of important upcoming

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

Defence outlook

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

NO PILOT, NO PROBLEM

Boeing and the US Navy successfully completed the first test flight of the Boeing MQ-25 Stingray unmanned aerial refueler in 2019.

The MQ-25 is powered by a single Rolls-Royce AE 3007N engine and flew under the direction of Boeing test pilots operating from a ground control station in the US. The MQ-25 will provide the Navy with a carrier-based, unmanned, aerial refueling capability.



Operating environment

Rolls-Royce key differentiators

Advanced technology, innovation, and collaboration with partners and customers are unique hallmarks of Defence. These differentiators enable successful delivery of products and services tailored to our customers' evolving needs.



Market dynamics

- Long-term defence investment is tied to economic growth while threat levels and politics drive near-term spend; the business expects to see modest growth across the globe in the coming years.
- While higher growth areas exist in Asia and the Middle East, driven by indigenisation and regional threats, the US represents nearly half of addressable defence spend globally.
- Programme wins are generally long-term and as a result barriers to entry are high, which leads to entrenched competitors and aggressive competition for new opportunities.



Opportunities

- There is strong interest in electrification across land, sea, and air platforms; the business is exploring more electric and hybrid-electric propulsion technologies as well as power generation and thermal management for the growing directed energy systems market.
- Combat propulsion remains the largest market segment, with opportunities for current products (LiftSystem and EJ200), UK investment in future combat air technologies (Combat Air Acquisition Programme), and a large US opportunity in the Boeing B-52 re-engineing competition.

- In transport, Defence is well positioned for various next generation opportunities, including with Bell on the V-280 Valor for the US Army's Future Vertical Lift programme.
- Building on our success as the preferred gas turbine provider on Australian SEA 5000 and Canadian frigate programmes, Defence is well positioned to capture other large maritime opportunities with the MT30.
- There continues to be strong service growth potential via technology insertion and emerging service opportunities using digital technology and data analytics to generate new solutions.



Business risks

- If a major product failure in service is experienced, then this may result in loss of life and significant financial and reputational damage.
- If global defence spending experiences a significant downturn, then financial performance would be impacted.
- If we do not continue to invest in improving the performance and cost of Rolls-Royce products, then market share may be lost.
- If the business suffers a major disruption in its supply chain, then delivery schedules would be delayed, damaging financial performance and reputation.
- If new applications are not secured, then the business may have to increase investment or accept erosion in capabilities.
- If electrification and digitalisation technology proceeds at a faster rate than expected, then the business may not be positioned to fully capitalise on this potential growth.
- If geopolitical issues arise impacting government-to-government relations or export controls, then our routes to market and regional sales may be impacted.

BUSINESS REVIEW

ITP Aero

ITP Aero is a global leader in aero-engine design, manufacture and maintenance. Alongside the development, manufacturing, assembly and testing of engines, it provides MRO services for regional airlines, business aviation, industrial and defence applications.

Progress against our 2019 Group priorities

Customers

- ▶ Increased civil aviation module delivery:
 - 20% for Rolls-Royce
 - 40% for other customers
- ▶ Invested in a new facility to offer more complex engine externals product capability to customers.
- ▶ Certified as only the second company worldwide capable of providing support to the MTR390-E engine.

Technology

- ▶ Completed aerodynamic testing of the multi-stage intermediate pressure turbine for UltraFan.
- ▶ Demonstrated enhanced additive manufacturing capability:
 - delivery of shroud segments for the Trent XWB-84K
 - design of the TP400 rear structure vanes
 - potential for component weight reduction of up to 40% and significant cost savings.

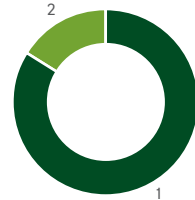
People and Culture

- ▶ Launched transformation project to drive continued improvement of our operating model:
 - increased standardisation across the organisation
 - simplified processes to increase efficiency
- ▶ Held CEO engagement sessions at every ITP Aero site around the globe.

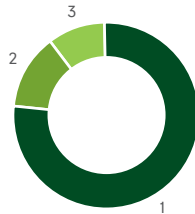
Financial

- ▶ OE sales up 19% led by higher volumes on civil aerospace programmes.
- ▶ Operating margin grew to 11.9%.
- ▶ Investing in capacity expansion in Queretaro, Mexico.
- ▶ Actions to improve manufacturing efficiency, including roll-out of additive layer manufacturing capability at Zamudio, Spain.

Underlying revenue mix



1. OE.....84%
2. Services.....16%



1. Civil.....77%
2. Defence.....13%
3. In-Service Support.....10%

Underlying revenue

£936m

2018: £779m

Underlying operating profit

£111m

2018: £67m

Order backlog

£0.9bn

2018: £0.9bn

ITP Aero overview 2019

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

Financial overview

Underlying revenue

Underlying revenue was £936m, an increase of 21% over 2018. OE growth of 19% was driven by higher engine volumes on civil programmes, with ITP Aero module deliveries up 20% on Trent engine programmes and 40% higher for non-Rolls-Royce programmes. This was partially offset by a reduction in defence sales. Aftermarket revenue increased by 37% due to higher spare parts sales, largely from Rolls-Royce engine programmes. Revenues also benefitted by circa £50m from a change made to simplify ITP Aero's trading relationship and contractual terms

Financial overview

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

with Civil Aerospace. This was net neutral at Group level.

Underlying operating profit

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

Operational and strategic review

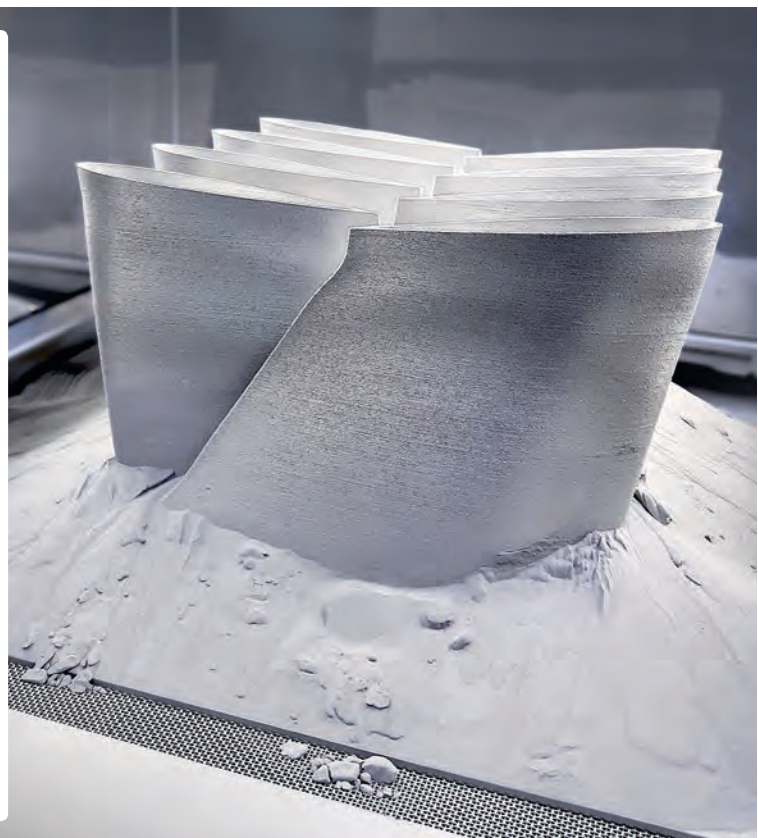
In November, ITP Aero celebrated its 30th anniversary. The business continued to grow, underpinned by strong positions across a range of large commercial aircraft and business jet platforms. In large commercial, we delivered a 20% increase in engine module deliveries for Rolls-Royce widebody programmes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

LOSING WEIGHT WITH ADDITIVE LAYER TECHNOLOGY

During the year, we completed the design process and began production of the first components manufactured by ITP Aero using additive technology – often referred to as 3D printing.

The first parts to emerge are low pressure turbine seal segments for the Trent XWB-84 engine for the Airbus A350 XWB aircraft, and non-structural vanes for the TP400 engine that powers the Airbus A400M military transport aircraft.

ITP Aero has an additive layer manufacturing cell and a team of professionals dedicated exclusively to this technology at our facility at Zamudio, Spain. Thanks to investment in collaborative technology development projects, ITP Aero is able to apply in-house standards and specifications to the application of this technology in aircraft engine components that are subjected to high temperatures in-service. The proprietary design criteria used by ITP Aero is expected to result in a component weight reduction of up to 40% as well as generating significant cost savings.



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

We also achieved important technology milestones in 2019. In June, the first aerodynamic tests of the intermediate pressure turbine for UltraFan were successfully carried out. UltraFan will be 25% more efficient than the first generation of Rolls-Royce Trent engines and 10% more efficient than the Trent XWB, the most efficient civil large engine in service globally.

Other significant milestones in 2019 included producing the first components designed and manufactured using additive technology. Our new additive layer manufacturing cell in Zamudio, Spain, manufactured both the low pressure turbine seal segments for the Trent XWB-84 engine and non-structural vanes for the TP400 engine. Additionally, earlier in the year we were certified as only the second provider of servicing globally for the MTR390-E engine for the Tiger helicopter.

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

ITP Aero outlook

We expect continued demand growth on newer, more fuel-efficient engine programmes in both narrowbody and

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

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

Operating environment

Rolls-Royce key differentiators

ITP Aero will sustain its strong position through the development of advanced, world-leading technology, a culture of partnership with customers and suppliers, our broad programme portfolio and market access, and well-invested global facilities with advanced and efficient manufacturing.

Market dynamics

- The long-term trends driving demand growth in passenger aircraft remain strong. Growth in air travel is expected to stabilise close to the long-term average of 4–5%.
- Through 2019, the market has seen short-term downward pressure on widebody aircraft but the longer-term outlook remains positive.
- The short-term prospects in the narrowbody and regional markets accessed through involvement in the PW1000G programme are positive. Growth in those markets is driven by the Airbus A320neo ramp up, a trend towards airlines using the longer range A321 on routes previously served by widebody aircraft and the introduction of new regional aircraft products including Airbus A220 and the Embraer E2 family.
- In business aviation, ITP Aero enjoys a route to market as a partner on a number of engine programmes, including the PW800 which powers the Gulfstream G500/600 and Dassault Falcon 6X and the HTF7000 which now also powers the Embraer Praetor 500/600 and Cessna Longitude. Short-term demand in the business aviation sector has softened with the uncertain macro-economic environment but the long-term fundamental drivers are strong.

- With defence budgets rising and the emergence of a number of new programmes, there is potential for growth in the sector.

Opportunities

- Expected growth in widebody installed base driven by Trent engine deliveries.
- Expected growth in single aisle installed based on PW1000G engine deliveries.
- Expected participation in the next generation European Fighter (FCAS) following Spain joining France and Germany on the programme.

Business risks

- If our products do not achieve their required technical attributes and maturity, then product performance, customer satisfaction, unit costs and aftermarket costs may be impacted and could result in financial and reputational damage.
- If a product failed in service, then this could result in loss of life and significant financial and reputational damage.
- If the business suffered a major disruption in its supply chain, then delivery schedules would be delayed, damaging financial performance and reputation.
- If customer programmes were to be delayed into service or experience a cut to production rates, then our financial performance might be negatively impacted.
- If global defence spending experiences a significant downturn, then our financial performance would be impacted.

SUSTAINABILITY

As a leading industrial technology company, our activities have a significant impact on society and the environment. We understand this impact and use that understanding to inform our strategy and decision making.



We believe in the positive power of technology: the products and services we provide play a vital role in connecting, protecting and powering society.

The most significant contribution we can make to a more sustainable society is to reduce the environmental impacts of our product portfolio and accelerate the decarbonisation of the sectors in which we operate, in line with global ambitions to mitigate climate change. This is an integral part of our business strategy.

Our sustainability approach focuses also on the wider impacts we have on society, including environmental, social, ethical and cultural factors. We know we cannot consider these in isolation of each other.

We seek to understand and prioritise the issues that matter most to us and our stakeholders, including employees, investors, and broader society. We identify and prioritise topics in terms of potential impact and also take into consideration our ability to influence the issue.

Non-financial information statement

The following chart summarises where you can find further information on each of the key areas of disclosure required by the EU Non-Financial Reporting Directive.

	Related Group policies	Related principal risks
Environmental matters See pages 41 to 44	– Health, Safety & Environment	– Climate Change – Safety
Employees See pages 45 to 48	– Security – People	– Talent and Capability – Safety
Social matters See page 46	– Charitable Contributions & Social Sponsorships	– Political Risk
Human rights See page 49	– People – Human Rights	
Anti-bribery and corruption See page 49	– Anti-Bribery & Corruption	– Compliance

- Our business model provides an insight into the key resources and relationships that support the generation and preservation of value within Rolls-Royce. See pages 12 and 13.
- Non-financial key performance indicators allow us to assess progress against objectives and monitor the development and performance of specific areas of the business. These are set out on page 15.
- Further information on Group policies can be found on www.rolls-royce.com.
- Full details of the Group’s principal risks can be found on pages 50 to 54.
- Disclosures in line with the Taskforce on Climate Related Financial Disclosures (TCFD) are detailed on page 41.

POSITION ON CLIMATE CHANGE

We have an irrefutable role to play in enabling the transition towards a low carbon economy. Successful and just transition will require technological solutions that we are well placed to provide.

We have always pursued clean, safe and competitive solutions to deliver society's vital power needs. Rising global population and increased wealth is driving further demand for power and mobility. Coupled with increased understanding of the potential impacts of climate change, we recognise that future power must be low carbon.

Governance

Our framework sets out how we govern our business, manage risk and maintain consistent operating standards across the Group. Sustainability and the consideration of climate change is a core component of this.

The Safety, Ethics & Sustainability Committee oversees our approach (see pages 105 to 110). Our executive-level environment & sustainability committee, chaired by the Chief Technology Officer, is responsible for environmental and climate-related policy, strategy and co-ordinating related activities.

Our independent environmental advisory committee, comprising leading academics from the environmental, materials and climate-related fields, complements our in-house expertise.

Strategy

Climate change and its associated impacts will play a pivotal role in determining the long-term success of our organisation: it presents a variety of opportunities and risks that drive our strategic decisions. Our ability to develop technological solutions will deliver future competitive advantage over the longer-term (see pages 42 and 43).

We have a three-part approach to reducing our environmental impacts, embedded within our business strategy: continuing to pursue incremental improvements of existing products and services; developing novel low carbon technologies, including electrification; and minimising the impacts of our operations and facilities.

Managing risk and opportunity

We recognise the substantial potential risks and opportunities presented by climate change. These include risks and opportunities associated with both the physical impact of global temperature rises and the transition to a low carbon global economy.

The assessment and management of climate-related risk and opportunity is an integral part of our enterprise risk management process (see Principal Risks, pages 50 to 54). During 2019, we continued to review our exposure to climate-related risk, including considering the growing scientific understanding of the potential impacts of climate change, coupled with our position as a manufacturer of complex equipment that is currently heavily dependent on fossil fuels. In light of these changes, we have included the risk of climate change to future revenue growth as an additional principal risk.

PREPARING FOR THE FUTURE

Understanding how the business may be impacted by climate change is a key component of mitigating longer-term risk.

We have used scenario planning techniques to explore the resilience of our business model and strategy in the context of future climate change and the transition to a low carbon global economy.

Three scenarios were developed based on varying global temperature increases and societal responses – one of which aligned to the temperature rise limit of 1.5°C set out by the Intergovernmental Panel on Climate Change (IPCC). The outputs from this have been used to inform strategic decision making and risk management.



POWERING THE LOW CARBON TRANSITION

We are pioneering sustainable power through technology. We continue to invest in improving performance and reducing the impacts of our products and services, as well as developing low carbon technologies for the future.

The transition to a low carbon global economy will be dependent on the development of technological solutions that Rolls-Royce is well positioned to provide. We have a long-standing history of pioneering products and services that deliver society’s power and propulsion needs.

In 2019, our technology priorities have included: supporting the operation of today’s products through revitalising our service capabilities; continuing the development of a new aero engine architecture to deliver further emissions reductions into the next decade; and continuing to advance our electrification strategy. This balance between continuous efficiency gains and the introduction of novel technologies will help ensure a structured transition to a low carbon global economy.

During the year, we invested £1.46bn in gross R&D expenditure, with a total of 830 patents approved for filing. Over two-thirds of this R&D expenditure is dedicated to improving the environmental performance of our products and services.

Decarbonising aviation in particular will require cross-sector collaboration: our technologies operate as part of a wider system. During 2019, our Chief Technology Officer brought together counterparts from seven major aerospace companies to announce a joint statement on the future sustainability of aviation, including a commitment to work together pre-competitively to meet industry-level targets for reducing the sector’s CO₂ impacts and support the commercialisation of sustainable alternative fuels.

Engineering and technology capabilities

Our global engineering population supports our research and technology programmes. During the year, we have taken steps to simplify our approach to engineering competencies, enabling more flexibility in skills development and increasing our engineers’ capabilities in systems thinking, electrification and digital.

Our global network of 29 University Technology Centres (UTCs) and seven Advanced Manufacturing Research Centres (AMRCs) continue to develop advanced research that can be applied in our technology portfolio and across our manufacturing operations.



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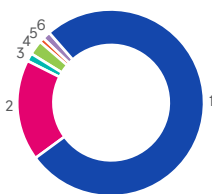
Patents approved for filing



£1.46bn

Gross R&D expenditure

2019 Gross R&D expenditure (£m)



1. Rolls-Royce	1,118
2. UK government	253
3. EU funding	21
4. US government	37
5. German government	12
6. Other	18

A RECORD BREAKER TAKES TO THE SKIES

Inside an airport hanger in Gloucestershire, UK a team of engineers, designers and data specialists recruited from inside and outside Rolls-Royce are setting out to make history.

During 2019, we began the design and build of a high-speed, fully electric aeroplane unlike any seen before. Scheduled to fly in 2020, the aircraft will reach speeds of over 300mph, making it the fastest all-electric plane in history.

This Rolls-Royce project is called ACCEL, Accelerating the Electrification of Flight, and is intended to pioneer a third era of aviation and support our electrification strategy.

Through the project we are developing new skills and capabilities in electrical aviation.



SMALL REACTOR, BIG POTENTIAL

Rolls-Royce is leading a consortium of world-class companies in designing an affordable, compact nuclear power station to meet increasing demands for low carbon electricity.

We believe our compact power station design can make a significant contribution to the UK and other nations' ambitions to reach net zero carbon emissions by 2050.

The UK government's Research and Innovation agency has granted £18m initial funding, matched by the consortium, to complete vital elements of the preliminary design concept. A full UK programme could create 40,000 UK jobs and generate £52bn value for the economy, with tremendous commercial potential and an estimated global export market worth £250bn by 2050.



Revitalising service capabilities

Our services packages help our customers to maximise the availability of their engines. With growth of our in-service fleet of engines and power systems, our services innovations have provided significant additional capacity to maintain their operation in field and increase throughput in repair and overhauls. This is particularly important as we continue to work through in-service issues with the Trent 1000.

We are increasing the use of digital tools to enhance our service offerings, including using imaging technologies to automate the assessment of the condition of critical engine parts whilst the engine remains on-wing, extending engine availability.

This year, we introduced rapid new near-wing component swap procedures, avoiding the need to bring engines into repair and overhaul centres. These new methods were validated and introduced 90% faster than traditional procedure changes. Used engines and parts are collected at each of our centres worldwide. Up to 90% of a used aero engine can now be recycled, reducing our demand for resource intensive, virgin materials.

Developing new engine architecture

Looking forward, we continue to take big strides towards maturing a new aero engine architecture and related technologies. Our UltraFan design will deliver a 25% reduction in emissions relative to the first generation of Trent engines; an unprecedented efficiency leap.

In 2019, we made good progress on a series of important sub-system validations, including testing our advanced organic matrix composite fan system and the world's most high power aero gearbox, validating operability and thermal efficiency.

Advancing electrification

Rolls-Royce is leading the transition towards electrification in all our markets. The application of hybrid and electric technologies has the potential to decarbonise our technology portfolio over the longer term, particularly in ground-based transportation and power, and regional aviation.

Our self-contained business unit, Rolls-Royce Electrical, has celebrated a number of successes during the year, including: ground testing of our M250-based hybrid electric system for urban air mobility and eVTOL applications; full speed testing of the 2.5 MW generator that, coupled with our AE2100 aero gas turbine, will power the E-Fan X hybrid flight demonstrator in 2021; and making significant progress with the development of all-electric flight technologies within our ACCEL programme.

The acquisition of the eAircraft business, from Siemens, has given us a leading position in electrical technologies for aero applications and provides a basis for increasing the delivery of advanced electrical components to a range of customers.

Within Power Systems, we are increasing the production of mobile hybrid power systems for rail and marine applications. We are also applying our electrical competencies within our microgrid solutions, which are supporting the accelerated uptake of renewable energy as well as providing vital back-up power and storage.

IMPACTS FROM OPERATIONS AND FACILITIES

Understanding and managing the environmental impact of our operations is a key part of being a responsible and resilient business. We seek to consider and mitigate the environmental impact of our activities and major business decisions.

During the year, we have taken steps to strengthen our understanding of materials consumption across our operations, identifying opportunities to optimise use and avoid wastage. Half of our top 20 waste-producing sites have completed waste-mapping reviews, identifying and prioritising areas for improvement with an estimated cost saving of approximately £1.6m identified to date.

We continue to invest in installing low carbon and renewable energy sources across our global estates, including completing a solar PV installation in Friedrichshafen, Germany. Coupled with a Rolls-Royce microgrid to provide stability of supply, this installation will deliver 30% of the site's energy demand, as well as acting as a showcase for our microgrid technology.

During 2019, we made significant progress towards our long-term zero carbon operations target, entering into a green power purchase agreement (PPA) part way through the year for all our UK purchased electricity, decreasing our scope 1 & 2 emissions by 21%. At the same time, we have continued to invest in energy efficiency opportunities to reduce our overall power demand, including upgrading lighting and heating systems.



CLEANING UP ON COOLANT

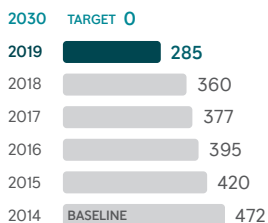
We continue to strengthen our waste management processes, with a particular focus this year on alternative treatments for liquid waste. Almost all our manufacturing sites rely on using coolant as a vital part of our machining processes.

During 2019, we worked with one of our AMRCs to introduce novel technologies to clean and filter 'used' coolant, doubling its useable life. This reduces our coolant waste by 50%, contributing to our waste reduction target, as well as decreasing cutting fluid spend.

These technologies and improved working practices developed in the UK trial are now being rolled out worldwide. We intend to share this capability with our supply chain.

Absolute GHG emissions (ktCO₂e)

285 ktCO₂e

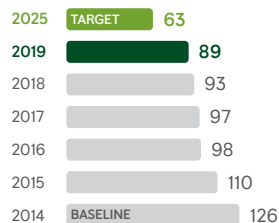


Target: Achieve zero scope 1 + 2 GHG emissions by 2030 ^{1,2,3}

The emissions associated with our operations has reduced by 40% since 2014. This has been achieved through continued decarbonising of our energy systems and increased use of generated or purchased renewable energy.

Energy consumption (MWh/£m)

89 MWh/£m

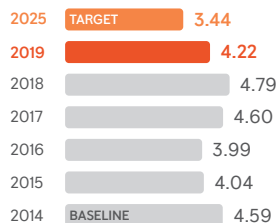


Target: Reduce energy consumption by 50% by 2025 ^{1,2,3}

Our energy consumption has reduced by 26% since 2014 as we continue to invest in improving the energy efficiency of our offices and manufacturing facilities. This includes heating and lighting upgrades.

Total solid and liquid waste (t/£m)

4.22 t/£m

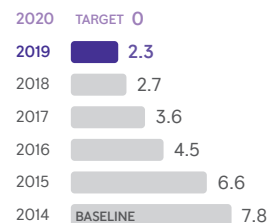


Target: Reduce solid and liquid waste by 25% by 2025 ^{1,2,3}

Total waste generated in our operations has reduced by 13% since 2014. We continue to focus on identifying opportunities to prevent the creation of waste at source in our manufacturing processes.

Waste to landfill (000 tonnes)

2.3 kilotonnes



Target: Achieve zero waste to landfill by 2020 ^{1,2}

The amount of waste sent to landfill has reduced by 71% since 2014. This has been achieved through continued investment in waste management improvements and the use of alternative recovery and recycling options.

¹ External assurance over the STEM, energy, GHG, waste and TRI rate data provided by Bureau Veritas. See page 203 for their sustainability assurance statement.

² Data has been reported in accordance with our basis of reporting, available at www.rolls-royce.com/sustainability. Data for prior years has been restated to reflect the disposal of the Commercial Marine business. Data associated with ITP Aero is included in the GHG, energy and total waste targets from 2017 only.

³ Emissions associated with product test and development, critical to ensuring product safety, and power generation are excluded from our GHG target. Statutory GHG emissions data, including emissions from these sources, are detailed on page 209. Our energy and total waste reduction targets are normalised by revenue.

PEOPLE AND CULTURE

It is through our people that we fulfil our potential, achieve our vision and deliver our strategy.

We continue to focus on driving the right culture through embedding our values and behaviours. We are committed to creating the right working environment where each of us is able to be at our best. This continues to be a critical lever in all we do.

Progressing our transformation

From the outset our transformation programme has been designed as more than a headcount reduction exercise (see page 17). It is a strategic change in our culture, our people, and our ways of working. Embedding our people framework is a core element in achieving this.

During 2019, our efforts have focused in three areas: enhancing leadership capability; embedding our values and behaviours; and eradicating bullying and harassment. We have made progress on embedding our values and behaviours through actions like a robust communications campaign, leading activities to engage our population and hosting 'let's talk' sessions (see page 46). Our values and behaviours are now integrated into our processes and systems, including performance management, reward and employee learning.

Enhancing our leadership

In 2018, we refreshed our enterprise leadership group (ELG) through restructuring, and we continue to refresh the whole leadership population through internal movements and external hiring.

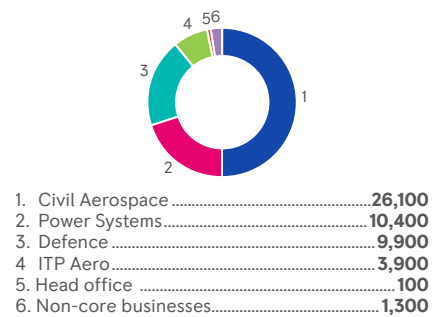
During 2019, we introduced our leadership expectations, an extension of our people framework, which provide clear indicators of success for our leaders to live up to our values and behaviours.

We continue to refresh our leadership learning and development programmes. This includes updating our core leadership learning programmes, including a licence to operate curriculum, and building key capabilities in coaching, driving performance and being inclusive. This is a critical investment in ensuring our leadership remains fit for the future.

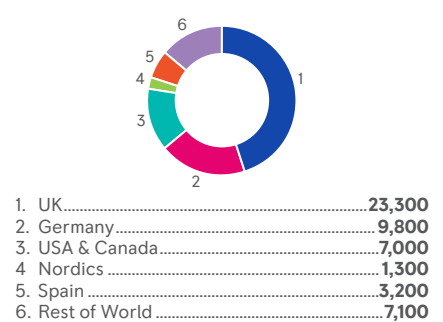
Capabilities and skills

We work hard to ensure we have the right skills and capabilities in place to execute our strategy. During 2019, we invested £28.7m in employee learning and development (2018: £27.1m), delivering 1.4m hours of

51,700 employees total (monthly average) *



Employees in 50 countries (monthly average) *

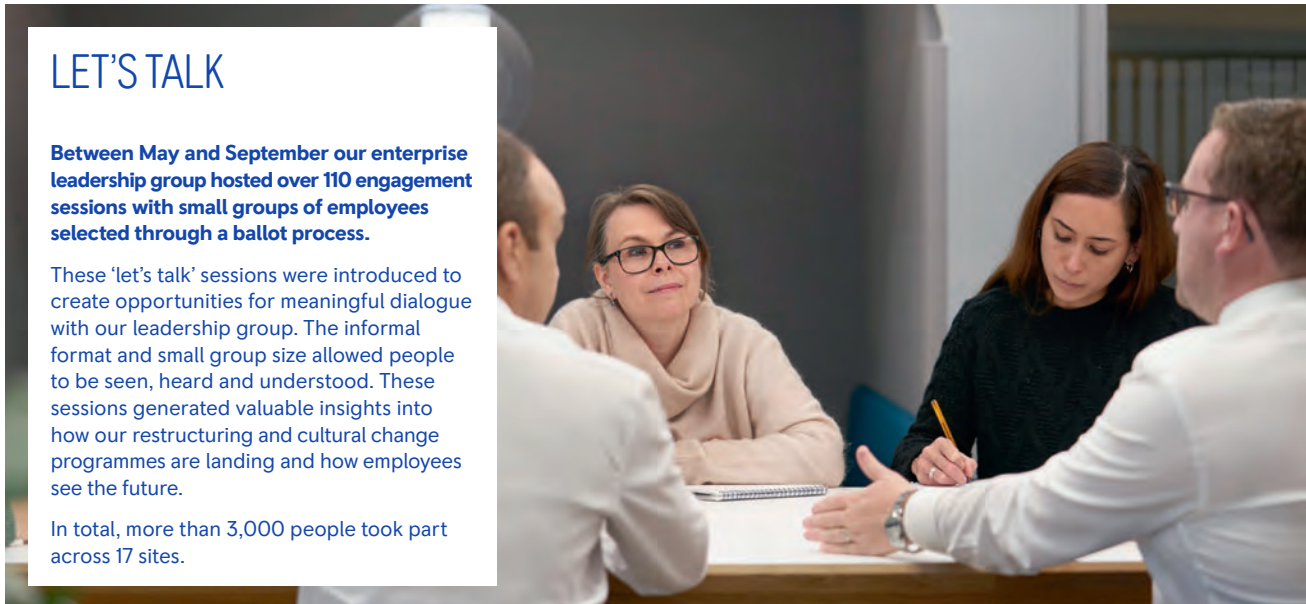


Embedding our people framework

Our people framework provides the backbone of our employee development and engagement activities. This is particularly important as we progress our restructuring programme and continue to embed and evolve our culture to support our purpose, vision and strategy.

Care	Creating a working environment where each of us is able to be at our best.
Growing capabilities	Key capabilities needed to secure emerging opportunities: <ul style="list-style-type: none"> – systems integration – electrical engineering – data sciences
Growing behaviours	Key behaviours needed to secure emerging opportunities: <ul style="list-style-type: none"> – embrace agility – be bold – pursue collaboration – seek simplicity
Core competencies	Key competencies needed to safeguard our competitiveness: <ul style="list-style-type: none"> – engineering pre-eminence – programme management – business acumen
Core values	Key values needed to safeguard our competitiveness: <ul style="list-style-type: none"> – operate safely – trusted to deliver excellence – act with integrity

* Employee headcount data is calculated as the average number of full time equivalents throughout the year.



LET'S TALK

Between May and September our enterprise leadership group hosted over 110 engagement sessions with small groups of employees selected through a ballot process.

These 'let's talk' sessions were introduced to create opportunities for meaningful dialogue with our leadership group. The informal format and small group size allowed people to be seen, heard and understood. These sessions generated valuable insights into how our restructuring and cultural change programmes are landing and how employees see the future.

In total, more than 3,000 people took part across 17 sites.

training (2018: 1m hours). We have focused on developing skills in business acumen, digital and data sciences, and programme management. Interactive learning opportunities, forums and online platforms have been utilised to develop these capabilities throughout the organisation. We are investing circa £4m in a new learning proposition that brings together all our learning offerings in one place.

We continue to acquire talent to support our electrical strategy, including through the acquisition of Siemens' eAircraft business and the introduction of a specialist learning offering within our Power Systems business.

Talent management

Developing our talent strategy and future pipelines continues to be a core focus. We have considerably improved succession planning through the implementation of a new talent review process. This has standardised our approach to assessing potential and managing development needs, as well as proactive engagement of external talent, to improve the quality and diversity of our succession planning.

In 2018, we began work to launch our career framework, a refreshed approach to the way we manage careers and talent. Our management job levels have been broadened to remove complexity and enable greater movement between roles. In 2019, 1,150 managers were promoted internally (2018: 1,340) and our employee turnover rate remained stable at 7.5% (2018: 7.6%).

We have introduced practical tools for managers to help drive their own careers

and to better support their teams. This encourages individuals to take more ownership of their personal development. We have also introduced training and tools to enable leaders to have career conversations that offer broader and more agile career development options for all.

Employee engagement

We believe that positive engagement is a result of our leadership and working environment. Our approach to engagement is founded on the premise that engagement happens locally and should be owned and driven by local teams and leaders.

We provide a variety of channels to communicate and engage with our employees and their representatives. This includes employee newsletters, magazines and team briefings, as well as our digital communication channels. We work closely with elected employee representatives through well-established frameworks, including our European Works Council. Our employee forums ensure everyone has the opportunity to contribute their views.

This year, we introduced a new employee opinion survey, in partnership with Gallup. This survey is more streamlined, moving from 64 questions to 12, encouraging participation by removing the burden of responding. We ran two surveys during the year as we embedded this new approach and increased our focus on measuring and actioning the results; 58% of employees completed the survey in April, and 72% in November. The results from the surveys are a key measure in our annual bonus plan, see page 15 and 89.

We also monitor feedback from current and past employees through Glassdoor, who awarded us #30 on their 'Best Places to Work in the UK'. Our Chief Executive also ranks #9 on their 'Top CEOs in the UK', with an 85% approval rating.

STEM and communities

Our ability to attract and recruit the right people with the right skills in the future is dependent on there being a pipeline of available talent. To support this we focus on building awareness and engagement in science, technology, engineering and maths (STEM) with young people from an early age, as well as those who may have influence over their future career choices such as teachers, parents and carers.

We are now 27% towards our 2030 target to reach 25 million of tomorrow's pioneers through our STEM programmes, with 1.25m people engaged in STEM activities during 2019¹. These activities vary from individual classroom activities and community group workshops, to flagship initiatives such as the Rolls-Royce science prize.

Our broader community investment activities are intended to build positive relationships and engagement opportunities in communities local to our operations, with a focus on environment, education, arts and culture. During 2019, we invested £7m in supporting local communities, including £3.4m in cash contributions and sponsorships. Over 96,000 hours of employee time was committed to community and STEM projects as part of our wider employee engagement approach.

¹ External assurance over the STEM, energy, GHG, waste and TRI rate data provided by Bureau Veritas. See page 203 for their sustainability assurance statement.

UK PENSIONS REVIEW

During 2019, we undertook two actions to manage our pension obligations for current and former UK employees.

The Group carries significant post-retirement liabilities on our balance sheet. During the year, we supported the Trustee of the UK pension plan to fully insure liabilities for around 33,000 former employees with Legal & General Assurance Society. This removes future risk for the Group whilst providing former employees with greater certainty over the delivery of their benefits.

Our UK pension plan closed to new hires in 2007. In 2019 we consulted on changes to the plan, impacting 2,700 managers. This was undertaken in consideration of increasing future service costs, the balance sheet risk of future pension liabilities, as well as the increasing imbalance of overall reward for UK employees who joined the Company before or after 2007. The proposed changes have been agreed and will take effect from 1 March 2020. The Board supported each of these actions after considering in detail the impact on current and former employees and the financial impact on the Group.



Health, safety and wellbeing


Ensuring the wellbeing of our people and those who work with us through providing a safe place of work and minimising potential exposure to harm is a key component of our care promise. This year we introduced mandatory HSE training for all managers. Additional leadership training has been conducted for the Executive Team.

In 2018, we initiated a programme of comprehensive safety reviews following a series of major and high potential incidents, including two fatalities in 2017. The programme remains on track, with 88% of sites in scope having been reviewed and a systematic approach to managing identified areas for improvement implemented. The objectives of this programme are to identify latent risks across our operations and to assess individual sites' HSE maturity, providing site based leadership with greater visibility and understanding of hazards, controls and residual risks.

LiveWell is our internal global accreditation scheme for site-based wellbeing provisions; this acts as a framework for sites to identify specific health and wellbeing requirements in their workplace, and implement improvements. At the end of 2019, 86% of our sites have achieved LiveWell accreditation, recognising the steps they have taken to support employees in making healthy and sustainable lifestyle choices in

the workplace. More than 44,000 employees worldwide have benefited from these workplace interventions.

Mental wellbeing continues to receive a high public profile and our analysis confirms this is a significant source of concern for our employees and a cost to the business. In 2019, we introduced a new toolkit to enable teams to assess their workplace mental health and develop action plans to address any concerns. Our mental health champions programme continues to grow and we now have over 580 trained mental health first aiders.

 **For more information on our safety performance, including TRI rates, see the Safety, Ethics & Sustainability Committee Report, pages 105 to 110.**

Accelerating diversity & inclusion

Improving diversity & inclusion remains a strategic priority for the Group. During 2019, we have refreshed our strategy and associated policies and sought to accelerate progress in its implementation. Our approach focuses on four key areas: leadership and governance; attraction and recruitment; retention; and development.


We continue to leverage external partners to substantiate our approach, including

participation in the Women in Aviation and Aerospace Charter; National Action Council for Minority Engineers; and the General Counsel Diversity Charter.

Our Executive Team currently comprises nine members, all of whom are male. The Group has a 2020 gender diversity target for the Executive Team of 23%. The detailed succession plan for the Executive Team currently comprises 44% females (2018: 35%). The Executive Team, Company Secretary and their direct reports comprise 82 individuals, 21 (26%) of whom are female. Currently 20% of our ELG are female (2018: 14.7%), as are half our Board apprentices.

In 2019, we revised our diversity & inclusion and anti-bullying and harassment policies to align to our strategy and values and behaviours. Our policies ensure that all employees, regardless of gender, race, religion, physical abilities or any other characteristics, are treated with dignity and respect, and feel safe and empowered to work without fear of bullying and harassment.


We give full and fair consideration to all employment applications from people with disabilities and support disabled employees in the workplace, helping them to make best use of their skills and expertise to reach their full potential.

 **For more information on the Board diversity policy, see Nominations & Governance Committee Report, page 78.**

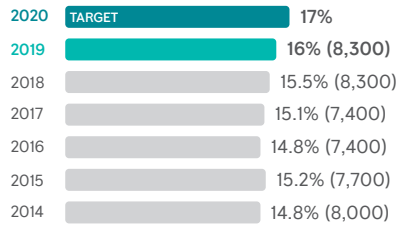
Progress against our 2020 targets

We are taking deliberate action to create a more balanced and representative employee population, in which everyone can be at their best. We have targets in place to increase the representation of women at all levels by the end of 2020. These are supported by additional local and business targets to address local diversity challenges. We are currently working towards developing a new set of diversity targets out to 2025, to be published during 2020.

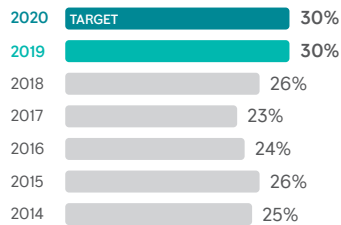
Due to the introduction of the new employee engagement survey, Gallup Q12, we no longer measure a separate inclusiveness score. This is now embedded within our broader measures of employee engagement, linked to our remuneration approach.

 For more information on our employee engagement measure, see KPIs on page 15.

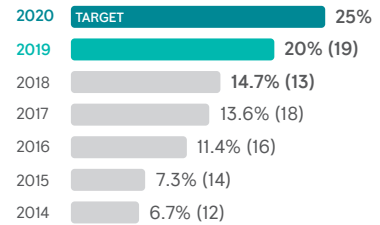
Female employee population¹



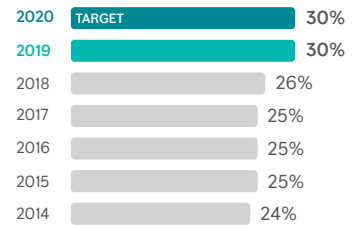
Female graduate population³



Female senior manager population²



Female high potentials population³



¹ Employee headcount data is calculated as the average number of full time equivalents throughout the year. Certain joint ventures are classified as joint operations, 1,300 employees associated with joint operations are not included within our overall headcount or diversity data.

² Senior manager population for 2018 and 2019 is calculated as Executive Team and ELG population (2019 total: 94, 2018 total: 88), prior years data refers to the senior leadership team that was replaced by the ELG through restructuring in 2018.

³ The graduate and high potentials targets refer to the percentage of employees on these development programmes as at 31 December each year.

BUILDING A DIVERSE TALENT PIPELINE

We continue to focus on early careers recruitment as an opportunity to bring more diverse talent into the organisation.

In 2019, 184 graduates and 353 apprentices joined Rolls-Royce on early career development programmes. These provide a vital pipeline of talent into engineering and other functions, including finance, procurement and project management.

Our graduate intake was 32% female (2018: 32%). Apprentice starters were 16% female (2018: 21%), this decline was driven in part by the fact we only recruited engineering apprentices this year.



ETHICS AND COMPLIANCE

Maintaining high standards of ethics and compliance are fundamental to our continued success. We work hard to create a working environment where everyone at Rolls-Royce and everyone we work with can be at their best.

We are committed to maintaining the highest ethical standards and have a suite of global policies and processes in place to avoid any potential complicity in misconduct.

Our Code of Conduct (Our Code) and associated policies set out the values and behaviours we expect everyone to demonstrate. They also provide guidance on how to apply these principles in our daily decisions. In 2019, 99% of managers certified their commitment to adhere to the principles set out in Our Code (2018: 99%). We flow these principles to our suppliers through our Supplier Code of Conduct. All suppliers are contractually required to adhere to this, or a mutually agreed alternative.

We encourage speaking up in the event of a question or concern and provide a variety of channels through which to do so. For example, we now have 150 employees trained as local ethics advisors who can act as first point of call. During the year, we have focused on supporting our leadership population in how to listen to someone raising a concern and how to follow up.

We have a zero tolerance approach to misconduct of any kind and will take

disciplinary action, up to and including dismissal, in the event of a breach of Our Code. In 2019, 85 employees (2018: 59) left the business for reasons related to breaches of Our Code.

Anti-bribery and corruption

Our Code and associated policies clearly set out our commitment not to tolerate bribery or corruption of any form. In 2019, our ongoing anti-corruption programme focused particularly on managing conflicts of interest and confidential information. This has targeted training for higher-risk teams and individuals.


In addition, we have continued to strengthen our anti-bribery due diligence approach. The level of due diligence activity carried out is dependent on the level of risk that a particular third party provides and may include in-person interviews and site visits, as well as external due diligence reports from specialist corporate intelligence providers. We also conduct extensive due diligence into potential joint ventures as well as supporting existing joint ventures in their ethics and compliance programmes.

Human rights and anti-slavery

Our commitment to protecting and preserving the human rights of our employees, and those whom may be impacted by our business operations or supply chain, is embedded within Our Code, our Human Rights policy and our Supplier Code of Conduct.

Our approach to identifying and assessing modern slavery risk is embedded within our broader risk management approach. Due diligence is embedded within our operating systems and processes, including recruitment and procurement processes.

 More information on our approach can be found in our anti-slavery and human trafficking statement, available at www.rolls-royce.com.

 For more information on our ethics approach see the Safety, Ethics & Sustainability Committee Report, pages 105 to 110.



TREATING OTHERS WITH DIGNITY AND RESPECT

This year's mandatory ethics training focused on treating others with dignity and respect, linked to our anti-bullying and harassment campaign.

This comprised individual study and team discussions on real-life cases of bullying and harassment experienced in the Group. 97% of in-scope employees completed the training (2018: 98%).

We have strengthened our investigation process for allegations related to bullying and harassment. During the year, five employees left the organisation as a result of these investigations.

PRINCIPAL RISKS

Our risk and internal control system

The Board has established procedures to manage risk and oversee the risk management system (RMS). The 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 Audit Committee reviews the Group's internal financial controls which form a subset of the broader set of controls, and also reviews the RMS and its effectiveness. During the year, the Board completed a robust 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 risks, 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 take

into account 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. 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 Executive Team and regular Board and Board committee meetings.

During the year, we continued to refine our risk appetite metrics and to use these more systematically in concluding on the effectiveness of mitigating activities. We also continued to strengthen the controls in place over risks at remote sites. Our plans for 2020 include simplification of our risk policies and guidance and additional support for risk owners in assessing the effectiveness of mitigating control activities.

Principal risks

Our principal risks are identified and managed in the same way. Principal risks are owned by at least one member of the Executive Team and subject to a deep dive at an Executive Team meeting at least once each year, before a review by the Board or a Board committee. The Board has completed a review of the principal risks and concluded that there are no changes

in nature except for the elevation of the risk of climate change as described below. A description of all of the principal risks, how we manage them, the main mitigating control activities, the change in status and how these underpin our priorities is set out on pages 51 to 54.

Emerging risks

Our emerging risks are also identified and managed this way. As we committed last year, given the additional focus on emerging risks this year, we have introduced additional activities to identify emerging risks. These include workshops, facilitated together with the central strategy team, and the use of an app, developed with digital support by R² Data Labs, to collect insight from diverse stakeholder groups across the organisation. Questions were posed to identify items that could translate into longer-term issues or opportunities, beyond the period considered for viability, that could significantly impact or challenge our current strategy and business model.

Any risks identified have been recorded in RMS and are being managed and monitored alongside our existing risks.

Following the UK's exit from the European Union on 31 January 2020, we continue to monitor the potential outcomes for the UK's future relationship with the EU through our steering group which has remained active during 2019 and will remain active until the outcome is clear and any necessary mitigation plans are in place. We model potential impacts and include these in our assessment of strategic, operational and compliance risks, adjusting mitigation plans where necessary including where we build or hold inventory, testing additional logistics options and reviewing supplier readiness. We ensure regular dialogue takes place with all stakeholders including customers, suppliers, employees, governments and regulatory agencies. The Board is regularly updated on the latest risk assessment and mitigating activities.

Growing appreciation of the potential impact of climate change on the environment combined with our position as a global leader in the manufacture, service and operation of assets that are dependent on the use of fossil fuels, has increased our exposure to a wide variety of climate-related risks. In light of this, we have included the risk of climate change to future revenue growth as an additional principal risk. More detail on how we manage this, the main mitigating control activities and how these underpin our priorities is set out on page 52.

Our risk and internal control system

Risk Management

Risks facing the business are identified and assessed on a regular basis.

Internal control

Internal controls are designed and deployed to mitigate these risks to an accepted level.

Assurance




Assurance activities assess whether the controls are effective and risks are mitigated to an acceptable level in practice.

2019 Group priorities 1 Customers 2 Technology 3 People and culture 4 Financial progress		Change in risk level in 2019 Increased Decreased Static New risk	
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PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
<p>SAFETY</p> <p>Failure to meet the expectations of: i) our customers to provide safe products; or ii) the people who work for or with us to provide a safe and healthy place of work which minimises the impact on the environment; would adversely affect our reputation and long-term sustainability.</p>	<p>We manage product safety by:</p> <ul style="list-style-type: none"> – Ensuring clear accountability for safety and a culture that puts safety first. – Applying our engineering design and validation process from initial design, through production and into service to reduce the safety risks so far as is reasonably practicable; always ensuring that we meet or exceed the relevant company, legal, regulatory and industry requirements. – Operating a safety management system, governed by the product safety assurance board, and subject to continual improvement based on review of existing and emerging threats, experience, and industry best practice. – Ensuring that our products and those of our suppliers conform to their specifications. – Ensuring that everyone receives appropriate product safety awareness training. <p>We manage people's safety and wellbeing by:</p> <ul style="list-style-type: none"> – Ensuring clear accountability for HSE and a culture that puts operating safely first. – Refreshing our global HSE policy and introducing our Zero Harm programme. – Operating an HSE management system, including reporting, investigating and learning lessons from incidents. – Driving sustainable use of resources. <p>This principal is subject to review by the Safety, Ethics & Sustainability Committee.</p>	<p>For the safety of our products:</p> <ul style="list-style-type: none"> – Company product safety assurance committee – Business product safety committee – Quality compliance audit – Engineering technical audit – Crisis management team <p>For people's safety and wellbeing:</p> <ul style="list-style-type: none"> – HSE management system – HSE accountability framework – HSE committee – Crisis management team – Environment & sustainability committee 		<p>1 2 3</p>
<p>BUSINESS CONTINUITY</p> <p>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); 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 adverse impact on our people, our internal facilities or our external supply chain.</p>	<ul style="list-style-type: none"> – Sustaining investment in adequate capacity, modern equipment and facilities, dual sources of supply and researching alternative materials. – Promoting and developing resilience within our external supplier partners. – Providing a supplier finance programme in partnership with banks to enable our suppliers to benefit from the Rolls-Royce credit rating and access funds at low interest rates. – Building a resilient culture through flexible and collaborative working, using our single Group-wide incident management framework. – Developing, maintaining and regularly exercising effective business continuity and crisis management plans to prepare our people to respond quickly and confidently to any business disruption. – Sharing lessons learned identified through exercises or incidents. – Scanning the horizon to provide awareness of emerging risks/potential incidents. <p>This principal risk is subject to review by the Audit Committee.</p>	<ul style="list-style-type: none"> – Incident management framework – Business continuity readiness assessment – External supplier audits and robust contractual agreements – Training and exercising in incident response and recovery – Environment & sustainability committee 		<p>1 3 4</p>

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
<p>CLIMATE CHANGE</p> <p>Understanding the impact of climate change and our products increases our susceptibility to physical and transitional climate-related risks. We will need to transition our products and services to a lower carbon economy. Failure to consider changes in atmospheric conditions could result in changes in maintenance and overhaul requirements, affecting revenues generated by our in-service fleet and jeopardising the viability of a services-based business model. Failure to transition from carbon-intensive products and services at pace could impact our ability to win future business; achieve operating results; attract and retain talent; secure access to funding; realise future growth opportunities; or force government intervention to limit emissions.</p>	<ul style="list-style-type: none"> – Investment in our existing product range to reduce its carbon impact, and in zero carbon technologies to replace our existing products. – Partnering programme to introduce the skills, capability and hunger to rapidly develop class-leading solutions. – Seeking a balanced portfolio of products, customers and revenue streams to reduce our dependence on any one product, customer or carbon emitting fuel source. – Clear communication and acknowledgment of our role in the problem and the solution, and the actions we are taking to enact a credible plan of action in line with societal expectations. <p>This principal risk is subject to review by the Board and the Safety, Ethics & Sustainability Committee.</p>	<ul style="list-style-type: none"> – Strategic reviews – Science & Technology Committee – Environment and sustainability committee 	+	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0056b3; color: white; width: 20px; height: 20px; margin-bottom: 2px;"></div> <div style="background-color: #0056b3; color: white; width: 20px; height: 20px; margin-bottom: 2px;"></div> <div style="background-color: #0056b3; color: white; width: 20px; height: 20px; margin-bottom: 2px;"></div> <div style="background-color: #666; color: white; width: 20px; height: 20px;"></div> </div>
<p>COMPETITIVE ENVIRONMENT</p> <p>The presence of competitors in the majority of our markets means that the Group is susceptible to significant price pressure for original equipment or services. Our main competitors have access to significant government funding programmes as well as the ability to invest heavily in technology and industrial capability. Disruptive technologies or new entrants with alternative business models could also reduce our ability to sustainably win future business, achieve operating results and realise future growth opportunities.</p>	<ul style="list-style-type: none"> – Horizon scanning for emerging technology and other competitive threats, including patent searches. – Establishing our Innovation Hub to invest in innovation, manufacturing and production, and ensure continuing governance of technology programmes. – Enhancing our capabilities to access, invest in and develop key technologies and innovative service offerings which differentiate us competitively. – Improving the quality, delivery and durability of our products and services through investment in innovation, manufacturing and production capabilities. – Forming strategic partnerships and conducting joint research programmes with our partners. – Driving down cost to improve margins. – Protecting credit lines. – Strengthening our balance sheet to enable access to cost-effective sources of third party funding. <p>This principal risk is subject to review by the Board.</p>	<ul style="list-style-type: none"> – Financial performance review – Strategic planning process – Investment review committee – Science & Technology Committee – Data Security Committee 	◁▷	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0056b3; color: white; width: 20px; height: 20px; margin-bottom: 2px;"></div> <div style="background-color: #0056b3; color: white; width: 20px; height: 20px; margin-bottom: 2px;"></div> <div style="background-color: #666; color: white; width: 20px; height: 20px;"></div> </div>
<p>COMPLIANCE</p> <p>Non-compliance by the Group with legislation, the terms of the DPAs or other regulatory requirements in the heavily regulated environment in which we operate (for example, export controls; use of controlled chemicals and substances; anti-bribery and corruption; and tax and customs legislation). This could affect our ability to conduct business in certain jurisdictions and would 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.</p>	<ul style="list-style-type: none"> – Taking an uncompromising approach to compliance. – Operating an extensive compliance programme. Global mandatory policies, processes and training are disseminated throughout the Group and are updated from time to time to ensure their continued relevance, and to ensure that they are complied with, both in spirit and to the letter. – Regular reviews of the strength of relevant teams including the ethics, anti-bribery and corruption, compliance, tax, sustainability and export control teams. – A legal team is in place to manage any ongoing regulatory investigations. – Engaging with all relevant external regulatory authorities. – Implementing a comprehensive REACH compliance programme. This includes ensuring that we and our supply chain are covered by REACH authorisations for a number of chemicals needed for our products, establishing appropriate data systems and processes and working with our suppliers, customers and trade associations. <p>This principal risk is subject to review by the Safety, Ethics & Sustainability Committee.</p>	<ul style="list-style-type: none"> – Governance model – Compliance and export control teams – Governance team – Legal team 	◁▷	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #666; color: white; width: 20px; height: 20px; margin-bottom: 2px;"></div> <div style="background-color: #0056b3; color: white; width: 20px; height: 20px; margin-bottom: 2px;"></div> <div style="background-color: #666; color: white; width: 20px; height: 20px;"></div> </div>

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
<h2>CYBER THREAT</h2> <p>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.</p>	<ul style="list-style-type: none"> – Implementing defence in depth through deployment of multiple layers of software and processes including web gateways, filtering, firewalls, intrusion, advanced persistent threat detectors and integrated reporting. – Running security and network operations centres. – Actively sharing cyber security information through industry, government and security forums. – Information and product assurance processes. – Training and awareness to improve cyber security culture. <p>This principal risk is subject to review by the Audit Committee through its Data Security Committee.</p>	<ul style="list-style-type: none"> – Data Security Committee – IT executive – Product cyber security working groups in high risk areas – Information assurance and engineering processes – Crisis management team 	↔	1 2 3
<h2>MAJOR PRODUCT PROGRAMME DELIVERY</h2> <p>Failure to deliver a major programme on time, within budget, to technical specification or falling significantly short of customer expectations, or not delivering the planned business benefits, would have potentially significant adverse financial and reputational consequences, including the risk of impairment of the carrying value of the Group's intangible assets and the impact of potential litigation.</p>	<ul style="list-style-type: none"> – Major programmes are subject to Board approval. – Reviewing major programmes at levels and frequencies appropriate to their criticality and performance, against key financial and non-financial deliverables and potential risks throughout the programmes lifecycle. – Investing in facilities and people to manage the level of disruption to our customers from Trent 1000 in-service issues and developing longer-term solutions to these issues. – Conducting technical audits at pre-defined points which are performed by a team that is independent from the programme. – Requiring programmes to address the actions arising from reviews and audits and monitoring and controlling progress through to closure. – Applying knowledge management principles to provide benefit to current and future programmes. <p>This principal risk is subject to review by the Board.</p>	<ul style="list-style-type: none"> – Rolls-Royce management system – Operational performance review – Project audit and risk assurance reviews – Gated business and technical reviews – Quality compliance audit – Quality committee 	↔	1 2 4
<h2>MARKET AND FINANCIAL SHOCK</h2> <p>The Group is exposed to a number of market risks, some of which are of a macro-economic nature (for example, foreign currency, oil price, interest rates) and some of which are more specific to the Group (for example, liquidity and credit risks, reduction in air travel or disruption to other customer operations). Significant extraneous market events could also materially damage the Group's competitiveness and/or creditworthiness. This would affect operational results or the outcomes of financial transactions.</p>	<ul style="list-style-type: none"> – Maintaining a strong balance sheet, through managing cash balances and debt levels. – Providing financial flexibility by maintaining high levels of liquidity and an investment grade credit rating. – Sustaining a balanced portfolio through earning revenue both from the sale of original equipment and aftermarket services, providing a broad product range and addressing diverse markets that have differing business cycles. – Deciding where and what currencies to source in, and where and how much credit risk is extended or taken. The Group has a number of treasury policies that are designed to hedge residual risks using financial derivatives (foreign exchange, interest rates and commodity price risk). – Review debt financing and hedging in light of volatility in external financial markets caused by external events, such as Brexit or other geopolitical changes. <p>This principal risk is subject to review by the Audit Committee.</p>	<ul style="list-style-type: none"> – Financial performance review – Financial risk committee – Operational performance review – Group finance, treasury and tax teams 	↑	4

PRINCIPAL RISK OR UNCERTAINTY	HOW WE MANAGE IT	KEY CONTROLS	CHANGE	PRIORITY
<p>POLITICAL RISK</p> <p>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.</p>	<ul style="list-style-type: none"> – Where possible, diversifying our global operations to avoid excessive concentration of risks in particular areas. – The Group's businesses, strategic marketing network and global government relations teams proactively monitoring local situations. – We develop and maintain relationships with governments and stakeholders and proactively influence policy, regulation and legislation where it affects us. – Steering committee to co-ordinate activities across the Group and minimise the impact of Brexit. <p>This principal risk is subject to review by the Board.</p>	<ul style="list-style-type: none"> – Global government relations network – Group tax and export control teams – Strategic planning process – Brexit steering committee 		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">1</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">2</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">3</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px;">4</div> </div>
<p>STRATEGIC TRANSFORMATION</p> <p>Failure to deliver our strategic transformation, including changing our behaviours could result in: missed opportunities; dissatisfied customers; disengaged employees; ineffective use of our scarce resources; and increasing the likelihood of other principal risks occurring. This could lead to a business that is overly dependent on a small number of products and customers; failure to achieve our vision; non-delivery of financial targets; and not meeting investor expectations.</p>	<ul style="list-style-type: none"> – Implementing a new organisational operating model. – Focusing on behaviours to drive cultural change. – Simplifying the processes in our Rolls-Royce management system, whilst ensuring we comply with our legal, contractual and regulatory requirements. – Horizon scanning and scenario planning. – Investing in products with lower emissions, reducing our impact on climate change. – Employee innovation portal. <p>This principal risk is subject to review by the Board and the Safety, Ethics & Sustainability Committee.</p>	<ul style="list-style-type: none"> – Executive Team – Gated reviews 		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">1</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">2</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">3</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px;">4</div> </div>
<p>TALENT AND CAPABILITY</p> <p>Inability to identify, attract, retain and apply the critical capabilities and skills needed in appropriate numbers to effectively organise, deploy and incentivise our people would threaten the delivery of our strategies, business plans and projects.</p>	<ul style="list-style-type: none"> – Attracting, rewarding and retaining the right people with the right skills globally and locally in a planned and targeted way, including regular benchmarking of remuneration. – Developing and enhancing organisational, leadership, technical and functional capability to deliver global programmes. – Continuing a strong focus on individual development and succession planning, recognising the changing nature of careers and expectations of work. – Proactively monitoring retirement in key areas and actively managing the development and career paths of our people with a special focus on employees with the highest potential. – Embedding a lean, agile, high-performance culture where everyone can be at their best that tightly aligns Group strategy with individual and team objectives. – Incentivising and effectively deploying the critical capabilities, skills and people needed to deliver our strategic priorities, plans and projects whilst implementing the Group's major programme to transform its business, to be resilient and to act with pace and simplicity. – Tracking engagement through regular employee opinion surveys and a commitment to drive year-on-year improvement to employee engagement. <p>This principal risk is subject to review by the Nominations & Governance Committee.</p>	<ul style="list-style-type: none"> – Remuneration Committee – Executive Team – ELG – People leadership team 		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">1</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">2</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px; margin-bottom: 2px;">3</div> <div style="background-color: #0056b3; color: white; padding: 2px 5px;">4</div> </div>

GOING CONCERN AND VIABILITY STATEMENTS

Introduction

Rolls-Royce operates an annual planning process. Our plans and risks to their achievement are reviewed by the Board and, once approved, are cascaded throughout the Group and are used as the basis for monitoring our performance, incentivising employees and providing external guidance to our shareholders.

The processes for identifying and managing risk are described on pages 50 to 54. 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.

Going concern

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

As described on page 204, the Group meets its funding requirements through a mixture of shareholders' funds, bank borrowings, bonds and notes. At 31 December 2019, the Group had borrowing facilities of £5.6bn (excluding lease liabilities of £2.4bn) and total liquidity of £6.9bn, including cash and cash equivalents of £4.4bn and undrawn facilities of £2.5bn. £435m of the facilities mature in 2020 (excluding lease liabilities of £340m).

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

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

Viability

The viability assessment considers solvency and liquidity over a longer period than the going concern assessment. Consistent with previous years, we have assessed our viability over a five-year period which is in line with our five-year medium-term planning process. Inevitably, the degree of certainty reduces over this longer period.

In making the assessment, severe but plausible scenarios have been considered that estimate the potential impact of principal risks arising over the assessment period, for example: the loss of a key element of the supply chain, the impact on aircraft travel of a global pandemic, a trade war between major trading blocs or worsening or new in-service issues on Civil Aerospace programmes.

The scenarios assume an appropriate management response to the specific event, but not broader mitigating actions which could be undertaken, which have been considered separately. The cash flow impacts of these scenarios were overlaid on the five-year forecast to assess how the Group's liquidity and solvency would be affected. Reverse stress testing has also been performed to assess the severity of scenario that would have to occur to exceed headroom, including a scenario where existing borrowing facilities could not be refinanced as they mature.

The assessment took account of the Group's current funding, forecast requirements and existing committed borrowing facilities.

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:

- that maturing facilities, including the Group's revolving credit facility (RCF), will be refinanced and the Group is able to drawdown its existing facilities as required;
- the Group currently has access to global debt markets and expects to be able to refinance these 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 (say 12 months) where debt markets were effectively closed to the Group and the RCF not available;
- that in the event of one or more risks occurring, which has a particularly severe effect on the Group, all potential actions, such as constraining capital spending and reducing or suspending payments to shareholders, would be taken on a timely basis. The Group believes it has the early warning mechanisms to identify the need for such actions and the ability to implement them on a timely basis if necessary; and
- that implausible scenarios, whether involving multiple risks occurring at the same time or the impact of individual risks occurring that cannot be mitigated by management actions to the degree assumed, do not occur.

s172 STATEMENT

The Board believes that, individually and together, they have acted in the way they consider, in good faith, would be most likely to promote the success of the Company for the benefit of its members as a whole, having regard to the stakeholders and matters set out in s172(1)(a–f) of the Companies Act 2006 in the decisions taken during the year ended 31 December 2019.

This illustration sets out the Board’s approach to decision making, its stakeholder engagement, why its stakeholders matter and some key decisions made during 2019. To give greater understanding to this, we have provided clear cross-referencing to where more detailed information can be found in this Annual Report.

The Board’s approach

We remain a particularly active Board, seeking opportunities outside the boardroom to find out what is happening across the organisation

Purpose, vision and strategy (see page 10)

- clearly articulated purpose recognising our role in society
- corporate narrative aligned with both vision and strategy

Group policies (see page 40)

- annual review of Group policies
- new mandatory training introduced in 2019 (see page 1110)

Culture and people (see page 45)

- review of the culture change agenda (see page 67)
- Code of Conduct clearly communicated and enforced (see page 49)
- continued support for the people framework (see page 45)

Board’s structure (see page 65)

- role of the Board and its matters reserved, reviewed annually
- clear focus of the Board’s committees, annual review of terms of reference
- clearly defined roles and responsibilities for Board members and the Company Secretary

‘freedom within a framework’ (see page 61)

- communication of freedom within a framework culture
- Rolls-Royce management system simplification
- new decision rights model

Risk and internal control framework – see page 50

- all risks and mitigating actions subject to a detailed annual review at Board level (see pages 68 and 80)
- reviewed process for the preparation of both going concern and viability statements (see page 55)

OUR PURPOSE

At Rolls-Royce we pioneer the power that matters to connect, power and protect society

Our stakeholder engagement

Our activities are global and complex. Touching upon a wide variety of stakeholders, we aim to create trusted relationships to understand the needs of all our stakeholders so we can continue to deliver value and build a resilient business
See page 70 for the Board’s engagement with our stakeholders.
See page 12 for our business model

Customers

Focusing on the needs of our customers is critical to the success of our business. We maintain a high degree of customer intimacy in order to anticipate and understand the future power needs of our customers, building on our years of experience in delivering for our markets. We collaborate and innovate with our customers to improve product performance and value

Investors

Continued access to capital is vital to the long-term performance of our business. We work to ensure that our investors and investment analysts have a strong understanding of our strategy, performance, ambition and culture

Employees

Employee engagement is critical to our success. We work to create a diverse and inclusive workplace where every employee can reach their full potential and be at their best. We engage with our people to ensure we are delivering to their expectations, supporting wellbeing and making the right business decisions. This ensures we can retain and develop the best talent

Partners

Our external supply chain and our suppliers are vital to our performance. We engage with them to build trusting relationships from which we can mutually benefit and to ensure they are performing to our standards and conducting business to our expectations

Communities

We are committed to building positive relations with the communities in which we operate. We support communities and groups, local and relevant to our operations, particularly educational outreach

Governing bodies and regulators

We engage with national governments, national/transnational agencies and key politicians and regulators to ensure that we can help shape policy, have licence to operate, attract funding, enable markets and ultimately win business. We work with governments globally where we have operations or future business opportunities

DELIVERED WITH INTEGRITY

We discuss how we maintain high standards of ethics and compliance and their fundamental importance to our continued success on page 49

Our principal decisions during 2019

More discussion on these decisions can be found in the Board focus on page 67

UK pensions review (see pages 47 and 67)

- transfer of certain pension risk liability and balance sheet impact
- changes to the defined benefit pension scheme for UK managers

Climate change impact (see pages 52 and 68)

- elevation of risk of climate change to future revenue growth

New midsize airplane platform (NMA)

- withdrawal from engine competition to power Boeing’s NMA platform (see page 67)
- continue to focus on our UltraFan demonstrator programme (see page 26)

Trent 1000 mitigation actions (see pages 8 and 68)

- strong focus on customer and accounting impact of technical and operational challenges including risks to the programme
- increased stock of spare engines and accelerated growth in the MRO network to meet long-term servicing demands

Enhanced capital allocation discipline

- set as a 2019 priority (see page 7)
- agreed approach and overview of capital allocation as part of our freedom within a framework culture (see page 61)
- strengthening the balance sheet and monitoring our credit rating risk (see page 17)

Payments to shareholders

- continued policy and recommendation to shareholders of final shareholder payment (see page 5)

Strategic Report
signed on behalf of the Board

Warren East
Chief Executive

28 February 2020