



Our business, purpose and value creation



Our business

Renishaw is a global, high-precision metrology and healthcare technology group.

Our purpose

To design, develop and deliver solutions and systems that provide unparalleled precision, control and reliability.

By pursuing our purpose, we can continue to be a worldwide leader in precision technology: an insatiable innovator, a trusted partner, an inspiring employer and a responsible business.

How we create value

At Renishaw, we have spent nearly 50 years engineering change. Our unique blend of pioneering science and product innovation helps customers push the boundaries of what is possible. From transport to agriculture, electronics to healthcare, our breakthrough technology transforms product performance and touches billions of lives around the world.

We work closely with our customers to solve complex challenges and improve products and processes. Our disruptive thinking and manufacturing excellence help customers increase innovation, improve quality, expand output and enhance efficiency.

We underpin this with long-term investments in people, innovation and infrastructure. This nurtures a powerful pipeline of measurement technology and manufacturing techniques that advance the development of diverse products and address pressing real-world problems.

We thrive through our collaborative team of 5,000 people. They bring fresh thinking, relentless rigour and an obsession with quality to every aspect of their work. Their thirst for innovation and commitment to continuous improvement informs the drive, determination and energy that mean we keep moving forward, every day.

+ For more about the value we generate for our stakeholders see page 11

+ For more about how we engage with our stakeholders see pages 12 to 15

Investing globally for the long term

For more information visit:

www.renishaw.com

Financial highlights

Revenue

£574.0m

(2018: £611.5m)

Adjusted* profit before tax

£103.9m

(2018: £145.1m)

Statutory profit before tax

£109.9m

(2018: £155.2m)

Total dividend for the year

60.0p

(2018: 60.0p)

Adjusted* earnings per share

119.9p

(2018: 170.5p)

Statutory earnings per share

126.7p

(2018: 181.8p)

We use a number of abbreviations and trade marks within this document. For brevity, we do not define or identify these every time that they are used; please refer to the glossary on page 146 for this information.

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* Note 25, Alternative performance measures, defines how Adjusted profit before tax is calculated.



Dates within this document refer to financial years unless otherwise stated.

Renishaw at a glance

What we do

Renishaw is a global, high-precision metrology and healthcare technology group. We market our products through our subsidiaries in 36 countries and 81 locations.

Metrology products



Our technology solutions help manufacturers to maximise production output, to significantly reduce the time taken to produce and inspect components, and to keep their machines running reliably. In the fields of industrial automation and motion systems, our position measurement and calibration systems allow machine builders to manufacture highly accurate and reliable products. We are a world leader in the field of metal additive manufacturing (3D printing) with machines that produce parts from metal powder.

Healthcare products



Our technologies are helping within applications such as craniomaxillofacial surgery, dentistry, neurosurgery, and tissue and biofluid analysis. These include engineering solutions for stereotactic neurosurgery, analytical systems that identify and assess biochemical changes associated with disease formation and progression, the supply of specially configured metal additive manufacturing (AM) systems for medical and dental applications, the supply of implants to hospitals and specialist design centres for craniomaxillofacial surgery, and products and services that allow dental laboratories to manufacture high-quality dental restorations.

Where we operate

APAC (Asia Pacific)

Locations

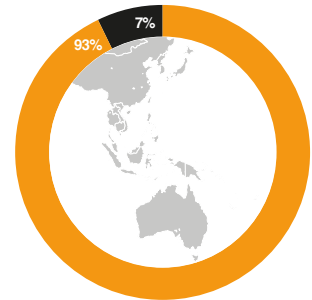
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Metrology revenue ■

£223.7m

Healthcare revenue ■

£16.4m



EMEA (Europe, Middle East and Africa)

Locations

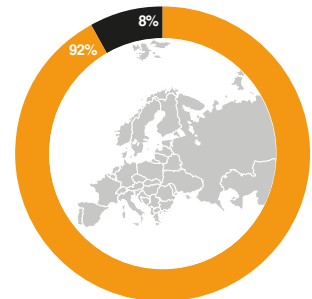
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Metrology revenue ■

£153.0m

Healthcare revenue ■

£14.2m



Americas

Locations

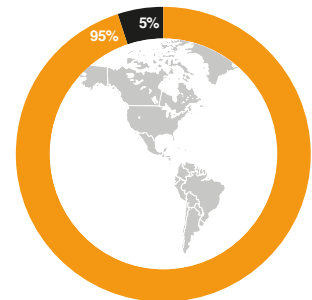
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Metrology revenue ■

£126.6m

Healthcare revenue ■

£6.0m



UK

Locations

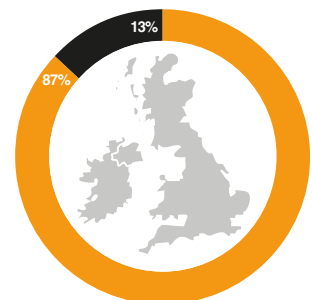
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Metrology revenue ■

£29.6m

Healthcare revenue ■

£4.5m



Our principal markets



Aerospace

New aircraft production to meet growing global demand for civil air transport

New fuel-efficient engines with complex parts requiring faster measurement

Improvements to fuel efficiency by minimising airframe weight.



Automotive

Increasing investment in hybrid and electric vehicles with reduced investment in internal combustion engines

Improved fuel efficiency requires tighter tolerances on powertrain components

Cost efficiencies and automated processes required throughout the supply chain.



Consumer products

Ever shorter product life cycles require flexible manufacturing systems

New generations of electronic devices and household appliances demand precision manufacturing systems for form and function

5G mobile products require significant investments in more complex integrated circuits.



Power generation

Manufacture of components for civil nuclear, wind and solar energy

Increasing focus on maximising output from machinery used in power generation

Increasing research into energy storage.



Agriculture

Increasing global demand for food products due to growing population and rising incomes

Greater investment in machinery for intensive farming capabilities and new technology to increase yields and reduce input and environmental costs

Smart farming techniques and greater automation.



Construction

Major infrastructure projects drive heavy equipment sales

Drive to improve efficiency of large diesel engines used for vehicles in the sector

Skills shortages requiring more automation in equipment manufacturers.



Healthcare

Life expectancy increasing

Neurological disorders require faster and highly precise surgical therapies

Growing demand for cosmetic dentistry with superior aesthetics

Growing demand for orthopaedic implants and patient-specific implants.



Resource exploration

Global population growth and urbanisation drive long-term demand for fossil fuels

Non-renewable resources require exploration in demanding terrains or more research into optimal extraction from existing sites

Equipment manufactured to stringent safety requirements requires accurate, cost-effective and traceable processes.

See pages 16 and 17, Our markets, for further details.

2019 in numbers

Revenue

£574.0m

Adjusted* profit before tax

£103.9m

Statutory profit before tax

£109.9m

Total dividend for the year

60.0p

Number of employees at 30 June 2019

5,041

Patents – continual innovation in new technologies

1,970

* Note 25, Alternative performance measures, defines how Adjusted profit before tax is calculated.

Chairman's statement



Sir David McMurtry
Executive Chairman



The Group has faced challenging market conditions this year resulting in lower revenue of £574.0m (2018: £611.5m) and reduced adjusted profit before tax of £103.9m (2018: £145.1m), a decrease of 28%. On a statutory basis, profit before tax reduced by 29% to £109.9m. While we saw growth in the Americas and EMEA, weakness in key sectors in APAC caused a drag on results.

Introduction

I am pleased to report our 2019 results. We achieved a turnover for the year of £574.0m (2018: £611.5m) with a decrease in revenue of 7% at constant exchange rates*, against a backdrop of challenging economic conditions. Adjusted* profit before tax amounted to £103.9m (2018: £145.1m), a decrease of 28%.

Following the appointment of Will Lee as Chief Executive last year, I have been delighted to see his progress and strong leadership during the year. He is driving change in key areas of the business, including a focus on the skills development of our people, to continue to improve productivity.

Innovation drives our business, from the generation of new technologies to new manufacturing processes. In my role as Executive Chairman, I have enjoyed the opportunity to focus on Group innovation and product strategy, supporting our talented engineering teams. This has included our industrial metrology and AM technologies, where there are exciting opportunities for future growth.

During the year, we continued to invest in developing future technologies, with total engineering costs of £97.9m (before net capitalised development costs and the R&D (research and development) tax credit), amounting to 17% of total revenue.

Board changes

On 30 June 2019, Geoff McFarland, Group Engineering Director, resigned as a Director of the Board for family reasons. On behalf of the Board, I would like to thank Geoff for the invaluable contribution he has already made to the developments that have helped Renishaw grow into the global technology leader that it is today. I look forward to continuing to work with him in his new role as Director of Group Technology, reporting to Will.

As reported last year, Kath Durrant stepped down from the Board on 31 July 2018. Catherine Glickman joined us as an Independent Non-executive Director on 1 August 2018, becoming Chair of the Remuneration Committee and a member of the Audit and Nomination Committees. Catherine previously held the role of Group HR Director at Genus plc and Tesco PLC and is making a valuable contribution as we strengthen our HR processes and implement a new internal communications and employee engagement strategy.

People, culture and values

We thrive through our collaborative team of 5,000 people. They bring fresh thinking, deep experience and an obsession with quality to every aspect of their work. On behalf of the Board, I would like to thank them all for their professionalism and dedication during the year.

We have created a culture that aims to allow our employees to maximise their potential. We work hard to encourage open communication and innovative thinking and believe everyone in our business should feel valued and be able to grow.

Innovation is at the heart of everything that we do and is one of our core values. We believe our people are fundamental to our disruptive thinking and manufacturing excellence which helps our customers to increase their own innovation, improve quality, expand output and enhance efficiency.

Integrity is another of our core values and is key to the relationships that we have with our people, customers, suppliers, communities and other stakeholders. We strive at all times to be open, honest and consistent.

We are also focused on diversity at all levels. During the year, we published our second Gender Pay Gap report. While progress has been made, we and our industry still have much work to do in this area. Our educational outreach programmes engage with children from primary school age onwards to encourage more young people from diverse gender, ethnic and economic backgrounds into the sector (see pages 49 and 50 for more information).

Corporate governance

The Board is committed to the highest standards of corporate governance to protect our business and its long-term success. The Board has already started to consider the new 2018 UK Corporate Governance Code and steps have been taken to start implementing its requirements. Further details are provided in the Directors' corporate governance report on pages 52 to 64.

Investor communications

Our sixth annual investor day on 14 May 2019 was attended by a record 150 people, with an equal mix of private and institutional investors. The day included presentations on Group strategy, industry sectors and key sales regions, as

well as demonstrations, opportunities to meet the Board and senior management, and a question and answer (Q&A) session with Board members. Following the event, we conducted a survey with all the attendees to gather further feedback.

The event is one of four key touchpoints across the year where the investment community can learn more about Renishaw's business and strategy, with the Annual General Meeting (AGM) in October, plus live half-year and full-year webcasts.

UK defined benefit pension scheme

Following further engagement with The Pensions Regulator, the Company and trustees have agreed the terms of a new deficit funding plan for the Company's UK defined benefit pension scheme. The Company has agreed to pay £8.7m per annum into the scheme for five years with effect from 1 October 2018. Under the terms of the previous agreement the Company paid approximately £4m per year.

Dividend

A final dividend of 46.0p net per share will be paid on 31 October 2019, to shareholders on the register at 27 September 2019, giving a total dividend of 60.0p for the year (2018: 60.0p).

Sir David McMurtry

Executive Chairman

1 August 2019

* Note 25, Alternative performance measures, defines how Adjusted profit before tax, Adjusted earnings per share, Adjusted operating profit and Revenue at constant exchange rates are calculated.

+ Developing solutions to address real-world problems



Ellie Edbrooke is a graduate medical engineer in the neurological applications team at Renishaw and a member of our Greenpower electric car racing team. She first became involved with Greenpower, a charity supported by Renishaw, while at school and this led to engineering being considered a career choice alongside her interest in biology.

While studying medical physics at university she met the Renishaw Greenpower team at the 2015 competition finals. After learning about our work in healthcare, she undertook an industrial placement with us before joining our graduate scheme after finishing her degree. Today her work includes designing implants that help deliver drugs to the brain to treat degenerative diseases such as Parkinson's.



It's great to be able to work on something that can really make a difference to someone's life.

Chief Executive's review



Will Lee
Chief Executive



After completing my first full year as Chief Executive during a challenging period, I am focused on ensuring that we draw maximum benefit from our long-term investments in people, innovation and infrastructure. The combination of a strong pipeline of future product developments, excellent manufacturing operations and highly skilled people, gives us many opportunities to grow our business, despite the expected challenging economic conditions, and to deliver on our purpose.

Introduction

As stated last year, my role is to build on the strong heritage and culture developed by our co-founders, Sir David McMurtry and John Deer, and inspire our people to meet the opportunities and challenges of a changing business environment. During my first full year I have travelled widely within the Group, spending time with our R&D teams, visiting our sales regions, attending trade exhibitions, and listening to what people feel is good about Renishaw and where we can make improvements. This has given me a clear sense of where we need to focus to continue to be a technology world leader that is trusted by our customers and suppliers, and an employer that inspires its people.

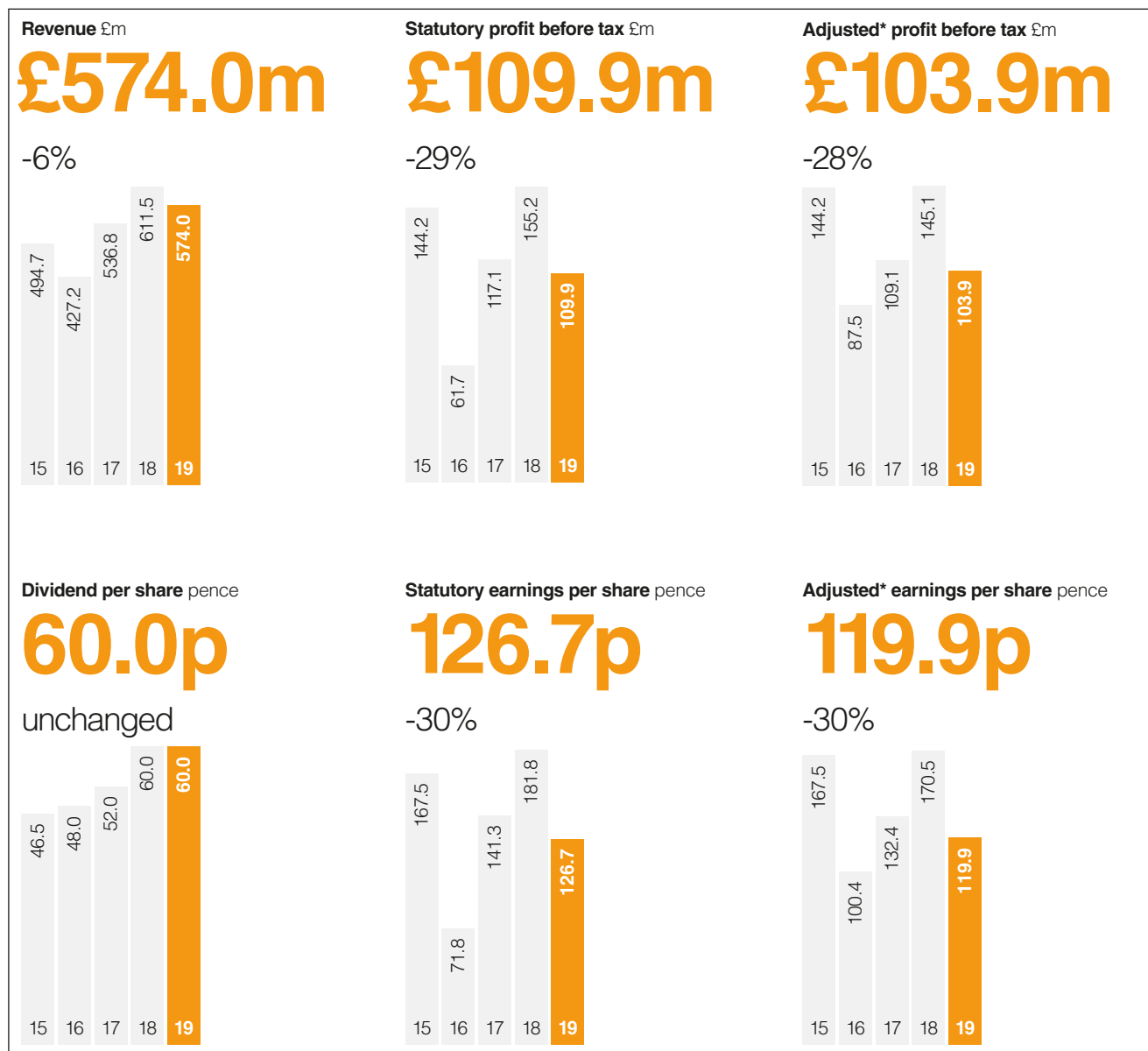
Performance overview

As Sir David has already outlined (see page 4), this was a challenging year with reduced turnover and Adjusted* operating profit for the Group. However, outside APAC, our other regions saw strong growth for some of our product lines, including the AM and spectroscopy lines. We remain focused on the long term with a key focus on developing technologies that provide patented products to support the strategies for our metrology and healthcare segments.

Revenue

We achieved revenue for the year ended 30 June 2019 of £574.0m, compared with £611.5m last year, against a backdrop of challenging economic conditions including the impact of trade tensions between the USA and China, and ongoing uncertainty surrounding the potential impacts of Brexit. Aside from APAC, we experienced revenue growth in all regions as set out below. The lower revenue in the APAC region is largely a result of a slowdown in demand for our encoder products, which are used in electronics and display manufacturing equipment, and for our machine tool products from large end-user manufacturers of consumer electronic products, due to weaker smartphone demand and the resultant over-capacity in the supply chain. We have not experienced an erosion in our customer base in the region and we continue to work closely with key customers to ensure we are in position to meet their requirements when economic conditions improve.

	2019 £m	2018 £m	Change %	Constant fx change %
APAC	240.1	289.2	-17	-19
EMEA	167.2	165.1	1	2
Americas	132.6	126.6	5	1
UK	34.1	30.6	11	11
Total Group revenue	574.0	611.5	-6	-7



Profit and earnings per share

The Group's Adjusted* profit before tax for the year was £103.9m compared with £145.1m last year. Adjusted* earnings per share on continuing activities was 119.9p compared with 170.5p last year.

Statutory profit before tax for the year was £109.9m compared with £155.2m last year. Statutory earnings per share on continuing activities was 126.7p compared with 181.8p last year.

This year's tax charge on continuing operations amounts to £17.7m (2018: £22.9m) representing a tax rate of 16.1% (2018: 14.7%). Lower profits in the UK in the current year resulted in a fall in the patent box benefit of £3.9m relative to the previous year, which is the principal factor for the increase in the effective tax rate.

Metrology

Revenue from our metrology business for the year was £532.9m compared with £575.8m last year. There was strong growth in our AM product line; good growth in our measurement and automation line (Equator gauging systems); and in our fixturing line – reflecting pleasing progress in our end-user focused solutions business. We continue to focus on ensuring that our AM systems satisfy the demands of our customers for the series production of metal components. As previously mentioned, we have seen a slowdown in demand for our encoder products and from large end-user manufacturers of consumer electronic products, which primarily impacts the machine tool revenue.

Chief Executive's review continued

The geographical analysis of metrology revenue is set out below.

	2019 £m	2018 £m	Change %
APAC	223.7	276.7	-19
EMEA	153.0	153.9	-1
Americas	126.6	119.7	6
UK	29.6	25.5	16
Total metrology revenue	532.9	575.8	-7

Adjusted* operating profit for our metrology business was £90.6m (2018: £142.8m).

We continued to invest in R&D, with total engineering costs of £90.7m (before net capitalised development costs and the R&D tax credit) compared with £77.1m in 2018.

We launched a range of new products during the year. The PHS-2 second generation servo positioning head for co-ordinate measuring machines (CMMs) is used within the automotive market for body-in-white measurement. We also introduced new calibration products including the XM-600 calibration system for high-speed dynamic CMM error-mapping and fault-finding, and the XK10 alignment laser system for use during the build and alignment of machine tools, replacing the need for artefacts.

The APCA-45 tool setting probe is designed for the very harsh environments found in lathes and multi-tasking machine tools, while the new SupaScan QuickPoint macro software package allows superfast probing cycles in machining applications with very short cycle times.

For the motion control market we launched a rotary encoder for our QUANTiC family of incremental encoders, while for high-end XY stages that require multiple interferometer feedback axes, our new multi-axis periscope (RMAP) enables accurate six degrees of freedom measurements.

Healthcare

Revenue from our healthcare business for the year was £41.0m, an increase of 15% over the £35.7m last year. There was strong growth in our spectroscopy and medical dental product lines.

There was an Adjusted* operating profit of £3.1m, compared with £0.3m last year, with two years of continuous profit achieved for the first time.

Healthcare also saw continued investment in R&D, with total engineering costs in this business segment of £7.2m (before net capitalised development costs and the R&D tax credit) compared with £6.5m in 2018.

New products launched during the year include, the RA816 Biological Analyser, a compact benchtop Raman imaging system designed exclusively for biological and clinical research, and the new neurolocate 2D module, which requires just two X-rays to register patient position against the neuromate robot, also obtained a CE mark.

The results of a pioneering clinical trial for which Renishaw manufactured a drug delivery device on behalf of North Bristol NHS Trust, to administer Glial Cell Line-Derived Neurotrophic Factor (GDNF), were made public in February.

The results showed that the drug delivery system performed effectively and reliably, and a similar device developed by Renishaw, called neuroinfuse, is now being used in another clinical trial.

Strategy and markets

Our strategy is fundamentally based on long-term investments in patented and innovative products and processes, high-quality manufacturing, and the provision of excellent local support to customers in all our markets around the globe. This strategy is consistent across all the product lines and market sectors in which we operate to deliver our purpose (for more information see page 18).

Renishaw has moved in recent years, from primarily being a supplier of products to capital equipment manufacturers, to working closely with end users to solve their complex challenges and deliver solutions and systems that transform their manufacturing capabilities. This is helping to build brand loyalty and opening up new revenue opportunities (see pages 16 and 17 for more information).

At the same time, we are seeing external market growth drivers – including global skills shortages, digitisation, requirements for more capable products, rising energy costs, a focus on reducing emissions and waste, population growth and rising life expectancy – that are creating positive opportunities for our business.

We continue to spread risk through the diversification of our applications for product lines, our customer base and our routes to market.

Focused investment for long-term growth

The Group firmly believes in its long-term strategy of investing for the future, expanding our global marketing and distribution infrastructure, along with increasing manufacturing capacity and R&D activities. However, with the current global economic uncertainties, our focus for the near-term is on maximising the benefits of the investment we have made over the past few years.

We are also investing in a new human resources (HR) system and development programmes for our people, which we believe, will ultimately boost our productivity.

Capital expenditure on property, plant and equipment and vehicles for the year was £56.8m (2018: £34.9m), of which £25.4m (2018: £10.0m) was spent on property and £31.4m (2018: £24.9m) on plant and equipment and vehicles.

This year saw the commencement of a 94,000 sq ft extension to the Innovation Centre at our New Mills site, the purchase of a new property in Nagoya to support the expansion of our Japanese distribution function, the purchase of land near São Paulo for the future development of a distribution facility in Brazil and the purchase of our existing building in The Netherlands for our Benelux operation.

Working capital

Group inventory increased from £110.6m at the start of the year to £129.0m, primarily reflecting the impact of Brexit contingency preparations and the reduced demand we experienced in the second half of the financial year. We continue to focus on working capital management while

remaining committed to our policy of holding sufficient finished inventory to ensure customer delivery performance, given our short order book. Trade receivables decreased from £154.6m to £123.2m, with debtor days outstanding at the end of the current year at 73 days (2018: 69 days).

Net cash balances at 30 June 2019 were £106.8m, compared with £103.8m at 30 June 2018. Additionally, there is an escrow account of £10.5m (2018: £10.4m) relating to the provision of security to the UK defined benefit pension scheme.

Corporate social responsibility

As a socially responsible business, we recognise the importance of operating in a way that delivers long-term sustainable value for all stakeholders. This year we have: increased investment in developing the skills of our employees; assisted local organisations through charitable donations; reached more than 10,000 children with our educational outreach programmes and donated more than 10,000 hours of paid time to educational and other local organisations; recruited a record number of apprentices on our training schemes; reduced our greenhouse gas (GHG) emissions by 15%; and reduced our accident frequency rate to 24.67. Further information on our key performance indicators (KPIs) and GHG performance can be found on pages 23, 46 and 50.

Our people

Our workforce at the end of June 2019 was 5,041 (2018: 4,862) an increase of 4%. During the year, 119 apprentices and graduates were taken on as part of our ongoing commitment to train and develop skilled resource for the Group in the future. We also took on 73 new paid industrial and summer placements in the year.

In January 2019, we carried out an extensive UK employee engagement survey. The results clearly showed that our people believe Renishaw makes a positive impact on society, they have pride in their roles, treat each other with respect and believe that the business acts in a socially responsible manner. They also told us we need to focus more on career development, including progression opportunities, be clearer on performance assessment and improve the way we recognise and ensure people feel valued. This fully validates the HR initiatives we introduced during the year, including a renewed focus on learning and development, and leadership and management training.

I would like to express my thanks to all employees for their invaluable contribution to the success of the Group during the year.

Brexit

The Board continues to oversee the work of the Brexit steering group in identifying the key risks arising from a no-deal Brexit scenario and implementing mitigation plans. These activities significantly increased in the period leading up to the original Brexit deadline of March 2019 and included the following:

- the establishment of a new distribution warehouse in Ireland which, if required, would significantly reduce the number of direct shipments between the UK and the EU post Brexit;

Our principal markets



Aerospace



Consumer products



Agriculture



Healthcare



Automotive



Power generation



Construction



Resource exploration

- a general increase in inventory of certain components and finished goods held at our various sites within the EU and the UK; and
- continued ongoing assessment and updating of other key issues arising from Brexit and the mitigations against any possible negative impacts.

The steering group will continue to carefully monitor ongoing developments in the Brexit process and consider the impact of these against our current plans as the situation develops in the coming months.

Outlook

The Group is in a strong financial position, despite a challenging year, and continues to invest in the development of new products and applications, along with targeted investment in production, and sales and marketing facilities around the world. With the ongoing uncertainty surrounding Brexit, weaker economic indicators, exchange rate volatility and trade tensions between the USA and China, we expect market conditions to remain difficult throughout this financial year.

Your Directors remain confident in the long-term prospects for the Group due to the high quality of our people, our innovative product pipeline, extensive global sales and marketing presence and relevance to high-value manufacturing.

Will Lee

Chief Executive

1 August 2019

* Note 25, Alternative performance measures, defines how Adjusted profit before tax, Adjusted earnings per share, Adjusted operating profit and Revenue at constant exchange rates are calculated.

Our business model

We identify customer needs and then apply innovative engineering to deliver successful solutions. Our purpose supports our business model which is driven through our strategy.

We have a simple business model...



Customer needs

All areas of our organisation seek to work in partnership with customers to understand and solve their current and anticipated real-life problems.

We aim to provide solutions that help customers increase innovation, improve quality, expand output and enhance efficiency.

+ For more about customers see pages 16, 17, 20 and 21



Innovative engineering

Renishaw's strategy of investment in R&D and engineering skills enables us to take a longer-term view of the viability of new technologies.

We are actively expanding our significant portfolio of innovative and patented products.

+ For more about innovation see pages 19 and 30 to 37



Successful solutions

We are a highly vertically-integrated company, which helps us to deliver for our customers. We not only undertake design of innovative products, we also manufacture and sell them through our wholly-owned manufacturing and sales organisations.

+ For more about solutions see pages 21, 28 and 29

+ Our key performance indicators are shown on pages 22 and 23

+ Information on the risks associated with our business and how we manage them are on pages 40 to 43

...generating value for a wide range of stakeholders

Our customers

- During the year, we opened new facilities in China and Turkey allowing us to demonstrate our metrology products and officially opened our new office in Mexico. We continue to enhance customer support through our ongoing investment in training and demonstration facilities
- Multiple new products were introduced to aid our customers' efficiency (see pages 33 and 37).

Increase in new product
R&D spend

13.4%

Sales and marketing spend

£127m

Our shareholders

- We have a strong balance sheet (see page 26)
- Shareholders' funds grew by 6.3% in the financial year
- Our total assets grew by 5% in the financial year
- We have a progressive dividend policy and paid a total dividend in the year of 60.0p.

Dividend paid in the year

£43.7m

TSR over the past five years

181%

Our people

- We employ around 5,000 people across the Group
- Our lost working time injuries rate during the period was 0.95 against an industry average of 2.10 per million hours worked
- 96% of UK employees who responded to our engagement survey would recommend, or have already recommended, Renishaw as a place to work
- We launched a new worldwide Employee Assistance Programme which is available to all our employees and their cohabitants.

Money invested in training
and development

£2m

Number of people in further
education, graduate and
industrial programmes

397

Our suppliers

- We are signatories to the Prompt Payment Code
- We have approximately 400 key suppliers who vary in size and location, with about half being located within a 100-mile radius of our main manufacturing sites
- More than 80% of our tier one suppliers have been assessed for the risk of modern slavery.

Average UK payment days

45

Number of key suppliers

c.400

Global communities

- Across the Group we support a number of care homes, orphanages, social organisations, hospitals, festivals, sports clubs, schools, educational and environmental projects
- £260,680 donated to more than 290 organisations during the year
- Our educational outreach work is supported by nearly 200 STEM ambassadors
- We have engaged with around 10,000 students through our educational outreach programmes in the 2018 calendar year.

Charitable donations

£260k

Paid hours donated within
this reporting period

10,000+

Our stakeholders

How we engage with and respond to our stakeholders

Our rich and varied network of stakeholder relationships upholds the values on which Renishaw was founded.

We have more than 1,800 registered shareholders, 5,000 colleagues and supplied nearly 25,000 customer accounts during the year. We deal with suppliers in more than 36 countries. These individuals, businesses and communities are all integral to our business. We are only able to achieve our purpose with their input, cooperation and trust. As a Board, stakeholder considerations are embedded throughout our discussions and decisions.

Like any business, sometimes we have to take decisions that adversely affect one or more of these groups and, in such cases, we always try to ensure that those affected are treated fairly. Over the past 46 years, we have invested in the development of our stakeholder communities, as part of our evolving strategy. The following pages provide an overview of some of the ways in which we do this.

People

One of Renishaw's greatest assets is its highly skilled people. Over the past 18 months, our HR function has significantly strengthened its resources across the globe. This means that we are in a much stronger position to engage and respond to the needs of our growing workforce. With support and direction from our Chief Executive, we are continuing to develop an infrastructure that will enable us to deliver global initiatives, improve engagement with our employees and ensure that Renishaw is fit for the future by aligning our people development strategy with the Group's strategic aims.

Part of this transition has involved sourcing a new global HR system and implementation is currently in progress in the UK with roll out planned to our overseas colleagues in stages to support global operations. This will facilitate enhanced capability of our people development, succession planning and continuous feedback mechanisms.

The benefits of an engaged workforce are well documented. Catherine Glickman, one of our Independent Non-executive Directors, will, over the coming year, be providing the Board with greater visibility of workforce engagement activities across the Company and of the views of our employees, which is one of the options set out in the 2018 UK Corporate Governance Code.

In 2019, we conducted a formal employee engagement survey in the UK for the first time. Over 74% of our people participated allowing us to gather their views on a wide variety of topics and to better understand what matters to them, as well as prioritise areas for improvement. We aim to engage with our overseas colleagues later this year to seek their views.

Analysis of the survey results has provided some clear themes on what Renishaw does well and highlighted areas requiring improvement. Concerns regarding lack of clarity about how performance is assessed are being addressed with the implementation of a new performance review process. 96% of UK employees who responded to the survey would recommend, or have already recommended, Renishaw as a place to work and nearly 70% feel positively about the work-life balance.

As we continue to grow, there is greater focus on ensuring effective communication, engagement and feedback across the Group. As well as working on a new communications strategy, our Group Communications team have partnered with our HR function and the Board to devise a focused communication plan in relation to the implementation of many new initiatives.

Our employee newsletter (Probity) has been produced since 1979 and continues to report quarterly on a variety of topics from our offices around the world.

In February 2019, we launched a new video channel specifically designed and produced for our employees to keep them up-to-date on a range of topics from colleagues worldwide including: leadership communications, employee achievements, upcoming events, new projects, community initiatives and general Group news. This platform has also been used to stream business updates from the Chief Executive for colleagues who were unable to attend an update in person.



Channel R, a new internal video channel, specifically designed and produced for our employees to keep them up-to-date on a range of topics.

In March 2019, we implemented a global Employee Assistance Programme to provide specialist guidance and support to our employees and their immediate families on issues ranging from everyday matters to more serious wellbeing problems.

We are actively progressing the development of diversity and inclusion initiatives to promote representation of those from different backgrounds and embed diversity across the Group to improve engagement. A global policy is being implemented together with further development of a Group diversity strategy to champion the changes.

Our learning and development team has also expanded to enable them to support the growth of our apprentice, graduate and placement programmes to cultivate a pipeline of talent across the business. This will enable greater focus on developing core training programmes for all employees and managers and is being complemented by the introduction of a new performance review process globally.



Renishaw graduates and apprentices.

Customers

To deliver on our purpose, it is vital that we work closely with our customers to solve their complex challenges and help them to increase their own innovation, improve product quality, expand their production output and enhance their operational efficiencies.

Our future success depends on us:

- understanding customers' true needs and using this to inform future technology innovations;
- obtaining customer feedback on new developments during testing programmes; and
- working with customers to help us develop our world-class customer support programmes.

We prefer to do this through direct contact with our customers, due to the highly technical nature of both their requirements and our products. The voice of our customers is then represented at numerous forums including regional sales and marketing conferences, product line conferences attended by representatives from the sales regions and our Group Service conferences. Members of our Board of Directors, Executive Board and ISMB also regularly meet with OEM (original equipment manufacturer) customers and end-users across our key sales regions to receive feedback on our performance as a supplier and how we can continue to help them improve their own products and operational performance.

A key platform for our engagement with current and future customers is trade exhibitions, which are typically held over two to six days. Over the duration of these events there is the opportunity to meet with thousands of people from multiple industries who visit our stands to talk to us about their challenges. Enquires from customers and prospects are recorded and stored digitally in accordance with our Privacy Notice (which is set out on our website), to ensure appropriate follow-up by our sales teams after the exhibitions to continue those conversations.

During the year, we attended more than 140 trade exhibitions which covered all the industries we supply. We also held numerous in-house seminars, inauguration events, and attended conferences and OEM customers' open houses across the world, the latter providing access to companies with whom we would not normally deal directly.

We also make increasing use of social media to engage with our customers, with multiple corporate, subsidiary and product line accounts across platforms including Twitter, Facebook, LinkedIn, Instagram and Weibo.

Our stakeholders continued



Suppliers

The supply of goods and services are critical to our overall success, so we have developed processes and procedures to ensure all supply chains and supplier relationships are managed in an effective way. Particular attention is paid to the initial supplier identification/selection process to ensure that we have supply chains that are commercially robust and capable of supplying what we need, when we need it, and at a cost that is appropriate for business needs. The ongoing management of supply chains and supplier relationships are equally as important, so we engage with all key suppliers on a regular basis through defined communication and feedback channels.

We have approximately 400 key suppliers who vary in size and location, with about half being located within a 100-mile radius of our main manufacturing sites. Many of these are SMEs (small and medium-sized enterprises). We also have many suppliers overseas, to support the ongoing development and management of supply chains and supplier relationships; we have purchasing staff located in the UK, Ireland, India, China, the USA and various European countries. This allows us to have regular and direct communications with them while addressing challenges such as culture, time zone and language.

We recognise the need to protect the interests of our employees, customers and shareholders by ensuring that our supply chains are as risk-free as possible. We use a risk management process that regularly assesses supply chain risk and, where possible, looks to introduce secondary sources for all key outsourced requirements. Where this is not possible, bespoke stock policies have been implemented to allow us to manage any potential disruption in the supply chain.

We actively involve suppliers in our supplier performance programme. All suppliers are assessed on a regular basis to ensure that they meet expectations in the areas of delivery, quality, corrective actions and commercial response. Where there are shortcomings, we engage with suppliers to ensure they are trained in best practice and appropriate ongoing improvement programmes are in place.

Our purchasing and engineering teams put great emphasis on ensuring that suppliers have the capability to meet our high standards of quality by engaging with suppliers as early as possible. Where necessary, we work closely with suppliers to ensure that they have the necessary controls in place to assure the ongoing supply of quality goods and services by sharing known best practices, and our knowledge and experience of working within the metrology and process control manufacturing sector.

We are committed to conducting our business with honesty and integrity, and suppliers are no exception to this policy. All suppliers we engage with are required to comply with our trading terms covering areas such as modern slavery, sustainability, human rights, anti-bribery, tax evasion, data protection and dangerous goods.



Shareholders

In 2019, 150 visitors attended the Company's investor day, which included presentations on Group strategy, business segments and product lines by members of the Board and senior management, as well as Q&A sessions and an opportunity to ask our Directors, managers and employees questions during tours, lunch and refreshment breaks.

The AGM takes place at our headquarters and remains one of the key elements of our shareholder calendar. A business presentation is given and all Directors are available for questions during and after the meeting, including the Chairs of the Audit, Remuneration and Nomination Committees. Tours of the Company's facilities are also offered.

Live webcast presentations of the Group's full and half-year results are held and recordings of the presentations and subsequent Q&A sessions are made available on the Company's website.

We also connect with both current and potential new shareholders on an ongoing basis through a variety of other channels including the Annual Report and online where an increasing amount of content is available via our website.



Communities

As part of our purpose, we aim to be an inspiring employer and a responsible business. Our core value of integrity also manifests itself in the relationships we have with our communities around the world, where we strive to be open, honest and consistent. We recognise the impact we have on our local communities. We aim to make a positive difference and to maintain an open dialogue with community representatives.

We achieve this through our extensive education outreach initiatives (see Education on page 49), large work experience programmes, financial support for charities and other not-for-profit organisations (see Charity on page 48), support for employee fundraising, the free use of our facilities for educational and other community events, the sponsorship of community sports clubs and festivals for science, music and the arts, engagement with trade and general business organisations, and through employee volunteering that we support (see Community on page 48).

As part of our community engagement activities, we believe it is vital to reach out to those from areas that are economically and educationally disadvantaged, and which may have historically been neglected by technology companies. We are participating in various programmes with partner organisations who share our values, to help raise aspirations in these communities.

This includes a new three-year initiative with Cardiff Blues rugby club's Community Foundation where 100 pupils from five secondary schools in South Wales take part in an eight-week programme each year, participating in a range of workshops that include team building, goal setting, communication, leadership, equality in the workplace and career pathways, and includes a visit to Cardiff University and our Miskin site. Together we are aiming to build confidence and show the wide range of career opportunities available.

To help support victims of the floods in Kerala State, our people in India raised money and collected donations to create emergency kits. Our Indian subsidiary also supported Janakalyan Rakta Pedhi, a blood bank that supports hospitals in the Pune region, with a solar array that has reduced their running costs.

While the majority of our education outreach has been focused on STEM, we also recognise that many young people are interested in other careers. Within the last two years, we have created new commercial and IT apprenticeships and, in July 2019, we held our first commercial work experience week for 14 students from the areas close to our UK headquarters.

Employee engagement survey participation

74%

Trade exhibitions attended

140+

Young people who gained work experience

138

Paid hours donated

10,000+

Investor day attendance

150



In August 2018 we held an Engineering Open House event at our New Mills headquarters site.

Our markets

We work closely with our customers across multiple markets to solve complex challenges and improve products and processes. We design, develop and deliver solutions and systems that provide unparalleled precision, control and reliability. Our disruptive thinking and manufacturing excellence help customers increase innovation, improve quality, expand output and enhance efficiency.

Our unique blend of pioneering science and product innovation produces a powerful pipeline of measurement technology and manufacturing techniques that helps our customers in diverse markets push the boundaries of what is possible. From transport to agriculture, electronics to healthcare, our breakthrough technology transforms product performance and touches billions of lives around the world.

We therefore contribute to the development of a wide range of products (from smartphones to solar panels, jet engines to dental implants) and help address pressing real-world problems (such as food security, energy generation and degenerative diseases).

We help customers make the most of our technology through expert sales and service support in 36 countries and 81 locations.

We have listed our principal markets and the specific key drivers of demand within those markets for our products.

There are also more generic market economic drivers that impact our business:

- **global economic growth** – growth in key geographic markets and the freedom of global trade impact demand in key sectors that we supply;
- **global skills shortages and rising labour costs** – increased investments in automation, robotics and user-friendly technology;
- **industry 4.0/smart factories** – demand for more digitisation and data to inform manufacturing processes;
- **rising energy costs** – increased demand for products that maximise output;
- **the requirement for more capable products** – increased investments in research and development and manufacturing capabilities;
- **a focus on reducing emissions and waste** – increased demand for high-performance products with ever tighter manufacturing tolerances and products that help minimise waste and rework;
- **global competitiveness** – increased focus on costs demands increased speed of operation and reduced scrap/rework;

- **population growth and rising incomes** – increased consumption in our principal markets; and
- **life expectancy increasing globally** – increased demand for healthcare products and continuing demand for consumer products.

We are also increasingly spreading risk through the diversification of our applications for product lines, our customer base and our routes to market.

Our business has transitioned over recent years from primarily being a supplier of products to capital equipment manufacturers, to becoming much more focused on delivering a full solution directly to end-users. The experience gained by dealing direct with the users of our products on a global basis and gaining a deeper understanding of their problems, is helping to inform the development of new products and services.

Today, many of our product lines including AM, calibration, measurement and automation, and healthcare lines are primarily sold direct to the end-user. This helps to build brand loyalty and open up new revenue opportunities including hardware and software upgrades, the cross-selling of complementary products and maintenance contracts.



Aerospace

Aircraft are highly complex structures and key assemblies from engines and wings to control systems, control surfaces (e.g. flaps and rudders) and landing gear, rely on our products for process control and post-process inspection during their manufacture. Our products are applied throughout the supply chain in many application areas, including maintenance, repair and overhaul (MRO) and in materials research, where our AM technologies are, for example, being used to produce lightweight components through lattice structures and part consolidation. Key drivers include the expected requirement for 42,700 new aircraft by 2038 to meet growing global demand for civil air transport (source: 2018 Boeing Global Market Forecast), new fuel-efficient engines with more complex parts requiring faster measurement, and the requirement to improve fuel efficiency by minimising airframe weight. There is also a growing global market for engine MRO due to the increased demands on engine performance including operation at higher temperatures and pressures.



Agriculture

The majority of key components on high-end agricultural equipment are subject to process control using Renishaw products, while our encoders can be found on satellites assisting with Smart Farming techniques. The sector is being driven by increasing global demand for food products due to a growing global population with rising disposable incomes, against a backdrop of climate change. This is requiring greater investment in machinery for intensive farming capabilities and new technology to increase yields and reduce input and environmental costs. This is seeing a focus on precision agriculture – using satellites to monitor crop condition and direct machinery for optimal performance – and more automation to make greater use of smaller areas, often close to consumption, in which to grow crops.



Automotive

We operate throughout the automotive supply chain. The majority of key components on domestic and commercial vehicles are subject to process control using our products. Key drivers include reduced global demand for vehicles with internal combustion engines (ICE) due to greater pressures on emission levels, with a trend towards hybrid and electric vehicles, and a focus on autonomous vehicles. This represents both opportunity and risk, with a mixed global environment for adoption of the newer technologies. While our products are deeply embedded in ICE vehicle production processes, which is seeing reduced capital investment, there is still a drive to make engines as efficient as possible. There are multiple opportunities for metrology products, AM and position encoders in the research and manufacture of new vehicle types, which will still require precision parts, cost efficiencies and automated processes throughout the supply chain. Vehicle design life cycles are also reducing, driving more flexible manufacturing and measurement requirements from which we are well placed to benefit. We are also benefiting from increasing demand for sensors and digital display dashboards.



Construction

From heavy earthmoving equipment to mineral analysis, Renishaw's products are used in a diverse range of construction industry applications. These include the manufacture of large high-value components such as chassis where scrap is too costly to accept, the production of power plants to deliver improved reliability and reduced emissions, and materials identification of geological samples using Raman spectroscopy. Key market drivers include the investment environment for infrastructure projects increasing the demand for heavy equipment and skills shortages within the sector requiring more automation within equipment manufacturers.



Consumer products

The fast-paced and evolving nature of the consumer products market demands flexible manufacturing systems that can adapt to shorter life cycles, yet still meet the requirements for high-quality, high-volume components. Consumer products and electronics continue to change at a rapid pace, with ever-shorter life cycles driven by consumer demand for more capable products, including brighter screens, longer battery life, smaller size and faster networks (5G). Precision manufacturing systems with multiple process control techniques are required to produce the high standard of fit and finish increasingly required for home appliances and enclosures on products such as mobile phones, computers and tablets, where we are seeing a trend away from metal to glass and ceramic. There is also increasing use of automation in manufacturing processes and material handling due to rising labour costs in China and southeast Asia. The successful introduction

of 5G mobile products will require significant investment to produce the more complicated integrated circuits required by this new technology, and our encoder products are well positioned to benefit from this. Weaker demand for smartphones and the resultant over-capacity in the supply chain have impacted demand for our metrology products.



Healthcare

Our technologies are being applied to an ever-increasing number of applications within healthcare, including brain surgery, reconstructive surgery and dentistry. Life expectancy is increasing in both developed and developing markets leading to an increase in neurological disorders which require fast and precise surgical therapies to reduce waiting times. There is also a drive for more economical treatments, more patient-specific treatments, more cosmetic dentistry with superior aesthetics and safer procedures with reduced human error, increasing the demand for medical robots for precision positioning.



Power generation

From fossil fuels to renewable energy, our products are at the heart of associated manufacturing processes and are used to control the production of key componentry including power transmission systems, bearings, generators and pumps. We are also helping drive renewables development by reducing component lead times and helping to bring new components and technology to market faster. Key drivers include the manufacture of components for wind turbines and solar panels, an increasing focus on maximising the efficiency of machinery used in power generation and increasing research into energy storage, especially in relation to electric vehicles.



Resource exploration

Equipment for oil and gas exploration has to be manufactured to stringent safety standards, requiring accurate, cost-effective and traceable processes. Our products give manufacturers this capability, whether using our calibration systems to check and verify the dimensional accuracy of large, high-value computer numerically controlled machine tools, or using probe systems for setting operations and in-process verification. The growth in the global population and increased urbanisation are driving the long-term demand for fossil fuels and the exploration of new sources, or more research into optimal extraction from existing sites. There is also a focus on improving the efficiency of large diesel engines used in transport and resource exploration and extraction, requiring greater component accuracy.

Our strategy

Our strategy focuses on key elements that keep our business model running.

<h1>1</h1>	<h2>People and culture</h2> <p>delivering success through the strength of our talented and committed employees</p> <p>+ See page 19</p>	
<h1>2</h1>	<h2>Continuous R&D</h2> <p>creating strong market positions with innovative products</p> <p>+ See page 19</p>	
<h1>3</h1>	<h2>High-quality manufacturing</h2> <p>delivering robust and reliable products tested to our exacting standards</p> <p>+ See page 20</p>	
<h1>4</h1>	<h2>Global customer support</h2> <p>ensuring our customers recognise Renishaw as a critical part of their value chain</p> <p>+ See page 20</p>	
<h1>5</h1>	<h2>Delivering solutions</h2> <p>understanding our customers' needs to offer cost-effective, efficient and easy-to-use solutions</p> <p>+ See page 21</p>	

Our strategy in action

1. People and culture

Focusing on people development

Our success is a result of the commitment, skills and ingenuity of our 5,000 people. They bring fresh thinking and customer focus to every aspect of their work.

Our core values of innovation and integrity shape our strong culture. This provides the foundations and required alignment for us to successfully work towards our strategy, fulfil our purpose and continue to build a sustainable and successful Group.

Our focus

With 5,000 employees globally, we are focused on a new internal communications strategy to ensure effective communication, engagement and feedback across the Group. We also have a renewed focus on learning and development, and leadership and management training, complemented by a new performance review process.

➔ See the Chairman's statement on pages 4 and 5 for more information on our values and culture

Examples of what we have achieved in the past year:



- 67 apprentices will be recruited at our Gloucestershire and South Wales sites in 2019, a record intake in our 40th year of apprenticeship recruitment

- We launched our global Wellbeing Programme to help support our people around the world and help employees manage their work-life balance
- We conducted a UK-wide engagement survey to obtain employee feedback about working at Renishaw; we expect this to be rolled out overseas during the year
- Global HR business partners have been established to support our different regions, allowing us to have greater focus on people development
- Nearly 200 STEM ambassadors, including graduates and apprentices, continue to support our educational outreach initiatives.

2. Continuous R&D

Taking a long-term view

For Renishaw, research and development has always been at the heart of our business, typically investing between 13% and 18% of revenue annually in R&D and engineering to maintain leadership in our various technologies. Patent and intellectual property generation is core to new product developments and our six in-house patent attorneys are key members of our development teams.

'Apply innovation' is deeply embedded in our culture. We have continued to protect our core businesses with exciting new patented technology and process developments, while also diversifying into new product and market areas. We also work with key universities to supplement our core specialities.

We are prepared to take a long-term view with R&D and, as our Director of Group Technology, Geoff McFarland, says, "It requires a passionate belief in the ultimate commercial viability of the technology, and the ability to hold your nerve, because the length of time from fledgling technology to commercial launch is regularly underestimated."

Our focus

The current technology focus continues to be on products that help our customers to improve measurement performance, enhance the performance and efficiency of their products, increase speed of operation, increase measurement capability and are easier to use.

Examples of what we have achieved in the past year:



- 29 new patent applications filed and 103 previously filed patents granted during the year
- Designed for biological and clinical research, the new Renishaw RA816 Biological Analyser (above) was launched during the year
- The new APCA-45 tool setting probe is for the very harsh environments found in lathes and multi-tasking machines
- A new servo positioning head for CMMs is used within the automotive market for body-in-white measurement
- For high-end XY stages that require multiple interferometer feedback axes, our new multi-axis periscope (RMAP) enables accurate six degrees of freedom measurements.

Our strategy in action continued

3. High-quality manufacturing

Investment in efficiency and infrastructure

We are a highly vertically-integrated organisation with significant in-house manufacturing capabilities. With high-quality manufacturing plants located in the UK, Ireland, India, Germany, the USA and France, we are able to deliver exceptionally robust and reliable products to our customers, which have been tested to our exacting standards.

As a manufacturer operating in a high-mix/low-volume situation, with a strategy of delivering exceptional customer service, our approach has been to maintain as much control as possible of our supply chains. This has been achieved through a combination of in-house manufacturing (using in-house automation and our own products), duplication of critical processes, dual sourcing and strategic long-term partnerships with our third-party suppliers. We also have supply chain management teams based in China, India and Ireland.

Our focus

We strive to ensure our products are designed to optimise manufacturing capability, whether in relation to our machining and assembly processes, or that of third-party suppliers. We invest in people and resources to meet the output requirements demanded by turnover growth and to improve our cost of sales performance.

Examples of what we have achieved in the past year:



AM assembly at Miskin, South Wales.

- In Ireland we continue developing intelligent manufacturing systems using smart factory concepts and in-house developed process control systems, while displaying real-time data for production outputs, product yields and process monitoring
- At the Woodchester site we installed the first of a new generation of in-circuit test platforms to improve throughput on PCB (printed circuit board) functionality tests
- In Wales we added to our in-house capabilities for cutting tool and large part manufacture, and installed a second automated cell with robot loading for encoder ring machining.

4. Global customer support

An essential part of our customers' world

We are passionate in the belief that excellent customer support delivers success. Our customers can be global, with an order being placed in one country and the product shipped to the eventual end-user, who could be located on a different continent. By having 'local' global support through our wholly-owned subsidiary network and long-term distributors, we are able to assure customers that whatever their needs, we are able to support and assist them, resulting in a positive return on their investment.

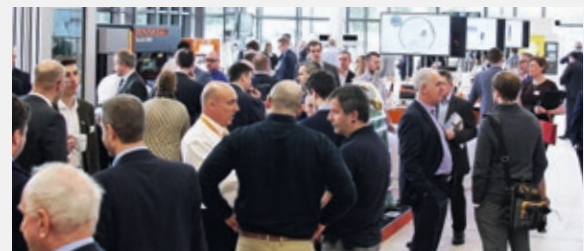
We are very focused on having a long-term relationship with our customers. It is not just about a sale but also supporting and helping our customers develop their processes and improving the quality of their product output.

We continually review our support policies and create new services to help our customers in their changing markets. Our aim is not just to meet customer requirements, it is to exceed their expectations.

Our focus

Through the life cycle of all our product ranges, we are focused on providing innovative services to support changing customer expectations and market requirements. We are flexible with our approach, and support customer needs from initial purchase right through to obsolescence, regardless of global location. We are continuing to grow our support network.

Examples of what we have achieved in the past year:



- 150 visitors attended our Manufacturing in Aerospace open day at our world-class Innovation Centre in Gloucestershire, UK, where we led discussions on the future of aerospace and how manufacturers should prepare to meet the expectations of this growing industry
- We formally opened our new Additive Manufacturing Solutions Centre in Pliezhausen, Germany, with two solutions networking events for customers from key sectors including: machinery and plant engineering, automotive and aerospace
- We opened new facilities in Ningbo, China and Istanbul, Turkey, enabling us to demonstrate our metrology products to customers in these locations. We also officially opened our new office in Nuevo León, Mexico.

5. Delivering solutions

Meeting market demands

Our business has transitioned over recent years from primarily being a supplier of products to capital equipment manufacturers, to becoming much more focused on delivering a full solution directly to end-users. We aim to truly understand our customers' needs, allowing us to offer a cost-effective, efficient and easy-to-use solution.

This requires our sales force and technical support teams to be ever more knowledgeable, not just about what our products do, but also how they can be applied to benefit our customers' processes and practices.

Our global network of Additive Manufacturing Solutions Centres is typical of our differentiated approach. We work collaboratively with companies that intend to deploy AM in production, supporting them from conceptual design, through product and process optimisation, to pre-

production scale-up and production deployment. As well as AM machines and application engineering support, customers benefit from our expertise in machining, metrology and finishing operations.

Our focus

We are focused on the levels of integration that we can bring to our customers' manufacturing environments, especially those looking to bring connectivity and the intelligent use of data within their manufacturing processes.

Examples of what we have achieved in the past year:



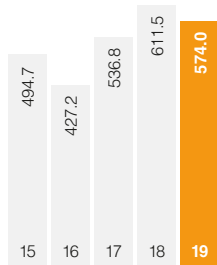
- Adoption of quad laser AM systems is enabling Knust-Godwin (USA) to reduce oil and gas customers' lead times from concept to commercialisation from 24 months to just eight months
- Integrating Renishaw's RLE10 laser encoder has dramatically improved the positional accuracy of Yagishita Giken's (Japan) multi-core optical connector inspection machine from 0.1 micron to 0.01 micron resolution
- Senior Aerospace Weston, Lancashire, UK has used Renishaw's Equator gauge to cut inspection times per part by around 75% and introduce more comprehensive component traceability.

Key performance indicators

The main performance measures monitored by the Board are:

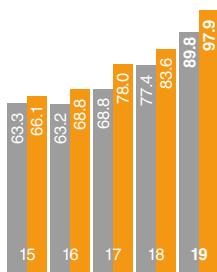
Financial

Revenue £m



We are focused on growth in revenue, through increasing our market and geographic penetration and continually introducing new products. We have previously made a number of acquisitions which expanded our product range and will support revenue growth by using the Group's worldwide marketing and distribution infrastructure to expand these businesses.

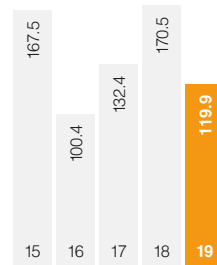
Total engineering costs including R&D £m



The growth of the business is fundamentally dependent on the continuing investment in engineering for the development of new products and processes. The Group continues to make significant investment in future products, with engineering costs equal to approximately 16% of Group revenue, and has also been accelerating new product development in certain areas.

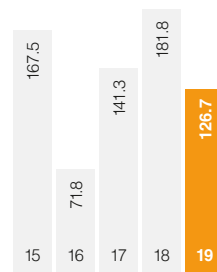
■ Included in the Consolidated income statement
■ Gross expenditure

Adjusted earnings per share pence

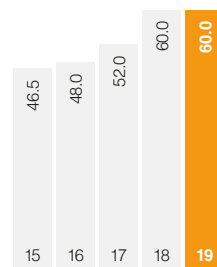


In order to provide an increasing return to shareholders, along with retaining adequate funds for reinvestment in the business, we aim to achieve year-on-year growth in Adjusted earnings per share. Note 25, Alternative performance measures, defines how Adjusted earnings per share is calculated and why the Board has adopted this measure.

Statutory earnings per share pence



Dividend per share in respect of the year pence



We aim to achieve significant long-term returns to shareholders by maintaining a progressive dividend policy, while maintaining a solid capital base with sufficient working capital to support the forecast growth.

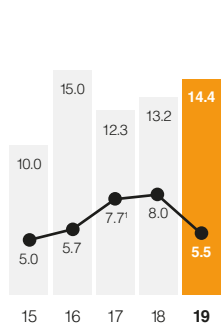
Engineering a charitable success Project Gromit

Gromitronic is a special animated Gromit sculpture, created by a young team of Renishaw apprentices and graduate engineers.



Non-financial

UK employee turnover %



Our people are central to our success, so it is important that we retain skilled and effective teams.

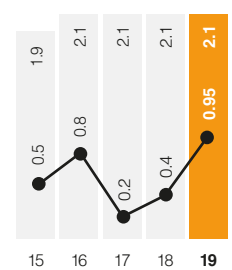
Our aim is to maintain our employee turnover rate below the UK average for the manufacturing and production sector.

UK average data source EEF/ makeuk labour turnover reports

¹ Excludes discontinued operations

— Renishaw
■ UK average

Total lost working time injuries per million hours worked



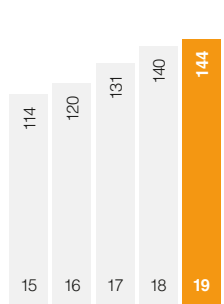
In a manufacturing environment, it is crucial that we maintain high standards of health and safety.

We have had zero fatalities this year. A breakdown of reportable accidents is given on page 47.

Our aim is to have zero fatalities and zero lost working time injuries.

— Renishaw
■ UK average

Number of apprentices in training



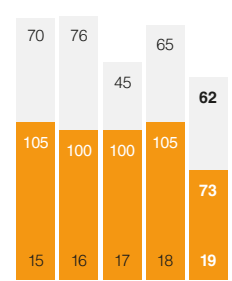
Early careers programme – apprentices

A significant part of our early careers programme is our apprenticeship scheme.

Apprentices play an essential role within our business and help tackle the STEM skills gap.

We are committed to continuing our apprenticeship programme at a sustainable level.

Number of new placements and graduates

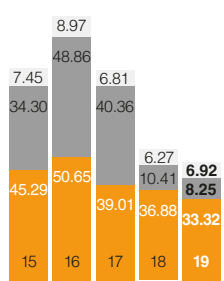


Our early careers programme is an integral part of ensuring we have the talent pipeline for the future.

We aim to maintain a sustainable intake of graduates and placement students each year.

■ Placements
■ Graduates

Greenhouse gas emissions '000 tCO₂e/£m



Minimising our GHG emissions is an important way in which we can lower our environmental impact.

Our aim is to have a year-on-year 3% reduction of our normalised GHG emissions (tCO₂e/£m).

■ Scope 1 – Direct emissions
■ Scope 2 – Electricity indirect emissions
■ Scope 3 – Other indirect emissions

For more information on these KPIs:

- People see page 45
- Early careers programmes see page 45
- Health and safety see page 47
- Environment see pages 50 and 51

Gromitronic is a special animated Gromit sculpture, created by a young team of Renishaw apprentices and graduate engineers.

The sculpture was created for The Grand Appeal's Gromit Unleashed 2 trail and was organised by Bristol Children's Hospital charity, Wallace & Gromit's Grand Appeal.

As one of the Trailblazer companies involved, the Renishaw team was asked to create one of three interactive sculptures for the trail that represents innovation in engineering and design. Gromitronic showcases the mechatronic nature of Renishaw's products and aims to get children and adults excited about STEM subjects.

The team that created Gromitronic had the necessary skills in software, electronics, design engineering and mechanical engineering to ensure the sculpture would work well during

two months on public display at the M Shed museum in Bristol. Each member of the team worked on a different component to make sure it was interactive and interesting for all ages of visitors. Dozens of Renishaw colleagues volunteered to attend the trail and talk to members of the public about our business and the technology used as part of the Gromitronic display.

The trail and subsequent auction of the sculptures took place in late summer 2018 and raised £2m for Bristol Children's Hospital charity, Wallace & Gromit's Grand Appeal.

Renishaw made a substantial donation to the charity to keep Gromitronic at our New Mills headquarters in Gloucestershire, where it will be seen by thousands of people (schools, business and community groups) every year in our Innovation Centre.

Performance – financial review



Allen Roberts
Group Finance Director



We have experienced a fall in both revenue and Adjusted* profit before tax, largely due to adverse trading conditions in the APAC region. With a strong balance sheet, including cash balances of £106.8m, we remain confident in the future prospects of the Group, and continue to invest and focus on productivity to deliver long-term growth.

Overview

We have achieved revenue amounting to £574.0m and Adjusted* profit before tax of £103.9m. Statutory profit before tax was £109.9m. We have a strong balance sheet with total equity growing by £34.7m to £583.3m, with net cash balances of £106.8m (2018: £103.8m). In line with our progressive dividend policy, the Board is proposing an unchanged dividend of 60.0p per share this year.

Revenue

We achieved revenue for the year of £574.0m, compared with £611.5m last year. This fall is largely a result of a slowdown in demand for our encoder products and from large end-user manufacturers of consumer electronic products, primarily driven by economic uncertainty in the APAC region. The table below shows the analysis of Group revenue by geographical market.

In our metrology business segment, revenue was £532.9m, compared with £575.8m last year. Revenue in our healthcare business segment increased by 15% from £35.7m last year to £41.0m.

A geographical analysis of our metrology and healthcare businesses is shown on page 2.

Revenue analysis by region

	2019 revenue at actual exchange rates £m	Change from 2018 %	2018 revenue at actual exchange rates £m	Underlying change at constant exchange rates %
APAC	240.1	-17	289.2	-19
EMEA	167.2	1	165.1	2
Americas	132.6	5	126.6	1
UK	34.1	11	30.6	11
Total Group revenue	574.0	-6	611.5	-7

Profit and tax

The Adjusted profit before tax amounted to £103.9m compared with £145.1m in 2018. Statutory profit before tax was £109.9m compared with £155.2m in the previous year.

In our metrology business, Adjusted operating profit was £90.6m compared with £142.8m last year. I am pleased to report further growth in our healthcare business, with an Adjusted operating profit of £3.1m compared with £0.3m last year.

The overall effective rate of tax on continuing operations was 16.1% (2018: 14.7%). The Group operates in many countries around the world and the overall effective tax rate is a result of the combination of the varying tax rates applicable throughout these countries. Lower profits in the UK in the current year resulted in a fall in the patent box benefit to £1.8m (2018: £5.7m) and is the principal factor for the increase in the overall effective tax rate. Note 8 provides further analysis of the effective tax rate.

Alternative performance measures

In 2017, the Board introduced APMs (Adjusted profit before tax, Adjusted operating profit and Adjusted earnings per share) to report the results on the basis that all forward contracts are accounted for as effective hedges. These measures are the basis by which the Board evaluates the Group's performance as they better represent the underlying trading of the Group. The table below shows the details of the adjustments between Adjusted profit before tax and statutory profit before tax.

	2019 £m	2018 £m
Adjusted profit before tax	103.9	145.1
Fair value gains and losses on financial instruments not eligible for hedge accounting:		
– reported in revenue	5.0	5.3
– reported in gains from the fair value of financial instruments	1.0	4.8
Statutory profit before tax	109.9	155.2

See note 25 of the Financial statements for further details on this and Revenue at constant exchange rates.

Earnings per share and dividend

Adjusted earnings per share from continuing operations is 119.9p compared with 170.5p last year.

Statutory earnings per share from continuing operations is 126.7p compared with 181.8p last year.

A final dividend of 46.0p net per share (2018: 46.0p) results in a total dividend for the year of 60.0p (2018: 60.0p). Dividend cover is 2.0 times (2018: 2.8 times) on an adjusted basis.

Research and development

Gross expenditure on engineering costs, including R&D on new products, was £97.9m (2018: £83.6m). The gross charge amounts to 17% of Group revenue (2018: 14%).

The capitalisation of development costs (net of amortisation charges) amounted to £2.9m (2018: £2.1m). The R&D tax credit in 2019 amounted to £5.1m compared with £4.1m in 2018. The net charge in the Consolidated income statement amounted to £89.8m compared with £77.4m in 2018.

Between the business segments gross expenditure on engineering costs was £90.7m (2018: £77.1m) in the metrology segment and £7.2m (2018: £6.5m) in our healthcare segment.

New product R&D expenditure amounted to £67.0m, which compares with £59.1m spent last year. There have been a number of new product releases in both our metrology and healthcare business segments, as detailed in our business segment performance reviews, and a number of new product introductions are anticipated during the 2020 financial year.

Group headcount

Group headcount has increased from 4,862 at 30 June 2018 to 5,041 at 30 June 2019, with the average for the year of 4,968 compared with 4,639 last year. The increase during the year of 179 comprised additional employees of 122 in the UK and 57 overseas. In the UK we took on 119 apprentices and graduates in the year and are also funding the further education of 117 employees in engineering, software and commercial/professional disciplines.

Labour costs, the most significant cost for the Group, increased by 5% to £237.4m (2018: £226.8m) reflecting a pay increase in July 2018 and the incremental cost of the employees recruited in both 2018 and 2019, partially offset by a reduction in bonuses.

Business systems transformation

In recent years, we have made significant progress in enhancing and simplifying financial reporting processes and systems, to further improve the analysis of business performance.

With a focus on increasing productivity and efficiency, further major system deployments are in progress for our HR, engineering change management and marketing activities.

We have recently committed to a new ERP system to replace our global finance, sales & marketing and CRM systems. This will deliver many benefits to the business including enhanced customer support and inventory management and will provide the infrastructure to support our growing solution selling activities.



Performance – financial review continued

Consolidated balance sheet

The Group's shareholders' funds at the end of the year were £583.3m, compared with £548.6m at 30 June 2018. Reserves benefited from our trading results, with a retained profit after tax of £92.2m and were reduced by dividends paid of £43.7m.

Additions to property, plant and equipment and vehicles totalled £56.8m, of which £25.4m was spent on property and £31.4m on plant and machinery, IT equipment and infrastructure, and vehicles.

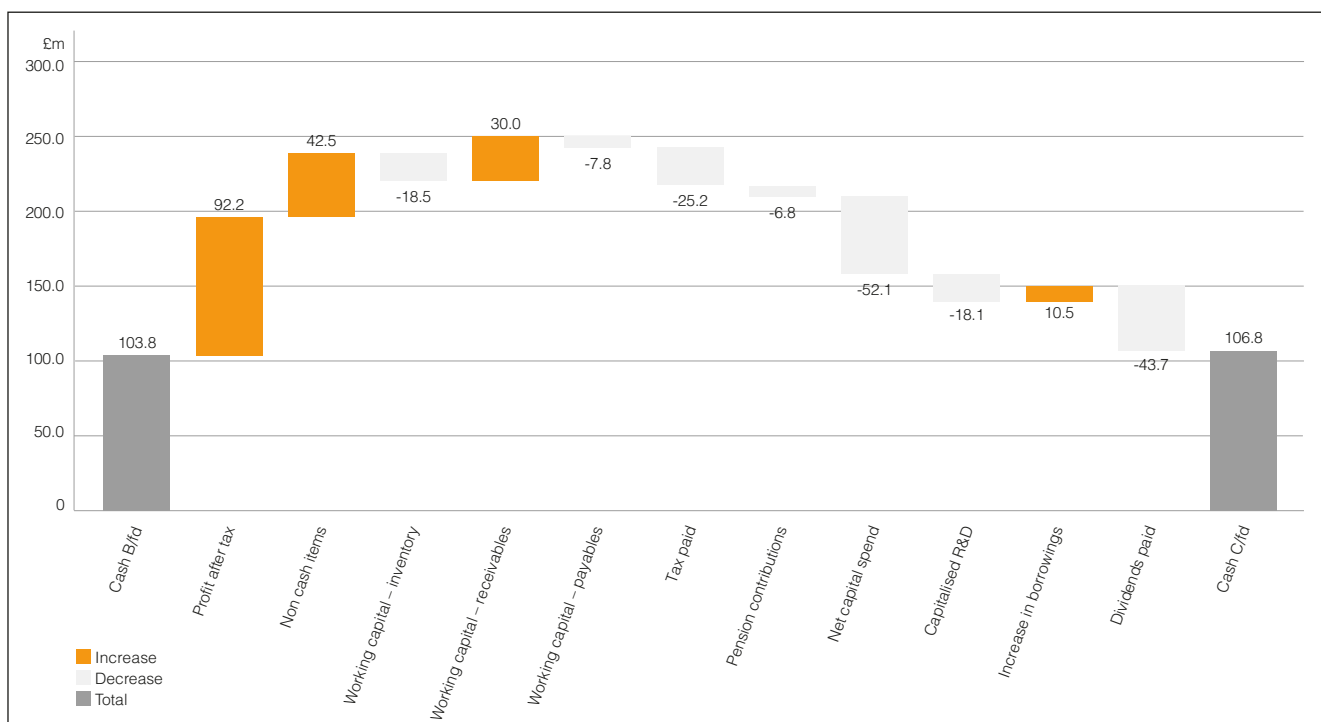
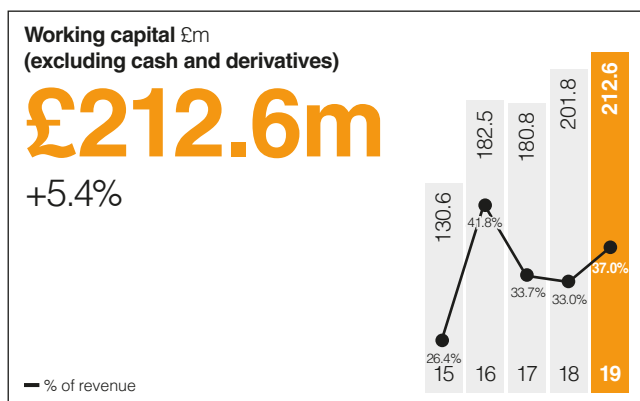
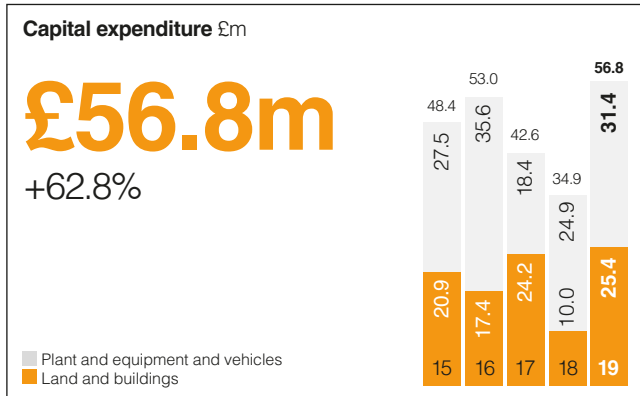
The main additions were:

- in the UK, a 94,000 sq ft extension to our Renishaw Innovation Centre due for completion in December 2019;
- in The Netherlands, the purchase of our existing facility;
- in Brazil, the purchase of land for the future development of a new distribution facility; and
- in Japan, the purchase of property in Nagoya to support the expansion of our distribution function, funded by local third-party borrowing.

Within working capital, inventories increased to £129.0m from £110.6m at the beginning of the year primarily reflecting the impact of Brexit contingency preparations and the reduced demand we experienced in the second half of the financial year. We continue to focus on inventory management while remaining committed to our policy of holding sufficient finished goods to ensure customer delivery performance, given our short order book.

Trade receivables decreased from £154.6m to £123.2m reflecting record revenue in the final quarter of 2018. Debtor days were 73 at the end of the year, compared with 69 at the end of last year.

Net cash balances at 30 June 2019 were £106.8m (2018: £103.8m). The cash flow bridge below shows the significant items that reconcile opening to closing cash balances.



Pensions

At the end of the year, the Group's defined benefit pension schemes, now closed for future accrual, showed a deficit of £51.9m compared with a deficit of £67.4m at 30 June 2018. Defined benefit pension schemes' assets at 30 June 2019 increased to £181.6m from £172.8m at 30 June 2018, representing investment performance during the year net of £7.2m benefit payments including transfers. Pension scheme liabilities decreased from £240.2m to £233.5m. Following further engagement with The Pensions Regulator, the Company and trustees have agreed the terms of a new deficit funding plan for the UK defined benefit pension scheme, based on the triennial valuation as at 30 September 2018. The Company has agreed to pay £8.7m per annum into the scheme for five years with effect from 1 October 2018. Under the terms of the previous agreement, the Company paid approximately £4.0m per year.

In line with the previous agreement, the new agreement will continue until 30 June 2031 and any outstanding deficit will be paid at that time. The agreement will end sooner if the actuarial deficit (calculated on a self-sufficiency basis) is eliminated in the meantime.

On 26 October 2018, the High Court reached a judgement in relation to Lloyds Banking Group's defined benefit pension schemes which concluded that the schemes should be amended to equalise pension benefits for men and women as regards guaranteed minimum pension benefits. The issues determined by the judgement arise in relation to most other defined benefit pension schemes and are relevant to the Company's UK defined benefit pension scheme. Following discussions between the Company, the trustees and their respective advisors, we have estimated incremental liabilities to be £0.8m, which have been recognised in the Consolidated income statement in Administrative expenses. The estimate has increased the scheme's liabilities by 0.4% and is based on the C2 method which has been approved by the courts and likely to be the most commonly used approach. The Company and trustees along with their respective advisors continue to assess the most appropriate method to achieve the equalisation of benefits.

Treasury policies

The Group's treasury policies are designed to manage financial risks to the Group that arise from operating in a number of foreign currencies and to maximise interest income on cash deposits. As an international group, the main exposure is in respect of foreign currency risk on the trading transactions undertaken by Group companies and on the translation of the net assets of overseas subsidiaries.

Weekly Group-wide cash management reporting and forecasting is in place to facilitate management of this currency risk. The operations of Group Treasury, which is situated at head office, are governed by Board-approved policies.

All Sterling and foreign currency balances not immediately required for Group operations are placed on short-term deposit with leading international highly-rated financial institutions. See note 15 for an analysis of cash balances at the year end.

The Group uses forward exchange contracts to hedge a significant proportion of anticipated foreign currency cash inflows. There are forward contracts in place to hedge against the Group's Euro, US Dollar and Japanese Yen cash inflows. The Group does not speculate with derivative financial instruments.

See note 20 for further details on financial instruments.

Capital allocation strategy

The Board regularly reviews the capital requirements of the Group, in order to maintain a strong financial position to protect the business and provide flexibility to fund future growth.

Our capital allocation approach has been consistently applied for many years. We are committed to investment in the R&D of new products, manufacturing processes and global support infrastructure in order to generate growth in future returns. This is evidenced in the year with capital investments and additional R&D spend cited previously. Actual and forecast returns, along with our strong financial position, then support our progressive dividend policy, which aims to increase the dividend per share, while maintaining a prudent level of dividend cover.

Allen Roberts

Group Finance Director

1 August 2019

Global investment

The way that we behave and operate drives our success. Our continual investment in our people and infrastructure allows us to deliver excellence to our global customer base.

Expansion in Mexico

In 2018, Renishaw México moved to new premises in Apodaca, Nuevo León, helping to support further expansion in Mexico's automotive and aerospace market. This new facility, with our state-of-the-art customer demonstration area, enables us to provide further expert support to customers, for many different product lines at various stages in their manufacturing processes.

In this new facility, we host workshops, seminars and industry events, allowing customers to see how Renishaw can support industry in the region.

Renishaw México has also been recognised as a 'Great Place to Work'. In 2018, it ranked in the top 100 companies (with fewer than 50 employees) to work for in Mexico. The certification was awarded by Great Place to Work, a global organisation that helps businesses to build a 'winning workplace culture'.



Alejandro Silva
President – Mexico

Research and development in Slovenia

Renishaw Slovenia, is an R&D facility located in the University of Ljubljana, Slovenia, within the Faculty of Electrical Engineering. It specialises in designing and supplying integrated circuits and sensor technologies for existing and future products, meeting the exacting needs of the precision measurement and healthcare sectors.

Being located within the university has created an environment that offers enormous potential for research and development. The faculty also benefits from having a world-leading company located within its facilities, helping to mentor and develop aspiring engineers.

In 2019, Renishaw Slovenia was shortlisted in a national Best Employer Competition and was one of seven finalists out of 89 entrants to be shortlisted in the small business category (up to 50 employees). The annual competition organised by the Dnevnik newspaper, invited entrants from many different industries with the finalists assessed on their employee feedback, employee experience, the business's role in the local community and the general success of the business.



Marija Manevska
ASIC Design Engineer – Slovenia

Investing globally

High-quality manufacturing in India

Renishaw delivers exceptional levels of service and product quality to our customers through superior manufacturing. We produce a substantial amount of our products in the UK, but we also operate other manufacturing sites across the globe, including our state-of-the-art facility in Pune, India, operated by our Indian subsidiary.

In 2011, the facility was expanded to its current 60,000 sq ft size and today 200 manufacturing employees are involved in building parts for a range of Renishaw products, including: vacuum casting and AM machines, hand controllers for CMM products, parts for our Equator gauging system and different types of cable sub-assemblies and tool setting arms.

New roof-top solar panels were installed at the site in 2017. These panels now generate half the power needed to run the facility.

Renishaw India also contributes to the local community through an active CSR programme, where employees work with local villages, schools, elderly care homes and hospitals.



Suhas Cholkar
Director and Head of
Manufacturing Services
Division – India

People development in APAC

We have now appointed Regional HR Heads into our Americas, EMEA and APAC regions.

In APAC, the HR mission is to support our functional teams across the region to achieve their business goals, through strategic people management and development.

Our aim is to continue to build a rounded leadership capability and to drive alignment with management values on individual performance evaluation, in a very diverse region with many cultural differences.

One of our focuses is to promote collaboration in the region, including training, technical expertise and knowledge sharing, to build stronger relationships across APAC.

As HR professionals, we need to be active listeners and have a clear understanding of business operations, processes and systems. This will enable us to work closely with our teams to provide timely and appropriate HR guidance, and to continue to develop talented people, to drive our business forward.



Elaine Lam
Head of Human
Resources – APAC

for the long term

Metrology – business segment

Our key markets include aerospace, automotive, consumer products and power generation.



Aerospace

We offer expertise in controlling the manufacture of specialist components. We specialise in performance, MRO, safety and innovative materials. For further information, visit www.renishaw.com/aerospace.



Automotive

We have decades of experience in helping manufacturers improve their efficiency and performance, bringing new components to market faster than ever before. We specialise in new processes, automation, efficiency and performance. For further information, visit www.renishaw.com/automotive.



Consumer products

From consumer electronic devices to high-precision components, we support improvements in manufacturing capabilities that cater to the demands of more sophisticated hardware, sleeker physical design and the requirement for ever-shorter life cycles. For further information, visit www.renishaw.com/electronics.



Power generation

We work across the entire energy sector. For further information, visit www.renishaw.com/energy.

Our technology solutions help manufacturers to maximise production output, to significantly reduce the time taken to produce and inspect components, and to keep their machines running reliably. In the fields of industrial automation and motion systems, our position measurement and calibration systems allow machine builders to manufacture highly accurate and reliable products. We are a world leader in the field of metal additive manufacturing (3D printing) with machines that produce parts from metal powder.

The product range includes:

Additive manufacturing

Advanced metal AM systems for direct manufacturing of 3D-printed metallic components. A total solution is offered from systems, materials, ancillaries and software through to consultancy, training and support for a range of industries including industrial, consumer products and mould tooling.

Co-ordinate measuring machine products

Sensors, software and control systems for three-dimensional CMMs, including touch-trigger and scanning probes, automated probe changers, motorised indexing probe heads and 5-axis measurement systems, which enable the highly accurate measurement of manufactured components and finished assemblies.

Machine tool probe systems

Sensors and software for computer numerically controlled (CNC) metal cutting machine tools that allow the automation of setting and on-machine measurement operations, leading to more productivity from existing machines and reductions in scrap and rework. These include laser tool setters, contact tool setters, tool breakage detectors, touch probes, contact scanning systems and high-accuracy inspection probes.

Styli for probe systems

Precision styli that attach to probe sensors for CMMs, machine tools and Equator gauging systems to ensure that accurate measurement data is acquired at the point of contact.

Performance testing products

Calibration and testing products to determine the positioning accuracy of a wide range of industrial and scientific machinery to international standards, including a laser interferometer, rotary axis calibrator, wireless telescoping ballbar and software for data capture and analysis.

Gauging

The Equator gauging system enables process control by delivering highly repeatable, thermally insensitive, versatile gauging to the shop floor, both as a standalone device and as part of an automated manufacturing cell. Combined with IPC (intelligent process control) software and automatic transfer systems, the Equator gauge provides the functionality to fully automate tool offset updates in CNC manufacturing processes.

Fixtures

Modular and custom fixtures used to hold parts securely for dimensional inspection on CMM, vision and gauging systems.

Position encoders

Position encoders that ensure accurate linear and rotary motion control in a wide range of applications from electronics, flat panel displays, robotics and semiconductors to medical, precision machining and print production. These include magnetic encoders, incremental optical encoders, absolute optical encoders and laser interferometer encoders.

Metrology in numbers 2019

Revenue

£532.9m

-7%
(2018: £575.8m)

Adjusted operating profit

£90.6m

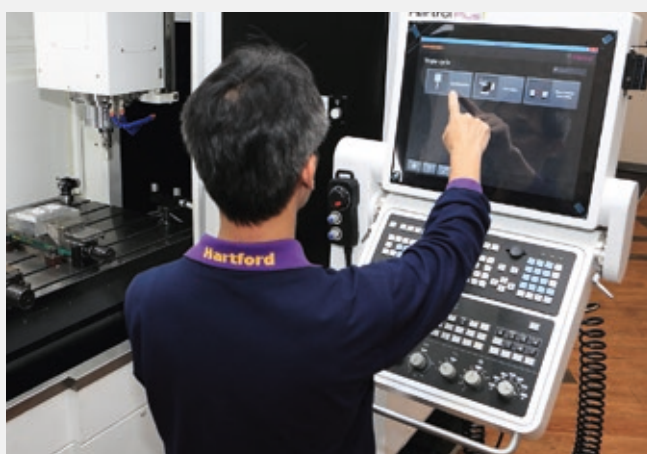
-37%
(2018: £142.8m)

Percentage of Group revenue

93%

(2018: 94%)

+ Helping to deliver smart factory solutions



In the face of global skills shortages and rapidly emerging Industry 4.0 trends, Hartford, a Taiwanese CNC machine tool manufacturer, undertook to develop an innovative, easier-to-use human machine interface (HMI) for its machines. Bruce Lin, Manager of Hartford's R&D Intelligent Technology Department explains: "Our customers are needing to process workpieces of increasing complexity, however a lack of skilled labour means they are having to insist on machining centres that are even simpler to use."

Hartford, which has supplied 46,000 machines to 65 countries, has developed Hartrol Plus, an intelligent CNC controller which is as easy to use as a smartphone. The controller's HMI visualises data in a way that helps machine operators make more informed decisions and solve problems more quickly.

Renishaw's Set and Inspect on-machine app has been integrated with the new controller. It is a highly visual graphical user interface which leads the operator through every step of on-machine probing processes, eliminating the need to remember machine code instructions, reducing data entry errors and programming times, and increasing processing efficiency by as much as 20%.

Metrology – performance



There are multiple opportunities in the research and manufacture of new vehicle types, with precision parts, cost efficiencies and automated processes required throughout the supply chain.

Dave Wallace, Director of Industrial Metrology

Performance

It was a challenging year for our metrology business, especially the machine tool and position encoder product lines which were impacted by weakness in key markets in the APAC region. There was however strong growth in our AM product line, while our measurement and automation, and fixturing lines, also experienced good growth.

The AM line benefited from growth in the market for AM technologies and the adoption of the RenAM 500Q four-laser system. Designers and manufacturers are aiming to enhance product performance and efficiency through more complex geometries and lightweight components, to produce products that are inherently more efficient, and to lower emissions and reduce raw material usage. The aerospace and medical sectors are currently the most developed users of the technology, with oil and gas, and power generation also seeing good levels of adoption. During the year we supplied multiple RenAM 500Q systems to Knust-Godwin, a US supplier to the oil and gas sector. We entered into a partnership with Sandvik Additive Manufacturing in Sweden to supply multiple systems and Siemens also invested in our technology for its UK subsidiary, Materials Solutions.

The measurement and automation product line, currently focused on the Equator gauging system, continues to see high levels of global success in the aerospace, automotive and electronics sectors, with the trend towards integration within automation cells continuing and greater use of the Equator system for process control earlier in manufacturing operations. The trend towards faster design iterations in the automotive market, from seven-year cycles to as low as 18 months, is beneficial for a flexible gauge versus fixed, single-application gauges. The Equator gauge is also well placed for metrology applications with electric vehicle parts including gears and rotors/stators.

While there were challenges this year for the position encoders line, our optical encoders and the magnetic encoders from our joint venture, RLS, are still benefiting from the ongoing global drive towards industrial automation which aims to increase capacity and flexibility, while reducing manufacturing lead times and costs.

Market conditions

We have experienced lower demand in some areas caused by reduced investments in markets such as consumer electronic products (due to weaker smartphone demand and the resultant over-capacity in the supply chain), DRAM (computer memory) production and semiconductors, which have impacted our position encoder and machine tool product lines. However, we are still seeing positive trends for our position encoders, driven by new flat panel display technology and the demand for 5G mobile products. The latter requires more complex integrated circuits and significant investment in manufacturing plants to be produced in volume. A new trend is for connectivity, where customers are requiring more real-time data on machine performance and where encoders are able to give such feedback, including temperature. Our comprehensive encoder portfolio, including new diagnostic interfaces, is well placed to meet these requirements.

Despite what we believe to be a short-term slowdown in the demand for consumer electronics, we are continuing to see global investment in production systems and processes, including automation and robotics, aided by an increasing awareness of the benefits to be gained by adopting Industry 4.0 and smart factory philosophies, and to tackle global skills shortages. To offset the need for highly-skilled machine operators, manufacturers are demanding user interfaces and software that are easier to operate.

Our metrology lines are also benefiting from the drive to reduce costs, shorten lead times, meet the need for increased complexity and closer tolerances in product design, and supply markets where shorter product life cycles are compressing times for process development.

A key sector for Renishaw is the civil aviation market, where our products are heavily used in process control and part inspection to meet stringent safety standards. In addition to the expected requirement for 42,700 new aircraft by 2038, there is also a growing global market for engine MRO due to the increased demands on engine performance including operation at higher temperatures and pressures. Our measurement products, including the REVO measuring head and scanning probes with SPRINT technology, help deliver the high-accuracy data acquisition and minimised repair lead times required by the industry in applications such as turbine blade re-manufacture.

The automotive sector is also very important for our metrology business and we operate throughout the supply chain. There are opportunities and risks for our business; while there is reduced global demand for vehicles with internal combustion engines (ICE), the trend towards hybrid, electric vehicles and autonomous vehicles represents opportunities. Our products are deeply embedded in ICE production which is seeing reduced capital investment, yet there is still a drive to make those engines as efficient as possible, and there are multiple opportunities in the research and manufacture of new vehicle types, which will still require precision parts, cost efficiencies and automated processes throughout the supply chain.

Strategy for growth

We continue to position Renishaw as a solutions provider. Our measurement and automation, calibration, AM, and accessory ranges, such as styli and fixtures, can be supplied direct to the end user, while we continue to strengthen our portfolio of hardware and software for users of CMMs, including the upgrades of measuring machines already installed.

We are focused on the long term and a key focus is on developing technologies that provide patented products and methods which support our product strategies, with £90.7m (before net capitalised development costs and the R&D tax credit) expenditure on R&D and engineering during the year. The current technology focus continues to be on products that help our customers to improve measurement performance, enhance the performance and efficiency of their products, increase speed of operation, increase measurement capability and are easier to use.

These include: integrated process control solutions for automated manufacturing processes; the development of AM systems with faster processing capability and improved process control for large-scale manufacturing; miniaturised high-resolution position feedback systems that support the manufacture of high-precision electronics; simplified software, including apps, for machine tool and CMM probing, calibration and gauging; and a multi-sensor capability for CMMs.

Our wide portfolio of products gives us key advantages when competing for high-value orders. Our larger exhibition stands and our in-house demonstration facilities focus on the levels of integration we can bring to a manufacturing environment, especially for companies looking to bring connectivity and the intelligent use of data within their manufacturing processes. We also utilise our existing technologies across different product lines to speed development times; for example, our MODUS metrology software platform, initially created for CMM applications, is used with our Equator gauging systems, and our optical position encoders are used on the Z-axis of our RenAM 500 series AM systems and the REVO-2 measuring head for CMMs.



We are seeing greater use of the Equator system for process control earlier in manufacturing operations.

Key developments

During the year we introduced new products for our CMM product line including the PHS-2 second generation servo positioning head which is used by many vehicle manufacturers for body-in-white measurement, and a new version of UCCsuite for our UCC CMM controllers which supports our new XM-600 calibration system for high-speed dynamic CMM error-mapping and fault-finding. Within our calibration line, the new XK10 alignment laser system is used during the build and alignment of machine tools, replacing the need for artefacts.

We also introduced the QuickLoad rail and plate system for faster throughput of inspected parts by allowing users to quickly changeover fixturing plates.

Within our machine tool product line we launched the APCA-45 tool setting probe for the very harsh environments found in lathes and multi-tasking machines. Additionally, the new SupaScan QuickPoint macro allows superfast probing cycles in machining applications with very short cycle times.

In our position encoder line we released a rotary encoder for our QUANTiC family of incremental encoders which offer machine builders ease-of-use for machine set-up due to exceptionally wide installation and operating tolerances. For high-end XY stage performance that requires multiple interferometer feedback axes, our new multi-axis periscope (RMAP) enables accurate six degrees of freedom measurements utilising the performance from the Renishaw RLD10-X3-DI interferometer head.

We now offer a single laser (S) version of the RenAM 500 production series AM platform, having launched the 'Q' system with four lasers last year.

Outlook

A detailed analysis of the key markets for our metrology products can be seen in Our markets (page 16). While there are current challenges in terms of global economic growth, especially due to the risks posed by reduced freedom in global trade, we remain confident that underlying market drivers will continue to benefit the long-term growth of our business. Rising global incomes and population will drive demand in our key markets including civil aviation, agriculture and power generation (including renewables), all of which will require products that help drive efficiencies to maximise valuable resources and minimise waste.

We continue to see a global drive to automate and simplify manufacturing processes, both to minimise labour costs and reduce the need for skilled labour, which will especially benefit our position encoder, measurement and automation, and machine tool product lines. We also see a continuing focus on introducing new technologies, such as 5G communication, and the requirement for more capable products, requiring fundamental redesigns and new approaches to manufacturing, benefiting both our AM and encoder lines.

Healthcare – business segment

Our healthcare products are designed to improve medical research and surgical procedures.

Life expectancy is increasing in both developed and developing markets, meaning key drivers include the requirement for faster procedures to reduce waiting times, more economical treatments, more patient-specific treatments (e.g. implants) and safer, more automated procedures with reduced human errors. All our healthcare product lines are well placed to deliver on these requirements.

Our technologies are being applied to an ever-increasing number of applications within healthcare, including brain surgery, reconstructive surgery and dentistry.

Our key markets are dental, neurological and craniomaxillofacial products as well as Raman spectroscopy. For further information, visit www.renishaw.com/healthcare.



The RA816 Biological Analyser is a compact benchtop Raman imaging system designed exclusively for biological and clinical research.

Our technologies are helping within applications such as craniomaxillofacial surgery, dentistry, neurosurgery, and tissue and biofluid analysis. These include engineering solutions for stereotactic neurosurgery, analytical systems that identify and assess biochemical changes associated with disease formation and progression, the supply of specially configured metal additive manufacturing systems for medical and dental applications, the supply of implants to hospitals and specialist design centres for craniomaxillofacial surgery, and products and services that allow dental laboratories to manufacture high-quality dental restorations.

The product range includes:

Additive manufacturing

Advanced metal AM systems configured for direct manufacturing of 3D-printed metallic dental and medical components. A total solution is offered from systems, materials, ancillaries and software through to consultancy, training and support for customers in the healthcare sector.

Craniomaxillofacial custom-made implants

Additively manufactured from titanium, custom-made craniomaxillofacial implants are structural implants that are used in the reconstruction of a patient's head, face or jaw. These are most commonly required after oncology treatment or as a result of trauma.

Dental scanners

3D contact scanners and non-contact optical scanners used for the digitising of dental preparations and the measurement of implant locations for tooth-supported frameworks and custom abutments.

Dental computer-aided design software

Dental CAD software that allows set-up of scanning routines and enables laboratory staff to design abutments and structures for crowns and bridges, including powerful anatomic design functions.

Dental structures manufacturing service

A central manufacturing service that can handle CAD files from a wide variety of dental CAD systems to produce structures for crowns, bridges and abutments in cobalt chrome.

Neurosurgical robot

A stereotactic robot that provides a platform solution for a broad range of functional neurosurgical procedures including deep brain stimulation (DBS), stereoelectroencephalography (SEEG), neuroendoscopy and stereotactic biopsies, and is being used within the context of clinical trials for both neurosurgical disorders and brain oncology.

Neurosurgical planning software

Software that allows advanced planning of targets and trajectories for stereotactic neurosurgery.

Neurosurgical implants

Implantable devices that allow surgeons to verify expected DBS electrode position relative to targeted anatomy using magnetic resonance imaging (MRI) for the treatment of Parkinson's disease, other movement disorders and neuropathic pain.

Neurosurgical accessories

Specialist electrodes and instruments for use in epilepsy neurosurgery, manufactured by DIXI Medical.

Raman microscopes

Research-grade inVia Raman microscope for the non-destructive chemical analysis and imaging of materials used by scientists and engineers worldwide. Its high-speed, high-quality results and upgradeability are valued in fields as diverse as nanotechnology, photovoltaics, pharmaceuticals and forensics.

Hybrid Raman systems

Hybrid systems that unite the chemical analysis power of Raman spectroscopy with the high spatial resolution of other techniques, such as atomic force microscopy and scanning electron microscopy. These new instruments are vital tools for investigating materials and devices for nanotechnology applications.

Biological analysis

RA816 Biological Analyser comes in a simple to use, compact platform that enables biologists and clinicians to identify and assess biochemical changes associated with disease formation and progression.

Pharmaceutical analysis

RA802 Pharmaceutical Analyser, a compact benchtop Raman imaging system designed exclusively for the pharmaceutical industry. It enables users to formulate tablets more efficiently by speeding up the analysis of tablet composition and structure.

Healthcare in numbers 2019

Revenue

£41.0m

+15%
(2018: £35.7m)

Adjusted operating profit

£3.1m

+933%
(2018: £0.3m)

Percentage of Group revenue

7%

(2018: 6%)

+ Parkinson's trial utilises novel drug delivery device



Renishaw has built and manufactured a device used in a ground-breaking clinical trial. The device enabled the precise delivery of a new drug candidate, GDNF, with the hope of regenerating dying dopamine brain cells in people with Parkinson's disease and thereby improving their symptoms.

The results of the trial feature in a two-part BBC Two documentary, *The Parkinson's Drug Trial: A Miracle Cure?*

During the trial, 41 patients had the additively manufactured titanium port embedded into their skull through which GDNF could be delivered via micro-catheters to the putamen, a critical region of the brain for motor function. The device is implanted using the Renishaw neuromate surgical robot, which positions four catheters into the brain.

The trial was funded by Parkinson's UK with support from the Cure Parkinson's Trust and in association with the North Bristol NHS Trust. Results showed the drug delivery system performed effectively and reliably and a similar device, developed by Renishaw, called neuroinfuse, is now being used in another clinical trial for Parkinson's in Scandinavia – see www.renishaw.com/drugdelivery.

Image: Chris Marshall/Mint Motion

Healthcare – performance



The GDNF trial showed that the delivery system achieved precision administration of drugs into the brain and offers great potential for future studies and experimental treatments.

Paul Skinner, General Manager, Neurological Products Division

Performance

It was a good year for our healthcare business, with strong growth from the medical dental and spectroscopy product lines.

The medical dental product line experienced strong growth due to the sale of Renishaw AM machines configured for medical and dental applications. These were purchased by customers supplying the orthopaedic markets, including spinal implants, craniomaxillofacial implants and medical tooling, and customers supplying dental structures, including implant-related products.

In the USA, California-based PrinterPrezz invested in a RenAM 500M system as part of a one-stop 3D printing facility for the medical sector, including the manufacture of medical devices, surgical aids and prosthetics, while in France, we are collaborating with two companies, 3D Medlab and Newclip Technics, to develop innovations for the orthopaedic medical device market. The latter, which designs, manufactures and markets osteosynthesis implants for elective surgery or traumatology, has also purchased a RenAM 500M system.



The neuromate stereotactic robot in use with a neurolocate module that is mounted to the robot to register a patient's position using either computed tomography (CT) or X-ray.

Through the Healthcare Centre of Excellence at our Miskin site in South Wales, which operates under an ISO 13485 quality management system, we produce the majority of our medical dental AM products and also collaborate with healthcare organisations to prove the potential for AM in medical applications. During the year, this included working with Irish Manufacturing Research (IMR) and software company nTopology to demonstrate the advantages of AM in the production of spinal implants with lattice structures, something that cannot be achieved with conventional manufacturing techniques. Patients with medical conditions including degenerative disc disease, herniated disc and osteoporosis can require spinal implants to restore intervertebral height. An implant with a lattice structure is lightweight, can be optimised to meet the required loading conditions and has a greater surface area, which can aid osseointegration.

The range of research applications using our Raman instrumentation continues to grow. Pollution caused by plastics is of rising global concern, especially with increasing evidence of microplastics being discovered in the food chain. Raman spectroscopy is an indispensable tool for the analysis of very small microplastics (less than 20 microns).

Raman spectroscopy is also being used within the food manufacturing sector, both for research to aid improved formulations and to detect counterfeit products. The Manchester Institute of Biotechnology is using an inVia Raman microscope to detect counterfeit coconut water. This product has seen a recent boom in popularity and with only five countries in the world supplying the majority of coconut water to the Western markets, this surge in popularity, and the resulting imbalance between supply and demand, has led to criminal activity in the supply chain.

At the Physics in Food Manufacturing Conference held in January, we highlighted research to characterise the distribution of the core ingredients within chocolate, such as fats and sugars, which could lead to changes in formulation and production to improve the flavour, feel and stability of chocolate products.

During the year, the neurological product line achieved key sales of the neuromate stereotactic robotic systems, including in key neurological centres across the UK, EU and North America where there is strong demand to streamline SEEG procedures with the assistance of a Renishaw neuromate stereotactic robot. SEEG is a procedure used in the treatment of epilepsy; multiple intracerebral electrodes are inserted into the brain to gather data and map brain activity to identify which region of the brain is acting as a source for the epileptic seizures. Once the epileptogenic region has been identified, neurosurgeons can follow up with a tailored resection to remove the problematic tissue.

To improve the quality, access and uptake of epilepsy brain surgery available to children, NHS England set up the Children's Epilepsy Surgery Service. At the four centres, specialists evaluate children with difficult-to-control epilepsy to see if they would benefit from surgery. Each centre operates a Renishaw neuromate stereotactic robot to assist neurosurgeons with SEEG procedures.

Michael Carter, Consultant Paediatric Neurosurgeon at Bristol Royal Children's Hospital, commented: "The neuromate enables high-precision interrogation of volumes of cerebral tissue, not just the cortical surface. It is particularly useful when there are no obvious lesions and where the epileptogenic focus is not clear from scalp recordings. SEEG using the neuromate has an extremely favourable safety profile."

Outside the UK, a neuromate robot was installed in the University Children's Hospital in Zurich, which is not only the largest paediatric clinic in Switzerland, but also one of the leading centres for paediatric and youth medicine in Europe. The neuromate robot and neuroinfuse, a novel drug delivery system developed by Renishaw, are at the heart of what promises to be part of a groundbreaking international programme in brain cancer therapy.

Market conditions

Life expectancy is increasing in both developed and developing markets, meaning that key drivers include; the requirement for faster procedures to reduce waiting times, more economical treatments, more patient-specific treatments (e.g. implants), and safer procedures with reduced human errors. All our healthcare product lines are well placed to deliver on these requirements.

While academic research funding has been reduced in some areas of the world, including the USA, due to global economic conditions, the worldwide demand for Raman products is still growing due to an increasing acceptance of the benefits of Raman spectroscopy for industrial applications and increased investment in research in developing nations, specifically in Asia. The growth in research in key areas such as nanomaterials, biomedical and green energy is also benefiting our business. Our high-end spectroscopy products, which offer ease of use, are well placed to service these growth areas.

Strategy for growth

We aim to develop innovative healthcare products that will significantly advance our customers' operational performance by maximising research capabilities, reducing process times and improving the efficacy of medical procedures. We are also increasingly addressing the requirement for personalised healthcare treatments.

As a key focus is to develop technologies that provide patented products and methods, we invested £7.2m (before net capitalised development costs and the R&D tax credit) of expenditure on R&D and engineering during the year.

The regulatory requirements for healthcare products demand significant investment, but make barriers to entry high for competitive products.

Our metrology and healthcare businesses are interconnected and we employ core metrology technologies and manufacturing expertise to minimise technology risks. This is illustrated very clearly in our medical dental product line where, as well as selling our own AM machines specially configured for healthcare applications, we use those machines in the manufacture of dental structures and medical implants to demonstrate the suitability of AM for this purpose, while also taking advantage of our knowledge of subtractive machining in the hybrid manufacture of LinkAbutments.

We actively seek out partnerships that will assist research and our routes to market.

Key developments

During the year we introduced the RA816 Biological Analyser, a compact benchtop Raman imaging system, designed exclusively for biological and clinical research. At the John Ratcliffe Hospital in Oxford, UK, a system is being used for brain tumour research.

A new frameless patient registration module for the neuromate stereotactic robot, the neurolocate 2D module, has obtained a CE mark. It requires just two X-rays to register patient position against the robot and complements the neurolocate 3D module, which offers the same functionality but requires an intraoperative flat panel computed tomography system. Both neurolocate modules allow the surgeon to accurately determine the position of the patient relative to the neuromate robot.

The results of a pioneering clinical trial for which Renishaw manufactured a drug delivery device on behalf of North Bristol NHS Trust, to administer GDNF, were made public in February. The results showed that the drug delivery system performed effectively and reliably. A similar device developed by Renishaw, called neuroinfuse, is now being used in another clinical trial and we are seeing significant interest in its use for the treatment of brain tumours and neurodegenerative diseases.

Outlook

The market for Raman spectroscopy continues to grow in fields such as advanced materials, nanotechnology, life sciences, pharmaceutical and medical diagnosis, including research into cancers, infectious diseases and infection.

In developing markets, levels of wealth are increasing at a national and individual level, which is driving demand for higher-quality medical treatments, often requiring more technologically advanced products.

Increased life expectancy on a global basis means greater incidences of degenerative neurological diseases, which will require surgical therapies. With appropriate regulatory approvals and increasing numbers of reference sites, we are well placed to supply neurosurgeons with the products and techniques to support such procedures.

Risk and risk management

Effective risk management is critical to the achievement of our strategic objectives. Risk management controls are integrated into all levels of our business and across all our operations. We continually assess our exposure to risk and seek to ensure that risks are appropriately mitigated.

Overview of risk management

The Board is responsible for the overall stewardship of our system of risk management and internal control. It has established the level of risk that is appropriate for our business and acceptable in the pursuit of our strategic objectives and has therefore set appropriate policies. It has also set delegated authorities to provide the framework for assessing risks and ensuring that they are escalated to the appropriate levels of management, including up to the Board where appropriate, for consideration and approval.

The roles and responsibilities of the Board, key committees and all levels of management from a risk management perspective are summarised in the infographic below. This process ensures that risks are not just the product of a bottom-up approach but are also examined from a top-down perspective through an integrated senior management process, which is closely aligned with the Group's strategy, in order to enhance the Group's approach to risk generally.

Activities during the year

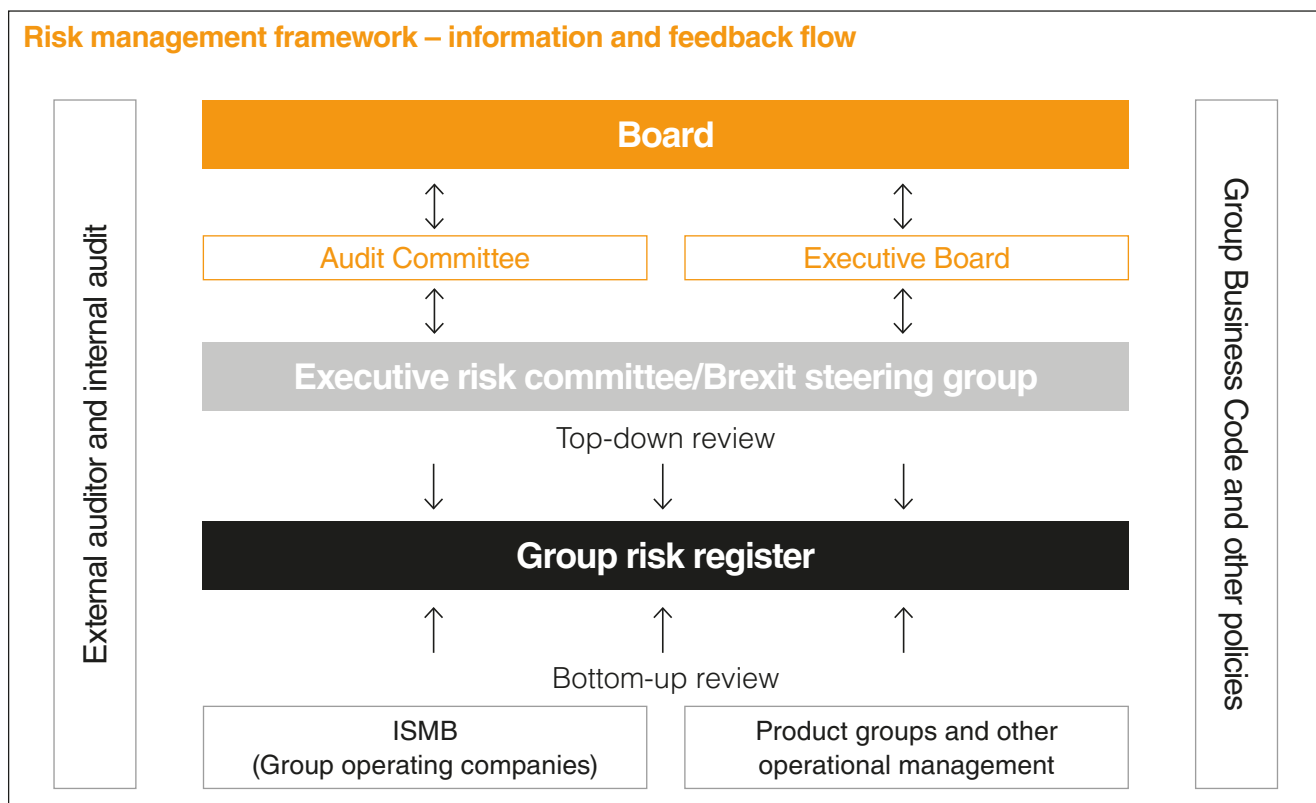
The executive risk committee met three times in the period and conducted a thorough review of our principal risks, relevant mitigation plans for each and considered emerging risks.

The overall effectiveness of the Group's risk management and mitigation processes is reviewed regularly by the Executive Board and the Audit Committee.

The internal audit team operates independently, reporting to the Audit Committee. Scheduled visits to Group companies were held and documented, with executive summaries provided to Audit Committee meetings and any significant shortcomings discussed and acted upon promptly. Process enhancements are facilitated by this team. All operating companies are required annually to complete self-certification questionnaires, regarding compliance with Group policies, procedures and requirements.

Key focus areas during 2018/19

- aligning risk committee membership to reflect changes across the Group;
- enhancing the yearly risk review calendar and Group risk information flows, in order to ensure the Board and other governance bodies obtain regular and comprehensive updates;
- a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity;
- consideration of emerging risks;
- consideration of the risks related to Brexit and the trade and tariff disputes;
- evaluation of and protection against cyber security threats; and
- consideration of workforce-related risks.



Brexit

As with many other companies across the UK, the continuing political process has meant the full implications of Brexit for all aspects of our business still remain uncertain. In 2018 we formally established a Brexit steering group to try to evaluate the potential impact of the UK's departure from the EU on the Group, make recommendations where required and implement agreed actions.

As a result, we have put in place measures to attempt to mitigate potential impacts of a no-deal Brexit as set out on page 9. Further changes may need to be made in aspects of the Group's operations as the situation moves forward. However, with a strong direct presence in the EU, Renishaw is well placed to respond to changes in future trading arrangements between the UK and the EU. Developments will be monitored closely to assess required actions as the exit and trading negotiations become clearer in 2019.

Ethical business practices

Our Group Business Code is designed to ensure employees understand the importance of 'doing the right thing' in all our activities and comply with applicable laws and regulations. We also have an Anti-Bribery Policy and a Whistleblowing Policy facilitated by a confidential global telephone service run by Safecall which, together with employee training in these areas, are fundamental parts of our programme to establish guidelines and promote a clear culture of ethical business across the globe. Training continues to be refreshed and refined to suit the risk profile in the business and is reviewed by an anti-bribery working group several times per year, which also facilitates the evaluation of risk in this area.

Any calls to our whistleblowing line are rigorously followed up. During 2019/20, we will be refreshing our Whistleblowing Policy and updating our anti-bribery training modules.

We have due diligence procedures for routinely screening new and existing agents and distributors, utilising the services of a market-leading screening service, World-Check One. We have an Intermediary Due Diligence Policy together with a specific e-learning course, which explains to employees our requirements and the process to follow. We have also continued to strengthen our legal and HR resources globally, which in turn support our compliance activities.

Cyber security

In relation to the continuing cyber security threat, we provided specific Company-wide training and invested in the development of members of our IT security team. We have further strengthened our IT systems' resilience in key areas as well as the monitoring of emerging threats.

Data protection

We have continued to focus on our compliance with the requirements of the General Data Protection Regulation as well as other existing and emerging data protection legislation. This has included ongoing reviews of and updates to policies and procedures, training and the appointment of a Group data protection officer.

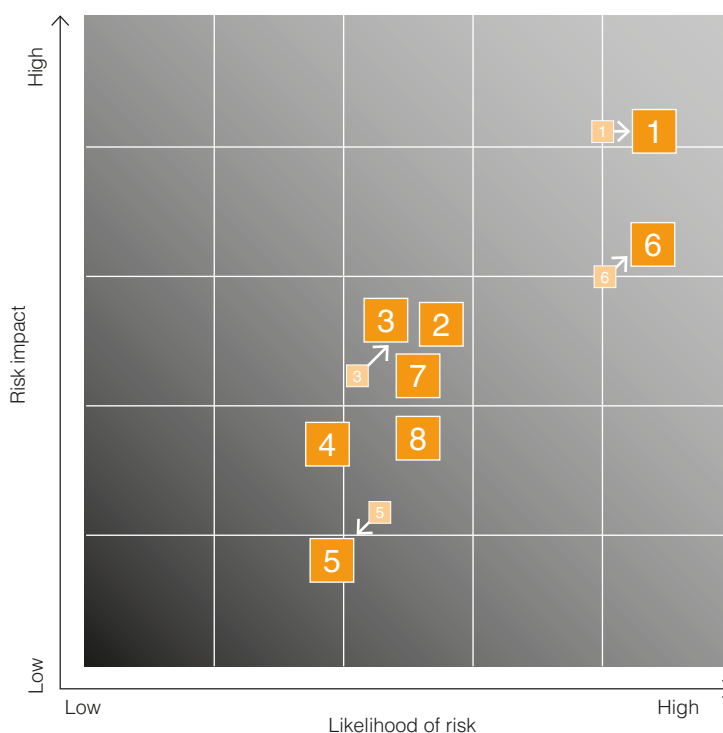
+ Viability statement
 for more information see page 43

Risk likelihood and impact before mitigation

The diagram to the right shows the principal risks affecting the Group, before mitigation.

- 1 Current trading levels and order book
- 2 Research and development
- 3 Supply chain management
- 4 Regulation of healthcare
- 5 UK defined benefit pension scheme
- 6 Exchange rate fluctuations
- 7 Cyber security threats
- 8 Workforce (new)
- X Movement since 2018

+ Further descriptions and associated mitigations are shown on pages 40 to 42



Principal risks and uncertainties

Our performance is subject to a number of risks – the principal risks and factors impacting on them are set out in the table below, together with the links to strategy and mitigation. The Board has conducted a robust assessment of the principal risks facing the business.

Strategic priorities (see pages 18 to 21 for more information)

- 1** People and culture


2 Continuous R&D


3 High-quality manufacturing
- 4** Global customer support


5 Delivering solutions

1 Current trading levels and order book	Year-on-year change
<p>Revenue growth is unpredictable and orders from customers generally involve short lead times with the outstanding order book at any time being around one month's worth of revenue value.</p> <p>Related strategic priorities:</p> <p>2 4 5</p>	<p>Potential impact</p> <p>Global market conditions continue to highlight risks to growth and demand that can lead to fluctuating levels of revenue and profit. The potential impacts include those arising from Brexit and trade and tariff disputes, resulting in an increased risk rating for this year.</p> <p>Future growth is difficult to predict, especially with such a short-term order book. This limited forward order visibility results in uncertainty in revenue and profit forecasts. If the Group does not manage its cost base and optimise operational efficiency, this may adversely impact profitability.</p>
<p>Mitigation</p> <ul style="list-style-type: none"> The Group is expanding and diversifying its product range in order to maintain a world-leading position in its sales of metrology products. Targeted investment in sales and marketing resources continues in order to support the breadth of the product offerings. The Group is applying its measurement expertise to grow its healthcare and AM business activities. The Group retains a strong balance sheet and has the ability to flex manufacturing resource levels and shift patterns. The Group has implemented programmes in relation to the management of costs and with the aim of maximising profitability. 	











2 Research and development	Year-on-year change
<p>The development of new products and processes involves risk, such as development timescales, meeting the required technical specification and the impact of alternative technology developments.</p> <p>Related strategic priorities:</p> <p>2 5</p>	<p>Potential impact</p> <p>As a Group at the leading edge of new technology in metrology and healthcare, there are uncertainties whether all new R&D programmes will provide an economic return.</p>
<p>Mitigation</p> <ul style="list-style-type: none"> Patent and intellectual property generation are core to new product developments. R&D programmes are regularly reviewed against milestones and, when necessary, projects are suspended or cancelled. Medium- to long-term R&D strategies are monitored regularly by both the Board and the Executive Board, including reviews of the allocation of R&D resource to key projects. Product development processes around the Group are reviewed and aligned where possible to provide consistency and efficiency. New products involve beta testing with customers to ensure as much as possible that they will meet the needs of the market. Market developments are closely monitored. Enhanced collaboration and knowledge-sharing between R&D teams. 	

3 Supply chain management		Year-on-year change 
<p>Customer deliveries may be threatened by a failure in the supply chain.</p> <p>Related strategic priorities:</p> <p>3</p>	<p>Potential impact Inability to meet customer deliveries could result in loss of revenue and profit.</p> <p>Supply chain disruption caused by a no-deal Brexit with respect to customs and border clearances and uncertainty over UK and EU product approvals, which has given rise to an increased risk rating for this year.</p>	<p>Mitigation</p> <ul style="list-style-type: none"> • Production facilities are maintained with fire and flood risks in mind. • Critical production processes are replicated at different locations where practical. • The Group is highly vertically integrated providing increased control over many aspects of the supply chain. • The Group has the ability to flex manufacturing resource levels and shift patterns. • Regular vendor reviews are performed for critical part suppliers. • Stock policies are reviewed by the Board on a regular basis. • Product quality is closely monitored. • The Group has undertaken a review of the supply chain to identify key suppliers to ensure they have their own risk management process in place for a no-deal Brexit.

4 Regulation of healthcare		Year-on-year change 
<p>The Group's healthcare business involves a significant increase in compliance requirements to obtain regulatory approval prior to the sale of these products and the need to comply with the relevant legal and regulatory obligations.</p> <p>Related strategic priorities:</p> <p>1 2 5</p>	<p>Potential impact Regulatory approval can be very expensive and time-consuming. This area is also very complex and there is a risk the correct approvals are not obtained. Failure to comply could have reputational and financial consequences for the Group.</p> <p>In a worst case no-deal Brexit scenario, a UK-based notified body can no longer CE mark a product for sale in the EU which would invalidate our current CE mark.</p>	<p>Mitigation</p> <ul style="list-style-type: none"> • Specialist legal and regulatory expertise is in place to support the healthcare business. • The Group has experience of healthcare regulatory matters at Board level. • Healthcare operations in the UK and France have ISO13485 certification for their quality management systems, with Ireland and other subsidiary healthcare operations falling under the UK quality management system. • The notified body for approving medical device products has been changed from BSi UK to the BSi Netherlands ensuring the Group will be able to keep valid certificates without interruption.

5 UK defined benefit pension scheme		Year-on-year change 
<p>Investment returns and actuarial valuations of the defined benefit pension scheme liabilities are subject to economic and social factors that are outside the control of the Group.</p> <p>Related strategic priorities:</p> <p>1</p>	<p>Potential impact Volatility in investment returns and actuarial assumptions can significantly affect the defined benefit pension scheme deficit, impacting on future funding requirements.</p>	<p>Mitigation</p> <ul style="list-style-type: none"> • The investment strategy is managed by the pension scheme trustees who operate in line with a statement of investment principles and take appropriate independent professional advice when necessary. • A new recovery plan was agreed in June 2019 with the trustees in relation to the September 2018 actuarial deficit based on funding to self-sufficiency. This, combined with Company funding during the year, results in a decrease in the risk rating this year.

Principal risks and uncertainties continued

6 Exchange rate fluctuations		Year-on-year change 
<p>Fluctuating foreign exchange rates may affect the results of the Group.</p> <p>Related strategic priorities:</p> <p>NONE</p>	<p>Potential impact</p> <p>With c.94% of revenue generated outside the UK, there is an exposure to major currency fluctuations, mainly in respect of the US Dollar, Euro and Japanese Yen. Such fluctuations could adversely impact both the Group's income statement and balance sheet. The potential impacts are likely to increase during periods of market uncertainty such as Brexit and trade and tariff disputes, which has given rise to an increased risk rating this year.</p>	<p>Mitigation</p> <ul style="list-style-type: none"> The Group enters into forward contracts in order to hedge varying proportions of forecast US Dollar, Euro and Japanese Yen revenue. Forward contracts which are ineffective for accounting purposes provide the protection against rate changes that management intended when entering the contracts. Currency rates and hedging position are regularly monitored.
7 Cyber security threats		Year-on-year change 
<p>For the Group to operate effectively it requires continuous access to timely and reliable information at all times. We seek to ensure continuous availability, security and operation of information systems.</p> <p>Related strategic priorities:</p> <p>  </p>	<p>Potential impact</p> <p>Reduced service to customers due to lack of reliable management information putting the Group at a competitive disadvantage.</p> <p>Delay or impact on decision-making through lack of availability of sound data or disruption in/or denial of service.</p> <p>Loss of commercially sensitive and/or personal information leading to implications including reputational damage, claims or fines.</p> <p>Theft of commercial or sensitive information/data or fraud causing loss and disruption.</p>	<p>Mitigation</p> <ul style="list-style-type: none"> There is substantial resilience and back-up built into Group systems. Cyber risk and security is discussed with the Board every six months. External penetration testing is utilised on an appropriate basis. The Group operates central IT policies in all aspects of information security. Regular monitoring of all Group systems takes place with regular reporting and analysis. Operating systems are continuously updated and refreshed in line with current threats. The Group employs a number of physical, logical and control measures to protect its information and systems. E-learning courses are rolled out as required to all employees on all cyber risks. The Group continues to focus on compliance with the General Data Protection Regulation and other existing and emerging data legislation.
8 Workforce		Year-on-year change NEW
<p>Our people drive the success of our business. Inability to identify, attract, retain, develop and apply the critical capabilities and skills needed in appropriate numbers or to effectively organise, deploy and incentivise our people would threaten the delivery of our strategic goals.</p> <p>Related strategic priorities:</p> <p>    </p>	<p>Potential impact</p> <p>Not filling key roles, having a significantly changing workforce or not effectively deploying or organising the workforce could lead to delays in new products, quality issues, reduced sales levels, poor customer service and reduced profitability.</p>	<p>Mitigation</p> <ul style="list-style-type: none"> Attracting, rewarding and retaining people with the right skills globally in a planned and targeted way. Developing and enhancing organisational, leadership, technical and functional capability to deliver global programmes. An increased focus on individual development and succession planning, recognising the changing nature of careers and expectations at work. Incentivising and effectively deploying the critical capabilities, skills and people needed to deliver our strategic priorities, including benchmarking. Listening to our people and seeking to understand their views through active leadership and engagement including a new, regular survey. Extensive apprentice, graduate and industrial placement programmes. Commitment to equality, diversity and inclusion.

Increased  Decreased  No change 

Viability statement

The Board undertakes an annual review of the corporate strategy, which includes medium-term financial forecasts and an assessment of the major risks facing the business. In addition, current financial year forecasts are reviewed regularly by the Board, underpinned by regular briefings from its business segments and subsidiaries on progress. The corporate strategy provides the foundations for monitoring of performance, budgets, risks and strategic actions by the Board.

The Board confirms that its assessment during the year of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency and/or liquidity, and which are set out in the Group's Principal risks and uncertainties on pages 40 to 42, was robust and included consideration of emerging risks. In making the assessment, severe but plausible scenarios have been considered that estimate the potential impact of the principal risks on the financial forecasts over the assessment period. The scenario testing included assessing the impact on cash flows of falls in the revenue forecasts arising from adverse economic conditions, a slowdown in global demand for consumer electronic products and delays in new product introductions.

In accordance with provision C.2.2 of the 2016 UK Corporate Governance Code, while the Board has no reason to believe the Group will not be viable over a longer period, the period over which the Board considers

it possible to form a reasonable expectation as to the Group's longer-term viability, based on the risk and sensitivity analysis undertaken, is the three-year period to 30 June 2022, taking account of the Group's current position, financial forecasts, future prospects and the potential impact of the principal risks and uncertainties documented in the Strategic report. The Board believes a three-year viability assessment period is appropriate, as the time frame is covered by the Group's corporate strategy, takes account of the Group's short order book and, together with the planning process set out above, gives management and the Board sufficient, realistic visibility of the future in the context of the industry and world economic environment.

On the basis of the above, and other matters considered and reviewed by the Board during the year, the Board has a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period to 30 June 2022. In assessing the Group's viability over the next three years, it is recognised that all future assessments are subject to a level of uncertainty which increases for the latter part of the assessment period and that future outcomes cannot be guaranteed or predicted with any certainty.

+ Going concern – for more information see page 63

+ For further explanation of our approach to risk management and internal control, see pages 38 and 39

Corporate social responsibility



Allen Roberts
Group Finance Director



At Renishaw, we carry out our work with a strong sense of responsibility to colleagues, customers and the communities around us. Underpinning our approach is our Group Business Code, which sets out our principles of business conduct.

Progress during the year

Our businesses and CSR programmes all operate under the principles set out in our Group Business Code (the Code), which can be found at www.renishaw.com/businesscode.

The Code underpins everything we do across the global Group and is split into five areas: business ethics; employment; health and safety; environmental; and management systems, which are all managed by further policies. We communicate the Code to our suppliers and expect them to work to the spirit of the Code.

In June 2017, the Financial Stability Board released its final report on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We recognise climate change as a significant environmental risk that could cause disruption to our own operations as well as our supply chain. This year represents the beginning of our journey to report in compliance with these recommendations and to ensure our strategy is aligned with the four themes. We expect to undertake a materiality assessment within 2019/20 to enable us to focus our efforts on those areas we are best positioned to positively impact. Further information can be found in the additional information section of this report on page 143, along with our first TCFD disclosure statement.



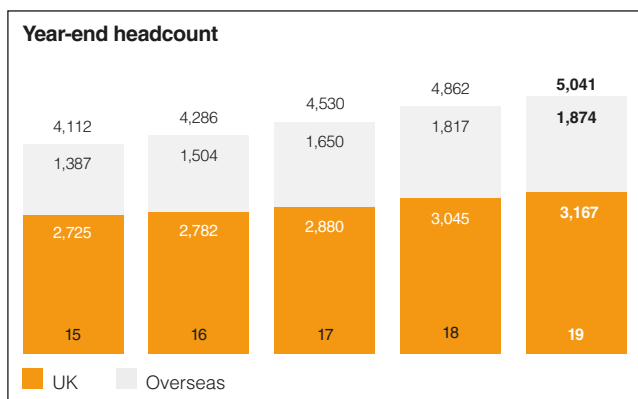
To reduce our use of single-use plastic in the UK, we have removed all plastic cups from our coffee vending machines. Each Renishaw employee has been given a reusable ceramic mug to use at work.

Non-Financial Reporting Statement: This CSR section of the Annual Report contains a wide range of non-financial information about our people, environmental, social and ethical matters; ranging from human rights to waste. Our approach to CSR and our Group Business Code are available on our website www.renishaw.com/CSR and expand on this information. As required under the new non-financial reporting requirements, the table below sets out where more information on non-financial matters can be found within this Annual Report and also on our website www.renishaw.com. The due diligence carried out for each policy is contained within each respective policy's documentation.

		Pages
Business model	Business strategy	18
	Business model	10 – 11
	KPIs	22 – 23
	Principal risks and uncertainties	40 – 42
Environmental matters	Principal risks and uncertainties: Supply chain	41
	Greenhouse gas emissions	144
	Chief Executive's review: CSR	9
	KPIs: Greenhouse gas emissions	23
	Energy consumption and waste	46 & 51
	TCFD statement	143
	Details of our approach to protecting the environment can be found on our website	
Our people	Principal risks and uncertainties: Workforce	42
	Chairman's statement: People, culture and values	4 – 5
	Chief Executive's review: Our people	9
	Our strategy in action: People and culture	19
	Our stakeholders: People	12 – 13
	KPIs: UK employee turnover	23
More details on our people and opportunities are available on our website		
Social matters	Generating value for our stakeholders: Global communities	11
	Our stakeholders: Communities	15
	Health and safety	11, 23 & 47
	Charity, community and education	48 – 50
	Further details and policies on social matters are available on our website	
Human rights	Human rights, equality and diversity	47
	Details of our policy, as well as our approach to protecting human rights, can be found on our website	
Anti-corruption and anti-bribery matters	Risk and risk management: Ethical business practices	39
	Our Code of Business Conduct and other related policies can be found on our website	

People and culture

Renishaw draws on the diverse cultures and experience of our international team of around 5,000 people to add value for customers around the world. In order to maximise the potential of this diverse pool of talent, we strengthened our international HR teams by recruiting a Head of Human Resources for each of our overseas regions – the Americas, EMEA and APAC. This will enable an aligned global people strategy with emphasis on talent, development and engagement. It will help to improve communication and build our capacity to manage diversity, fairness, gender parity and commitment to investment in our people across the globe.



In 2018, we made a significant investment in a world-class HR system. This will enable us to improve global people management through real-time analytics and, during 2020, we will integrate our worldwide e-learning platform. This investment will bring great benefit to the Group in areas such as people development, succession planning and information sharing.

In early 2019, in the UK, where the majority of our employees are based, we carried out a new engagement survey to help us understand what we are doing well, what we can change for the better and how we should prioritise areas for improvement going forward. We were delighted with our response rate of 74%.

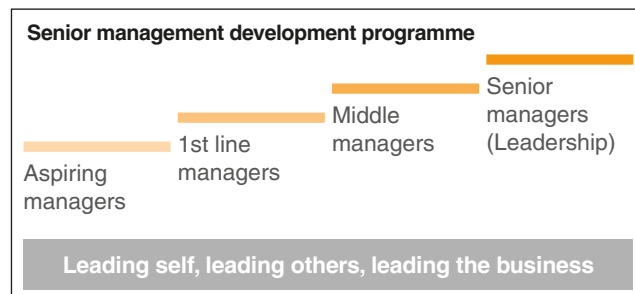
The areas where our people feel we are doing well are: our company ethics, innovation, engagement, empowerment and quality management. Feedback on our people, products and technologies was consistently positive.

Feedback from this survey highlighted areas where we need to focus including: people development, flexible working and communication. Work to seek to address these areas in collaboration with our people will continue into 2020.

Our people are core to our continuing success and growth. While we are ahead of the field in disruptive technologies, we are conscious that we must also be ahead in how we recruit, onboard, develop and retain our talented people.

We have a long history of excellent technical skills development. During 2019, we recruited several learning and development professionals to help raise our skills development in non-technical areas.

We are implementing robust leadership and management development frameworks. A senior management leadership development programme, externally facilitated, has started in the UK and some of our overseas subsidiaries. It aims to develop a consistent set of management skills and cultural leadership abilities.



We continue to build and grow our own talent pipelines through our early careers development programmes. This year we introduced a new commercial apprenticeship scheme. Combined with our engineering and software apprenticeship programmes, this means we will be welcoming a record number of apprentices in summer 2019. We have also maintained recruitment at a consistent level on our graduate and placement schemes. We continue to review and evolve these programmes to fully support our employees of the future, and enhance their technical and soft skills, knowledge and behaviours through training and mentorship. You can find out more about our apprenticeship schemes at www.renishaw.com/careers.

To help feed the early career programmes, we continue to invest heavily in our UK-based educational outreach programme, see more on pages 49 and 50.

For 2019/20, we have introduced a new global appraisal programme to create a common framework across the business. This will help managers and their teams to have regular and open dialogue about performance and skills development. It will be recorded through our new HR platform and allow us to globally track and measure employees' performance with a view to encouraging and supporting recognition and development more effectively.

Corporate social responsibility continued

2019 CSR targets and progress



Energy consumption

Target

- We aim to reduce our reliance on fossil fuels by consistently reducing our energy consumption.

For more information see pages 50 and 51

2,570,658 kWh of electricity from onsite generation this year (2018: 1,566,597).

Progress

- 2.3% year-on-year decrease in total energy consumption;
- 80% (2018: 51%) of electricity consumed is from certified renewable sources; and
- 6.4% (2018: 3.8%) of total global electricity consumption is from on-site generation.

Future plans

- we have commissioned a solar array at our new site in Norton Shores, USA with a potential annual generating capacity of over 184,000 kWh; and
- we are continuing to roll out the installation of LED lighting across our sites.



GHG emissions

Target

- 3% reduction in GHG emissions (tCO₂e) per million pounds turnover compared to 2018.

For more information see pages 50, 51 and 144.

9% decrease in market-based GHG emissions (tCO₂e) per £m turnover compared with 2018.

Progress

- 44% decrease in market-based GHG emissions (tCO₂e) per £m turnover since 2015 (base year); and
- our total GHG emissions have decreased by 35% since 2015 (base year).

Future plans

- we are actively looking at opportunities for wind generation and further solar arrays across all of our sites; and
- our site in Pune, India is working towards having net zero operations; and
- we are defining a strategy to ensure we will be able to fulfil our duty to be net zero by 2050.



People

Target

- 5% of our employees are apprentices, graduates or sponsored students on structured programmes.

For more information see pages 9, 11 and 23.

Over 5% of our employees are on structured programmes.

Progress

- 397 people across the Group are in further education, graduate and industrial programmes; and
- 178 apprentices, graduates and placements starting this summer.

Future plans

- we are implementing new leadership and management development frameworks;
- a mentoring programme is being developed for our early careers programmes; and
- new performance review process being rolled out across the Group.



Waste management

Target

- 5% reduction of waste to landfill from global operations.

For more information see page 51.

32% or 52 tonnes

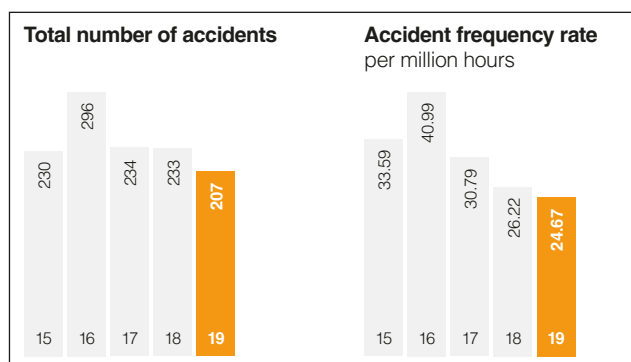
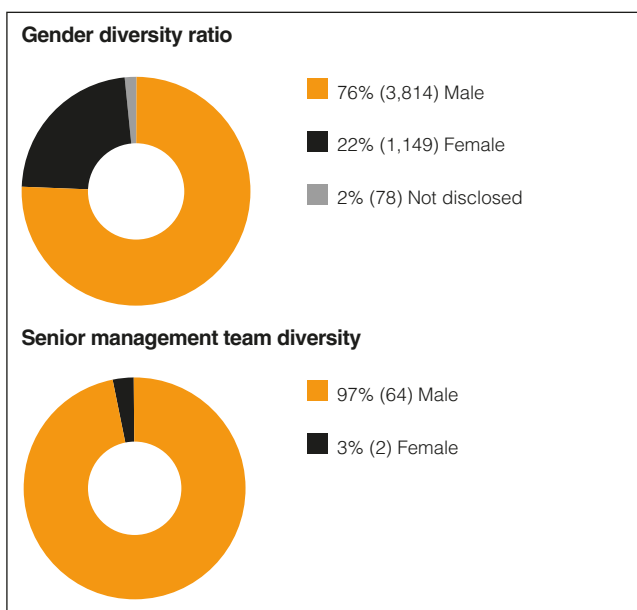
decrease of waste to landfill from our global operations.

Progress

- just over 3,637 tonnes of waste from our global operations were diverted from landfill; and
- in the UK, waste training has been carried out by our waste contractors for our manufacturing waste champions team, to increase their knowledge and ability to find new ways to reduce, reuse and recycle our operational waste.

Future plans

- we are starting a project to work with internal and external suppliers to reduce waste at source, this should decrease our total waste; and
- to assist our customers with their ability to recycle, our packaging development group are looking at ways to ensure our packaging is as sustainable as possible.



Human rights, equality and diversity

As an international company, Renishaw enjoys the advantages of a diverse workforce, including over 20 different nationalities represented within our senior management group. We benefit from the variety of expertise they bring to the business.

On 30 June 2019, we employed 5,041 people across the Group, an increase of 4% since last year. Of these, 76% are men and 22% are women. In 2018/19, there were nine Directors on the Board, consisting of seven men and two women. The senior management group is made up of 66 people, of whom 64 (97%) are men and two (3%) are women. Renishaw defines its senior managers to be the Executive Board, the heads of each strategic product group, each product division and each of the three sales regions, the managing directors of Renishaw's subsidiary undertakings, and any other relevant managers who report to the Executive Board or Chief Executive.

We believe that equality and fairness are critical to the success of our organisation. We have policies in place, such as our Equality, Diversity and Inclusion Policy and our Employee Handbook, to ensure we foster a workplace that is open and fair to all. We have published our annual Modern Slavery Act statement and our Gender Pay Gap reporting at www.renishaw.com.

Unconscious bias training will be rolled out in 2019/20. It aims to ensure we are supporting our diverse culture and helping our people be open and fair to everyone. This will be reinforced throughout our recruitment and management training programmes.



An operator loading a carousel within a Renishaw machining facility.

Health and safety (H&S)

Maintaining a safe working environment for our people, visitors and customers is the primary aim of our H&S management system. Our Group H&S policy (HS201) frames our approach and drives our culture of safety throughout the Company. It details our H&S management structure and processes, in line with industry best practice. The outcome of these policies is a clear and consistent approach to H&S that is used throughout the Group.

The total number of accidents for the period was 207 (2018: 233) against a year-end headcount of 5,041 (2018: 4,862). This equates to an accident frequency rate of 24.67 per million hours worked (2018: 26.22).

There were eight reportable accidents under the UK RIDDOR reporting requirements: four musculoskeletal injuries; two deep lacerations to hands; and two related to occupational disease (hand arm vibration and carpal tunnel syndrome). This equates to a lost time injury rate of 0.95 per million hours worked compared with a UK manufacturing average for RIDDOR reportable accidents of 2.10 per million hours worked.

We continually assess the risks across the Group through our risk assessment processes and regular auditing, which have identified additive manufacturing and its associated processes as our main area of risk. We tightly control and manage AM risks via training, policies and procedures, with the wider AM industry generally accepting Renishaw as one of the safest producers of AM machinery in operation.

In 2018/19, we launched an online H&S management system within the UK. This has been well received and provides more accurate data allowing for better statistical analysis of trends.

During 2019, we introduced an employee assistance programme. This allows all Renishaw colleagues worldwide and their immediate family to access telephone and online support on a range of personal or work-related issues, including illness, debt, family relationships and mental health issues, all in complete confidence.

Our annual health screening programme was used by a record number of people this year in the UK, with planned roll out globally during 2020.

Stress awareness training for all UK supervisory employees is underway and will be rolled out to our overseas subsidiaries in 2020.

Corporate social responsibility continued

In 2019/20 the H&S team will concentrate on three key areas:

- **maintaining best practice:** implement a phased roll-out of a global H&S policy, roll-out of the online H&S management system globally and improve H&S communications across the Group;
- **continuous improvement:** developing a more robust internal auditing procedure, developing ongoing wellbeing initiatives, reviewing and updating our H&S policies and procedures; and
- **supporting divisional/subsidiary activities:** further improvements to our safe systems of work for R&D activities, provide specialist advice as required, continue to support H&S activities, policies and procedures.

Charity

Our values of innovation and integrity played a large part in the founding of our Renishaw Charities Committee (RCC) in the UK and equivalent committees in India and Germany. These committees focus on distributing funds that Renishaw makes available to support local charitable and voluntary organisations. Several of our subsidiaries support charities in similar ways. Donations are focused on activities that help enrich the lives of children and adults, from toddler groups and sports clubs, through to organisations that support people with disabilities and the bereaved. A separate fund is administered by the RCC, which donates monies to aid the victims of global disasters.

In 2018/19, our charity committees and subsidiaries made donations totalling £260,680 to 290 organisations. The RCC also fully matched funds raised by employees for UK national fundraising events such as Children in Need and Red Nose Day and supported individual employee fundraising activities.

£12,000

A charitable donation of £12,000 was made towards the Disasters Emergency Committee appeal following the cyclone in south east Africa.

Significant donations (of £2,000 or more) were made to support organisations around the world. These included:

- **in the UK:** Gloucestershire Arthritis Trust, which supports local patients and hospitals with treatment for arthritis; Severn Freewheelers, a volunteer service which distributes essential medical items and blood between hospitals; Vale of Berkeley Railway, who are restoring a part of our cultural heritage;
- **in India:** Sassoon General Hospital, a local general hospital in Pune; Jeevan Jyot Mandal, a non-governmental organisation which supports children with special educational needs through vocational training; Chaitanya Mahila Mandal, a women's shelter which provides family counselling and legal aid to exploited women; and
- **in Turkey:** Maktek Golden Compass CNC Lathe Design Competition, a competition for students in all the technical high schools.

We are highly supportive of communities local to Renishaw operations. In the USA, local employees participated in the Miles for Manufacturing run, which raises funds for schools that offer education for manufacturing. They also banded together at Christmas and donated presents for 75 underprivileged children in the local area.

Our team in Mexico raised money to purchase supplies for a local orphanage based in the town of one of our local employees. They also collected donations of clothes for the residents.

For a full list of organisations who received significant donations of over £2,000 see page 143.

Community

We recognise the positive contribution that Renishaw can make to our local communities, through varied interactions with residents, businesses, schools, governmental bodies and not-for-profit organisations. This is especially true in the West of England and South Wales, where we are a significant employer.

Charity Committee activities

Our people in India raised money and collected donations to create emergency kits, containing blankets, clothes, toiletries, torches, portable gas cooking stoves etc. to help support victims of the floods in Kerala State.

During this reporting period we also supported Janakalyan Rakta Pedhi, a blood bank, that supports hospitals in the Pune region with blood and blood components. We purchased and installed a 15 kW solar array to reduce their long-term reliance on fossil fuel derived energy and reduce their running costs.



The 2018 flood in Kerala, India.

To ensure a strong pipeline of future talent for Renishaw and the wider engineering community, we communicate a positive story about the attractive nature of a career in science, engineering and manufacturing, and how these industries benefit society.

Across the Group, we continue to host tours and give talks to a wide range of organisations including business clubs, primary schools, secondary schools, colleges and universities. We also host events organised by other organisations, which in the last year included the Confederation of British Industry's Innovation Conference and a regional heat of Tomorrow's Engineers EEP Robotics Challenge for students aged 11 to 14.

We actively support the business community regionally, nationally and internationally, by sponsoring award schemes and through active membership of trade and lobbying associations. Some of these include the Additive Manufacturing Users Group (USA), the European Society for Precision Engineering & Nanotechnology, UCIMU-SISTEMI PER PRODURRE (Italy), Verein Deutscher Werkzeugmaschinenfabriken e.V. (Germany), SAE International, the Confederation of British Industry (CBI), the Dental Laboratories Association (UK), the Association of British Healthcare Industries, and the UK's Manufacturing Technologies Association (MTA), where two of our senior managers are board members.

We are also a member of various industry research centres across the globe, including Global 3D Printing Hub (Spain), IAM 3D HUB (Spain), The Manufacturing Technology Centre (UK), the Advanced Manufacturing Research Centre (UK), PräziGen (Germany), BazMod (Germany) and Canada Makes (Canada).

To improve awareness of Renishaw as a significant and engaged employer, we support a wide range of arts and music festivals, sports clubs and organisations in the West of England and South Wales. During the year, this included an active role in the Gromit Unleashed 2 sculpture trail (see pages 22 and 23) raising funds for Bristol Children's Hospital, corporate membership of the SS Great Britain Trust, Bristol Music Trust and Bristol Museums, and the main sponsor for both Lechlade and Nibley music festivals.



Renishaw is a sponsor of the Gloucester-Hartpury rugby team which plays in the top-tier of women's English rugby union.

In South Wales and the West of England, rugby has an especially high profile. We see similar cultural challenges in attracting women into engineering and rugby, so we are working with rugby clubs to change perceptions, which includes girls-only events combining rugby and engineering activities, and back-of-shirt sponsorship of the Cardiff Blues and Gloucester-Hartpury women's rugby teams. We continue to sponsor Tomos Williams (Cardiff Blues and Wales), Ben Morgan (Gloucester and England) and Samson Lee (Scarlets and Wales).

We are a technical and financial sponsor of numerous university student racing teams, where we utilise our AM expertise to supply key components. This includes teams in Germany, Italy, the UK and Australia. In Germany, we also became a sponsor and technical partner for the Elisabeth Brandau (EBE Racing) mountain bike team, supplying the team with metal AM parts to reduce the weight of the team's bikes. Elisabeth is a multiple German mountain bike champion and a member of the German national team.

Education

Our educational outreach programme is designed to excite, interest and engage young people of all genders, ethnicities and backgrounds to study STEM subjects and to consider engineering as a career.

Our aim is to provide real insight into the vibrant world of engineering, and careers based on STEM subjects. To become a key educational resource for the hands-on learning of design, fabrication, manufacturing and engineering skills. We also help support schools with the national curriculum at a time of resource shortages.

In 2018, we engaged with around 10,000 students through our various outreach programmes in South Wales and Gloucestershire/Bristol, which are managed by four full-time outreach staff and supported by our STEM ambassadors. Our nearly 200 STEM ambassadors have a vital role in helping to inspire the next generation and in the UK many of them are apprentices and graduates. All STEM ambassadors undertake specialist STEM training and through their outreach work are also able to develop their own skills.



Renishaw is a technical partner and sponsor for the Germany-based Elisabeth Brandau (EBE Racing) mountain bike team.

Corporate social responsibility continued

In 2018/19, we have partnered with many local organisations to promote careers in STEM. These included: the Cheltenham Science Festival, where we ran hands-on engineering activities for secondary and primary aged children; EngineeringUK, where we hosted a Robotics Challenge for schools at our New Mills headquarters; STEMworks, who delivered 100 workshops to students aged nine to 11; and Cardiff Blues rugby club, with our joint 'Raising Inspirations' programme, which, over eight weeks, gives 100 students in South Wales an opportunity to develop new skills and experience different education and career opportunities.

The Fabrication Development Centre, our dedicated education centre located at our Miskin site, continues to develop relationships with local schools with ever-increasing interest. To expand our outreach programme, we will be opening an additional education centre at our New Mills headquarters in 2019/20, allowing us to support more schools in the Gloucestershire area.

We are increasing our career support for young people in our communities, including expanding and enhancing our work experience programme. We hosted our largest apprenticeship and graduate information evening in November 2018, and continue to promote our different career schemes at school and university careers events.

Outside the UK, we focus on supporting educational initiatives that will improve the available talent for our own skills requirements and that of our customers. We attended the 2018 IMTS Smartforce Student Summit in Chicago and hosted learning labs to help inspire students to pursue a career in advanced and manufacturing technologies.

In Germany, we support an initiative founded by VDW (the German machine tool builders association) which promotes careers in metalworking to young people. Our apprentices support educational booths at major metalworking exhibitions, helping to promote industrial metrology as a career. In Spain, we are a judge and sponsor for SpainSkills, a competition for 400 students that promotes vocational training.



Primary school children enjoying a 3D printing lesson in the dedicated STEM education centre at Miskin.

Environment

We continually try to improve our business and manufacturing processes through energy saving and increased efficiencies. As part of our continued drive for sustainable manufacturing we use our own products and take advantage of the significant efficiencies in manufacturing they provide, thus increasing throughput, reducing energy per manufactured unit and reducing our waste.

Our Group Business Code frames our approach to environmental management and drives our culture of efficiency throughout the Company. It is supported by our environmental and waste policies, with other underlying management controls as necessary. The outcome of these policies is a clear and consistent approach to environmental management that is used across all our locations.

We aim to improve how we approach our environmental responsibilities. As part of these efforts we expect to carry out a materiality assessment to find out which environmental and social issues are important to our stakeholders.

This year, we have increased our internal communications around environmental issues with our people, to ensure they know how sustainability affects their job role.

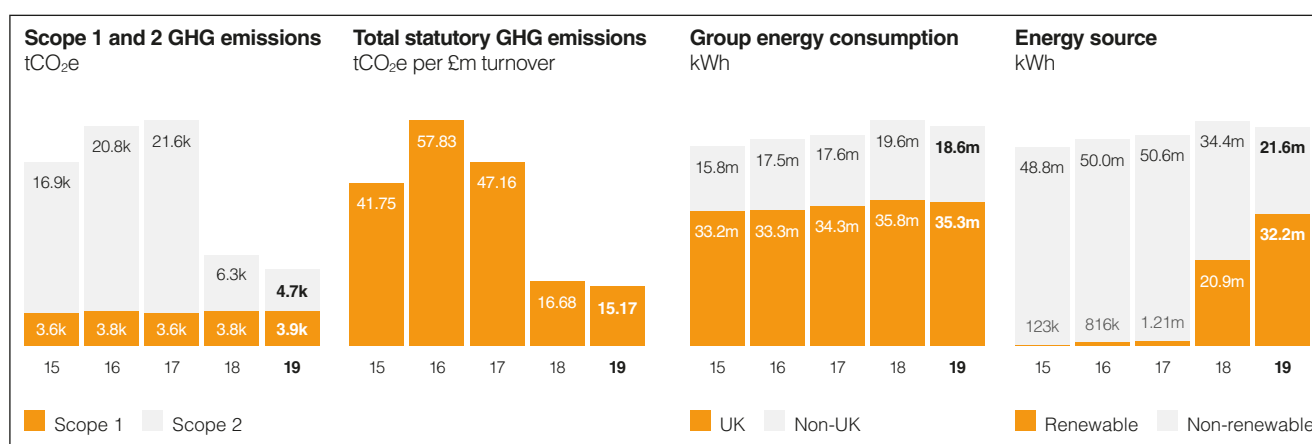
During 2018/19, we invested in an expanded software package to enable us to more closely identify and monitor our greenhouse gas (GHG) emissions worldwide, and report on a wider array of sustainability initiatives.

We renewed our Carbon Trust Standard certification in the UK and our manufacturing locations in Ireland and India. This certification covers 71% and 48% of our global energy consumption and GHG emissions respectively. It is third-party confirmation of our work to measure, manage and reduce our GHG emissions.

In 2018/19, our normalised statutory emissions have decreased by 37% (location-based calculations) and 15% (market-based calculations), which is based on an absolute reduction in our total GHG emissions of 15% (using market-based calculations). Our statutory emissions are defined by the Greenhouse Gas Protocol as Scopes 1 and 2. Scope 1 is the direct emissions coming from our sites and vehicles, and Scope 2 is indirect emissions coming from the electricity and heat that we purchase from energy providers.

A significant proportion of our GHG emissions, however, falls within the definition of Scope 3 emissions. These are emitted by other organisations on our behalf, for example, emissions from our freight forwarders when transporting our products. Through the continual improvement of our management system and processes, we can report on a wider array of Scope 3 activities, with a view to expanding this in the coming years. The details of our GHG emissions for this year are shown in the charts on page 51 with the relevant data shown on page 144.

To calculate our GHG emissions we have used the GHG Protocol Corporate Accounting and Reporting Standard (revised addition), data gathered for our Carbon Reduction Commitment submission, and the UK Government's GHG reporting guidance. The emission factors are taken from the DEFRA and IPCC libraries and energy suppliers. Our GHG emissions are based on actual data taken



from bills, invoices, meter readings and expense claims wherever possible.

For our Scope 1 and 2 emissions, less than 2% of the data is based on estimates from averaged data sets.

We continue to strive to reduce our GHG emissions and energy consumption worldwide, and are investing in renewable energy generation. In 2018/19, we have increased the area of solar panels at New Mills and Stonehouse, and installed a new solar array at our Woodchester site. We are installing a solar array at our new site in Norton Shores, Michigan and investigating further solar potential at other sites worldwide, as well as considering hydroelectric and wind energy generation opportunities.

We continue to install LED lights in all of our UK sites to improve lighting efficiency, and are embracing the process of Phase 2 of the Energy Savings Opportunities Scheme to try and identify further ways to lower our energy use wherever possible.

In India, we are moving towards carbon neutrality for our Pune manufacturing site. Our solar array provided 48% of energy requirements for this site during 2018/19.

We are pleased to report that our 2017/18 GHG emissions figures have been independently verified by thinkstep and they have found no material evidence to suggest it is not accurate. They also verified the methodology we used as being compliant with the GHG Protocol Corporate Accounting and Reporting Standard (revised edition).

Waste management

Our waste management strategy successfully diverted a further 3,637 tonnes of waste from landfill. Just under 87% of all waste generated in 2018/19 originated from our UK sites, which continue to maintain their certification to the Carbon Trust Waste Standard. These sites are recognised by the Carbon Trust for their efforts in moving waste away from landfill as a disposal choice, towards recovery and recycling.

Global waste totals (tonnes)

	2019	2018	2017
Reused	163.20	67.62	0.00
Recycled	3,004.34	2,370.05	2,151.00
Composted	109.01	71.76	27.50
Incinerated	360.60	240.70	310.60
Total non-landfilled	3,637.16	2,750.12	2,489.10
Landfilled	110.75	162.93	129.52
Percentage of waste sent to landfill	2.96%	5.59%	5.20%
Total waste	3,747.91	2,913.06	2,618.62

This year our target was a 5% reduction of waste to landfill from our global operations. We were able to achieve a 32% reduction of waste to landfill during this year. We have determined that a proportion of our waste that we previously thought was going to recycling is being reused. We have diverted more than 97% (2018: 94%) of our waste from landfill this year.

We are committed to reducing the use of single-use plastic. In the UK, we no longer have polystyrene cups in our coffee vending machines, removing 1.5m plastic cups a year from our sites and 7 tonnes from landfill.

We continue to look at other ways we can reduce the use of plastic in our offices, supply chain, and product packaging.

At New Mills, we are researching opportunities for closed-loop recycling of our food and garden waste. This will enable us to use food and gardening waste to create natural gas which we will in turn use to power some of our cooking facilities in our onsite restaurant.

Allen Roberts
Group Finance Director

This Strategic report was approved by the Board on 1 August 2019 and signed on its behalf by

Sir David McMurtry
Executive Chairman

Directors' corporate governance report



Sir David Grant
Senior Independent Director



The Board is ultimately responsible to shareholders for all the Group's activities, its strategy and financial performance, the efficient use of the Group's resources and social, environmental and ethical matters.

Introduction

The Board continues to be committed to the highest standards of corporate governance in order to protect our business and its long-term success.

The Board welcomes and supports the publication of the 2018 UK Corporate Governance Code. We are currently preparing to report against the revised principles and provisions next year, while complying this year with the prevailing code.

We recognise the importance of our stakeholders to the long-term sustainability of our business. Details of how we currently engage with our stakeholders are set out on pages 12 to 15. The Board also remains mindful of its obligations under section 172 of the Companies Act, including in relation to stakeholders and their interests, in its decision making.

We have been discussing the most effective methods of achieving greater Board engagement with our workforce and building on our existing initiatives, in order to better understand their views. I am pleased that Catherine Glickman, one of our Non-executive Directors, will be providing the Board with greater visibility of workforce engagement activities across the Company and of the views of our employees, over the coming year.

As a Group, we are committed to gender equality and diversity initiatives at Board and all levels, and this will remain an important matter for the Board to monitor and continue to improve. We published our latest Gender Pay Gap report on the Group's website, www.renishaw.com/genderpaygap. Employment policies are designed to provide equal opportunities irrespective of race, religion, gender, age, socio-economic background, disability or sexual orientation – see page 84 for more information.

The Board takes seriously its responsibilities for making sure all employees are aware of their obligations to act with openness, honesty and transparency. As we continue to grow, it is vital that we maintain a strong culture which aligns with our purpose, strategy and values. The Company's strong culture from an ethics perspective, is already embedded in our Group Business Code and Anti-Bribery Policy which can be found at: www.renishaw.com/businesscode.

As with many other companies across the UK, the continuing political process around Brexit has meant the full implications on all aspects of our business remain uncertain. However, we continue to closely monitor developments and take appropriate steps and advice.

The Board continues to review the Group's risk management processes, to ensure they are robust in light of Renishaw's strategy, market position and the regulatory environment. With the assistance of the Audit Committee, the Board approves the Group's governance framework and reviews its risk management and internal control processes, with a view to maintaining high standards of corporate governance throughout the Group. Our executive risk committee conducted a thorough review of our principal and emerging risks, together with mitigation plans. The Board also considered the viability statement on page 43 in the context of risk.

Another important activity this year was the external evaluation of the Board, Committees and Directors. I am pleased that this external evaluation confirmed our Board continues to be transparent and effective. A summary of this year's process and principal recommendations is set out on pages 62 to 63.

Cyber security continued to be a focus for the Board this year, with regular updates being provided at Board meetings and new initiatives and investment being undertaken in order to mitigate cyber threats.

The Annual remuneration report for 2019, starting on page 78, sets out the details of Directors' compensation throughout this financial year, which will be subject to the normal advisory vote at the AGM. Our 2017 remuneration policy remains unchanged and we will put a new policy to shareholders at our 2020 AGM.

Scope of disclosures

This corporate governance report has been prepared in accordance with the UK Corporate Governance Code 2016 (Governance Code). The Governance Code can be viewed at: www.frc.org.uk. This report, which incorporates the reports of the Audit Committee and Nomination Committee, together with the Directors' remuneration report, describes how we have applied the main principles of the Governance Code.

We report on the operation of our business in the following ways:

- a review of the Group's business and likely future developments is given in the Chairman's statement, pages 4 and 5, the Chief Executive's review, pages 6 to 9 and the other sections of the Strategic report on pages 10 to 51. Segmental information by geographical market is given in note 2 to the Financial statements;
- the Financial Conduct Authority's Disclosure Guidance and Transparency Rules (DTR), require the Annual Report to include a management report which can be found in the Strategic report;
- the Directors' corporate governance report and Other statutory and regulatory disclosures set out on pages 52 to 82 and 83 to 85 together form the Directors' report;
- for the purposes of the DTR, which require a corporate governance statement to be included in the Directors' report, the Company's corporate governance practices are set out in the Directors' corporate governance report, which forms part of the Directors' report; and
- for the purposes of the Financial Conduct Authority's Listing Rules (LR), certain information required to be provided to the shareholders is also contained in the Directors' corporate governance report, the Directors' remuneration report and the Other statutory and regulatory disclosures, including information relating to arrangements with controlling shareholders.

Disclosure of information under LR 9.8.4R

The information that fulfils the reporting requirements under this rule can be found on the pages identified below.

Section	Topic	Location
(1)	Interest capitalised	Not applicable
(2)	Publication of unaudited financial information	Not applicable
(4)	Details of long-term incentive schemes	Not applicable
(5)	Waiver of emoluments by a director	Not applicable
(6)	Waiver of future emoluments by a director	Not applicable
(7)	Non pre-emptive issues of equity for cash	Not applicable
(8)	As item (7), in relation to major subsidiary undertakings	Not applicable
(9)	Parent participation in a placing by a listed subsidiary	Not applicable
(10)	Contracts of significance	Not applicable
(11)	Provision of services by a controlling shareholder	Directors' remuneration report pages 70 to 82
(12)	Shareholder waivers of dividends	Other statutory and regulatory disclosures page 83
(13)	Shareholder waivers of future dividends	Other statutory and regulatory disclosures page 83
(14)	Agreements with controlling shareholders	Other statutory and regulatory disclosures page 85

Cautionary note and safe harbour: this Annual Report has been prepared for the purpose of assisting the Company's shareholders to assess the strategies adopted by the Company and the potential for those strategies to succeed and no one, including the Company's shareholders, may rely on it for any other purpose.

This Annual Report has been prepared on the basis of the knowledge and information available to the Directors at the time. Given the nature of some forward-looking information, which has been given in good faith, the Company's shareholders should treat this information with due caution.

Board of Directors



Sir David McMurtry

CBE, RDI, FREng, FRS, CEng, FIMechE

Executive Chairman



Appointed September 1975

Contribution, skills and experience

As co-founder of Renishaw and now through his responsibilities for Group innovation and product strategy, Sir David continues to be a key contributor to the long-term sustainable success of the Company. His strategic vision, technical and industry knowledge, gained from building the Company from inception with John Deer, mean he is able to provide a significant contribution to all aspects of the business alongside his leadership of the Board.

Background

Sir David was employed by Rolls-Royce plc, Bristol, for 17 years, latterly holding the positions of deputy chief designer and assistant chief of engine design for all Rolls-Royce engines manufactured at Filton, Bristol. After inventing the original probe in the early 1970s, Sir David co-founded Renishaw in 1973 with John Deer.

His CBE was awarded for services to Science and Technology and he was appointed a Royal Designer for Industry (RDI) in 1989. He is a visiting professor at the University of Huddersfield, where he was awarded an honorary doctorate in 2017, and has been awarded an honorary Doctorate of Engineering at the University of Birmingham and honorary degrees of Doctor of Engineering at Heriot-Watt University, the University of Bristol and the University of Bath. He has also been awarded an honorary fellowship at Cardiff University. Sir David is a Chartered Engineer, a Fellow of the Institution of Mechanical Engineers, a Fellow of the American Society of Manufacturing Engineers, a Fellow of the Royal Academy of Engineering, and in 2011 became a Fellow of The Royal Society. The Institute of Physics jointly awarded its 2012 Swan Medal to Sir David and John Deer for their roles in founding Renishaw and leading it to become one of the world's principal manufacturers of metrology equipment. In 2019 he was honoured by the Manufacturing Technologies Association for his outstanding contribution to British engineering. In addition to his role as Executive Chairman, Sir David also has responsibility for Group technology.

External appointments

None



John Deer

Deputy Chairman

Appointed July 1974

Contribution, skills and experience

Having held responsibility for manufacturing and quality for many years, John's extensive experience is important in ensuring Renishaw continues to deliver efficient, high-quality manufacturing – a key component of the Company's strategy. In addition, having founded the Company with Sir David McMurtry, John's commercial and international experience also brings deep insight and strategic vision to the Board. John has been and continues to be instrumental in the strategic decisions for growing the business into new markets and territories, whether organically or by acquisition.

Background

John trained as a mechanical engineer and worked for Rolls-Royce plc, Bristol, from 1960 to 1974. He was Managing Director of Renishaw from 1974 to 1989, primarily involved in the commercial direction of the Group, with particular emphasis on marketing and the establishment of the Group's wholly-owned subsidiaries in the USA, Ireland, Japan, Germany, France and Italy. John and Sir David McMurtry were members of the four-man team of Renishaw engineers honoured with the MacRobert Award in 1987. In 2012, John was awarded the Swan Medal by the Institute of Physics jointly with Sir David McMurtry for their roles in founding Renishaw and leading it to become one of the world's principal manufacturers of metrology equipment. In September 2014 John was awarded an honorary fellowship at the University of South Wales for his contribution to UK manufacturing and in October that year he and Sir David were jointly honoured with a Lifetime Achievement Award at Gloucestershire Business Awards. He was also awarded an honorary doctorate of engineering by the University of Bristol in 2018 and in 2019 he was made an Honorary Fellow of the Faculty of General Dental Practice. In 2019 he was also honoured by the Manufacturing Technologies Association for his outstanding contribution to British engineering. John is responsible for Group manufacturing and Group quality.

External appointments

None



Will Lee

MA, MBA, FinstP

Chief Executive

Appointed August 2016 as Group Sales and Marketing Director, February 2018 as Chief Executive

Contribution, skills and experience

Will has an in-depth understanding of the Group's business, products and markets, having held various senior management positions, which have included engineering, operations, and sales and marketing, prior to his appointment as Chief Executive. Will was selected as Chief Executive having demonstrated to the Board the leadership capabilities, breadth of knowledge and relationships to continue to develop the Renishaw business and has a record of performance execution.

Background

Will joined the Renishaw graduate scheme in 1996 and became Director and General Manager for the Laser and Calibration Products Division in 2007. He holds a degree in physics from the University of Oxford and an MBA from the University of Bath. In 2014 he became Director and General Manager of the Machine Tool Products Division. In December 2015, he was appointed to the new role of Director of Group Sales and Marketing and became a member of the Executive Board.

In February 2018 Will was appointed Chief Executive, taking over from Sir David McMurtry. He is responsible for the product divisions, overseas sales subsidiaries and human resources.

External appointments

None



Allen Roberts

FCA

Group Finance Director

Appointed October 1980

Contribution, skills and experience

Allen has a deep understanding of the Group's business, products, relationships and the sectors in which it operates. Having led the finance function for many years, the Board values in particular his management of the financial risks, reporting and planning for a Group that has seen significant growth, as well as his contribution to strategy and business development. Allen has a strong record of operational excellence.

Background

Allen qualified as a Chartered Accountant in 1972 and is a Fellow of the Institute of Chartered Accountants in England and Wales. Before joining Renishaw in 1979, he was employed for 11 years by Peat, Marwick, Mitchell & Co. Allen heads Group Finance, Business Systems and Wotton Travel Ltd. He is also responsible for the metrology regulatory and quality assurance functions and corporate social responsibility.

External appointments

None



Geoff McFarland

BEng, DEng, MInstP, FREng

Group Engineering Director

Appointed July 2002

Resigned from Board 30 June 2019

Background

Geoff holds a degree in computer-aided mechanical engineering. After working in the medical device and electronic manufacturing sectors, Geoff joined Renishaw's research facility in Edinburgh in 1994, before moving to the headquarters in 1999 to become Director and General Manager of the CMM Products Division. He heads the Group engineering function and is also responsible for Group IP, patents and R&D. He is a visiting professor at the University of Bath, an honorary professor at Heriot-Watt University and a member of the Institute of Physics. In 2017, Geoff was elected to the Royal Academy of Engineering.

External appointments

Non-executive director of Cambridge Mechatronics Ltd

Committees

A Audit Committee

R Remuneration Committee

N Nomination Committee

***** Chair of Committee

Board of Directors continued



Sir David Grant
CBE, PhD, FREng, FLSW, CEng, FIET
Senior Independent Director

A N R

Appointed April 2012

Contribution, skills and experience

Sir David has extensive engineering experience, having held various leadership positions at international engineering companies and government-related science and technology bodies, where he has been recognised for his contributions to industry. Sir David's career experience, initially as a student apprentice and latterly as a university vice-chancellor, also brings a unique insight into how the Company should continue to recruit talent, increase diversity and develop its current people, who are central to the Company's strategy and long-term sustainable success. The Board also values Sir David's role as Senior Independent Director.

Background

Sir David was vice-chancellor of Cardiff University from October 2001 until August 2012, with responsibility for 30,000 students, 6,000 members of staff, and an annual income of £430m. Prior to that he held leadership positions at a number of international engineering companies including Dowty Group and GEC plc where he was group technical director. Sir David has served as a vice-president of the Institution of Engineering and Technology; and from 2007 to 2012 he was a vice-president of the Royal Academy of Engineering. He has been a council member of EPSRC and a governing board member of Innovate UK. His PhD in Engineering Science was awarded by the University of Durham in 1974. In 1997, he was made a CBE for his contribution to the UK Foresight Programme. Sir David was elected a Fellow of the Royal Academy of Engineering in 1997 and elected an Honorary Fellow of Wolfson College, Cambridge, in 2000. He served on the Board of the Defence Science and Technology Laboratory from 2012 until 2018. He was also chair of STEMNET until 2018. Sir David received a knighthood in the Queen's Birthday Honours 2016 for his contributions to engineering, technology and education.

External appointments

Non-executive director and nomination and remuneration chair of IQE plc
Chair of the National Physical Laboratory



Carol Chesney
FCA
Independent Non-executive Director

A* N R

Appointed October 2012

Contribution, skills and experience

Carol's career, both in finance and as a company secretary in a listed company environment, has provided her with an in-depth understanding of corporate governance, internal controls, compliance, M&A and pensions. This knowledge and experience is important to the effectiveness of the Board. Her extensive financial expertise and insight make her ideally placed to serve as Chair of the Audit Committee. Serving as audit committee chair at a number of other listed companies also brings a wider industry perspective.

Background

Carol Chesney is a Chartered Accountant who worked at Arthur Andersen in audit services for seven years. Carol held a senior group finance role at English China Clays plc before joining Halma plc, where she served as company secretary for 20 years, having also been group financial controller. Carol's role at Halma included corporate governance, legal compliance, equity incentives, pensions, tax, internal audit management, property, health and safety compliance, environmental reporting and anti-bribery and corruption compliance.

External appointments

Non-executive director and audit committee chair of Hunting plc
Non-executive director and audit committee chair of Biffa plc
Non-executive director and audit committee chair of IQE plc



Catherine Glickman
BA
Independent Non-executive Director

A N R*

Appointed August 2018

Contribution, skills and experience

Catherine brings extensive HR, remuneration and pensions experience to the Board. Working closely with the remuneration committees at Genus plc and Tesco PLC, Catherine developed reward structures that aligned leadership motivation with group strategy. This background enables her to make a particularly valuable contribution as Chair of the Remuneration Committee. Catherine's breadth of human resources experience in other listed companies and as a non-executive director is particularly valued by the Board. Our own HR team are also able to leverage Catherine's background.

Background

Catherine Glickman retired as group HR director at Genus plc in February 2018, having previously held the same title at Tesco PLC where she led retail management development and customer service training during a period of significant expansion in the UK and overseas. Prior to this she held positions at Somerfield plc and The Boots Company plc. She is a graduate of Durham University with a BA Hons in English.

External appointments

Non-executive director and remuneration committee chair of Marston's PLC
Non-executive director and remuneration committee chair of TheWorks.co.uk plc
Non-executive director and remuneration committee chair of RPS Group plc



John Jeans

CBE, CEng

Independent Non-executive Director

A N R

Appointed April 2013

Contribution, skills and experience

John has deep healthcare sector knowledge gained from senior international leadership positions in global companies including Smith & Nephew, Bristol Myers Squibb, Johnson & Johnson and GE's life science business. Also, in serving on several government bodies relating to healthcare, John brings an invaluable insight to the Board, helping to grow the Company's healthcare products and business for the long term.

Background

John headed the commercial function of GE's life science business and was chair of its UK healthcare company. He chaired Innovate UK's stratified medicine steering group until February 2017. John served as advisor to the Prime Minister at the Office of Life Sciences in the medical technology sector for a period of four years ending June 2018. He has served on several government bodies including the Ministerial Committee on Medical Technologies. Previously he was the deputy chief executive of the Medical Research Council, chair of Cardiff University, chair of UK Biocentre Ltd and Imanova Ltd (an imaging research partnership between three London universities and the MRC), a non-executive director of Prometic Life Sciences Inc. and a director of the University Employers Association. He was awarded the CBE for services to Life Sciences, Healthcare and Science in 2012.

External appointments

Non-executive director of Edinburgh Molecular Imaging

Chair of the Scottish government's Digital Health & Care Institute at the University of Strathclyde

Chair of the strategic advisory board for the Singapore Government's diagnostics hub

Advisor to the Singapore Government on advanced manufacturing, health and biomedical science

Leads Innovate UK's knowledge transfer network's (KTN) health board



Mark Noble

General Counsel & Company Secretary

Appointed July 2018

Contribution, skills and experience

Mark spent 17 years in the FTSE 100 with National Grid plc in a variety of senior positions within the group legal and secretariat team and has substantial experience of operating in listed environments, corporate governance, company law and M&A. He is instrumental in offering legal and governance advice and guidance to the Board and senior management, as well as leading the Renishaw legal function.

Background

Mark joined Renishaw in January 2018 as General Counsel and Acting Company Secretary. He had previously held a number of positions at National Grid plc, including deputy group general counsel and head of company secretariat. Prior to that Mark was in private practice at Eversheds and SGH Martineau.

External appointments

None

Committees

A Audit Committee

R Remuneration Committee

N Nomination Committee

***** Chair of Committee

Executive Board

Will Lee (chair)

Chief Executive

See page 54 for biography

Sir David McMurtry

Executive Chairman

See page 54 for biography

John Deer

Deputy Chairman

See page 54 for biography

Allen Roberts

Group Finance Director

See page 55 for biography

Geoff McFarland

Group Engineering Director

See page 55 for biography

The members of the Executive Board listed above were also plc Board Executive Directors during 2018/19. Geoff McFarland resigned from the Board on 30 June 2019 but remains a member of Executive Board.

Further information on the Executive Board can be found on page 60.



Leo Somerville
President, Americas

Leo joined Renishaw in 1983, transferring to Renishaw, Inc. shortly afterwards in 1984. He initially served as Business Manager for machine tool probing and calibration products at Renishaw, Inc. Leo later became President of Renishaw, Inc. in 1993, and subsequently President, Americas in April 2018.

Leo was appointed as a member of the International Sales and Marketing Board in 2008 and the Executive Board in 2004.



Dave Wallace
Director of Industrial Metrology

Dave joined Renishaw in 1989 through Renishaw's sponsored student scheme. He holds a degree from the University of Oxford in Engineering and Management Science. He has worked in various functions of the business including a one-year secondment at Renishaw's German subsidiary, before being appointed Director and General Manager for the CMM Products Division in 2002. In 2014 Dave was given Board responsibility for the Styli and Fixturing Products Division. As part of a Group-wide reorganisation, he was appointed Director of Industrial Metrology in December 2018.

Dave was appointed to the Executive Board in 2008.



Gareth Hankins FIET
Director, Group Manufacturing Services Division

Gareth joined Renishaw in August 1988 as an apprentice, and was appointed to the role of Director, Group Manufacturing Services Division in 2006. He was educated at Cardiff University where he studied Manufacturing Systems and Manufacturing Management. Gareth undertook various roles in engineering, production and operations management prior to being appointed to his current position. His responsibilities include manufacturing operations, procurement and facilities management within the UK. Gareth was appointed Director of Renishaw (Ireland) DAC in 2011. In 2013 he was appointed as an Honorary Visiting Professor at Cardiff University School of Engineering, and was awarded The Institute of Engineering and Technology's Viscount Nuffield Silver Medal for manufacturing in 2017.

Gareth was appointed to the Executive Board in February 2018.



Mark Moloney
Director and General Manager, Renishaw (Ireland) DAC

Mark joined Renishaw in 1988 at its manufacturing plant in Dublin, Ireland. Prior to this he attended Dublin City University and worked in a production and inventory planning management role in a large-scale multinational company, both in Ireland and the US, where he also developed bespoke MRP/ERP systems for manufacturing. His primary responsibilities over the last 30 years have been to increase our manufacturing capabilities and resources in Ireland, which manufactures a large number of Renishaw's products, and to establish, direct and expand our manufacturing facilities in Pune, India, as well as oversee the manufacture of our neuromate robot in France. Mark is the Director and General Manager of Renishaw (Ireland) DAC and a Director of Renishaw Metrology Systems Ltd in Pune, India.

Mark was appointed to the Executive Board in February 2018.



Jean-Marc Meffre
President, EMEA

Jean-Marc joined Renishaw in 1988 as Managing Director of Renishaw France. He holds a master's degree in Economics and Marketing. Jean-Marc moved to Renishaw Hong Kong in 1997 and was appointed Managing Director for all the operations in the Far East (except Japan) and Australasia. In April 2018 he became President for the APAC and EMEA regions, handing over responsibility for APAC in July 2019 to Andy Buttrey.

Jean-Marc was appointed as a member of the International Sales and Marketing Board in 2008 and the Executive Board in October 2018.

International Sales and Marketing Board

Will Lee (chair)

Chief Executive

See page 54 for biography

John Deer

Deputy Chairman

See page 54 for biography

Allen Roberts

Group Finance Director

See page 55 for biography

Leo Somerville

President, Americas

See page 58 for biography

Jean-Marc Meffre

President, EMEA

See page 58 for biography

The first three members of the ISMB listed above are also plc Board Executive Directors.

Further information on the ISMB can be found on page 60.



Sean Hymas
President, Renishaw KK

Sean joined Renishaw in 1989 following a year's placement between 1987 and 1988. He has 30 years' experience of international marketing, sales, channel management and business development. In 2008, Sean transferred to Renishaw KK to further develop existing business and open up new market sectors in Japan. He was later appointed President of Renishaw KK.

Sean was appointed as a member of the ISMB in December 2012.



Rainer Lotz
Vice President, EMEA

Rainer joined Renishaw in 2006. He has over 20 years' experience in related positions, and was responsible for Renishaw's operations in Germany, Austria and Switzerland before becoming Vice President for the wider EMEA region in December 2018.

Rainer was appointed as a member of the ISMB in 2008.



Clive Martell
Director of Additive Manufacturing

Clive joined Renishaw in 2015. He is responsible for the strategy and direction of Renishaw's additive manufacturing. Clive started out as a graduate engineer with Delcam plc, where he progressed to CEO of the company. He managed the transition of Delcam from an AIM listed company to a division of Autodesk, Inc. and has over 30 years' experience in advanced engineering and international sales. Clive represents Renishaw on the steering group for the UK national strategy for additive manufacturing.

Clive was appointed as a member of the ISMB in 2015.



Rhydian Pountney
Director of Group Commercial Services

Rhydian joined Renishaw in 1979. He has over 30 years' experience in sales and marketing and was responsible for sales in the UK and 11 overseas operations, including India and Russia, before being appointed Director of Group Commercial Services as part of a Group-wide reorganisation in December 2018. Rhydian has been the UK chair of the technology collaboration in advanced engineering working group of the UK-India joint economic and trade committee since 2014 and was appointed as an export champion by the Department for International Trade (DIT) in March 2019.

Rhydian was appointed as a member of the ISMB in 2008.

Directors' corporate governance report continued

A. Leadership

The role of the Board

During 2018/19, the Board comprised four Executive and four Independent Non-executive Directors in addition to the Executive Chairman. The Directors holding office at the date of this report (with the exception of Geoff McFarland who resigned from the Board on 30 June 2019) and biographical details, are given on pages 54 to 57 including the specific reasons why their contribution is, and continues to be, important to the Company's long-term sustainable success. The Directors' biographies are also available at: www.renishaw.com. All Directors, with the exception of Geoff McFarland, will be retiring and seeking re-election at the AGM.

There is a formal schedule of matters specifically reserved for the Board's decision. These include the approval of annual and half-year results and trading statements, company and business acquisitions and disposals, major capital expenditure, borrowings, material agreements, director and company secretary appointments and removals, patent-related disputes and other material litigation, forecasts and major product development projects.

The Board meets as often as is necessary to discharge its duties effectively. In the financial year ended 30 June 2019, the Board met for eight scheduled meetings (together with a separate Board strategy day) and the Directors' attendance record at Board and Committee meetings is set out at the end of this report. In addition, the Non-executive Directors met a number of times without Executive Directors present. A high-level summary of subject areas discussed by the Board during the year is set out on page 61.

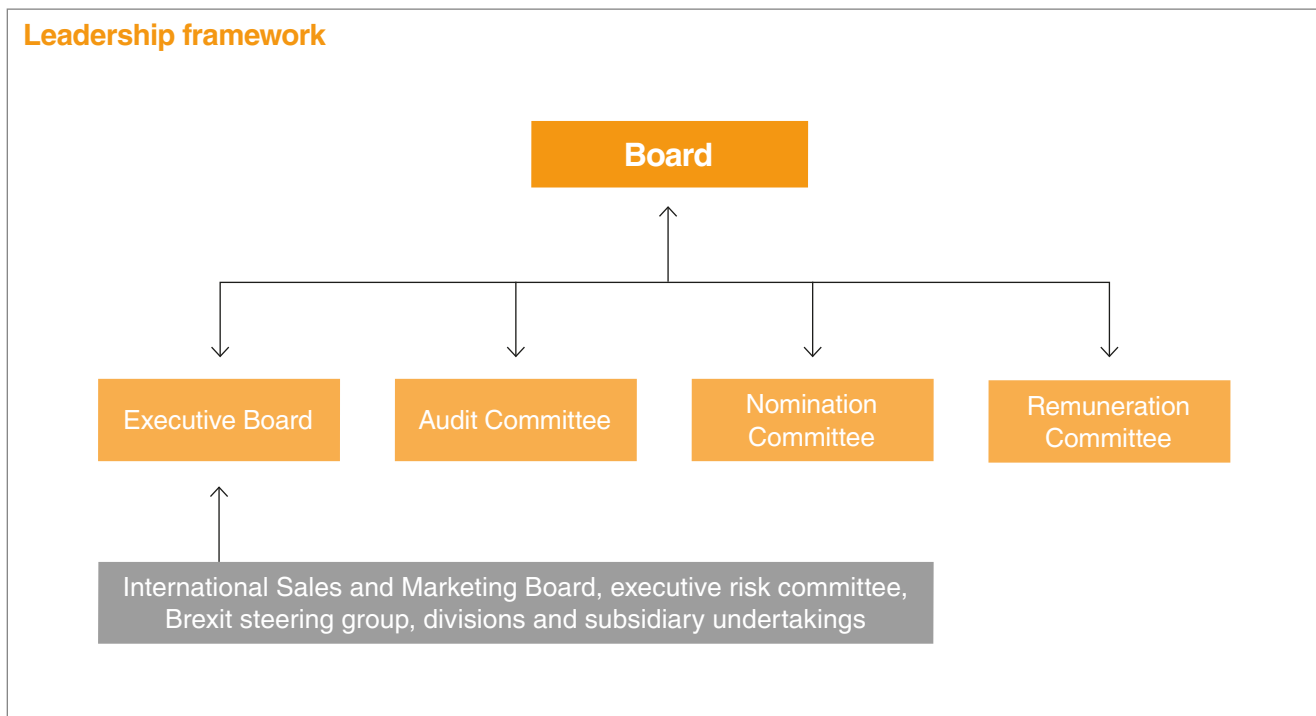
The Board has three formally constituted Committees – the Audit Committee, the Remuneration Committee and the Nomination Committee.

There is an executive management committee, the Executive Board, which is responsible for the executive management of the Group's businesses. It is chaired by the Chief Executive and includes the Executive Directors and senior managers as noted on page 58. The Executive Board usually meets for one day on a monthly basis and considers the performance and strategic direction of the metrology and healthcare businesses and other matters of general importance to the Group.

In addition, there is an executive sales and marketing committee, the International Sales and Marketing Board, which meets quarterly to determine the Group's sales and marketing policies and strategies and review its sales and marketing activities. This committee is chaired by the Chief Executive and includes the Deputy Chairman, the Group Finance Director, the managing directors (and other senior management) of the three sales regions and the Director of Additive Manufacturing.

A framework of delegated authorities is in place that maps out the structure of delegation below the Board and includes the matters reserved to the Executive Board and the level of authorities given to management below the Executive Board.

An executive risk committee meets regularly to review risks which may impact on the Group's business and to implement mitigation actions. The framework for managing risk is set out on pages 38 and 39.



Scheduled Board and Committee meetings in the year



July 2018				
A	A	R	B	N

August 2018				

September 2018				

October 2018				
A	B	B		

November 2018				

December 2018				
R	B			

January 2019				
A	B			

February 2019				

March 2019				
S	B	R	N	

April 2019				

May 2019				
A	B	R		

June 2019				
R	B	N		

Key

- B** Board (8)
- A** Audit Committee (5)
- N** Nomination Committee (3)
- R** Remuneration Committee (5)
- S** Board Strategy Day (1)

High-level summary of subjects discussed by the Board during the year

Strategy

- Business and corporate strategy
- Changes in markets and the competitive landscape
- Divisional five-year plans
- Products, technology and R&D
- Strategic risks

Risk

- Brexit and USA/China trade relations
- Cyber security
- Group's risk analysis and process evolution
- Hedging programme
- IT systems upgrades
- Patent litigation
- Data protection

Governance

- 2018 Corporate Governance Code requirements and legal updates
- Board evaluation
- Business organisation and structure
- Draft Annual Report
- Executive management structure
- Relations with controlling shareholders
- Review of internal controls

Finance

- Dividend policy
- Forecasts, targets, budgets and costs
- Oversight of the preparation and management of the financial statements
- Tax strategy and updates
- Trading statements

Shareholder engagement

- AGM and other shareholder feedback
- Investor day
- Investor relations policy

People

- Employee satisfaction survey
- Flexible working
- Gender pay gap and diversity policy and performance
- Health and safety system and updates
- Group reward policy and incentives
- Salary reviews, bonus and pensions

Directors' corporate governance report continued

Division of responsibilities – the Chairman and Chief Executive

Throughout the year, the Board considered that there was a clear division of responsibilities at Board level to ensure an appropriate balance of power and authority so that there is no one person with unfettered powers of decision. The Board and Executive Board meet on a sufficiently regular basis to make decisions of significance to the Group's business segments and review management actions.

There are written statements of the key responsibilities of the Chief Executive and the Executive Chairman. These are available on the Company's website at: www.renishaw.com/corporategovernance.

Sir David McMurtry has held the position of Executive Chairman since the Company listed in 1983. There has been a voting agreement in place between Sir David McMurtry and John Deer since 1983, further details of which are set out in the Other statutory and regulatory disclosures on page 83.

Non-executive Directors

Sir David Grant is the Senior Independent Director and is available to discuss material concerns with shareholders should the normal channels of the Executive Chairman, the Chief Executive or the Group Finance Director fail to resolve any concerns shareholders may have. The independent Non-executive Directors meet with the Executive Chairman without the other Executive Directors present, and the independent Non-executive Directors also meet without the Executive Directors or Executive Chairman present, in each case to discuss performance, corporate governance and other matters.

B. Effectiveness

Composition of the Board

All the Non-executive Directors are considered by the Board to be independent in character and judgement and there are no relationships or circumstances that are likely to affect a non-executive director's judgement. Sir David Grant has served as an Independent Non-executive Director for over seven years and Carol Chesney for almost seven years. As such, the Board considered in particular their continued independence and concluded that they both continue to demonstrate independent judgement and character.

The Board considers that all the Non-executive Directors demonstrate commitment to their roles and are able to dedicate sufficient time to their duties at the Company. Their skills and experience are summarised in their biographies on pages 56 and 57.

The Governance Code recommends that at least half the board, excluding the chairman, should comprise independent non-executive directors. The Board has complied with this requirement during the period.

Appointments to the Board

A description of the structure and activities of the Nomination Committee is set out in the Nomination Committee report on page 65 where the Board's commitment to diversity is also affirmed.

Commitment

The terms of appointment of the Non-executive Directors, which includes the expected time commitment and requirement to discuss any changes to other significant commitments with the Executive Chairman and Chief Executive in advance, are available for inspection at the AGM and the registered office upon written request.

None of the Executive Directors hold a directorship in a FTSE 100 company.

Conflicts of interest

The Board has a conflicts of interest policy, putting in place procedures for the disclosure and review of any conflicts and potential conflicts, and authorisation by the Board (if considered appropriate). Authorisations granted, and the terms of such, are reviewed on an annual basis. New disclosures are made where applicable.

Development

Directors are offered the opportunity to attend formal training courses to update their knowledge of their duties as directors. Guidance notes, papers and presentations on changes to law and regulations are provided as appropriate. Non-executive Directors are invited to attend internal conferences, which provide information to the Group on new product development and marketing initiatives, to meet with business units and functions, as well as attending investor days. Business presentations are given at Board meetings to provide updates on, and opportunities to discuss, products and business strategies.

A tailored induction pack is provided to new appointees to the Board, and the induction programme (together with the continuing development programme) includes site visits and briefings by senior managers, attendance at internal senior management conferences and external trade shows, as well as foreign subsidiary visits, as applicable. Following her appointment, Catherine Glickman's induction included a comprehensive set of meetings with Board and Executive Board members, the Group's international senior management and members of the HR team.

Information and support

The Board receives business updates, financial information, forecasts and commentaries thereon in advance of each Board meeting to enable its members to review the financial performance of the Group, current trading and key business initiatives. The General Counsel & Company Secretary advises the Board on all governance matters. All Directors have access to the General Counsel & Company Secretary and to independent professional advice at the Company's expense, where necessary, to discharge their responsibilities as directors. The appointment and removal of the General Counsel & Company Secretary is a matter reserved for the Board. The Company maintains liability insurance for its directors and officers, as disclosed in the Other statutory and regulatory disclosures.

Evaluation

The Board, its Committees and each Director are subject to an annual evaluation of their performance. The format of the evaluation varies each year. For the financial year ending 30 June 2019, an external evaluation process was undertaken by Equity Communications Limited

who undertook interviews with each of the Directors and the General Counsel & Company Secretary, based on an agenda agreed by the Board. The Board noted the significant level of change since its last external evaluation in 2016. The main recommendations from the 2019 evaluation included: a continuing focus on talent management and succession in key areas; and enhancing the presentation of business unit activities and progress against targets to the Board, both at regular Board meetings and at the Board strategy day. Equity Communications Limited has no other connection with the Company.

Re-election

In accordance with the Governance Code all the Directors will retire from the Board at the next AGM and offer themselves for re-election, with the exception of Geoff McFarland who, as previously announced, resigned from the Board on 30 June 2019.

C. Accountability

Audit Committee

A description of the membership and activities of the Audit Committee is set out in the Audit Committee report on pages 66 to 69.

Financial and business reporting

The respective responsibilities of the Directors and auditor in connection with the financial statements are explained in Directors' responsibilities on page 86 and the Independent auditor's report on pages 87 to 94.

Fair, balanced and understandable

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

Going concern

The Group's strategy for delivering its objectives and business model, together with the factors likely to affect its future development and performance, are set out in the Strategic report, where details of the financial and liquidity positions are also given. In addition, note 20 to the Financial statements includes the Group's objectives and policies for managing its capital, details of its financial instruments and hedging activities and its exposures to credit risk and liquidity risk.

The Group has considerable financial resources at its disposal and the Directors have considered the current financial projections. As a consequence, the Directors believe that the Group is well placed to manage its business risks successfully.

After making enquiries, the Directors have a reasonable expectation that both the Company and the Group have adequate resources to continue in operation for a period of at least 12 months from the date of approval of the Financial statements. Accordingly, they continue to adopt the going concern basis in preparing the Annual Report.

Viability statement

The Board approved the Company's viability statement on page 43.

Risk management and internal control

The Board is responsible for the Company's systems of risk management and internal control, and for reviewing their effectiveness. Any system of internal control is designed to manage rather than eliminate the risk of failure to achieve business objectives and can only provide reasonable, but not absolute assurance against material misstatement or loss.

There are defined lines of responsibility and delegation of authorities. Established and centrally documented control procedures also exist, including, for example, approvals of capital and other expenditure, information and technology security and legal and regulatory compliance. These are applied throughout the Group.

The Group internal audit function provides independent and objective assurance that the control procedures are appropriate and effectively applied. The Group Internal Audit Manager attends Audit Committee meetings to present annual internal audit plans and the results of such internal audits. Actions are monitored by the Audit Committee on an ongoing basis.

There is an established process for the review of business risks throughout the Group including an executive risk committee as explained on pages 38 and 39.

The Board ensures there are effective internal controls over the financial reporting and consolidation processes. Monthly accounts and forecasts are presented to the Board for review. The Group internal audit function undertakes a review of subsidiaries' accounting processes and performance to provide assurance to the Board on the integrity of the information supplied by each company forming part of the Group's consolidated results.

The Board undertakes an annual review of the effectiveness of the Group's system of internal controls and an updated risk and controls analysis. The review covers all material controls, including financial, operational and compliance controls and risk management systems.

The Board has conducted a robust assessment of the principal and emerging risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity. The Group's principal risks and uncertainties can be found on pages 40 to 42. The Board is satisfied that there is an ongoing process for identifying, evaluating and managing the significant risks facing the Group, which has been in place during the year, is regularly reviewed and accords with the FRC Guidance on Risk Management, Internal Control and Related Financial and Business Reporting. The Board confirms that necessary action has been or is being taken to remedy any significant failings or weaknesses identified from its review.

D. Remuneration

The Directors' remuneration report explains how the Company applies the Governance Code principles relating to remuneration and includes a description of the membership and activities of the Remuneration Committee.

Directors' corporate governance report continued

E. Relations with shareholders

Engagement with shareholders

We engage with our shareholders in a number of ways. Open webcasts of presentations of the full and half-year results are held and recordings of the presentations and the subsequent question and answer sessions made available on the Company's website. Analysts' and brokers' reports are circulated to the Board.

The Board is available for engagement with shareholders at the AGM and the annual investor day. The investor day includes presentations by members of the Board and senior management on Group strategy, business segments and product lines, as well as tours and demonstrations relating to the Group's activities. This year, 150 visitors attended the day and took part in a formal Q&A session with the Board as well as having the opportunity to put questions to the Board and senior management during lunch and refreshment breaks.

The Board reviews the Company's investor relations policy annually. As part of this year's review, feedback was sought from all attendees at the annual investor day including existing and potential institutional shareholders. The results of this engagement were presented to the Board and a number of management's recommendations were approved to enhance the format and content of future investor days, with the overall policy remaining unchanged.

The AGM

The AGM takes place at the Company's headquarters or one of its other sites and formal notification is sent to the shareholders at least 20 working days before the meeting. A business presentation is given and all Directors are available for questions during and after the meeting, including the chairs of the Audit, Remuneration and Nomination Committees (except in 2018 Catherine Glickman, as detailed later in this section).

Separate resolutions are proposed for each substantially separate issue, and all resolutions are taken on a poll.

Director	Board	Audit Committee	Remuneration Committee	Nomination Committee
Sir David McMurtry	8(8)	–	–	3(3)
John Deer	8(8)	–	–	–
Will Lee	8(8)	–	–	–
Allen Roberts	8(8)	–	–	–
Geoff McFarland	7(8) ³	–	–	–
Carol Chesney	8(8)	5(5)	5(5)	3(3)
Catherine Glickman	6(7) ¹	4(5) ¹	4(4)	2(2)
Sir David Grant	8(8)	5(5)	5(5)	3(3)
John Jeans	8(8)	5(5)	5(5)	3(3)
Kath Durrant	1(1) ²	–	1(1)	0(1) ²

The number in brackets indicates the number of meetings the Director was eligible to attend during the year.

¹ Catherine Glickman was absent from the Board meeting and Audit Committee meeting on 18 October 2018 due to travel plans organised in advance of joining the Board on 1 August 2018.

² Kath Durrant's resignation took effect on 31 July 2018, so the Board meeting on 24 July 2018 was her final Board meeting. She was absent for the Nomination Committee meeting on 24 July 2018.

³ Geoff McFarland was absent from the Board meeting on 13 May 2019 due to pre-arranged travel plans.

The Company reports on the number of votes lodged on each resolution, the balance for and against each resolution and the number of votes withheld. This information is published via a Regulatory Information Service (RIS) and on the Company's website following the meeting.

The Board has considered the votes against resolutions 4, the re-election of Sir David McMurtry (23.86%) and 5, the re-election of John Deer (24.00%), at the 2018 AGM. In order to better understand the reasons for these votes against, the Board considered the views of shareholders and proxy advisory firms as to voting and voting recommendations respectively (where these had been made available to the Company) and received feedback from the General Counsel & Company Secretary following engagement with a number of shareholders on the rationale for their voting. The Board will continue to engage with shareholders to understand their views on this and any other significant matter. The Company's overall approach to engagement with shareholders, and the opportunities for interacting with the Board, are set out earlier in this section.

Board and Committee meeting attendance record

The table below shows the number of scheduled meetings of the Board and its Committees at which each Director was present, and, in brackets, the number of meetings they were eligible to attend during the year.

Compliance statement

The Board considers that it has complied with the provisions of the Governance Code throughout the year except in relation to the following matter:

- the chairman should arrange for the chairmen of the audit, remuneration and nomination committees to be available to answer questions at the AGM and for all directors to attend (provision E.2.3).

Catherine Glickman was unable to attend the AGM in 2018 due to travel plans outside the UK that were arranged prior to her joining the Board.

Sir David Grant

Senior Independent Director

1 August 2019

Nomination Committee report



Sir David McMurtry
Chair of the Nomination Committee



The Nomination Committee has an important role to play in leading the process for Board appointments and ensuring the Board has the right balance of experience, diversity and skills to support our business model and strategy.

Boardroom diversity

Our aim is for the Board to consist of individuals with diverse skills and experience who can add value to our work. We recognise that diversity of gender, age, ethnicity, industry knowledge and education are important.

During the year, the proportion of women on the Board was 22% and, following Geoff McFarland's decision to resign from the Board from 30 June, is currently at 25%. While the Board continues to believe it is not appropriate to set any specific targets that may require positive discrimination for the appointment of women to the Board, it supports the aspiration on gender diversity in the Hampton-Alexander review and the Committee considers gender diversity when making appointment recommendations.

New Board appointments are subject to the Company's Equality, Diversity and Inclusion Policy, which was adopted in 2018 and formalised our commitment to diversity at all levels. The Committee's procedures require it to first evaluate the balance of skills, knowledge, experience and diversity on the Board. It then agrees a role specification for the proposed appointment and, if the position is not to be fulfilled internally, appoints recruitment consultants to produce a long-list of diverse candidates for the Committee's consideration.

Following this, the Committee will consider and take forward candidates on merit and against objective criteria, with due regard for the benefits of diversity on the Board.

Nomination Committee role and composition

The Nomination Committee, which meets on an ad hoc basis as required, is responsible for reviewing the size, structure and composition of the Board – including its balance of skills, knowledge and experience – succession planning for the Board and senior executives, and nominating candidates for appointment to the Board and for the role of Company Secretary.

The members of the Nomination Committee are Sir David McMurtry (Chair), Carol Chesney, Catherine Glickman, Sir David Grant and John Jeans. Catherine joined the Committee on appointment to the Board on 1 August 2018. With the exception of Sir David McMurtry, all of the members of this Committee are Independent Non-executive Directors. Details of attendance at meetings are shown on page 64 of the Directors' corporate governance report and the terms of reference are published on the Company's website.

Activities during the year

The Committee met three times during the year. The main issues that were discussed were:

- non-executive succession, in particular the appointment of Catherine Glickman as an Independent Non-executive Director and Chair of the Remuneration Committee following Kath Durrant's decision to step down.
As outlined in last year's report, Stonehaven International, a search consultancy, was engaged to seek appropriate candidates for appointment as an additional independent non-executive director and the Committee recommended Catherine's appointment. Stonehaven International has no other connection with the Company;
- the decision by Geoff McFarland to resign from the Board, his new role, and the change in structure and reporting lines of Geoff's responsibilities as a result;
- the appointment of a new General Counsel and Company Secretary; and
- the senior management structure following the internal reorganisation and creation of divisional product groups in December 2018.

Sir David McMurtry

Chair of the Nomination Committee

1 August 2019

+ Employees, diversity and policies – for more information see pages 45 and 47

+ Senior management diversity – for more information see page 47

Audit Committee report



Carol Chesney
Chair of the Audit Committee



The Audit Committee plays a vital role in ensuring the integrity of our financial statements, the effectiveness of our risk management processes and internal controls, and in evaluating the performance of the external audit process. During 2019, we also monitored the various changes to the UK Corporate Governance Code, agreed the content of the viability statement and reviewed the Group’s treasury control environment in order to minimise the risk of bank payment fraud.

Audit Committee role and composition

The Audit Committee is appointed by the Board from the Non-executive Directors of the Company. The Audit Committee’s terms of reference include all matters indicated by Disclosure and Transparency Rule 7.1 and the Governance Code. The terms of reference are considered annually by the Audit Committee and any changes are recommended to the Board for approval; they are available on the Company’s website.

The Audit Committee reviews the Group’s accounting policies and procedures, its full and half-year financial statements before submission to the Board and its compliance with statutory requirements. The Audit Committee monitors the integrity of the Group’s financial statements and announcements relating to financial performance and reviews the significant reporting judgements contained therein. It also reviews the scope, remit and effectiveness of the internal control systems and internal audit function. The terms of reference of Internal Audit are routinely reviewed and were refreshed during 2018/19.

The Audit Committee comprises four Non-executive Directors: Carol Chesney (Chair), Sir David Grant, John Jeans and Catherine Glickman (following her appointment to the Board on 1 August 2018). The Board is satisfied that at least one member of the Committee, Carol Chesney, has recent and relevant financial experience and that collectively, the Committee has a depth of financial and commercial experience in various industries, as well as the metrology and healthcare sectors in which the Group operates. A more detailed summary of the qualifications, skills and experience of each Committee member can be found on pages 56 and 57.

Governance

The Committee meets a minimum of four times a year with the Chief Executive, the Group Finance Director, the Head of Group Finance, the Group Financial Accountant, the General Counsel & Company Secretary (together, the executives), the Group Internal Audit Manager and the external auditor in attendance. After each meeting, the Committee holds separate discussions with the external auditor and with the Group Internal Audit Manager, respectively, without the executives. The executives work closely with the Chair of the Committee to ensure that transparency is maintained in both meeting papers and communications between meetings with the other Committee members, providing additional practical industry experience to aid discussions in and around meetings. The Chair of the Committee provides feedback on significant matters considered during meetings to the Board after each Committee meeting.

Key issues and activities

In addition to reviewing the financial reporting of the Company, the Committee also spends a significant amount of time reviewing the effectiveness of the Group's internal control processes and its internal and external audit activities.

The principal activities in the year were:

Financial statements and reports	Risk management and internal controls	Internal audit	External auditor and non-audit work
<ul style="list-style-type: none"> reviewed the effectiveness of the Group's risk management and internal controls and disclosures made in the 2019 Annual Report; reviewed the 2019 Annual Report and the 2019 Interim Report. The Committee received a report from the external auditor on the audit of the 2019 Annual Report; reviewed critical accounting judgements and estimation uncertainties in the Annual Report, being: revenue recognition, the amortisation and impairment of intangible assets, the capitalisation of development costs, the carrying value of inventory and the assumptions used to determine the defined benefit pension schemes' liabilities; reviewed the effectiveness of the Group's hedging policy and its application; reviewed the accounting and disclosures in relation to the Group's defined benefit pension schemes; reviewed the effective tax rate in the Annual Report and provision for uncertain tax positions; reviewed the approach the external auditor took in respect of management override of controls; evaluated the controls in place to ensure the Group's revenue recognition policy has been correctly applied; reviewed the work undertaken, and disclosures made, in relation to the financial impact of IFRS 16 'Lease Accounting'; and reviewed the work undertaken to implement IFRS 15 'Revenue from Contracts with Customers' and IFRS 9 'Financial Instruments'. 	<ul style="list-style-type: none"> reviewed the output from the Group's risk review process to identify, evaluate and mitigate risks and considered whether changes in risk profile were complete and adequately addressed; monitored the effectiveness of the Group's internal controls and fraud risk; reviewed the Group's control environment in relation to our treasury activities; reviewed and monitored the implementation plan to ensure the effective roll out of the updated sections of the Group Internal Control Manual; reviewed and agreed the content of the viability statement (see page 43) and the process undertaken, including an assessment of the stress testing performed, in order to approve both it and the going concern statement (see page 63); received updates on compliance with the Group's anti-bribery and corruption policy; monitored the effectiveness of the Group's global whistleblowing and serious misconduct policy; and reviewed the Group's published tax strategy. 	<ul style="list-style-type: none"> refreshed the terms of reference of Internal Audit; evaluated the scope of work to be undertaken by the internal audit function, including review of the data analytics testing undertaken in the year and approval of the data analytics testing plan for 2019/20; reviewed progress on recommendations brought forward and considered recommendations arising during the year; considered the resource levels available to the internal audit function; and reviewed the effectiveness of the internal audit function through discussion with the Group Finance Director, the Head of Group Finance, members of the Audit Committee and a questionnaire completed by a number of subsidiary finance teams. 	<ul style="list-style-type: none"> managed the relationship with the external auditor; reviewed, considered and agreed the scope and methodology of the 2019 audit work to be undertaken by the external auditor; evaluated the independence and objectivity of the external auditor; agreed the terms of engagement and approved the fees to be paid to the external auditor for the audit of the 2019 financial statements; reviewed the level and nature of non-audit services provided by the external auditor; undertook an effectiveness review of the external audit process; and reconfirmed the non-audit services policy.

Audit Committee report continued

Significant issues in relation to the financial statements

As part of the reporting and review process, the Committee has regular discussions with management and the external auditor relating to significant issues. For the current year, the Committee concluded that the treatment of forward exchange contracts for hedging purposes and the judgements made in relation to the Group's defined benefit pension schemes' liabilities were the two significant issues relating to the financial statements.

In 2017, it was identified that certain of the Group's hedging instruments did not comply with IAS 39 (replaced by IFRS 9 from 1 July 2018) and therefore could not be treated as qualifying hedging instruments. Since 2017 the Committee has received confirmation that all new hedging instruments entered into by the Group would be IAS 39/IFRS 9 compliant. The Committee confirmed by way of discussions with management that the required hedging documentation is in place, including prospective and retrospective effectiveness testing. The Committee satisfied itself that the work undertaken by management was appropriate and agreed with the conclusions reached and accounting entries and disclosures made. The Committee also reviewed the ongoing use of the adjusted profit before tax alternative performance measure, which excludes the profit/loss arising on hedging instruments entered into in previous years that do not qualify for hedge accounting, and concluded that this alternative performance measure should be retained in order to provide stakeholders with a better measure of underlying performance; one which is consistent with management's own assessment of performance.

The Committee then reviewed the judgements made in relation to the Group's defined benefit pension schemes' liabilities, with particular focus on the discount rate, inflation rate and mortality assumptions, along with an assessment of the disclosures made in respect of employee pension benefits. The Committee also considered the terms of the new recovery plan for the 2018 UK pension scheme deficit, including the schedule of payments. The Committee made enquiries of management to understand the process undertaken for determining the appropriate actuarial assumptions and to understand the basis on which the IFRIC 14 adjustment is not required at this year end.

The Committee satisfied itself that the judgements reached by management were appropriate.

The Committee discussed these issues with the external auditor and was satisfied that its conclusions were consistent with those of the external auditor.

Approach to auditor appointment and audit quality

The Committee has primary responsibility for recommending the appointment, reappointment or removal of the external auditor, which the Board puts to shareholders for approval at the AGM.

This is the third financial year that the Annual Report has been audited by Ernst & Young LLP following their appointment at the AGM in October 2016. There are no current plans to tender the audit, however the contract for external audit will be put out to tender at least every 10 years.

The Committee has monitored the audit approach undertaken by Ernst & Young LLP by way of updates provided at Audit Committee meetings and further routine discussions between the Committee Chair, company finance representatives, the Group Internal Audit Manager and senior representatives of Ernst & Young LLP.

When the Committee assesses the effectiveness of the external auditor and the quality of the audit work throughout the year it considers:

- any issues arising from the prior year audit;
- the proposed audit plan including the identification of risks specific to the Group, audit scope and materiality thresholds;
- the delivery of the audit in line with the plan; the communication of matters arising during the audit to the Committee;
- meetings with the external auditor without management being present;
- the independence and objectivity of the auditor; and
- feedback from executive management.

Independence of external auditor

In order to safeguard the independence and objectivity of the external auditor, the Committee reviews the nature and extent of the non-audit services supplied, receiving reports on the balance of audit to non-audit fees.

The non-audit services policy reflects the extended list of prohibited services as set out in the latest EU audit regulation. There are also specified services which require the prior approval of the Group Finance Director and Chair of the Audit Committee before the auditor may be appointed to provide such services. In addition, there are specified levels of authorisation to be obtained before the auditor may tender for non-audit services.

For 2019, the external auditor has provided £8,375 of non-audit work in relation to a piece of work regarding Wotton Travel's annual ATOL/ABTA reporting and a piece of work to provide a VAT turnover certificate for our Irish subsidiary.

An analysis of fees paid to Ernst & Young LLP is included in note 5 to the Group financial statements.

Risk management and internal controls

The Committee monitors the effectiveness of the Group's internal controls and risk management processes, with support from Internal Audit and the executive risk committee, which allows it to maintain a good understanding of the business performance and key areas of judgement and decision making within the Group.

The Internal Audit team report and follow up on control and operational weaknesses, and support management in making improvements where required. Further, an annual declaration of compliance with internal controls and processes is completed by senior management from each subsidiary company.

Internal Audit has expanded its use of data analytics techniques from the start of the 2018/19 financial year, thus increasing the work undertaken in the year and complementing the regular subsidiary visits. The Committee determined that the Internal Audit function is effective following the review detailed in the Key issues and activities section of this report.

Following a period of strong growth, the Committee commissioned a review of the Group Internal Control Manual in 2017 to ensure that Renishaw's policies exceed best practice for an organisation of Renishaw's size and structure. The review was materially completed in 2018/19, with updated sections of the Group Internal Control Manual communicated throughout the Group. The Audit Committee also reviewed the Group's control environment in relation to our bank accounts in order to minimise the risk of bank payment fraud, and reviewed and monitored the implementation plan to ensure the effective roll-out of the Group Internal Control Manual.

Details of risk management and internal controls are set out on pages 38 and 39.

Fair, balanced and understandable Annual Report

One of the key governance requirements is for the Annual Report to be fair, balanced and understandable and that it provides the shareholders with sufficient information to assess the Company's performance, business model and strategy. Ensuring that this standard is met requires continuous assessment of the financial reporting issues affecting the Group on a year-round basis, in addition to a number of focused exercises that take place during the financial statements production process within a strict timeframe.

The processes adopted in relation to the Annual Report included the following:

- overall management of the report was the responsibility of the Group Finance Director and the General Counsel & Company Secretary who instigated a comprehensive review of the disclosures and then assigned specific ownership and responsibility for the individual sections;
- during the compilation period, regular meetings were held with key contributors from Group Finance, Group Secretariat, CSR and Group Communications, all of whom are primary authors of the Annual Report. These meetings ensured that there was appropriate linkage between the various sections of the report and that reporting was balanced;
- an extensive review was undertaken to ensure factual accuracy;
- a qualitative review of the entire Annual Report was undertaken to ensure that it promotes consistency and balance between the component elements;
- at the first of the Committee's meetings in July 2019, the Committee reviewed an initial draft of the Annual Report, during which it probed and tested certain disclosures;
- at the second of the Committee's meetings in July 2019, the Committee challenged the fair, balanced and understandable assessment and examined whether appropriate balance and equal prominence had been given to favourable and unfavourable events; and
- following review and comment by both the Committee and the Board, the Annual Report was subject to final approval by the Board.

The Committee was satisfied with the process undertaken in preparing the Annual Report. Following discussions at its July 2019 meetings, the Committee advised the Board that the Annual Report, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the performance, strategy and business model of the Company.

The Directors' statement on a fair, balanced and understandable Annual Report is set out on page 63.

Carol Chesney

Chair of the Audit Committee

1 August 2019

Directors' remuneration report



Catherine Glickman
Chair of the Remuneration Committee



The Committee is mindful in its decision making of the principle of close alignment between executive remuneration and Group performance, as well as workforce remuneration more broadly. We believe the incentive outcomes for the year under review – and our approach to implementing the policy for 2019/20 – appropriately reflect this.

Remuneration Committee role and composition

The Remuneration Committee is responsible for deciding the Company's framework for executive remuneration, determining the remuneration for each of the Executive Directors, reviewing and approving remuneration for other senior management, and overseeing remuneration policy. A key aim of the Committee is to help attract, retain and motivate talented executives by ensuring competitive remuneration and motivating incentives. The incentives are linked to the overall performance of the Group and, in turn, to the interests of all shareholders.

The Committee reviews Executive Directors' remuneration annually in the context of the Group's performance. It also reviews the remuneration structure and packages for the next level of senior leaders to ensure they are competitive, fair, and that there is appropriate progression for those identified as potential successors to the Board and senior leadership team.

All members of the Committee are Independent Non-executive Directors: Catherine Glickman (Chair), Sir David Grant, Carol Chesney and John Jeans. The terms of reference for the Committee are published on the Company's website. Executive Directors may attend meetings of the Committee by invitation and independent advisers are used as required.

Statement from the Chair of the Remuneration Committee

Introduction

On behalf of the Board, I am pleased to present the Directors' remuneration report for 2019, my first as a Non-executive Director of the Company and the Chair of the Committee. Before my appointment, I spent some time understanding the development of the remuneration policy from both the previous Committee Chair and the current members. The Committee remains of the view, which I endorse, that although it differs from that of the majority of listed businesses, our policy supports the Group's strategy, is appropriate for the Executive Directors and is aligned with shareholder interests.

In compliance with the requirements for reporting on directors' pay introduced in October 2013 (as amended), the report is split into the following three sections:

1. this introductory statement;
2. the remuneration policy (pages 73 to 77) as approved by shareholders at the 2017 AGM; and
3. the Annual report on remuneration (pages 78 to 83), setting out information on Directors' remuneration during the year ended 30 June 2019, and how our policy will be implemented in the year ending 30 June 2020. This part of the report will be submitted to an advisory vote at the 2019 AGM.

In addition and for the first time, we have included on page 72 a section that provides an overview of Executive Director remuneration at Renishaw.

This remuneration report has been prepared in accordance with the Large and Medium sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013, 9.8.8R of the Listing Rules and the UK Corporate Governance Code 2016.

Context for remuneration at Renishaw

2018/19 was the second year of implementation for the remuneration policy voted on at the 2017 AGM and which received a high level of support. In summer 2018, we paid cash bonuses and made the first award of shares to the three non-founder Executive Directors under the new deferred equity incentive plan for financial performance for 2017/18, amounting to 42.5% of salary. Further details of the value of these awards are set out on page 81.

The Committee continues to keep the remuneration policy and its implementation under review in the context of shareholder feedback, the evolving governance landscape, and Renishaw's need to continue to attract, motivate and retain the talent required to underpin continued growth and long-term shareholder value creation. The Committee believes that the current policy and its approach to implementation for the year ending 30 June 2020 remains appropriate. The Committee is mindful of recent developments in remuneration governance, including the new UK Corporate Governance Code (published in July 2018), the passing into UK law of new regulations and the evolving views and voting policies of investors and the major proxy advisory bodies. The Committee will continue to consider the implications of these developments for executive remuneration as part of its review of remuneration

policy during 2019/20. In advance of putting the remuneration policy to a binding shareholder vote at the 2020 AGM, we expect to consult with shareholders on our proposals in early 2020.

Key remuneration discussions during the year

Review of 2018/19

- 2018/19 has been a challenging year with reduced turnover and adjusted operating profit for the Group.
- The new leadership structure came into effect on 1 February 2018, when Will Lee took over as Chief Executive. He has made a strong start in the role, taking operational responsibility for the business and setting strategic direction. He has instituted organisational change to align product development to the changing market dynamics and drive business performance. He has continued the investment in R&D while being committed to improved productivity in a business that has grown rapidly both in the UK and internationally.
- Sir David McMurtry has worked closely with Will Lee, supporting him during the hand over in this critical first year for a new chief executive. While Sir David continues to be involved in all aspects of the business as Executive Chairman, stepping down as Chief Executive has released time for him to focus on R&D, identifying disruptive engineering innovations and driving the development of next generation products and technologies.
- Last year, some shareholders queried Sir David McMurtry's unchanged salary following the split in his role. The Committee took the feedback seriously, discussing it at a number of meetings. The Committee concluded the full extent of Sir David's role and the significance of his contribution had not been fully disclosed. The Committee is clear that Sir David continues to be a major driver of innovation and growth in the business and that his salary is commensurate to the contribution he is making.
- The Committee approved a revised remuneration package for Geoff McFarland as a result of his decision to resign from the Board. We are pleased that he will continue to contribute to the business in his new role as Director of Group Technology.
- The Committee has also reviewed the new UK Corporate Governance Code, communications from governance bodies and feedback from shareholders, in relation to a number of policy matters, specifically pension contributions. Although the remuneration policy will not be formally reviewed until the new financial year, the Committee has agreed that, for any new appointments to the Board, any pension award will be in line with the wider workforce.

Performance and reward

We believe that our policy is appropriate for both the founder Directors and the appointed Executive Directors. The Committee considers the opportunities and risks in the long-term strategy and annual business plan when developing the policy and setting annual targets. The policy is simple, designed around an annual bonus rewarding financial performance paid in cash up to 100% of salary, and a further 50% settled in shares to the two non-founder Directors for performance between 'Stretch' and 'Maximum' targets, thereby building their respective shareholdings.

Adjusted PBT in 2018/19 was below the very stretching performance range set at the start of the year; as a result, there will be no pay out under the annual incentives for any of the Executive Directors.

The Committee discussed annual base pay increases for the Executive Directors, agreeing that they should receive an award of 2.1%, in line with the UK consumer price index (CPI) and consistent with that for eligible employees across the UK workforce. As a result of the Group's performance during 2018/19, the Committee did not consider a higher award for the Chief Executive for 2019. However, as stated last year, it reserves the option to adjust Will Lee's salary closer to the market over time, which may involve a salary increase above the average salary increase for the UK employee population as a whole.

Workforce considerations

The Committee reviews and discusses the remuneration arrangements and management decisions regarding base pay, bonuses and benefits for employees at other levels of management in consultation with the Chief Executive. The Committee also considers the base pay, bonus and benefits for all other employees in Renishaw.

A total salary award budget of 3.9% was made available for the UK workforce, comprising UK CPI and merit adjustments. Eligible non-UK employees received a country specific CPI base pay increase and merit adjustments where appropriate.

Additionally, the Committee has provided active support and advice to the Chief Executive as he considers the remuneration policy and practice for the workforce globally.

Review of the Remuneration Committee's activities

The Committee met five times during the year. Its main activities included:

- setting targets for the annual bonus and deferred equity incentive plan at the start of the year, with reference to the Company's budgets and forecasts;
- reviewing the implications for Executive Director remuneration at Renishaw of the revised UK Corporate Governance Code (published in July 2018) and recent developments in remuneration governance;
- reviewing remuneration arrangements across the Group;
- reviewing Executive Director salaries and approving bonus outcomes for the year;
- approving Sir David McMurtry's expenses; and
- reviewing gender pay gap reporting.

On behalf of Renishaw and the Remuneration Committee, I would like to thank you for your continued support and feedback. The Committee looks forward to meeting as many of you as possible at the forthcoming AGM, and hope that we can count on your support for this year's remuneration report.

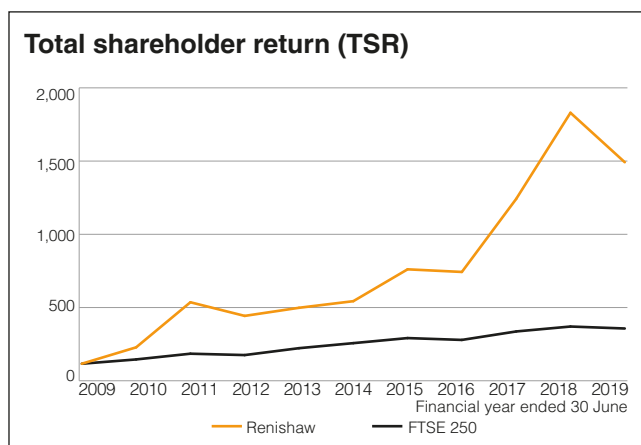
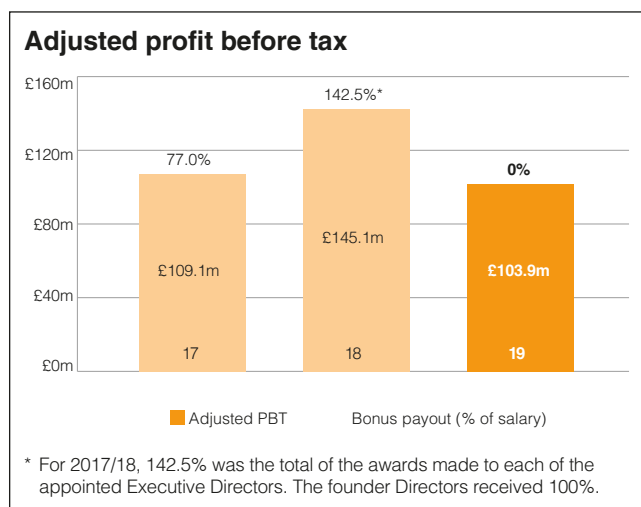
Catherine Glickman

Chair of the Remuneration Committee

1 August 2019

Remuneration at a glance

KPI – Performance snapshot



How is performance reflected in our incentives?

Adjusted* profit before tax is a key measure of Renishaw's financial performance.

In 2018/19 it was our sole measure for both the annual cash bonus and deferred equity incentive plan.

Our financial performance for 2018/19 has resulted in no awards being made in relation to the annual cash bonus or the deferred annual equity incentive plan.

Alignment of Executive Director and shareholder interests is reinforced by the significant shareholdings of our founder Directors, and for non-founder Directors through deferred annual equity plan awards being denominated in shares. Renishaw's TSR has outperformed the FTSE 250 index over the last three and five years. TSR over these periods has been 103% and 181%, respectively. This compares with 30% and 42% for the FTSE 250 over the same timeframe.

Executive Director remuneration in 2018/19

£'000	Sir David McMurtry	John Deer	Will Lee	Allen Roberts	Geoff McFarland
Base salary	700	437	550	409	409
Taxable benefits	3	21	20	21	20
Pension	n/a	n/a	83	61	61
Annual cash bonus	–	–	–	–	–
Deferred equity incentive	n/a	n/a	–	–	–
Total	703	458	653	491	490
Shareholding (multiple of salary)	1,604x	1,192x	0.22x	0.54x	0.52x

Implementation of Policy in 2019/20

Salary

The Executive Directors will each receive a salary increase of 2.1% in line with that for the UK workforce.

Benefits

The package of benefits for Executive Directors is unchanged from 2018/19.

Annual cash bonus

2019/20 awards under the annual cash bonus will continue to be structured in line with the remuneration policy.

Deferred equity incentive plan

2019/20 awards under the plan will continue to be structured in line with the remuneration policy. Awards are deferred into shares, normally held for three years.

* Note 25, Alternative performance measures, defines how Adjusted profit before tax is calculated.

Remuneration policy

This section of the Directors' remuneration report sets out the Directors' remuneration policy of the Company.

Executive Directors' policy table

Set out below is a table describing each component of the remuneration package for Executive Directors. This policy remains unchanged from that published in last year's Directors' remuneration report and approved by shareholders at the 2017 AGM, save for minor changes to aid clarity and improve transparency, including updated performance scenario charts, to reflect 2019/20 remuneration and additional disclosure under the section Statement of consideration of shareholder views.

Total remuneration policy	Purpose and relevance to strategy	Operation	Maximum	Performance measures
Total remuneration	To attract, motivate and retain talented executive directors to support delivery of Renishaw's strategy and maximise long-term shareholder value.	Executive Director remuneration is designed to be simple, conservative and aligned with shareholder interests.	A cap on total remuneration at upper quartile of the relevant market for the position in question, will apply.	Described below in relation to each constituent element of remuneration.

Our total remuneration policy comprises the following constituent elements:

Element of remuneration	Purpose and relevance to strategy	Operation	Maximum	Performance measures
Base salary	To provide a competitive remuneration package to motivate and retain executive directors of the required quality to help the Group meet its objectives to deliver the Group's strategy.	Renishaw aims to pay base salaries between median and upper quartile, reflecting that its variable pay opportunities remain significantly below market.	Salaries are set to deliver total remuneration in accordance with the policy defined above. Base salary increases will normally be capped at the level of salary increases for the broader workforce, unless the Committee in its absolute discretion determines that a higher increase is appropriate. Example circumstances include: to reflect a significant change in a director's role or responsibilities, or if (in shareholders' interests) a director was intentionally appointed on a below-market total remuneration opportunity initially and their subsequent performance in the role warrants an above-average salary increase. The rationale for any above-average increase will be disclosed in the relevant Annual remuneration report.	Continued good performance.

Directors' remuneration report continued

Element of remuneration	Purpose and relevance to strategy	Operation	Maximum	Performance measures
Benefits	To provide market-competitive benefits to motivate and retain executive directors and to support them to give maximum attention to their role.	<p>Benefits provided on an ongoing basis include:</p> <ul style="list-style-type: none"> • a car or car allowance; • private medical insurance; • life assurance; • long-term disability cover; and • home telephone costs. <p>If, on the appointment of a new Executive Director, relocation is required to the director's place of work, the necessary relocation support may be provided.</p>	Excluding accommodation and relocation costs, benefits are capped at £50,000 per annum.	Not applicable.
Annual cash bonus	To incentivise and reward execution of the Group's objectives.	<p>The Committee sets Group performance targets, including a threshold below which no bonus is earned increasing from zero on a straight-line basis to a target at which 75% of salary would be earned, and to a cap at which a maximum 100% of salary could be earned.</p> <p>Part or all of any bonus paid may be subject to repayment in the event of any material financial misstatement, error in calculation or misconduct.</p>	100% of salary.	<p>Based on Group performance, primarily measured by Adjusted profit before tax (the key measure of Group performance used by shareholders and by the Board). The Committee may introduce other metrics (financial and non-financial) to reflect the Group's priorities, or make adjustments to appropriately reflect underlying performance, provided that the bonus will always be subject to achievement of the threshold financial performance. Targets will be set around the Group's internal strategic plan. Any non-financial metrics shall not form more than 25% of the overall bonus opportunity.</p>

Element of remuneration	Purpose and relevance to strategy	Operation	Maximum	Performance measures
Deferred annual equity incentive plan	To incentivise and reward outperformance beyond the annual bonus maximum, and encourage executive director share ownership.	<p>If performance exceeds the level at which a maximum annual short-term bonus is earned, incremental profit growth beyond this level may be rewarded through a deferred annual equity incentive. Any such award is deferred in shares for a period of three years.</p> <p>Dividends may accrue on deferred shares over the deferral period and, if so, will be paid as additional shares (or a cash equivalent) on vesting.</p> <p>Part or all of any deferred annual equity award may be subject to repayment in the event of any material financial misstatement, error in calculation or misconduct.</p>	50% of salary.	As per the annual cash bonus above.
Pension	To provide a competitive pension as appropriate to motivate and retain executive directors of the required quality to meet the Group's objective.	<p>Each of Allen Roberts and Geoff McFarland receives a payment of 15% of salary, being the amount that would otherwise be contributed to a pension scheme on their behalf.</p> <p>Will Lee is entitled to an annual pension contribution of 15% of salary to the Company's defined contribution scheme, but, as agreed by the Committee, most of this is taken as a salary supplement, with the level of pension contribution dependent on the value of his pension pot from time to time and the annual allowance.</p> <p>For any new executive director, annual contributions of up to 15% of salary would be made to the Company's defined contribution scheme or all or part as an allowance paid in lieu, as agreed by the Committee.</p> <p>Will Lee and Geoff McFarland are deferred members of the Company's defined benefit scheme which closed for future accruals on 5 April 2007. Sir David McMurtry and John Deer receive no pension contribution or allowance in lieu.</p>	The maximum contribution to the defined contribution scheme, or, where applicable, additional salary payment in lieu of contributions is 15% of base salary.	Not applicable.
Minimum shareholding guideline	Supports the alignment of Executive and shareholder interests.	<p>Executive Directors are expected to build up and maintain a level of share ownership of at least 50% of base salary.</p> <p>50% of any net vested share awards (after sales to meet tax liabilities) must be retained until the minimum shareholding guideline is met.</p>	Not applicable.	Not applicable.

Directors' remuneration report continued

Approach to recruitment remuneration

When agreeing the remuneration package for a new Executive Director, the Committee will apply the policy for the existing Executive Directors to ensure a consistent approach, except as set out below.

For an external hire, base salary will be set in line with the factors set out in the policy table, taking into account the individual's experience and the amount required to attract the individual to join the Company. The Committee may also consider paying compensation to new hires who forfeit any award under the variable remuneration arrangements with a previous employer. Any such buyout awards would have a fair value no higher than that of the awards being replaced, and would be structured as far as possible to replicate the awards being forfeited, in terms of vesting horizons and performance linkage.

Where a new Executive Director is required to relocate from their home location to take up their role, the Committee may provide reasonable relocation assistance and other appropriate allowances if business needs require it.

When an internal appointment is made, any pre-existing obligations will be honoured and payment will be permitted under the policy.

As described in the Statement from the Chair of the Remuneration Committee, the pension contribution for any Executive Director appointed after 1 July 2019 will be aligned with that available to the wider workforce in the relevant market.

Committee discretion in exceptional circumstances

The Committee retains discretion in exceptional circumstances to offer a long-term incentive to support Renishaw in securing the best Executive Director candidate if the Committee considers it to be in shareholders' best interests to do so. Any use of this discretion would be limited by our internal policy for the aggregate of all incentive opportunities (as a percentage of salary) not to exceed market median, and for an individual Executive Director's total remuneration not to exceed upper quartile. Any use of this discretion would be accompanied by a full rationale in the relevant annual remuneration report.

Service contracts and policy on payment for loss of office

The Executive Directors' service contracts require 12 months' notice of termination by either party. There are no obligations in any Executive Director's service contract or Non-executive Director's letter of appointment which would require the Company to pay a specific amount of compensation for loss of office.

The Executive Directors' service contracts reflect the Company's policy regarding notice periods. No payment will be made for a termination by the Company for a breach by the executive director of his or her service contract. In other cases, payment in lieu of notice will be considered up to the 12 months' notice period to cover base salary, benefits and pension contributions.

If additional compensation is required to be considered, such as on a settlement agreement, the Committee will consider all relevant commercial factors affecting the specific case.

Statement of consideration of employment conditions elsewhere in the Group

The Committee takes into account the pay and employment conditions of the Group in the country in which the Executive Director resides, and is satisfied that the approach taken is fair and reasonable based on market conditions and practice and the best interests of shareholders. When considering the annual salary review, the average base salary increase awarded to employees provides a guide when determining the salaries of the Executive Directors (located in the same country).

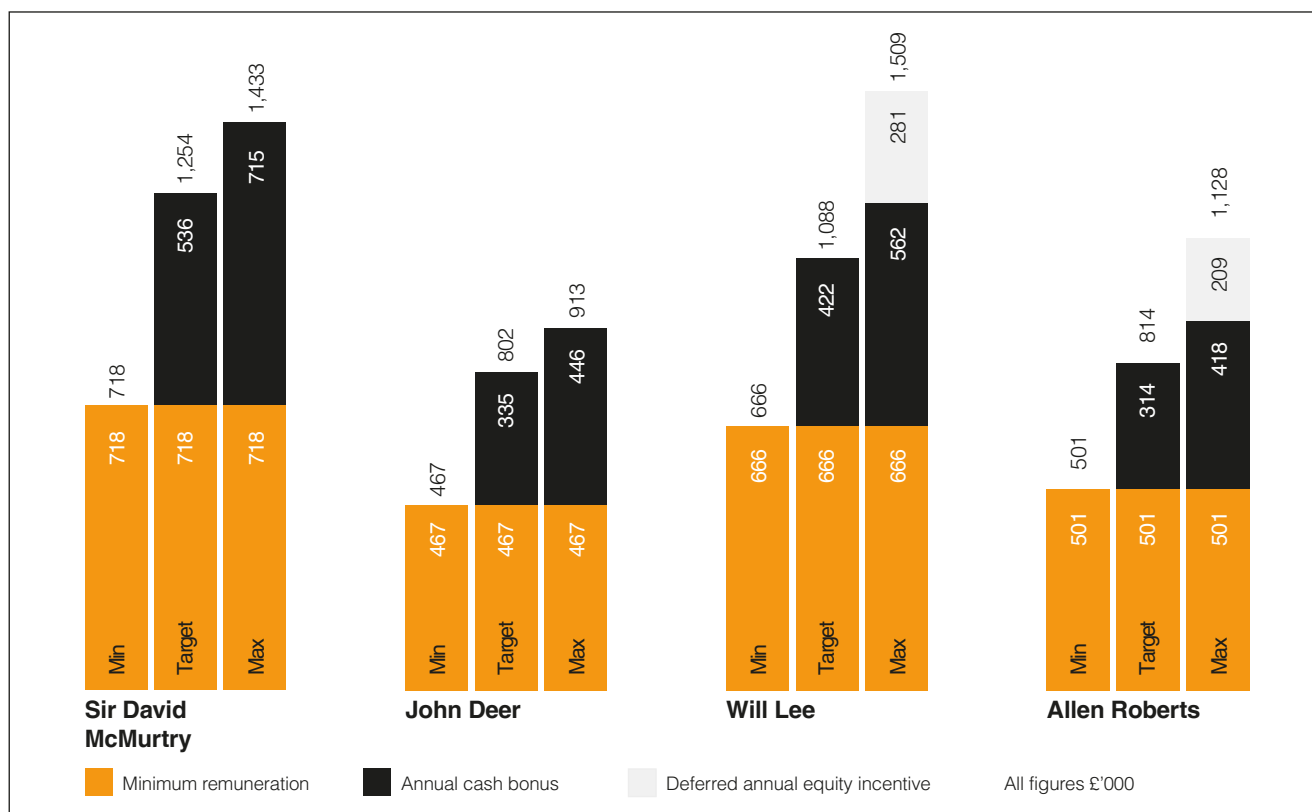
The Company does not specifically consult with employees on its Executive Director remuneration policy.

Statement of consideration of shareholder views

The Committee has taken into account feedback provided by external shareholders when drawing up the remuneration policy. At the AGM in 2017, the binding vote on the remuneration policy received proxy votes of 98.94% in favour. At the AGM in 2018, the advisory vote on the Directors' remuneration report received proxy votes of 95.21% in favour.

Illustrations of application of remuneration policy

The bar charts set out below for each Executive Director show for the financial year ending 30 June 2020: firstly, the minimum remuneration payable in respect of salary, benefits and pension; secondly, the remuneration payable if performance is in line with the Company's expectations; and thirdly, the remuneration payable if the maximum bonus and deferred annual equity incentive is payable. Note that deferred equity incentive plan awards granted in a year will not normally vest until the third anniversary of the date of grant, and the projected value excludes the impact of share price movement.



Non-executive Directors' policy table

The remuneration of the Non-executive Directors is determined by the Executive Directors and consists of a board fee only. There is no entitlement to any additional fees nor any bonus, incentive plans or pension. Set out below is a table summarising the approach to fees for the Non-executive Directors of the Company:

The Non-executive Directors are appointed for an initial three-year period subject to annual performance review and re-election at AGMs, unless terminated earlier by either party on one month's written notice. Appointments will not normally continue beyond nine years in office.

Element of remuneration	Purpose and relevance to strategy	Operation	Maximum	Performance measures
Board fees	To provide a competitive fee to attract and retain non-executive directors of the required quality to meet the Group's objectives.	All Non-executive Directors are paid the same fee, irrespective of membership of, or their chairing of, Board committees. The fees are reviewed annually with reference to fees payable to non-executive directors of companies of a similar size and complexity. Reasonable expenses that are incurred by Directors in undertaking their duties as a director are reimbursed.	The maximum aggregate Non-executive Director fees payable are set by the Company's Articles of Association, currently an aggregate of £300,000 per annum.	Not applicable.

Directors' remuneration report continued

Annual remuneration report

This section of the report sets out the remuneration of the directors in the year ended 30 June 2019 and also contains details of how we intend to implement the policy for the forthcoming financial year. The information on pages 78 to 82 has been audited where required under the regulations and is indicated as audited where applicable.

Single total figure table (audited)

	Salary/fees		Benefits		Bonus ²		Pension		Total	
	2019 £'000	2018 £'000	2019 £'000	2018 £'000	2019 £'000	2018 £'000	2019 £'000	2018 £'000	2019 £'000	2018 £'000
Sir David McMurtry	700	700	3	2	0	700	n/a	n/a	703	1,402
John Deer	437	425	21	21	0	425	n/a	n/a	458	871
Will Lee ¹	550	461	20	19	0	658	83	61	653	1,199
Allen Roberts	409	398	21	21	0	567	61	60	491	1,046
Geoff McFarland ³	409	398	20	19	0	567	61	60	490	1,044
Carol Chesney	55	52	0	0	n/a	n/a	n/a	n/a	55	52
Catherine Glickman ⁴	>50	n/a	>0	n/a	n/a	n/a	n/a	n/a	51	n/a
Sir David Grant	55	52	0	0	n/a	n/a	n/a	n/a	55	52
John Jeans	55	52	1	1	n/a	n/a	n/a	n/a	56	53
Kath Durrant ⁵	5	52	0	0	n/a	n/a	n/a	n/a	5	52

1 Will Lee was appointed to the Board on 1 August 2016, and promoted to the role of Chief Executive with effect from 1 February 2018. His remuneration shown in the table above in relation to 2018 reflects the change to his remuneration on promotion to Chief Executive with effect from 1 February 2018, as set out in last year's Directors' remuneration report.

2 The value of the bonus includes both the value of the annual cash bonus and the face value of shares to be awarded under the deferred annual equity incentive in respect of the relevant financial year. Deferred shares will normally vest on the third anniversary of grant, subject to continued employment.

3 Geoff McFarland resigned from the Board on 30 June 2019. His remuneration shown in the table above is for the full financial year 2018/19.

4 Catherine Glickman joined the Board on 1 August 2018. Remuneration shown in the table above in relation to 2019 reflects the period from her appointment to 30 June 2019.

5 Kath Durrant stepped down from the Board on 31 July 2018. Remuneration shown in the table above in relation to 2019 reflects the period from 1 July 2018 to this date.

Benefits

	Car allowance £'000	Private medical cover applies to all Executive Directors and home telephone costs, insurance on personal cars and M4 bridge toll fees apply to some Directors £'000
Sir David McMurtry	–	3
John Deer	19	>1
Will Lee	19	1
Allen Roberts	19	>1
Geoff McFarland	19	1

Incentive outcomes for 2018/19

Under the remuneration policy approved at the 2017 AGM, all Executive Directors were eligible for an annual cash bonus of up to 100% of base salary in 2018/19. In addition, Executive Directors who are participants in the deferred annual equity incentive plan are eligible for an award over shares with a face value of up to 50% of base salary if the annual cash bonus maximum performance level is exceeded.

For 2018/19, the annual cash bonus and deferred annual equity incentive plan were based on a single financial measure, being the Group's adjusted profit before tax; no non-financial measures were included.

The Committee established stretching targets for the annual cash bonus and deferred annual equity incentive plan taking into account the profit growth expectations for the business, other financial parameters and strategic objectives to be achieved.

The adjusted profit before tax targets for 2018/19 were: threshold – £155m; on-target – £170m; and maximum – £185m.

As the adjusted profit before tax for 2018/19 was below the performance range set by the Committee, no awards were made for 2019 performance under either the annual cash bonus or the deferred annual equity incentive plan.

Total pension entitlements

Will Lee and Geoff McFarland are members of the Company's closed defined benefit scheme. The normal retirement age is 65. On death, pension benefits would pass to that member's dependants.

Since the closure of the defined benefit scheme, contributions have been made to a defined contribution scheme or paid in cash.

At 30 June 2019:	Value of defined benefit pension entitlement £'000 per annum	Pension contributions
Will Lee	9	Paid in cash
Geoff McFarland	31	Paid in cash

Payments to past directors

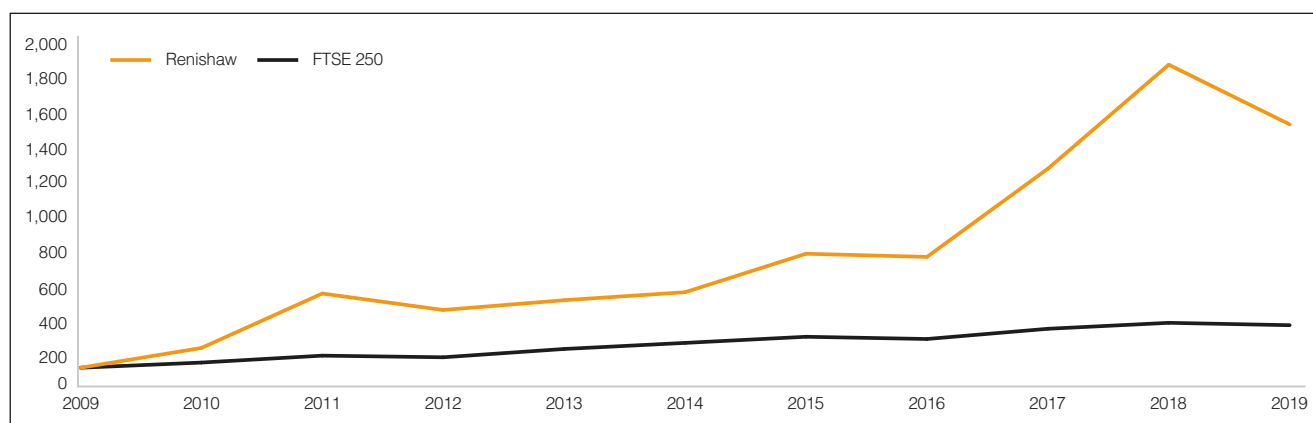
No payments were made to past directors during the year.

Loss of office payments

There were no loss of office payments during the year.

Performance graph

The graph below shows the Company's total shareholder return (TSR) performance, compared with the FTSE 250 index, which the Committee believes is the most appropriate broad index for comparison, as Renishaw is a constituent of this index. TSR performance has been rebased to 100 at 30 June 2009.



Directors' remuneration report continued

Chief Executive total remuneration

The table below sets out information relating to the remuneration of the Chief Executive for each of the years in question:

Year	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Will Lee (from 1 February 2018)										
Single figure of total remuneration (£'000)	653	594								
Annual bonus payout (includes annual cash bonus and deferred equity incentive) % of maximum	0	95								
Long-term incentive vesting % of maximum	n/a	n/a								
Sir David McMurtry (until 31 January 2018)										
Single figure of total remuneration (£'000) ¹		818	1,207	668	1,298	632	663	969	1,066	472
Annual bonus payout % of maximum		100	77	0	100	0	10	69	100	0
Long-term incentive vesting % of maximum		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

¹ Represents the total remuneration received by Sir David McMurtry in relation to this role.

Executive Directors serving as non-executive directors of other companies

During the year none of the Executive Directors served as a non-executive director of any other company in respect of which any remuneration was received other than Geoff McFarland, who is a non-executive director of Cambridge Mechatronics Limited and receives a fee of £25,000 per annum which he retains.

Statement of Directors' shareholding and share interests

During the year, none of the Directors were required to own shares in the Company, although the remuneration policy approved by the shareholders at the AGM in 2017 includes a minimum shareholding guideline for Executive Directors. As at 30 June 2019 the share interests (including the interests of connected persons) of the Directors who have served on the Board at any time during the year are:

	Number of ordinary shares of 20p each beneficially owned (as at 30 June 2019)	Unvested and subject to continued employment (awarded under the deferred equity incentive plan)	Minimum shareholding guideline	Current shareholding ¹	Minimum shareholding guideline met
Sir David McMurtry	26,377,291	n/a	0.5x salary	1,604x salary	Yes
John Deer	12,233,040	n/a	0.5x salary	1,192x salary	Yes
Will Lee	2,800	3,537	2x salary	0.22x salary	Building
Allen Roberts	5,165	3,051	0.5x salary	0.54x salary	Yes
Geoff McFarland	5,000	3,051	0.5x salary	0.52x salary	Yes
Carol Chesney	1,000	n/a	n/a	n/a	n/a
Catherine Glickman	1,350	n/a	n/a	n/a	n/a
Sir David Grant	–	n/a	n/a	n/a	n/a
John Jeans	440	n/a	n/a	n/a	n/a
Kath Durrant ²	198	n/a	n/a	n/a	n/a

¹ Current shareholdings for comparison with the shareholding requirements for Executive Directors are calculated based on salary as at 30 June 2019 and by reference to the closing share price on 28 June 2019 (4,258p).

² Correct at 31 July 2018, when Kath Durrant stepped down from the Board.

On 2 August 2018, the Executive Directors, excluding Sir David McMurtry and John Deer, were granted awards of shares under the deferred equity incentive plan for performance over 2017/18. The details of these awards are summarised opposite and reflected in the above table.

Deferred equity incentive plan awards granted during the year

Executive Director	Number of shares	Face value £'000 ¹	Face value % of salary ²	Vesting date
Will Lee	3,537	196	42.5	2 August 2021
Allen Roberts	3,051	169	42.5	2 August 2021
Geoff McFarland	3,051	169	42.5	2 August 2021

1 Based on the five-day average share price of 5,549p preceding the award date.

2 Expressed as a percentage of salary at the award date which was 2 August 2018.

In line with our remuneration policy, awards normally vest on the third anniversary of the award date, subject to continued employment only.

Percentage change in remuneration of the Chief Executive

The following table sets out the percentage change in the Chief Executive's remuneration compared with the percentage change in average remuneration of UK employees from 2018 to 2019:

	2019 £'000	2018 £'000	Chief Executive % change	UK employees (average) % change
Salary	550	638 ¹	-13.8	+4.6
Benefits	20	19 ²	+5.3	+1.4
Annual bonus	0	735	-100.0	-33.9

1 Represents the salary received by Sir David McMurtry in relation to this role (£700,000 per annum for the period to 31 January 2018), and by Will Lee for the period from 1 February 2018 (£550,000 per annum).

2 2018 has been restated to include the value of Will Lee's car allowance (previously excluded to allow a like-for-like comparison with Sir David McMurtry's benefits package in 2017).

UK employees have been chosen as a comparator group in order to avoid the impact of exchange rate movements over the year. UK employees make up 62.8% of the total number of Group employees.

Relative importance of spend on pay

The following table sets out the total amount spent in the current financial year and the previous year on remuneration to all Group employees and on dividends to shareholders:

	2019 £'000	2018 £'000	Change %
Employee remuneration	237,222	226,809	+4.6
Shareholder dividends paid	43,672	38,942	+12.1

Except as shown above, no other distributions have been made to shareholders or other payments or uses of profit or cash flow which impact on the understanding of the relative importance of spend on pay.

Statement of implementation of remuneration policy in the next year

Executive Directors

Base salary

The Committee determined the salaries for each of the Executive Directors will be increased by 2.1%. This is in line with UK CPI and consistent with that for eligible employees across the UK workforce. The salaries will be as follows from 1 July 2019:

	1 July 2019 £'000	30 June 2019 £'000
Sir David McMurtry	715	700
John Deer	446	437
Will Lee	562	550
Allen Roberts	418	409

The package of benefits for Executive Directors is unchanged from 2018/19.

Annual cash bonus

As set out in the remuneration policy, the maximum bonus opportunity for the year ending 30 June 2020 will continue to be 100% of salary for Executive Directors. Measures will be approved and targets set by the Committee in line with our stated policy. Further details (including, if awards are made, the targets) will be disclosed in next year's Annual remuneration report.

Deferred annual equity incentive

For 2019/20, non-founder Executive Directors will again be eligible for an award of up to 50% of salary under the deferred annual equity incentive, subject to stretching targets (in excess of the level required for the annual cash bonus to pay out in full) being achieved. Any award under this plan will be delivered in Renishaw shares that normally vest on the third anniversary of grant, subject to continued employment over that period. Further details will be disclosed in next year's Annual remuneration report as set out in relation to the annual cash bonus above.

Directors' remuneration report continued

Non-executive Directors

The fee paid to each of the Non-executive Directors for the year ending 30 June 2020 will be £56,155 (£55,000 for the year ending 30 June 2019). No additional fees are paid, for example, for chairing Board committees.

Consideration by Directors of matters relating to Directors' remuneration

During the year, the Remuneration Committee considered the amount of the Executive Directors' salary and the framework for the annual bonus. The members of the Committee for this purpose were:

Kath Durrant (until 31 July 2018)

Catherine Glickman (from 1 August 2018)

Carol Chesney

Sir David Grant

John Jeans

Mercer Kepler assisted the Committee in reviewing and benchmarking the Executive Director and senior management remuneration arrangements, as well as providing other remuneration-related advice to the Committee during the year under review.

Mercer Kepler is a founder member of the Remuneration Consultants Group and, as such, voluntarily operates under the code of conduct in relation to executive remuneration consulting in the UK. Total professional fees and expenses paid to Mercer Kepler for advice received in the year were £27,690. Mercer Kepler was appointed by the Committee and have not advised the Company on any other matters. During the year, the actuarial advisory division of Mercer Limited (Mercer Kepler's parent company) provided advice to the trustees of the Company's UK defined benefit pension scheme and in relation to the defined contribution scheme. This work is entirely separate from the work undertaken by Mercer Kepler for the Committee.

The Committee is of the opinion that the advice received from Mercer Kepler is objective and independent.

The Company Secretary acts as secretary to the Committee. Executive Directors may attend meetings of the Committee by invitation for parts of the agenda, as appropriate, and independent advisers are used as required. Executive Directors are not present for discussions in relation to their own remuneration.

Statement of voting at general meeting

At the AGM held on 20 October 2017, votes cast in respect of the Directors' remuneration policy were as follows:

Resolution	Votes for	% for	Votes against	% against	Total votes cast	Votes withheld
Approval of remuneration policy	60,902,216	98.94	654,533	1.06	61,556,749	1,187,755

At the AGM held on 18 October 2018, the votes cast in respect of the Directors' remuneration report were as follows:

Resolution	Votes for	% for	Votes against	% against	Total votes cast	Votes withheld
Approval of remuneration report	60,347,267	95.21	3,033,049	4.79	63,380,316	251,570

This report was approved by the Board and has been signed on its behalf by:

Catherine Glickman

Chair of the Remuneration Committee

1 August 2019

Other statutory and regulatory disclosures

Review of the business

A review of the business and likely future developments is given in the Chairman's statement, the Chief Executive's review and the other sections of the Strategic report. Segmental information by geographical market is given in note 2 to the Financial statements.

The principal activities of the Company are the design, manufacture, sale, distribution and service of metrology and healthcare products and solutions outlined on page 2 of the Strategic report. The Group has established and acquired overseas manufacturing, marketing and distribution subsidiaries to manufacture some of the Group's products and provide support to customers in our major markets in the following regions outside the UK:

- **EMEA:** Austria, Czech Republic, Denmark, Finland, France, Germany, Hungary, Israel, Italy, Ireland, Netherlands, Poland, Romania, Russia, Spain, Sweden, Switzerland and Turkey;
- **Americas:** Brazil, Canada, Mexico and USA; and
- **APAC:** Australia, China, Hong Kong, India, Japan, Malaysia, Singapore, South Korea and Taiwan.

There are also representative offices in Indonesia, Slovakia, Thailand and Vietnam and a joint venture in Slovenia, RLS Merilna tehnika d.o.o. (RLS).

In addition, the Group has a subsidiary in Slovenia which designs and arranges the procurement of application-specific integrated circuits for the Group and RLS.

Further information is available on the Company's website: www.renishaw.com.

Dividends

The Directors propose a final dividend of £33,482,729 or 46.0p per share (2018: £33,482,729 or 46.0p per share) which, together with the interim dividend of £10,190,396 or 14.0p per share (2018: £10,190,396 or 14.0p), makes a total amount of dividends for the year of £43,673,125 or 60.0p per share, compared with £43,673,125 or 60.0p per share for the previous year.

As at 30 June 2019, 9,639 shares were held by the Renishaw plc Employee Benefit Trust (EBT). The shares held by the EBT may be used to satisfy awards made to employees under the Company's employee share plan, the Renishaw Deferred Annual Equity Incentive Plan. The terms of the EBT provide that any dividends payable on the shares held by the EBT are waived.

Directors and their interests

The Directors at the end of the year together with their interests in the share capital of the Company (with the equivalent number of voting rights), as notified to the Company, are listed on page 80.

All the interests were beneficially held with the exception of 2,434,411 shares (2018: 2,434,411 shares) which were non-beneficially held by John Deer but in respect of which he has voting rights.

There has been no change in the holdings shown on page 80 in the period 1 July 2019 to 1 August 2019. In accordance with the provisions of the Governance Code all Directors will retire and, being eligible, offer themselves for re-election at the AGM to be held on 24 October 2019, with the exception of Geoff McFarland who resigned on 30 June 2019. Details of Directors who offer themselves up for re-election are shown on pages 54 to 57 and full biographical details are available at www.renishaw.com.

Sir David McMurtry, as one party, and John Deer and Mrs M E Deer, as the other party, have entered into an agreement relating to the way each party would vote in respect of his or her shares if requested by the other party to do so. Under this agreement Sir David McMurtry, John Deer and Mrs M E Deer agree that (i) John Deer and Mrs M E Deer will vote their shares in favour of any ordinary resolution if requested to do so by Sir David McMurtry and (ii) Sir David McMurtry will vote his shares against any special or extraordinary resolution if requested to do so by John Deer. The voting arrangement was renewed in 2018 for a further period of five years and will terminate on the earlier of 25 May 2023 or the deaths of both Sir David McMurtry and John Deer.

The rules on appointment, reappointment and retirement by rotation of the Directors and their powers are set out in the Company's Articles of Association. There are no powers given to the Directors that are regarded as unusual.

Directors' and officers' indemnity insurance

Subject to the provisions of the Companies Act 2006, the Company's Articles of Association provide for the Directors and officers of the Company to be appropriately indemnified. The Company maintains insurance for its directors and officers in respect of their acts and omissions during the performance of their duties.

Share capital and change of control

Details of the Company's share capital, including rights and obligations, is given in note 21 to the Financial statements. The Company is not a party to any significant agreements that might terminate upon a change of control of the Company.

A shareholder authority for the purchase by the Company of a maximum of 10% of its own shares was in existence during the 2019 financial year. However, the Company did not purchase any of its own shares during that time.

Auditor

A resolution to reappoint Ernst & Young LLP as the auditor of the Company will be proposed at the forthcoming AGM.

Disclosure of information to auditor

The Directors who held office at the date of approval of this statement confirm that, so far as they are each aware, there is no relevant audit information of which the Company's auditor is unaware, and each Director has taken all the steps that he or she ought to have taken as a Director to make himself/herself aware of any relevant audit information and to establish that the Company's auditor is aware of that information.

Other statutory and regulatory disclosures continued

Annual General Meeting

The notice convening the AGM and an explanation of the resolutions sought are set out in a separate circular. At the meeting, the Company will be seeking shareholder approval for, among other things, the ability to make market purchases of its own ordinary shares, up to a total of 10% of the issued share capital.

The Directors consider that all the resolutions proposed are in the best interests of the Company, and its shareholders as a whole, and unanimously recommend that shareholders vote in favour of the resolutions, as they intend to do in respect of their own holdings.

Substantial shareholdings

Apart from the shareholdings (and corresponding voting rights) of Sir David McMurtry and John Deer (36.23% and 16.80% respectively), the table below discloses the voting rights that have been notified to the Company under the requirements of the Financial Conduct Authority's Disclosure Guidance and Transparency Rules DTR 5, which represent 3% or more of the voting rights attached to issued shares in the Company, as at 30 June 2019. It should be noted that these holdings may have changed since being notified to the Company. However, notification of any change is not required until an applicable threshold is crossed.

Substantial shareholdings	% of issued share capital	Number of shares
Baillie Gifford & Co	5.25%	3,846,993
BlackRock, Inc.	4.92%	3,578,133
Capital Research and Management Company	4.76%	3,465,730
Standard Life Investments Limited	4.99%	3,631,612

There have been no changes notified to the Company, in the holdings shown above, in the period 1 July 2019 to 1 August 2019.

Research and development

The Group has a continuing commitment to a high level of R&D. The expenditure involved is directed towards the R&D of new products relating to metrology (including AM systems), CAD and manufacturing systems and healthcare products, including Raman spectroscopy systems, dental and craniomaxillofacial implants and certain areas in the medical devices field. Further information on the expenditure on R&D is contained in the Performance – financial review section of the Strategic report on page 25.

Employees

The retention of highly-skilled employees is essential to the future of the business, and the Directors place great emphasis on the continuation of the Company's approved training policy. Health and safety matters are given special attention by the Directors and well-established systems of safety management are in place throughout the Group to safeguard employees, customers and others.

Employment policies are designed to provide equal opportunities irrespective of race, religion, gender, age, socio-economic background, disability or sexual orientation. Proper consideration is given to applications for employment from disabled people where suitable for appropriate vacancies. Employees who become disabled while with the Company will be given every opportunity to continue their employment through reasonable adjustment to their working conditions, equipment or, where this is not possible, retraining for other positions. They will also be afforded opportunities to continue training and gain promotion on the same basis as any other employee.

Details on information provided to employees on the performance of the business, consultation with employees and performance incentives are contained in the description of CSR activities set out on pages 45 to 47 and in the Our stakeholders section on pages 12 to 13.

There are no agreements with employees providing for compensation for any loss of employment that occurs because of a takeover bid.

Political donations

No political donations were made during the year.

Events after the balance sheet date

There have been no material events affecting the Company since the year end.

Financial risk management, objectives and policies

Descriptions of the use of financial instruments and the Group's financial risk management objectives and policies, and exposure to market risk, including credit and liquidity risk, can be found in note 20 to the Consolidated financial statements on pages 122 to 125.

Controlling shareholders' arrangements

The Listing Rules require that premium listed companies with 'controlling shareholders' (defined as a shareholder who individually or with any of their concert parties exercises or controls 30% or more of the votes that may be cast on all or substantially all the matters at the Company's general meeting) must enter into a relationship agreement containing specific independence provisions.

The independence provisions required by the Listing Rules are that:

- (i) transactions and arrangements with the controlling shareholder (and/or any of its associates) will be conducted at arm's length and on normal commercial terms;
- (ii) neither the controlling shareholder nor any of its associates will take any action that would have the effect of preventing the Company from complying with its obligations under the Listing Rules; and
- (iii) neither the controlling shareholder nor any of its associates will propose or procure the proposal of a shareholder resolution which is intended or appears to be intended to circumvent the proper application of the Listing Rules.

By virtue of his shareholding in the Company, Sir David McMurtry (Executive Chairman 36.23% shareholder) is a controlling shareholder. John Deer (Deputy Chairman, together with his wife, 16.80% shareholder) is also a controlling shareholder by virtue of a long-standing voting agreement between John Deer (and his wife) and Sir David McMurtry. The Board confirms that the Company has not been able to enter into a relationship agreement with its controlling shareholders, containing the independence provisions required by the Listing Rules. The Financial Conduct Authority (FCA) has been notified of this, as required by the Listing Rules. The controlling shareholders have informed the Board that they are not willing to enter into a relationship agreement because they are of the view that the requirement to enter into a relationship agreement infringes upon their rights as shareholders and their track record demonstrates that they act in the best interests of the Company.

As a result of there being no relationship agreement in place, the Listing Rules provide that certain enhanced oversight measures will apply to the Company.

This means, unless and to the extent the FCA agrees otherwise, all transactions with the controlling shareholders must be approved by the Company's shareholders (excluding the controlling shareholders) in accordance with the related party transaction requirements of the Listing Rules, and none of the normal exemptions apply.

Guidance has been received from the FCA about the application of the enhanced oversight measures to the remuneration and benefits received by the controlling shareholders in their capacity as Executive Directors (in accordance with the Company's approved remuneration policy) as well as other ordinary course corporate matters, such as the payment of dividends by the Company to all shareholders. The FCA has confirmed that either, these are not transactions or arrangements that fall within the enhanced oversight measures or, the FCA will permit a modification of the enhanced oversight measures so they will not apply, provided the arrangements remain in the ordinary course of business and, in the case of salary reviews and bonuses, provided they fall within the small transaction exemption in the Annex to LR 11. This guidance continues to apply in respect of remuneration awarded under the existing remuneration policy.

Greenhouse gas emissions

The disclosures concerning GHG emissions required by law are set out in the Corporate social responsibility report on pages 50 and 51.

Signed on behalf of the Board.

Mark Noble

General Counsel & Company Secretary

1 August 2019

Renishaw plc
Registered number 01106260
England and Wales

Directors' responsibilities

The Directors are responsible for preparing the Annual Report and the Group and Company Financial statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare Group and Company Financial statements for each financial year. Under that law the Directors have prepared the Group Financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union (EU) and have prepared the Company Financial statements in accordance with UK Accounting Standards, including FRS 101 'Reduced Disclosure Framework'.

Under company law the Directors must not approve the Financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the Company and of their profit or loss for that period.

In preparing each of the Group and Company Financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent;
- for the Group Financial statements, state whether they have been prepared in accordance with IFRSs as adopted by the EU, subject to any material departures disclosed and explained in the Financial statements;
- for the Company Financial statements, state whether applicable UK Accounting Standards, including FRS 101 'Reduced Disclosure Framework', have been followed, subject to any material departures disclosed and explained in the Company Financial statements; and
- prepare the Financial statements on the going concern basis unless it is inappropriate to presume that the Group and the Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Group and the Company, and enable them to ensure that the Financial statements comply with the Companies Act 2006. They are also responsible for taking such steps as are reasonably open to them to safeguard the assets of the Group and the Company to prevent and detect fraud and other irregularities.

Under applicable law and regulations, the Directors are also responsible for preparing a strategic report, directors' report, directors' remuneration report and corporate governance statement that comply with that law and those regulations.

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

Responsibility statement of the Directors in respect of the annual financial report

We confirm that to the best of our knowledge:

- the Financial statements, prepared in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group and of the Company and the undertakings included in the consolidation taken as a whole; and
- the Strategic report and the Directors' report include a fair review of the development and performance of the business during the year and the position of the Company and the Group at the year end, together with a description of the principal risks and uncertainties that they face.

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

Signed on behalf of the Board.

Allen Roberts

Group Finance Director

1 August 2019

Independent auditor's report to the members of Renishaw plc

Opinion

In our opinion:

- Renishaw plc's Group financial statements and parent company financial statements (the "financial statements") give a true and fair view of the state of the Group's and of the parent company's affairs as at 30 June 2019 and of the Group's profit for the year then ended;
- the Group financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union;
- the parent company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006, and, as regards the group financial statements, Article 4 of the IAS Regulation.

We have audited the financial statements of Renishaw plc which comprise:

Group	Parent company
Consolidated balance sheet as at 30 June 2019	Balance sheet as at 30 June 2019
Consolidated income statement for the year then ended	Statement of changes in equity for the year then ended
Consolidated statement of comprehensive income and expense for the year then ended	Related notes C27 to C42 to the financial statements including a summary of significant accounting policies
Consolidated statement of changes in equity for the year then ended	
Consolidated statement of cash flow for the year then ended	
Related notes 1 to 26 to the financial statements, including a summary of significant accounting policies	

The financial reporting framework that has been applied in the preparation of the Group financial statements is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union. The financial reporting framework that has been applied in the preparation of the parent company financial statements is applicable law and United Kingdom Accounting Standards, including FRS 101 "Reduced Disclosure Framework" (United Kingdom Generally Accepted Accounting Practice).

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report below. We are independent of the Group and parent company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to principal risks, going concern and viability statement

We have nothing to report in respect of the following information in the annual report, in relation to which the ISAs (UK) require us to report to you whether we have anything material to add or draw attention to:

- the disclosures in the annual report set out on pages 40 to 42 that describe the principal risks and explain how they are being managed or mitigated;
- the directors' confirmation set out on pages 38 to 39 in the annual report that they have carried out a robust assessment of the principal risks facing the entity, including those that would threaten its business model, future performance, solvency or liquidity;
- the directors' statement set out on page 63 about whether they considered it appropriate to adopt the going concern basis of accounting in preparing them, and their identification of any material uncertainties to the entity's ability to continue to do so over a period of at least twelve months from the date of approval of the financial statements;
- whether the directors' statement in relation to going concern required under the Listing Rules in accordance with Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit; or
- the directors' explanation set out on page 43 in the annual report as to how they have assessed the prospects of the entity, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the entity will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

Independent auditor's report to the members of Renishaw plc continued

Overview of our audit approach

Key audit matters	<ul style="list-style-type: none"> • Overstatement of revenue due to accelerated recognition of product revenue as a result of management override of controls. • Management override of controls over top-side adjustments posted through the consolidation process to misstate financial performance. • Assessment of hedge effectiveness of forward currency contracts. • Valuation of the defined benefit pension liability.
Audit scope	<ul style="list-style-type: none"> • We performed an audit of the complete financial information of eight components and audit procedures on specific balances for a further five components. • The components where we performed full or specific audit procedures accounted for 94% of Profit before tax, 90% of Revenue and 91% of Total assets.
Materiality	<ul style="list-style-type: none"> • Overall Group materiality of £5.5m which represents 5.0% of Group profit before tax for both continuing and discontinued operations.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in our opinion thereon, and we do not provide a separate opinion on these matters.

Risk	Our response to the risk	Key observations communicated to the Audit Committee
<p>Overstatement of revenue due to accelerated recognition of product revenue as a result of management override of controls (£574.0m, 2018: £611.5m)</p> <p>Refer to the Audit Committee Report (page 67); Accounting policies (page 103 and 104); and Note 2 of the Consolidated Financial Statements (pages 109 and 110)</p> <p>There is an incentive to manipulate timing of revenue recognition through inappropriate cut-off through management override.</p>	<p>We performed walkthroughs of the revenue recognition process for all material revenue streams to assess the design and implementation of key controls.</p> <p>For a number of reporting units, which covered 46% of total revenue, we used data analysis tools on 100% of revenue transactions in the year to test the correlation of revenue to cash receipts to verify the occurrence of revenue. We tested non-correlating entries with detailed testing of a sample of revenue transactions to ensure that revenue had been appropriately recognised.</p> <p>For those in-scope locations where we did not use data analysis tools we performed representative sampling, tracing revenue transactions recorded throughout the year to cash receipts.</p> <p>We selected a sample of revenue transactions recorded before year end and obtained documentation to verify that revenue recognition criteria had been met. Our testing strategy included randomly selecting items below our standard testing threshold in order to introduce unpredictability.</p> <p>We selected a sample of credit notes issued after year-end and obtained documentation to verify that revenue adjustments had been recorded when appropriate.</p> <p>We performed full and specific scope audit procedures over this risk area in twelve locations, which covered 94% of the Group's revenue, of which the Primary Team performed the procedures in three locations which covered 35% of the Group's revenue.</p>	<p>Based on the audit procedures performed, revenue transactions have been recognised appropriately.</p> <p>Our procedures did not identify instances of inappropriate management override in the recognition of revenue across the Group.</p>

Risk	Our response to the risk	Key observations communicated to the Audit Committee
<p>Management override of controls over top-side adjustments posted through the consolidation process to misstate financial performance</p> <p>Refer to the Audit Committee Report (page 67); Accounting policies (page 103 and 104)</p> <p>There are a number of top-side adjustments posted through the consolidation process, many of which are material to the consolidated financial statements. The calculations behind these adjustments are manual in nature, leading to increased risk of misstatement.</p>	<p>We walked through the consolidation process to assess the design and implementation of key controls over the manual consolidation process.</p> <p>For all full and specific scope locations we independently verified the results of the consolidated entities used in the manual consolidation by agreeing the results included in the consolidation directly to the results audited by the component audit teams. For a sample of the remaining entities we verified the results of the consolidated entities to the underlying source data. We selected all journals posted through the consolidation process exceeding 15% of performance materiality and obtained evidence to verify the validity and accuracy of the journals being posted.</p>	<p>We identified one audit difference in relation to the depreciation of overseas properties, which was not material to the accounts, and we consider the deprecation charge and property balances to be reasonably stated. Based on the audit procedures performed, top-side adjustments posted through the consolidation process are appropriate. Our procedures did not identify instances of management override of controls over top-side adjustments posted through the consolidation process.</p>
<p>Assessment of hedge effectiveness of forward currency contracts (£50.1m, 2018: £28.6m)</p> <p>Refer to the Audit Committee Report (pages 67 and 68); Accounting policies (page 105); and Note 20 of the Consolidated Financial Statements (pages 122 to 125)</p> <p>The Group uses derivative financial instruments to manage risks arising from changes in foreign currency exchange rates relating to forecast sales. The Group designates certain derivatives as hedges of a particular risk associated with a recognised asset or liability or a highly probable forecast transaction (cash flow hedge). Hedge accounting is discontinued when the hedging instrument expires or is sold, terminated or exercised, or no longer qualifies for hedge accounting. Changes in the fair value of foreign currency derivatives which are ineffective or do not meet the criteria for hedge accounting in IFRS 9 'Financial Instruments' are recognised in the income statement. For those instruments which are effective and meet the criteria for hedge accounting, the change in fair value is recognised in other comprehensive income. Given the complexity of hedge accounting and the criteria for hedge effectiveness documentation under the provisions of IFRS 9 we continued to focus on this area.</p>	<p>We gained an understanding of the key controls and processes in place to assess the hedging effectiveness of forward currency contracts. We ensured that the requirements of IFRS 9 were met by:</p> <ul style="list-style-type: none"> • ensuring the appropriateness of the methodology used by management to hedge account. Through the involvement of our treasury specialists we reviewed a sample, spanning all banks and counterparties that Renishaw has deals with, of the terms and conditions of the different categories of forward currency contracts open at the year end and determined whether hedge accounting was permissible under IFRS 9; • using our treasury specialists to evaluate management's documentation and assessment of hedge effectiveness for a sample of hedge effectiveness model types; and • ensuring that the financial statement disclosures were in accordance with accounting standards. 	<p>Based on the audit procedures performed, we confirmed that the Group's assessment of hedging activities, including designation of forward currency contracts, and resulting classification of changes in their fair value, and the disclosures within Note 20 were in accordance with the requirements of IFRS 9.</p>

Independent auditor's report to the members of Renishaw plc continued

Risk	Our response to the risk	Key observations communicated to the Audit Committee
<p>Valuation of the defined benefit pension liability (£233.5m, 2018: £240.2m)</p> <p>Refer to the Audit Committee Report (pages 67 and 68); Accounting policies (page 107); and Note 13 of the Consolidated Financial Statements (pages 118 to 120)</p> <p>A gross defined benefit pension liability of £233.5m was held at 30 June 2019 in respect of Group schemes. As a result of the quantum of this liability, the level of judgement involved in calculating the closing liability, and the fact that relatively small movements in assumptions can result in a material impact to the financial statements there is an increased risk of material misstatement.</p> <p>Whilst management utilises the services of third-party actuarial advisors to determine their key assumptions, there is a risk that the discount rate, rate of inflation and mortality assumptions used in the calculation are inappropriate.</p>	<p>We understood and walked through management's process and methodology for calculating the pension liability to gain an understanding of the design and implementation of key controls.</p> <p>We evaluated the competence and objectivity of management's external actuarial experts.</p> <p>We obtained the IAS 19 'Employee Benefits' actuarial valuations for the UK and Irish Pension Schemes as prepared by management's experts and considered the reasonableness and consistency of the methodology used to calculate the pension liabilities through involvement of our actuarial specialists.</p> <p>We used our internal actuarial specialists to challenge the appropriateness of the significant assumptions used in determining the defined benefit pension liabilities including the discount rate, RPI and CPI inflation assumptions and mortality assumptions. Specifically, we ensured these fell within an acceptable range by benchmarking these against our independently calculated actuarial assumptions.</p> <p>We assessed the appropriateness and adequacy of the disclosures in respect of the defined benefit pension liability in Note 13 of the annual report.</p>	<p>All but one of the actuarial assumptions fell within our accepted range. However, overall based on the procedures performed we are satisfied that the closing liability is materially correct.</p> <p>We are satisfied that the disclosure in Note 13 is aligned with the requirements of IAS 19.</p>

An overview of the scope of our audit

Tailoring the scope

Our assessment of audit risk, our evaluation of materiality and our allocation of performance materiality determine our audit scope for each component within the Group. Taken together, this enables us to form an opinion on the Consolidated financial statements. We take into account size, risk profile, the organisation of the Group and effectiveness of group-wide controls, changes in the business environment and other factors such as recent internal audit results when assessing the level of work to be performed at each component.

In assessing the risk of material misstatement to the Group financial statements, and to ensure we had adequate quantitative coverage of significant accounts in the financial statements, of the 50 reporting components of the Group, we selected 13 components covering entities in China, France, Germany, Hong Kong, India, Ireland, Italy, Japan, South Korea, Spain, the United Kingdom and the United States of America, which represent the principal business units within the Group.

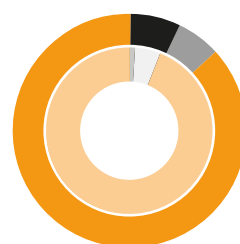
Of the 13 components selected, we performed an audit of the complete financial information of eight components ('full scope components') which were selected based on their size or risk characteristics. For the remaining five components ('specific scope components'), we performed audit procedures on specific accounts within that component that we considered had the potential for the greatest impact on the significant accounts in the financial statements either because of the size of these accounts or their risk profile.

The reporting components where we performed audit procedures accounted for 94% (2018: 95%) of the Group's Profit before tax, 90% (2018: 89%) of the Group's Revenue and 91% (2018: 88%) of the Group's Total assets. The audit scope of these components may not have included testing of all significant accounts of the component but will have contributed to the coverage of significant accounts tested for the Group.

Of the remaining 37 components that together represent 6% of the Group's Profit before tax, none are individually greater than 2% of the Group's Profit before tax. For a sample of these components we performed other procedures, including analytical review, to respond to any potential risks of material misstatement to the Group financial statements.

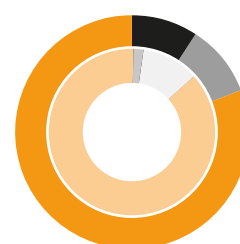
The charts below illustrate the coverage obtained from the work performed by our audit teams.

Profit before tax



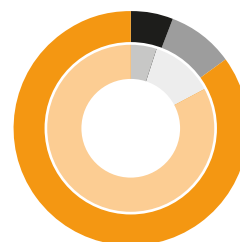
2019	2018
87% Full scope components	94% Full scope components
7% Specific scope components	1% Specific scope components
6% Other procedures	5% Other procedures

Revenue



2019	2018
81% Full scope components	87% Full scope components
9% Specific scope components	2% Specific scope components
10% Other procedures	11% Other procedures

Total assets



2019	2018
85% Full scope components	83% Full scope components
6% Specific scope components	5% Specific scope components
9% Other procedures	12% Other procedures

Changes from the prior year

The following changes in scope from the prior year to ensure that we performed sufficient work to be able to give an opinion on the financial statements as a whole taking into account the structure of the Group and company and the level of activity of each Group company within the year:

the scope for itp GmbH was reduced from specific scope in the prior year to review scope in the current year while Renishaw Ibérica, Renishaw Latino Americana and Renishaw Oceania were designated as review scope for the current year, all three were not in scope in the prior year.

Involvement with component teams

In establishing our overall approach to the Group audit, we determined the type of work that needed to be undertaken at each of the components by us, as the primary audit engagement team, or by component auditors from other EY global network firms operating under our instruction. Of the eight full scope components, audit procedures were performed on three of these (including Renishaw, Inc. in the USA) directly by the primary audit team, and of the five specific scope components, audit procedures were performed on three of these directly by the primary audit team. For the remaining five full scope components and two specific scope components, where the work was performed by component auditors, we determined the appropriate level of involvement to enable us to determine that sufficient audit evidence had been obtained as a basis for our opinion on the Group as a whole.

Independent auditor's report to the members of Renishaw plc continued

During the current year's audit cycle, visits were undertaken by the primary audit team to the component teams in China, Germany, Hong Kong and Ireland. These visits involved discussing the audit approach with the component teams, discussing key risk areas, meeting with local management, and attending planning meetings. The primary team interacted regularly with the component teams where appropriate during various stages of the audit, reviewed key working papers, attended all closing meetings via video conferencing facilities and were responsible for the scope and direction of the audit process. This, together with the additional procedures performed at Group level, gave us appropriate evidence for our opinion on the Group financial statements.

Our application of materiality

We apply the concept of materiality in planning and performing the audit, in evaluating the effect of identified misstatements on the audit and in forming our audit opinion.

Materiality

The magnitude of an omission or misstatement that, individually or in the aggregate, could reasonably be expected to influence the economic decisions of the users of the financial statements. Materiality provides a basis for determining the nature and extent of our audit procedures.

We determined materiality for the Group to be £5.5 million (2018: £7.8 million), which is 5.0% (2018: 5.0%) of Group Profit before tax for continuing and discontinued operations. We believe that Group Profit before tax for continuing and discontinued operations provides us with consistent year-on-year basis for determining materiality and is a generally accepted auditing benchmark for listed entities and is used by the board in measuring performance and communicating to the market.

We determined materiality for the parent company to be £1.7 million (2018: £3.9 million), which is 5.0% (2018: 5.0%) of profit before tax and dividends received. We believe that profit before tax provides us with consistent year-on-year basis for determining materiality and is a generally accepted auditing benchmark given that the company generates revenues of its own.

Performance materiality

The application of materiality at the individual account or balance level. It is set at an amount to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds materiality.

On the basis of our risk assessments, together with our assessment of the Group's overall control environment, our judgement was that performance materiality was 75% (2018: 75%) of our planning materiality, namely £4.1m (2018: £5.9m). We have set performance materiality at this percentage due to the past history of few misstatements indicating a lower risk of misstatement in the financial statements.

Audit work at component locations for the purpose of obtaining audit coverage over significant financial statement accounts is undertaken based on a percentage of total performance materiality. The performance materiality set for each component is based on the relative scale and risk of the component to the Group as a whole and our assessment of the risk of misstatement at that component. In the current year, the range of performance materiality allocated to components was £0.3m to £2.5m (2018: £0.3m to £3.0m).

Reporting threshold

An amount below which identified misstatements are considered as being clearly trivial.

We agreed with the Audit Committee that we would report to them all uncorrected audit differences in excess of £0.3m (2018: £0.4m), which is set at 5% of planning materiality, as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds.

We evaluated any uncorrected misstatements against both the quantitative measures of materiality discussed above and in light of other relevant qualitative considerations in forming our opinion.

Other information

The other information comprises the information included in the annual report set out on pages 1 to 85, including the Strategic Report, set out on pages 1 to 51, Governance, set out on pages 52 to 85, and Shareholder information, set out on pages 142 to 148, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information.

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in this report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact.

We have nothing to report in this regard.

In this context, we also have nothing to report in regard to our responsibility to specifically address the following items in the other information and to report as uncorrected material misstatements of the other information where we conclude that those items meet the following conditions:

- **Fair, balanced and understandable set out on page 63** – the statement given by the directors that they consider the annual report and financial statements taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's performance, business model and strategy, is materially inconsistent with our knowledge obtained in the audit; or
- **Audit committee reporting set out on pages 66 to 69** – the section describing the work of the audit committee does not appropriately address matters communicated by us to the audit committee; or
- **Directors' statement of compliance with the UK Corporate Governance Code set out on page 64** – the parts of the directors' statement required under the Listing Rules relating to the company's compliance with the UK Corporate Governance Code containing provisions specified for review by the auditor in accordance with Listing Rule 9.8.10R(2) do not properly disclose a departure from a relevant provision of the UK Corporate Governance Code.

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, the part of the directors' remuneration report to be audited has been properly prepared in accordance with the Companies Act 2006.

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the Group and the parent company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or the directors' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us; or
- the parent company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of directors

As explained more fully in the directors' responsibilities statement set out on page 86, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the Group and parent company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group or the parent company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud

The objectives of our audit, in respect to fraud, are: to identify and assess the risks of material misstatement of the financial statements due to fraud; to obtain sufficient appropriate audit evidence regarding the assessed risks of material misstatement due to fraud, through designing and implementing appropriate responses; and to respond appropriately to fraud or suspected fraud identified during the audit. However, the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of the entity and management.

Our approach was as follows:

- we obtained an understanding of the legal and regulatory frameworks that are applicable to the Group and determined that the most significant are those that relate to the reporting framework (IFRS, FRS 101 and the Companies Act 2006, the Financial Reporting Council (FRC) and the UK Corporate Governance Code) and the relevant tax compliance regulations in the UK and overseas jurisdictions in which the Group operates as referred to in the 'Tailoring the scope' paragraph above. In addition, we concluded that there are certain significant laws and regulations which may have an effect on the determination of the amounts and disclosures in the financial statements being the Listing Rules of the London Stock Exchange, the Bribery Act 2010, Occupational Health and Safety Regulations, the Data Protection Act, and export controls;

Independent auditor's report to the members of Renishaw plc continued

- we understood how Renishaw plc is complying with those frameworks by reading internal policies and codes of conduct and assessing the entity level control environment, including the level of oversight of those charged with governance. We made enquires of the Group's legal counsel and internal audit of known instances of non-compliance or suspected non-compliance with laws and regulations. We corroborated our enquiries through review of correspondence with regulatory bodies. We designed our audit procedures to identify non-compliance with such laws and regulations identified in the paragraph above. As well as enquiry and attendance at meetings, our procedures involved a review of board and other committee minutes to identify any non-compliance with laws and regulations. Our procedures also involved journal entry testing, with a focus on journals meeting our defined risk criteria based on our understanding of the business;
- we assessed the susceptibility of the Group's financial statements to material misstatement, including how fraud might occur by considering the programmes and controls that the Group has established to address risks identified by the entity, or that otherwise prevent, deter and detect fraud; how senior management monitor those programmes and controls, evaluating conditions in the context of incentive/pressure to commit fraud, considering the opportunity to commit fraud and the potential rationalisation of the fraudulent act, and by making enquiries of senior management, including the Group Finance Director, Head of Group Finance, Group Internal Audit Manager and Audit Committee Chair. We planned our audit to identify risks of management override, tested higher risk journal entries and performed audit procedures to address the potential for management bias, particularly over areas involving significant estimation. Further discussion of our approach to address the identified risks of management override are set out in the key audit matters section of our report;
- based on this understanding we designed our audit procedures to identify non-compliance with such laws and regulations. Our procedures involved making enquiries of key management and legal counsel, reviewing key policies, inspecting correspondence with regulators and reading key management meeting minutes. We also completed procedures to conclude on the compliance of significant disclosures in the Annual Report with the requirements of the relevant accounting standards, UK legislation and the UK Corporate Governance Code; and
- we communicated regularly with component teams, management and legal counsel in order to identify and communicate any instances of non-compliance with laws and regulations.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at <https://www.frc.org.uk/auditorsresponsibilities>. This description forms part of our auditor's report.

Other matters we are required to address

- We were appointed by the company at its annual general meeting on 13 October 2016 to audit the financial statements for the year ended 30 June 2017 and subsequent financial periods.
- The period of total uninterrupted engagement including previous renewals and reappointments is three years, covering the years ended 30 June 2017 to 30 June 2019.
- The non-audit services prohibited by the FRC's Ethical Standard were not provided to the Group or the parent company and we remain independent of the Group and the parent company in conducting the audit.
- The audit opinion is consistent with the additional report to the audit committee.

Use of our report

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Paul Mapleston

(Senior statutory auditor)

for and on behalf of Ernst & Young LLP, Statutory Auditor
Bristol

1 August 2019

Notes:

- ¹ The maintenance and integrity of the Renishaw plc website is the responsibility of the directors; the work carried out by the auditors does not involve consideration of these matters and, accordingly, the auditors accept no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the website.
- ² Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Financial statements – contents

Introduction

The Directors are responsible for preparing the Annual Report and the Group and Company financial statements in accordance with applicable law and regulations. The full statement of Directors' responsibilities can be found on page 86.

The notes (forming part of the financial statements) provide additional information required by statute, accounting standards or other regulations to assist in a more detailed understanding of the primary financial statements. The basis of preparation section (see note 1) provides details of accounting policies that apply to transactions and balances in general.

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Consolidated income statement

for the year ended 30 June 2019

from continuing operations	notes	2019 £'000	2018 £'000
Revenue	2	573,959	611,507
Cost of sales		(289,832)	(284,889)
Gross profit		284,127	326,618
Distribution costs		(126,822)	(121,352)
Administrative expenses		(58,593)	(56,911)
Gains from the fair value of financial instruments	20	1,081	4,834
Operating profit		99,793	153,189
Financial income	4	7,238	653
Financial expenses	4	(902)	(1,587)
Share of profits of associates and joint ventures		3,815	2,970
Profit before tax	5	109,944	155,225
Income tax expense	8	(17,712)	(22,870)
Profit for the year from continuing operations		92,232	132,355
Profit for the year from discontinued operations	7	–	582
Profit for the year		92,232	132,937
Profit attributable to:			
Equity shareholders of the parent company		92,232	132,924
Non-controlling interest	21	–	13
Profit for the year		92,232	132,937
		pence	pence
Dividend per share arising in respect of the year	21	60.0	60.0
Dividend per share paid in the year		60.0	53.5
Earnings per share from continuing operations (basic and diluted)	6	126.7	181.8
Earnings per share from discontinued operations (basic and diluted)	6	–	0.8
Earnings per share from continuing and discontinued operations (basic and diluted)		126.7	182.6

All discontinued operations relate to operations discontinued as at 30 June 2017. See note 7 'Discontinued operations' for further details.

Consolidated statement of comprehensive income and expense

for the year ended 30 June 2019

	notes	2019 £'000	2018 £'000
Profit for the year		92,232	132,937
Other items recognised directly in equity:			
Items that will not be reclassified to the Consolidated income statement:			
Remeasurement of defined benefit pension scheme liabilities	13	10,273	(3,813)
Deferred tax on remeasurement of defined benefit pension scheme liabilities		(1,534)	783
Total for items that will not be reclassified		8,739	(3,030)
Items that may be reclassified to the Consolidated income statement:			
Exchange differences in translation of overseas operations		2,045	2,107
Exchange differences in translation of overseas joint venture		72	48
Current tax on translation of net investments in foreign operations		(205)	–
Effective portion of changes in fair value of cash flow hedges, net of recycling	21	(27,573)	14,470
Deferred tax on effective portion of changes in fair value of cash flow hedges	21	4,561	(2,810)
Total for items that may be reclassified		(21,100)	13,815
Total other comprehensive income and expense, net of tax		(12,361)	10,785
Total comprehensive income and expense for the year		79,871	143,722
Attributable to:			
Equity shareholders of the parent company		79,871	143,709
Non-controlling interest	21	–	13
Total comprehensive income and expense for the year		79,871	143,722

Consolidated balance sheet

at 30 June 2019

	notes	2019 £'000	2018 £'000
Assets			
Property, plant and equipment	10	263,477	232,557
Intangible assets	11	59,056	54,511
Investments in associates and joint ventures	12	13,095	9,822
Long-term loans to associates and joint ventures	24	750	4,207
Deferred tax assets	9	29,855	27,428
Derivatives	20	1,311	9,578
Total non-current assets		367,544	338,103
Current assets			
Inventories	16	129,026	110,563
Trade receivables	20	123,151	154,587
Contract assets		352	–
Short-term loans to associates and joint ventures	24	6,644	–
Current tax		4,553	730
Other receivables	20	24,461	21,988
Derivatives	20	2,778	1,368
Pension scheme cash escrow account	13	10,490	10,413
Cash and cash equivalents	15, 20	106,826	103,847
Total current assets		408,281	403,496
Current liabilities			
Trade payables	20	21,513	25,232
Contract liabilities		5,631	–
Current tax		4,538	9,256
Provisions	17	2,846	3,453
Derivatives	20	18,920	22,478
Borrowings	19	1,043	–
Other payables	18	41,065	47,979
Total current liabilities		95,556	108,398
Net current assets		312,725	295,098
Non-current liabilities			
Borrowings	19	9,356	–
Employee benefits	13	51,870	67,378
Deferred tax liabilities	9	539	188
Derivatives	20	35,227	17,041
Total non-current liabilities		96,992	84,607
Total assets less total liabilities		583,277	548,594
Equity			
Share capital	21	14,558	14,558
Share premium		42	42
Own shares held	21	(404)	–
Currency translation reserve	21	14,577	12,665
Cash flow hedging reserve	21	(42,401)	(19,389)
Retained earnings		597,784	541,755
Other reserve	21	(302)	(460)
Equity attributable to the shareholders of the parent company		583,854	549,171
Non-controlling interest	21	(577)	(577)
Total equity		583,277	548,594

These financial statements were approved by the Board of directors on 1 August 2019 and were signed on its behalf by:

Sir David McMurtry **Allen Roberts**

Directors

Consolidated statement of changes in equity

for the year ended 30 June 2019

Year ended 30 June 2018	Share capital £'000	Share premium £'000	Own shares held £'000	Currency translation reserve £'000	Cash flow hedging reserve £'000	Retained earnings £'000	Other reserve £'000	Non-controlling interest £'000	Total £'000
Balance at 1 July 2017	14,558	42	–	10,510	(31,049)	450,803	(460)	(590)	443,814
Profit for the year	–	–	–	–	–	132,924	–	13	132,937
Other comprehensive income and expense (net of tax)									
Remeasurement of defined benefit pension scheme liabilities	–	–	–	–	–	(3,030)	–	–	(3,030)
Foreign exchange translation differences	–	–	–	2,107	–	–	–	–	2,107
Relating to associates and joint ventures	–	–	–	48	–	–	–	–	48
Changes in fair value of cash flow hedges	–	–	–	–	11,660	–	–	–	11,660
Total other comprehensive income and expense	–	–	–	2,155	11,660	(3,030)	–	–	10,785
Total comprehensive income and expense	–	–	–	2,155	11,660	129,894	–	13	143,722
Dividends paid	–	–	–	–	–	(38,942)	–	–	(38,942)
Balance at 30 June 2018	14,558	42	–	12,665	(19,389)	541,755	(460)	(577)	548,594
Adjustment for IFRS 15	–	–	–	–	–	(1,270)	–	–	(1,270)
Balance at 1 July 2018 restated	14,558	42	–	12,665	(19,389)	540,485	(460)	(577)	547,324
Year ended 30 June 2019									
Profit for the year	–	–	–	–	–	92,232	–	–	92,232
Other comprehensive income and expense (net of tax)									
Remeasurement of defined benefit pension scheme liabilities	–	–	–	–	–	8,739	–	–	8,739
Foreign exchange translation differences	–	–	–	1,840	–	–	–	–	1,840
Relating to associates and joint ventures	–	–	–	72	–	–	–	–	72
Changes in fair value of cash flow hedges	–	–	–	–	(23,012)	–	–	–	(23,012)
Total other comprehensive income and expense	–	–	–	1,912	(23,012)	8,739	–	–	(12,361)
Total comprehensive income and expense	–	–	–	1,912	(23,012)	100,971	–	–	79,871
Share-based payments charge	–	–	–	–	–	–	158	–	158
Purchase of own shares	–	–	(404)	–	–	–	–	–	(404)
Dividends paid	–	–	–	–	–	(43,672)	–	–	(43,672)
Balance at 30 June 2019	14,558	42	(404)	14,577	(42,401)	597,784	(302)	(577)	583,277

More details of share capital and reserves are given in note 21.

Consolidated statement of cash flow

for the year ended 30 June 2019

	notes	2019 £'000	2018 £'000
Cash flows from operating activities			
Profit for the year		92,232	132,937
Adjustments for:			
Amortisation of development costs	11	15,144	12,483
Amortisation of other intangibles	11	1,518	2,142
Impairment of goodwill		–	1,559
Impairment of property, plant and equipment	10	1,155	–
Depreciation	10	22,597	26,140
Loss on sale of property, plant and equipment		148	37
Profit on sale of other intangibles		(455)	–
Remeasurement of defined benefit pension scheme liabilities from GMP equalisation	13	751	–
Gains from the fair value of financial instruments	25	(6,081)	(10,143)
Share of profits from associates and joint ventures	12	(3,815)	(2,970)
Financial income	4	(7,238)	(653)
Financial expenses	4	902	1,587
Share-based payment expense	14	158	–
Tax expense	8	17,712	22,870
		42,496	53,052
Increase in inventories		(18,463)	(22,866)
Decrease/(increase) in trade and other receivables		30,028	(25,921)
Increase/(decrease) in trade and other payables		(7,183)	17,770
Increase/(decrease) in provisions	17	(607)	493
		3,775	(30,524)
Defined benefit pension contributions	13	(6,831)	(4,471)
Income taxes paid		(25,183)	(18,882)
Cash flows from operating activities		106,489	132,112
Investing activities			
Purchase of property, plant and equipment	10	(56,792)	(34,852)
Development costs capitalised	11	(18,091)	(14,602)
Purchase of other intangibles		(4,161)	(1,700)
Sale of other intangibles		2,000	–
Sale of property, plant and equipment		4,713	2,889
Interest received	4	1,222	653
Dividends received from associates and joint ventures	12	614	507
Payments (to)/from pension scheme escrow account		(77)	2,437
Cash flows from investing activities		(70,572)	(44,668)
Financing activities			
Interest paid	4	(57)	(338)
Increase in borrowings	19	10,486	–
Repayment of borrowings	19	(87)	–
Dividends paid	21	(43,672)	(38,942)
Purchase of own shares	21	(404)	–
Cash flows from financing activities		(33,734)	(39,280)
Net increase in cash and cash equivalents		2,183	48,164
Cash and cash equivalents at the beginning of the year		103,847	51,942
Effect of exchange rate fluctuations on cash held		796	3,741
Cash and cash equivalents at the end of the year	15	106,826	103,847

Notes (forming part of the financial statements)

1. Accounting policies

Basis of preparation

Renishaw plc (the Company) is a company incorporated in England and Wales. The Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the Group) and equity account the Group's interest in associates and joint ventures. The parent company financial statements present information about the Company as a separate entity and not about the Group.

The Group financial statements have been prepared and approved by the Directors in accordance with International Financial Reporting Standards as adopted by the EU (adopted IFRS). The parent company financial statements have been prepared in accordance with Financial Reporting Standard 101 'Reduced Disclosure Framework'. The consolidated financial statements are presented in Sterling, which is the Company's functional currency and the Group's presentational currency, and all values are rounded to the nearest thousand (£'000).

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Group financial statements. Judgements made by the Directors, in the application of these accounting policies, that have a significant effect on the financial statements and estimates with a significant risk of material adjustment in the next year are noted below.

Renishaw GmbH, Pliezhausen, Germany has chosen to exercise the right under section 264 – sub-section 3 of the German Commercial Code (HGB) on exemption and preparation. The consolidated financial statements of the Group include the financial statements of Renishaw GmbH, Pliezhausen, Germany.

Critical accounting judgements and estimation uncertainties

The preparation of financial statements in conformity with adopted IFRS requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities, income and expenses. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis of making the judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates. The estimates and underlying assumptions are reviewed on an ongoing basis.

The areas of key estimation uncertainty and critical accounting judgement that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities in the next financial year are summarised below, with further details included within accounting policies as indicated.

Item	Key judgements (J) and estimates (E)	Page
Revenue recognition	J – Timing of satisfaction of performance obligations	104
Intangibles	E – Estimates of useful life of intangible assets	106
Research and development costs	J – Whether a project meets appropriate criteria for capitalisation	106
Goodwill and capitalised development costs	E – Estimates of future cash flows for impairment testing	106
Inventory	E – Determination of net realisable inventory value	107
Defined benefit pension schemes	E – Valuation of defined benefit pension schemes' liabilities	107
Taxation	E – Estimates of future profits to utilise deferred tax assets	108

New, revised or changes to existing accounting standards

The following accounting standards have been applied for the first time, with effect from 1 July 2018, and have been adopted in the preparation of these financial statements.

IFRS 15 'Revenue from Contracts with Customers'

The Group adopted IFRS 15 on 1 July 2018 using the modified retrospective transition approach, taking advantage of the practical expedient in IFRS 15 C7 to apply the standard retrospectively only to contracts that were not completed as at 1 July 2018.

IFRS 15 provides a single, principles-based five-step model to be applied to all sales contracts with customers, against which the Group has reviewed the following:

- individually significant contracts by value;
- customers with cumulatively significant contracts;
- variable consideration arrangements;
- warranty arrangements, analysing such arrangements between assurance-type warranties already accounted for under IAS 37 and service-type warranties as defined by IFRS 15, to which revenue should be attributed and deferred over the service period; and
- sale of software licences and maintenance.

The impact on the Group's results and net assets is not material, with a cumulative catch-up adjustment of £1,270,000 made to equity at 1 July 2018. This primarily relates to the impact of more revenue being allocated to extended warranties under IFRS 15 than under IAS 18. See note 26 for a comparison between IFRS 15 and IAS 18.

Notes continued

1. Accounting policies (continued)

Consolidated balance sheet extract	Balances as at 30 June 2018 £'000	IFRS 15 adjustment £'000	Balances as at 1 July 2018 £'000
Non-current assets			
Deferred tax assets	27,428	372	27,800
Current liabilities			
Contract liabilities	–	1,642	1,642
Equity			
Retained earnings	541,755	(1,270)	540,485
– related to Revenue	–	(1,642)	–
– related to Income tax expense	–	372	–

IFRS 9 'Financial Instruments'

The Group adopted IFRS 9 on 1 July 2018. The Standard introduced new requirements for the classification and measurement of financial assets, impairment of financial assets and hedge accounting.

For the classification and measurement requirements, no changes have arisen from IFRS 9, while for the new impairment requirements, the Group recognises an 'expected credit loss' (ECL) for trade receivables under the Standard's 'simplified approach'. IFRS 9 does not impact hedge accounting in the Group's financial statements because all hedging relationships that were eligible under IAS 39 remain eligible under IFRS 9 and the change in fair value of foreign currency contracts continues to hedge movements in the forward currency rate. No adjustments have been made in respect of IFRS 9 to the Group's opening reserves at 1 July 2018 as the impairment adjustment calculated from a simple ECL model which considered historic credit loss rates was not material to the Group.

In addition to IFRS 15 and IFRS 9, the Group has adopted the following IFRS amendments, which have not had a material impact on amounts reported or disclosures in these financial statements:

- IFRS 2 (amendments) – Classification and Measurement of Share-based Payment Transactions;
- IAS 40 (amendments) – Transfers of Investment Property;
- IAS 28 (amendments) – Investments in Associates and Joint Ventures; and
- IFRIC 22 'Foreign Currency Transactions and Advance Consideration'.

The following accounting standards and interpretations have been issued but are not yet effective for the Group and have not been applied in these financial statements:

- IFRS 16 'Leases';
- IFRS 17 'Insurance Contracts';
- IFRS 9 (amendments) – Prepayment Features with Negative Compensation;
- IAS 28 (amendments) – Long-term Interests in Associates and Joint Ventures;
- IAS 19 (amendments) – Plan Amendment, Curtailment or Settlement;
- IFRS 10 and IAS 28 (amendments) – Sale or Contribution of Assets between an Investor and its Associate or Joint Venture;
- Annual Improvements – Amendments to IFRS 3 Business Combinations, IFRS 11 Joint Arrangements, IAS 12 Income Taxes and IAS 23 Borrowing Costs; and
- IFRIC 23 'Uncertainty over Income Tax Treatments'.

These are not expected to have a material impact on the financial statements of the Group, except in relation to IFRS 16.

IFRS 16 is effective for accounting periods beginning on or after 1 January 2019 and will be adopted by the Group for the financial year commencing 1 July 2019. Where the Group acts as a lessor, the accounting treatment is substantially unchanged. Where the Group acts as a lessee, the new standard will eliminate the classification of leases as either operating or finance leases and instead the Group will recognise a right-of-use asset and a lease liability for all leases (except for low-value assets and leases less than 12 months), similar to the accounting for finance leases under IAS 17.

At 1 July 2019 right-of-use assets and lease liabilities of £13,079,000 are expected to be recognised by the Group under the new standard, including £11,088,000 relating to properties and £1,880,000 relating to vehicles. Depreciation on the right-of-use assets will then be charged to the Consolidated income statement on a straight line basis over the lower of the asset's useful life or the life of the lease contract, while interest will be accreted to the lease liability across the same period. The aggregate of depreciation and interest expense will generally result in higher expenses in the earlier periods of a lease, however this is not expected to be material for the Group. No transition adjustment will be required to opening reserves in 2020.

1. Accounting policies (continued)

Going concern

The Group's business activities, together with the factors likely to affect its future development, performance and position, are set out in the Strategic report, where details of the financial and liquidity positions are also given. In addition, note 20 to the financial statements includes the Group's objectives and policies for managing its capital, details of its financial instruments and hedging activities and its exposures to credit risk and liquidity risk. The Group has considerable financial resources at its disposal and the Directors have considered the current financial projections. As a consequence, the Directors consider that the Group is well placed to manage its business risks successfully.

After making enquiries, the Directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for a period of at least 12 months from the date of approval of the financial statements. Accordingly, they continue to adopt the going concern basis in preparing the Annual Report.

Basis of consolidation

Subsidiaries – Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to or has rights to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. In assessing control, the Group takes into consideration potential voting rights that are exercisable. The acquisition date is the date on which control is transferred to the acquirer. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. Losses applicable to the non-controlling interests in a subsidiary are allocated to the non-controlling interests even if doing so causes the non-controlling interests to have a deficit balance.

Application of the equity method to associates and joint ventures – Associates and joint ventures are accounted for using the equity method (equity accounted investees) and are initially recognised at cost. The Group's investment includes goodwill identified on acquisition, net of any accumulated impairment losses. The consolidated financial statements include the Group's share of the total comprehensive income and equity movements of equity accounted investees, from the date that significant influence commences until the date that significant influence ceases. When the Group's share of losses exceeds its interest in an equity accounted investee, the Group's carrying amount is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal obligations or made payments on behalf of an investee.

Transactions eliminated on consolidation – Intragroup balances and transactions, and any unrealised income and expenses arising from intragroup transactions, are eliminated. Unrealised gains arising from transactions with equity accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

Alternative performance measures

The financial statements are prepared in accordance with adopted IFRS and applied in accordance with the provisions of the Companies Act 2006. In measuring our performance, the financial measures that we use include those which have been derived from our reported results in order to eliminate factors which distort year-on-year comparisons.

These are considered non-GAAP financial measures. We believe this information, along with comparable GAAP measurements, is useful to stakeholders in providing a basis for measuring our operational performance. The Board use these financial measures, along with the most directly comparable GAAP financial measures, in evaluating our performance (see note 25).

Revenue

The Group generates revenue from the sale of metrology and healthcare goods, capital equipment and services. These can be sold both on their own and together as bundled packages.

a) Sale of goods, capital equipment and services

The Group's contracts with customers consist both of contracts with one performance obligation and contracts with multiple performance obligations.

For contracts with one performance obligation, revenue is measured at the transaction price, which is typically the contract value except for customers entitled to volume rebates, and recognised at the point in time when control of the product transfers to the customer. This point in time is typically when the products are made available for collection by the customer, collected by the shipping agent, or delivered to the customer, depending upon the shipping terms applied to the specific contract.

Contracts with multiple performance obligations typically exist where, in addition to supplying product, we also supply services such as user training, servicing and maintenance, and installation services. Where the installation service is simple, does not include a significant integration service and could be performed by another party then the installation is accounted for as a separate performance obligation. Where the contracts include multiple performance obligations, the transaction price is allocated to each performance obligation based on the relative stand-alone selling prices, the assessment of which is documented in the Key judgement (see page 104). The revenue allocated to each performance obligation is then recognised when, or as, that performance obligation is satisfied. For installation, this is typically at the point in time in which installation is complete. For training, this is typically the point in time at which training is delivered. For servicing and maintenance, the revenue is recognised evenly over the course of the servicing agreement except for ad-hoc servicing and maintenance which is recognised at the point in time in which the work is undertaken.

Notes continued

1. Accounting policies (continued)

b) Sale of software

The Group provides software licences and software maintenance to customers, sold both on their own and together as a bundled package with associated products. Where the software licence and/or maintenance is provided as part of a bundled package then the transaction price is allocated on the same basis as described in a) above.

The Group's software licences provide a right of use, and therefore revenue from software licences is recognised at the point in time in which the licence is supplied to the customer. Revenue from software maintenance is recognised evenly over the term of the maintenance agreement.

c) Programming contracts

Programming is typically a distinct performance obligation and revenue for this work is recognised at a point in time, being when the completed program is supplied to the customer.

d) Extended warranties

The Group provides standard warranties to customers that address potential latent defects that existed at point of sale and as required by law (assurance-type warranties). In some contracts, the Group also provides warranties that extend beyond the standard warranty period and may be sold to the customer (service-type warranties).

Assurance-type warranties continue to be accounted for by the Group under IAS 37 'Provisions, Contingent Liabilities and Contingent Assets'. Service-type warranties are accounted for as separate performance obligations and therefore a portion of the transaction price is allocated to this element, and then recognised evenly over the period in which the service is provided.

e) Contract fulfilment costs

Contract fulfilment costs are recognised as an asset when they directly relate to a contract, will be used to fulfil one or more performance obligation in a contract in the future, and are expected to be recoverable. Contract fulfilment costs for the Group therefore typically relate to contracts in which programming is a distinct performance obligation and the associated labour costs have been incurred but the program has not yet been provided to the customer. Such assets are amortised to the income statement when the corresponding performance obligation is fulfilled.

f) Contract balances

Contract assets represent the Group's right to consideration in exchange for goods and services that have been transferred to a customer, and mainly includes accrued revenue in respect of goods and services provided to a customer but not yet fully billed. Contract assets are distinct from receivables, which represent the Group's right to consideration that is unconditional.

Contract liabilities represent the Group's obligation to transfer goods or services to a customer for which the Group has either received consideration or consideration is due from the customer.

g) Disaggregation of revenue

The Group disaggregates revenue from contracts with customers between:

- goods, capital equipment and installation, and aftermarket services;
- reporting segment; and
- geographical location.

Management believe these categories best depict how the nature, amount, timing and uncertainty of the Group's revenue is affected by economic factors.

Key judgement – Timing of satisfaction of performance obligations

The majority of the Group's revenue is recognised at a point in time, and to determine that point an assessment is made as to when the customer obtains control of promised products or services. This assessment is made primarily by reference to the shipping terms applied to the specific contract for products that do not require customer acceptance.

Where the contract requires customer acceptance, management assess whether the Group can objectively determine that the criterion of the testing can be successfully met at the point of transferring the equipment to the customer. Where this can be objectively determined, customer acceptance testing is considered a formality and does not delay the recognition of revenue. Where this cannot be objectively determined control of the product is not deemed to have transferred to the customer and therefore the portion of the transaction price that relates to this performance obligation is not recognised until the acceptance criteria are met.

For revenue recognised over time, such as servicing contracts, the Group recognises the revenue on a basis that depicts the Group's performance in transferring control of the goods or services to the customer, having assessed the nature of the promised goods or service. The Group applies the relevant output or input method consistently to similar performance obligations in other contracts.

The point at which control of performance obligations is transferred to customers under IFRS 15 is the same as under IAS 18 for the majority of our contracts with customers.

1. Accounting policies (continued)

Foreign currencies

Consolidation – Overseas subsidiaries' results are translated into Sterling at weighted average exchange rates for the year, which is effected by translating each overseas subsidiary's monthly results at exchange rates applicable to each of the respective months. Assets and liabilities denominated in foreign currencies at the balance sheet date are translated into Sterling at the foreign exchange rates prevailing at that date. Differences on exchange resulting from the translation of overseas assets and liabilities are recognised in Other comprehensive income and are accumulated in equity.

Transactions and balances – Monetary assets and liabilities denominated in foreign currencies are reported at the rates prevailing at the time, with any gain or loss arising from subsequent exchange rate movements being included as an exchange gain or loss in the Consolidated income statement. Foreign currency differences arising from transactions are recognised in the Consolidated income statement.

Financial instruments and fair value measurements

The Group measures financial instruments such as forward exchange contracts at fair value at each balance sheet date in accordance with IFRS 9. Fair value, as defined by IFRS 13 'Fair Value Measurement', is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Note 20, Financial instruments, provides detail on the IFRS 13 fair value hierarchy.

Trade and other current receivables are initially recognised at fair value and are subsequently held at amortised cost less any provision for bad and doubtful debts and expected credit losses according to IFRS 9. Long-term loans to associates and joint ventures are initially recognised at fair value and are subsequently held at amortised cost. Trade and other current payables are initially recognised at fair value and are subsequently held at amortised cost.

Foreign currency derivative cash flow hedges

Foreign currency derivatives are used to manage risks arising from changes in foreign currency rates relating to overseas sales and foreign currency denominated assets and liabilities. The Group does not enter into derivatives for speculative purposes. Foreign currency derivatives are stated at their fair value, being the estimated amount that the Group would pay or receive to terminate them at the balance sheet date, based on prevailing foreign currency rates.

Changes in the fair value of foreign currency derivatives which are designated and effective as hedges of future cash flows are recognised in Other comprehensive income and in the Cash flow hedging reserve, and subsequently transferred to the carrying amount of the hedged item or the Consolidated income statement. Realised gains or losses on cash flow hedges are therefore recognised in the Consolidated income statement within revenue in the same period as the hedged item.

Hedge accounting is discontinued when the hedging instrument expires or no longer qualifies for hedge accounting. At that time, any cumulative gain or loss on the hedging instrument previously recognised in equity is retained in equity until the hedged transaction occurs. If the hedged transaction is no longer expected to occur, the net cumulative gain or loss recognised in equity is then transferred to the Consolidated income statement.

Changes in fair value of foreign currency derivatives, which are ineffective or do not meet the criteria for hedge accounting in IFRS 9, are recognised in the Consolidated income statement within Gains/losses from the fair value of financial instruments.

In addition to derivatives held for cash flow hedging purposes, the Group uses short-term derivatives not designated as hedging instruments to offset gains and losses from exchange rate movements on foreign currency denominated assets and liabilities. Gains and losses from currency movements on underlying assets and liabilities, realised gains and losses on these derivatives and fair value gains and losses on outstanding derivatives of this nature are all recognised in Financial income in the Consolidated income statement. See note 20 for further detail on financial instruments.

Cash and cash equivalents

Cash and cash equivalents comprise cash balances and short-term (with an original maturity of less than 12 months) deposits. Bank overdrafts that are repayable on demand form part of cash and cash equivalents for the purpose of the Consolidated statement of cash flow.

Pension scheme cash escrow account

The Company holds a pension scheme escrow account as part of the security given for the UK defined benefit pension scheme. This account is shown within current assets in the Consolidated balance sheet as it may be used to settle pension scheme liabilities immediately upon enforcement of the charge over the account.

Goodwill and other intangible assets

Costs related to the acquisition, other than those associated with the issue of debt or equity securities, are expensed as incurred. Deferred consideration relating to acquisitions is subject to discounting to the date of acquisition and subsequently unwound to the date of the final payment. Goodwill arising on acquisition represents the difference between the cost of the acquisition and the fair value of the net identifiable assets acquired, net of deferred tax. Identifiable intangibles are those which can be sold separately or which arise from legal rights regardless of whether those rights are separable.

Business combinations are accounted for using the acquisition method as at the acquisition date, which is the date on which control is transferred to the Group.

Notes continued

1. Accounting policies (continued)

Goodwill is stated at cost less any accumulated impairment losses. It is not amortised but is tested annually for impairment or earlier if there are any indications of impairment. The annual impairment review involves comparing the carrying amount to the estimated recoverable amount and recognising an impairment loss if the recoverable amount is lower. Impairment losses are recognised through the Consolidated income statement.

Intangible assets such as customer lists, patents, trade marks, know-how and intellectual property that are acquired by the Group are stated at cost less amortisation and impairment losses. Amortisation is charged to the Consolidated income statement on a straight-line basis over the estimated useful lives of the intangible assets. The estimated useful lives of the intangible assets included in the Consolidated balance sheet reflect the benefit derived by the Group and vary from five to ten years.

Key estimate – Estimates of useful life of intangible assets

The periods of amortisation of intangible assets require judgements to be made on the estimated useful lives of the intangible assets to determine an appropriate rate of amortisation. Future assessments of impairment may lead to the writing off of certain amounts of intangible assets and the consequent charge in the Consolidated income statement for the accelerated amortisation. Capitalised development costs are written off over five years, the period over which demand forecasts can be reasonably predicted.

Intangible assets – research and development costs

Expenditure on research activities is recognised in the Consolidated income statement as an expense as incurred. Expenditure on development activities is capitalised if the product or process is technically and commercially feasible and the Group intends and has the technical ability and sufficient resources to complete development, future economic benefits are probable and the Group can measure reliably the expenditure attributable to the intangible asset during its development.

Development activities involve a plan or design for the production of new or substantially improved products or processes. The expenditure capitalised includes the cost of materials, direct labour and an appropriate proportion of overheads. Other development expenditure is recognised in the Consolidated income statement as an expense as incurred.

Capitalised development expenditure is amortised over five years and is stated at cost less accumulated amortisation and less accumulated impairment losses. Capitalised development expenditure is removed from the balance sheet ten years after being fully amortised.

Key judgement – Whether a project meets appropriate criteria for capitalisation

Product development costs are capitalised once a project has reached a certain stage of development and these costs are subsequently amortised over a five-year period. Judgements are required to assess whether the new product development has reached the appropriate point for capitalisation of costs to begin. Should a product be subsequently obsoleted, the accumulated capitalised development costs would need to be immediately written off in the Consolidated income statement.

Intangible assets – software licences

Intangible assets, comprising software licences that are acquired by the Group, are stated at cost less accumulated amortisation and impairment losses. Amortisation is charged on a straight-line basis over the estimated useful life of the assets. The useful life of each of these assets is assessed on an individual basis and they range from 2 to 10 years.

Impairment of non-current assets

All non-current assets are tested for impairment whenever there is an indication that their carrying value may be impaired. An impairment loss is recognised in the Consolidated income statement to the extent that an asset's carrying value exceeds its recoverable amount, which represents the higher of the asset's net realisable value and its value in use. An asset's value in use represents the present value of the future cash flows expected to be derived from the asset or from the cash-generating unit to which it relates. The present value is calculated using a discount rate that reflects the current market assessment of the time value of money and the risks specific to the asset concerned.

Goodwill and capitalised development costs are subject to an annual impairment test.

Key estimate – Estimates of future cash flows used for impairment testing

Determining whether goodwill is impaired requires an estimation of the value-in-use of cash-generating units (CGUs) to which goodwill has been allocated. The value-in-use calculation involves an estimation of the future cash flows of CGUs and also the selection of appropriate discount rates, which involves judgement, to calculate present values (see note 11). Similarly, determining whether capitalised development costs are impaired requires an estimation of their value-in-use which involves significant judgement.

1. Accounting policies (continued)

Property, plant and equipment

Freehold land is not depreciated. Other assets are stated at cost less accumulated depreciation. Depreciation is provided to write off the cost of assets less their estimated residual value on a straight-line basis over their estimated useful economic lives as follows:

Freehold buildings 50 years, Plant and equipment 3 to 25 years, Vehicles 3 to 4 years.

Inventory and work in progress

Inventory and work in progress is valued at the lower of actual cost on a first-in, first-out (FIFO) basis and net realisable value. In respect of work in progress and finished goods, cost includes all production overheads and the attributable proportion of indirect overhead expenses that are required to bring inventories to their present location and condition. Overheads are absorbed into inventories on the basis of normal capacity or on actual hours if higher.

Key estimate – Determination of net realisable inventory value

Determining the net realisable value of inventory requires judgement, especially in respect of provisioning for slow moving and potentially obsolete inventory. Management consider historic and future forecast sales patterns of individual stock items when calculating inventory provisions. For most inventory lines, provisions are based on the excess levels held compared to a maximum three-year outlook. Where strategic purchases of critical components have been made, an outlook beyond three years is considered where appropriate. The sensitivities around estimates vary significantly from product to product.

Warranty provisions

The Group provides a warranty from the date of purchase, except for those products that are installed by the Group where the warranty starts from the date of completion of the installation. This is typically for a 12-month period, although up to three years is given for a small number of products. A warranty provision is included in the Group financial statements, which is calculated on the basis of historical returns and internal quality reports.

Employee benefits

The Group operates contributory pension schemes, largely for UK, Ireland and USA employees, which were of the defined benefit type up to 5 April 2007, 31 December 2007 and 30 June 2012 respectively, at which time they ceased any future accrual for existing members and were closed to new members.

The schemes are administered by trustees who are independent of the Group finances. Investment assets of the defined benefit schemes are measured at fair value using the bid price of the unitised investments, quoted by the investment manager, at the reporting date. Pension scheme liabilities are measured using a projected unit method and discounted at the current rate of return on a high-quality corporate bond of equivalent term and currency to the liability. Remeasurements arising from defined benefit schemes comprise actuarial gains and losses, the return on scheme assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest). The Company recognises them immediately in Other comprehensive income and all other expenses related to defined benefit schemes are included in the Consolidated income statement.

The pension schemes' surpluses, to the extent that they are considered recoverable, or deficits are recognised in full and presented on the face of the Consolidated balance sheet under employee benefits. Where a guarantee is in place in relation to a pension scheme deficit, liabilities are reported in accordance with IFRIC 14 'The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction'. To the extent that contributions payable will not be available as a refund after they are paid into the plan, a liability is recognised at the point the obligation arises, which is the point at which the minimum funding guarantee is agreed. Overseas-based employees are covered by state, defined benefit and private pension schemes in their countries of residence. Actuarial valuations of overseas pension schemes were not obtained, apart from Ireland and USA, because of the limited number of members. For defined contribution schemes, the amount charged to the Consolidated income statement represents the contributions payable to the schemes in respect of the accounting period.

Accruals are made for holiday pay, based on a calculation of the number of days holiday earned during the year, but not yet taken and also for the annual performance bonus, if applicable.

Key estimate – Valuation of defined benefit pension schemes' liabilities

Determining the value of the future defined benefit obligation requires judgement in respect of the assumptions used to calculate liabilities and their present values. These include future mortality, discount rate and inflation. Management makes these judgements in consultation with independent actuaries. Details of the estimates and judgements in respect of the current year are given in note 13. Based on a review of the terms of the UK scheme trust deed, management has concluded that there are no likely circumstances which would result in the Company having an unconditional right to a refund in the event of a fund surplus.

Notes continued

1. Accounting policies (continued)

Share-based payments

The Group provides share-based payment arrangements to certain employees in accordance with the Renishaw plc deferred annual equity incentive plan (the Plan) (see the Governance section for further detail). The share awards are subject only to continuing service of the employee and are equity settled. The fair value of the awards at the date of grant, which is estimated to be equal to the market value, is charged to the Consolidated income statement on a straight-line basis over a three-year vesting period, with appropriate adjustments made to reflect expected or actual forfeitures. The corresponding credit is to Other reserve. The Renishaw Employee Benefit Trust (EBT) is responsible for purchasing shares on the open market on behalf of the Company to satisfy the Plan awards. Own shares held are recognised as an element in equity until they are transferred at the end of the vesting period, and such shares are excluded from earnings per share calculations.

Government grants

Government grants are recognised in the Consolidated income statement as a deduction against expenditure. Where grants are received in advance of the related expenses, they are initially recognised in the balance sheet and released to match the related expenditure.

Taxation

Tax on the profit for the year comprises current and deferred tax. Tax is recognised in the Consolidated income statement except to the extent that it relates to items recognised directly in Other comprehensive income, in which case it is recognised in the Consolidated statement of comprehensive income and expense. Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination; and differences relating to investments in subsidiaries, to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the balance sheet date.

Key estimate – Estimates of future profits to support the recognition of deferred tax assets

Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary differences can be utilised, based on management's assumptions relating to the amounts and timing of future taxable profits.

Estimates of future profitability on an entity basis are required to ascertain whether it is probable that sufficient taxable profits will arise to support the recognition of deferred tax assets relating to the corresponding entity.

Discontinued activities

Where a line of the Group's business is treated as a discontinued operation, the financial statements are re-presented and restated where required as if operations discontinued during the current year had been discontinued from the start of the comparative year. Discontinued operations are excluded from the results of continuing operations and are presented as a single amount as a profit or loss after tax from discontinued operations in the Consolidated income statement.

2. Segmental analysis

The Group manages its business in two segments, comprising metrology and healthcare products. The results of these are regularly reviewed by the Board to allocate resources to segments and to assess their performance. Within the operating segment of metrology, there are multiple product offerings with similar economic characteristics, and where the nature of the products and production processes and their customer bases are similar. More details of the Group's products and services are given in the Strategic report.

Year ended 30 June 2019	Metrology £'000	Healthcare £'000	Total £'000
Revenue	532,940	41,019	573,959
Depreciation and amortisation	37,714	2,700	40,414
Operating profit before gains from fair value of financial instruments	95,345	3,367	98,712
Share of profits from associates and joint ventures	3,815	–	3,815
Net financial gain	–	–	6,336
Gains from the fair value of financial instruments	–	–	1,081
Profit before tax	–	–	109,944
Year ended 30 June 2018	Metrology £'000	Healthcare £'000	Total £'000
Revenue	575,839	35,668	611,507
Depreciation and amortisation	38,690	2,075	40,765
Operating profit before gains from fair value of financial instruments	147,841	514	148,355
Share of profits from associates and joint ventures	2,970	–	2,970
Net financial expense	–	–	(934)
Gains from the fair value of financial instruments	–	–	4,834
Profit before tax	–	–	155,225

There is no allocation of assets and liabilities to operating segments. Depreciation is included within certain other overhead expenditure which is allocated to segments on the basis of the level of activity.

The following table shows the disaggregation of Group revenue by category:

	2019 £'000	2018 £'000
Goods, capital equipment and installation	519,782	564,664
Aftermarket services	54,177	46,843
Total Group revenue	573,959	611,507

Aftermarket services include repairs, maintenance and servicing, programming, training, extended warranties, and software licences and maintenance.

The analysis of revenue by geographical market was:

	2019 £'000	2018 £'000
APAC	240,115	289,177
EMEA	167,211	165,126
Americas	132,589	126,638
UK	34,044	30,566
Total Group revenue	573,959	611,507

Revenue in the previous table has been allocated to regions based on the geographical location of the customer. Countries with individually material revenue figures in the context of the Group were:

	2019 £'000	2018 £'000
USA	113,235	108,118
China	111,002	150,183
Japan	63,650	60,855
Germany	60,916	64,394

There was no revenue from transactions with a single external customer which amounted to more than 10% of the Group's total revenue.

Notes continued

2. Segmental analysis (continued)

The following table shows the analysis of non-current assets, excluding deferred tax and derivatives, by geographical region:

	2019 £'000	2018 £'000
UK	196,214	183,874
Overseas	140,164	117,223
Total non-current assets	336,378	301,097

No overseas country had non-current assets amounting to 10% or more of the Group's total non-current assets.

3. Personnel expenses

The aggregate payroll costs for the year were:

	2019 £'000	2018 £'000
Wages and salaries	193,035	183,873
Compulsory social security contributions	21,485	21,809
Contributions to defined contribution pension schemes	22,701	21,127
Share-based payment charge	158	–
Total payroll costs	237,379	226,809

The average number of persons employed by the Group during the year was:

	2019 Number	2018 Number
UK	3,126	2,934
Overseas	1,842	1,705
Average number of employees	4,968	4,639

Key management personnel have been assessed to be the Executive Directors of the Company. The total remuneration of the Directors was:

	2019 £'000	2018 £'000
Short-term employee benefits	2,590	5,589
Post-employment benefits	205	180
Share-based payment charge	158	–
Total remuneration of the directors	2,953	5,769

Full details of Directors' remuneration are given in the Directors' remuneration report.

4. Financial income and expenses

	2019 £'000	2018 £'000
Financial income		
Currency gains	5,940	–
Fair value gains from 1 month forward currency contracts (note 20)	76	–
Interest receivable	1,222	653
Total financial income	7,238	653
Financial expenses		
Net interest on pension schemes' liabilities (note 13)	845	1,249
Bank interest payable	57	338
Total financial expenses	902	1,587

Currency gains relates to revaluations of foreign currency denominated balances using latest reporting currency exchange rates. The gains recognised in 2019 largely relate to a depreciation of sterling relative to the US dollar affecting US dollar-denominated intragroup balances in the Company. In previous reporting periods, such movements were recognised in Administrative expenses (2018: £604,000 loss).

Certain intragroup balances were reclassified as 'net investments in foreign operations' on 3 December 2018, such that revaluations from currency movements on designated balances after this date accumulate in the Currency translation reserve in Equity. Additionally, from 1 January 2019, a policy of entering into rolling one month forward currency contracts began, with fair value gains and losses being recognised in financial income, to offset currency movements on remaining intragroup balances. See note 20 for further details.

5. Profit before tax

Included in the profit before tax are the following costs/(income):

	notes	2019 £'000	2018 £'000
Depreciation and impairment of property, plant and equipment	(a)	23,752	26,140
Amortisation of intangible assets	(a)	16,662	14,625
Research and development expenditure	(b)	66,965	59,127
Research and development tax credit	(b)	(5,137)	(4,149)
Impairment of goodwill	(c)	–	1,559
Loss on sale of property, plant and equipment	(c)	148	37
Profit on sale of other intangibles	(c)	(455)	–
Auditor:			
Audit of these financial statements	(c)	226	199
Audit of subsidiary undertakings pursuant to legislation	(c)	329	266
Other assurance	(c)	4	4
All other non-audit fees	(c)	1	1

These costs/(income) can be found under the following headings in the Consolidated income statement: (a) within cost of sales, distribution costs and administrative expenses; (b) within cost of sales; and (c) within administrative expenses.

6. Earnings per share

Basic and diluted earnings per share from continuing operations are calculated on earnings of £92,232,000 (2018: £132,342,000) and on 72,778,904 shares (2018: 72,788,543 shares), being the number of shares in issue. The 2019 number of shares excludes 9,639 shares held by the EBT, which were purchased on 10 December 2018.

Basic and diluted earnings and losses per share from discontinued operations for 2018 were calculated on losses of £582,000 and on 72,788,543 shares in issue.

There is no difference between the weighted average earnings per share and the basic and diluted earnings per share.

7. Discontinued operations

In October 2016, the Group decided to discontinue the operations of Renishaw Diagnostics Limited (healthcare segment) and in June 2017, to discontinue the spatial measurements business (metrology segment), on the basis of continued losses. Certain assets of the businesses were sold. Financial information relating to the discontinued operations is set out below:

	2019 £'000	2018 £'000
Revenue	–	4,326
Expenses	–	(3,664)
Goodwill impairment	–	–
Profit before tax	–	662
Tax charge	–	(80)
Profit for the year from discontinued operations	–	582
Cash flow	2019 £'000	2018 £'000
Profit for the year	–	582
Adjustments for operating activities	–	(250)
Cash flows from operating activities	–	332
Cash flows from investing activities	–	–
Net increase in cash and cash equivalents from discontinued operations	–	332

Notes continued

8. Income tax expense

	2019 £'000	2018 £'000
Current tax:		
UK corporation tax on profits for the year	4,691	10,806
UK corporation tax – prior year adjustments	(622)	(411)
Overseas tax on profits for the year	11,980	16,142
Total current tax	16,049	26,537
Deferred tax:		
Origination and reversal of temporary differences	2,719	(2,548)
Prior year adjustments	(882)	(665)
Recognition of previously unrecognised tax losses	(55)	(1,855)
Effect on deferred tax for changes in tax rates	(119)	1,401
	1,663	(3,667)
Tax charge on profit	17,712	22,870
	2019 £'000	2018 £'000
Total tax charge:		
Income tax expense reported in the Consolidated income statement	17,712	22,870
Tax attributable to discontinued operations	–	80
	17,712	22,950

The tax for the year is lower (2018: lower) than the UK standard rate of corporation tax of 19% (2018: 19%).

The differences are explained as follows:

	2019 £'000	2018 £'000
Profit before tax from continuing operations	109,944	155,225
Profit before tax from discontinued operations	–	662
Total profit before tax	109,944	155,887
Tax at 19% (2018: 19%)	20,889	29,619
Effects of:		
Different tax rates applicable in overseas subsidiaries	(124)	(849)
UK patent box	(1,787)	(5,678)
Expenses not deductible for tax purposes	583	672
Companies with unrelieved tax losses	231	448
Share of profits of associates and joint ventures	(631)	(534)
Items with no tax effect	(203)	195
Prior year adjustments	(1,504)	(283)
Effect on deferred tax for change in tax rates	(119)	1,401
Recognition of previously unrecognised tax losses	(55)	(1,855)
Recognition of previously unrecognised deductible temporary differences	–	(767)
Other differences	432	581
Tax charge on profit	17,712	22,950
Effective tax rate	16.1%	14.7%

The Group's future effective tax rate (ETR) will mainly depend on the geographic mix of profits and whether there are any changes to tax legislation in the Group's most significant countries of operations. The UK patent box benefit has a significant impact on the ETR and is unpredictable due to factors such as currency rate movements, trading profits in the Company and the level of capital allowances claimed in any given year. The fall of £3,891,000 in the patent box benefit is the primary driver for the increase in the ETR for 2019.

Deferred tax assets and liabilities have been calculated at the rate expected to be applicable when the relevant item reverses. A reduction in the UK rate of corporation tax to 17% (from 1 April 2020) has previously been substantively enacted and will have further impact on the ETR in future years.

The Group is not materially impacted by the changes to the international tax landscape resulting from the package of measures developed under the OECD base erosion and profit shifting project.

9. Deferred tax

Balances at the end of the year were:

	2019			2018		
	Assets £'000	Liabilities £'000	Net £'000	Assets £'000	Liabilities £'000	Net £'000
Property, plant and equipment	184	(13,265)	(13,081)	184	(8,896)	(8,712)
Intangible assets	–	(2,494)	(2,494)	17	(3,456)	(3,439)
Intragroup trading (inventory)	16,686	–	16,686	17,394	–	17,394
Intragroup trading (fixed assets)	2,309	–	2,309	2,322	–	2,322
Defined benefit pension schemes	8,526	–	8,526	11,233	(138)	11,095
Derivatives	8,816	–	8,816	5,410	–	5,410
Tax losses	3,255	–	3,255	1,855	–	1,855
Other	5,927	(628)	5,299	1,330	(15)	1,315
Balance at the end of the year	45,703	(16,387)	29,316	39,745	(12,505)	27,240

The movements in the deferred tax balance during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	27,240	25,271
IFRS 15 transition adjustment	372	–
Reallocation from current tax	340	329
Movements in the Consolidated income statement	(1,663)	3,667
Movement in relation to the cash flow hedging reserve	4,561	(2,810)
Movement in relation to the defined benefit pension schemes	(1,534)	783
Total movement in the Consolidated statement of comprehensive income and expense	3,027	(2,027)
Balance at the end of the year	29,316	27,240

The deferred tax movement in the Consolidated income statement is analysed as:

	2019 £'000	2018 £'000
Property, plant and equipment	(4,369)	196
Intangible assets	945	891
Intragroup trading (inventory)	(708)	1,378
Intragroup trading (fixed assets)	(13)	1,383
Defined benefit pension schemes	(1,036)	(712)
Derivatives	(1,155)	(1,927)
Tax losses	1,400	1,855
Other	3,273	603
Total movement for the year	(1,663)	3,667

A US deferred tax net asset of £6,007,000 is recognised in respect of losses and other temporary differences. The US business has generated losses in the current and prior period. It is considered likely that the business will generate sufficient future taxable profits to recognise the deferred tax net asset in full, as product lines which have been introduced in recent years are expected to contribute greater returns.

Deferred tax assets have not been recognised in respect of tax losses carried forward of £21,028,000 (2018: £21,809,000), of which approximately half are time limited, due to uncertainty over their offset against future taxable profits and therefore their recoverability.

Deferred tax assets and liabilities are offset where there is a legally enforceable right of offset and there is an intention to net settle the balances. After taking these offsets into account, the net position of £29,316,000 asset (2018: £27,240,000 asset) is presented as a £29,855,000 deferred tax asset (2018: £27,428,000 asset) and a £539,000 deferred tax liability (2018: £188,000 liability) in the Group's consolidated balance sheet. Where deferred tax assets are recognised, the Directors are of the opinion, based on recent and forecast trading, that the level of profits in current and future years make it more likely than not that these assets will be recovered.

Notes continued

10. Property, plant and equipment

Year ended 30 June 2019	Freehold land and buildings £'000	Plant and equipment £'000	Motor vehicles £'000	Assets in the course of construction £'000	Total £'000
Cost					
At 1 July 2018	174,156	218,018	9,736	6,800	408,710
Additions	19,603	27,596	903	8,690	56,792
Transfers	2,846	3,886	–	(6,732)	–
Disposals	(1,520)	(6,016)	(1,241)	–	(8,777)
Currency adjustment	2,389	1,543	157	–	4,089
At 30 June 2019	197,474	245,027	9,555	8,758	460,814

Depreciation

At 1 July 2018	30,776	138,576	6,801	–	176,153
Charge for the year	741	20,701	1,155	–	22,597
Impairment	–	1,155	–	–	1,155
Released on disposals	(106)	(2,628)	(1,182)	–	(3,916)
Currency adjustment	482	763	103	–	1,348
At 30 June 2019	31,893	158,567	6,877	–	197,337

Net book value

At 30 June 2019	165,581	86,460	2,678	8,758	263,477
At 30 June 2018	143,380	79,442	2,935	6,800	232,557

At 30 June 2019, properties with a net book value of £75,200,000 (2018: £66,759,000) were subject to a fixed charge to secure the UK defined benefit pension scheme liabilities.

Additions to assets in the course of construction of £8,690,000 (2018: £7,122,000) comprise £5,806,000 (2018: £3,034,000) for freehold land and buildings and £2,884,000 (2018: £4,088,000) for plant and equipment.

Year ended 30 June 2018	Freehold land and buildings £'000	Plant and equipment £'000	Motor vehicles £'000	Assets in the course of construction £'000	Total £'000
Cost					
At 1 July 2017	165,661	201,022	9,893	8,222	384,798
Additions	4,516	21,853	1,361	7,122	34,852
Transfers	6,340	2,204	–	(8,544)	–
Disposals	(1,115)	(6,580)	(1,409)	–	(9,104)
Currency adjustment	(1,246)	(481)	(109)	–	(1,836)
At 30 June 2018	174,156	218,018	9,736	6,800	408,710

Depreciation

At 1 July 2017	28,462	121,611	6,675	–	156,748
Charge for the year	3,181	21,545	1,414	–	26,140
Released on disposals	(644)	(4,320)	(1,213)	–	(6,177)
Currency adjustment	(223)	(260)	(75)	–	(558)
At 30 June 2018	30,776	138,576	6,801	–	176,153

Net book value

At 30 June 2018	143,380	79,442	2,935	6,800	232,557
At 30 June 2017	137,199	79,411	3,218	8,222	228,050

11. Intangible assets

Year ended 30 June 2019	Goodwill on consolidation £'000	Other intangible assets £'000	Internally generated development costs £'000	Software licences and intellectual property £'000	Total £'000
Cost					
At 1 July 2018	19,763	11,795	131,951	24,658	188,167
Additions	–	2,014	18,091	2,147	22,252
Disposals	–	–	–	(6,000)	(6,000)
Currency adjustment	464	14	–	22	500
At 30 June 2019	20,227	13,823	150,042	20,827	204,919
Amortisation					
At 1 July 2018	8,220	11,256	93,810	20,370	133,656
Charge for the year	–	18	15,144	1,500	16,662
Released on disposal	–	–	–	(4,455)	(4,455)
Currency adjustment	–	(14)	–	14	–
At 30 June 2019	8,220	11,260	108,954	17,429	145,863
Net book value					
At 30 June 2019	12,007	2,563	41,088	3,398	59,056
At 30 June 2018	11,543	539	38,141	4,288	54,511
Year ended 30 June 2018	Goodwill on consolidation £'000	Other intangible assets £'000	Internally generated development costs £'000	Software licences and intellectual property £'000	Total £'000
Cost					
At 1 July 2017	19,919	11,647	117,349	23,066	171,981
Additions	–	104	14,602	1,596	16,302
Currency adjustment	(156)	44	–	(4)	(116)
At 30 June 2018	19,763	11,795	131,951	24,658	188,167
Amortisation					
At 1 July 2017	6,661	11,187	81,327	18,299	117,474
Charge for the year	–	69	12,483	2,073	14,625
Impairments	1,559	–	–	–	1,559
Currency adjustment	–	–	–	(2)	(2)
At 30 June 2018	8,220	11,256	93,810	20,370	133,656
Net book value					
At 30 June 2018	11,543	539	38,141	4,288	54,511
At 30 June 2017	13,258	460	36,022	4,767	54,507

Goodwill acquired has arisen on the acquisition of a number of businesses and has an indeterminable useful life. Therefore it is not amortised but is tested for impairment annually and at any point during the year when an indicator of impairment exists. Goodwill is allocated to the cash generating units (CGUs), which are mainly the statutory entities acquired. This is the lowest level in the Group at which goodwill is monitored for impairment and is at a lower level than the Group's operating sectors. In the following table, only the goodwill relating to the acquisition of Renishaw Fixturing Solutions, LLC is expected to be subject to tax relief.

Notes continued

11. Intangible assets (continued)

The analysis of acquired goodwill on consolidation is:

	2019 £'000	2018 £'000
itp GmbH	3,092	3,065
Renishaw Mayfield S.A.	1,930	1,725
Renishaw Fixturing Solutions, LLC	5,453	5,247
Other smaller acquisitions	1,532	1,506
Total acquired goodwill	12,007	11,543

The recoverable amounts of acquired goodwill are based on value-in-use calculations. These calculations use cash flow projections based on either the financial business plans approved by management for the next five financial years, or estimated growth rates over the five years, which are set out below. The cash flows beyond this forecast are extrapolated to perpetuity using a nil growth rate on a prudent basis, to reflect the uncertainties over forecasting further than five years.

Rates applied to key assumptions

The rates applied to key assumptions utilised in the value-in-use calculations are:

Discount rate

The following pre-tax discount rates have been used in discounting the projected cash flows:

	2019 Discount rate	2018 Discount rate
itp GmbH	12%	12%
Renishaw Fixturing Solutions, LLC	12%	12%
Renishaw Mayfield S.A.	15%	15%

Forecast cash flows and future growth rates

	2019 Basis of forecast	2018 Basis of forecast
itp GmbH	5% growth rate	5% growth rate
Renishaw Fixturing Solutions, LLC	5 year business plan	5 year business plan
Renishaw Mayfield S.A.	5 year business plan	5 year business plan

These forecast cash flows are considered prudent estimates based on management's view of the future and experience of past performance of the individual CGUs and are calculated at a disaggregated level. The key judgement within these business plans is the forecasting of revenue growth, given that the cost bases of the businesses can be flexed in line with revenue performance.

The average growth rates included in the significant CGUs' business plans are as follows:

	2019 Average revenue growth	2018 Average revenue growth
Renishaw Fixturing Solutions, LLC	20%	20%

These business plans are recognised as key inputs to the impairment calculation. They are monitored by management regularly and updated for expected variances in future performance.

Sensitivity to key assumptions

Management has performed sensitivity analysis on the key assumptions detailed above.

Discount rate

An increase of 5% in the discount rate would not result in an impairment on any of the CGUs. Management believes the likelihood of any increase in discount rates above 5% to be remote.

Forecast cash flows and future growth rates

Given the average revenue growth assumptions included in the five-year business plans, management's sensitivity analysis involves a reduction of 10% in the forecast cash flows utilised in those business plans and therefore into perpetuity. For there to be an impairment there would need to be a reduction of 70% for Renishaw Fixturing Solutions, LLC. Management deems the likelihood of this reduction to be remote.

12. Investments in associates and joint ventures

The Group's investments in associates and joint ventures (all investments being in the ordinary share capital of the associate and joint ventures), whose accounting years end on 30 June, except where noted otherwise, were:

	Country of incorporation and principal place of business	Ownership 2019 %	Ownership 2018 %
RLS Merilna tehnika d.o.o.	Slovenia	50.0	50.0
Metrology Software Products Limited	England & Wales	50.0	50.0
HiETA Technologies Limited (31 December)	England & Wales	24.9	24.9

For the nature of the activities, see note C.41.

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	9,822	7,311
Dividends received	(614)	(507)
Share of profits of associates and joint ventures	3,815	2,970
Other comprehensive income and expense	72	48
Balance at the end of the year	13,095	9,822

The Group has recognised its share of losses in its associate in its share of profits of associates and joint ventures reported above to the extent of its interest in the associate.

Summarised aggregated financial information for associates and joint ventures:

	Joint ventures		Associate	
	2019 £'000	2018 £'000	2019 £'000	2018 £'000
Assets	30,570	23,567	3,083	2,114
Liabilities	(5,180)	(4,722)	(8,669)	(5,720)
Net assets/(liabilities)	25,390	18,845	(5,586)	(3,606)
Group's share of net assets/(liabilities)	12,695	9,423	(1,391)	(898)
Revenue	26,886	23,414	1,032	816
Profit/(loss) for the year	7,630	6,442	(1,980)	(1,655)
Other comprehensive income and expense	144	96	–	–
Total comprehensive income and expense for the year	7,774	6,538	(1,980)	(1,655)
Group's share of profit/(loss) for the year	3,815	3,221	(493)	(251)
Group's share of other comprehensive income and expense	72	48	–	–
Group's share of total comprehensive income and expense for the year	3,887	3,269	(493)	(251)

Notes continued

13. Employee benefits

The Group operates a number of pension schemes throughout the world. As noted in the accounting policies, actuarial valuations of foreign pension schemes are not obtained for the most part because of the limited number of members. The major scheme, which covers qualifying UK-based employees, is of the defined benefit type. This scheme, along with the Ireland and USA defined benefit pension schemes, has ceased any future accrual for current members and these schemes are closed to new members. UK, Ireland and USA employees are now covered by defined contribution schemes.

The total pension cost of the Group for the year was £22,701,000 (2018: £21,127,000), of which £205,000 (2018: £180,000) related to Directors and £6,440,000 (2018: £5,983,000) related to overseas schemes.

The latest full actuarial valuation of the UK defined benefit pension scheme was carried out as at 30 September 2018 and updated to 30 June 2019 by a qualified independent actuary. The mortality assumption used for 2019 is S2PMA and S2PFA tables, CMI (core) 2018 model with long-term improvements of 1% per annum. Major assumptions used by the actuary for the UK and Ireland schemes were:

	30 June 2019		30 June 2018		30 June 2017	
	UK scheme	Ireland scheme	UK scheme	Ireland scheme	UK scheme	Ireland scheme
Rate of increase in pension payments	3.3%	1.5%	3.3%	2.0%	3.3%	1.6%
Discount rate	2.3%	1.2%	2.8%	1.9%	2.7%	2.2%
Inflation rate (RPI)	3.4%	1.5%	3.4%	2.0%	3.4%	1.6%
Inflation rate (CPI)	2.4%	–	2.4%	–	2.4%	–
Retirement age	64	65	64	65	64	65

The life expectancies implied by the mortality assumption at age 65 are:

	2019 years	2018 years
Male currently aged 65	21.3	21.8
Female currently aged 65	23.2	23.7
Male currently aged 45	22.3	22.8
Female currently aged 45	24.4	24.9

The weighted average duration of the defined benefit obligation is around 24 years.

The assets and liabilities in the defined benefit pension schemes were:

	30 June 2019 £'000	% of total assets	30 June 2018 £'000	% of total assets
Market value of assets:				
Equities	111,209	61	107,982	62
Multi-asset funds	64,708	36	61,232	35
Bonds	3,135	2	2,759	2
Cash and other	2,536	1	869	1
	181,588	100	172,842	100
Actuarial value of liabilities	(233,458)	–	(240,220)	–
Deficit in the schemes	(51,870)	–	(67,378)	–
Deferred tax thereon	8,526	–	11,096	–

All equities are held in externally-managed funds and primarily relate to UK and US equities. Bonds relate to UK and Eurozone government-linked securities, again held in externally-managed funds and to which the majority relate to the UK. The fair values of these equity and fixed income instruments are determined using the bid price of the unitised investments, quoted by the investment manager, at the reporting date and therefore represent 'Level 2' of the fair value hierarchy defined in note 20.

Multi-asset funds are also held in externally-managed funds, with active asset allocation to diversify growth across asset classes such as equities, bonds and money-market instruments. The fair value of these funds is determined on a comparable basis to the equity and fixed income funds, and therefore are also 'Level 2' assets.

No scheme assets are directly invested in the Group's own equity.

For the UK scheme, the investment strategy is determined by the trustees and has been set in agreement with the Company. The main investment objective is to ensure that benefits payable to members are paid as they fall due. Currently, the scheme is considered to be relatively immature and therefore the focus of the investment strategy is growth. The strategy is to hold 64% of the assets in equities; 35% in diversified growth funds; and 1% in index-linked gilts. The actual allocations measured at fair value may vary from this due to market price movements and intervals between rebalancing the portfolio. The Company and trustees are discussing strategies for reducing investment risk as and when appropriate.

13. Employee benefits (continued)

Note C.37 gives the analysis of the UK defined benefit pension scheme. For the other schemes, the market value of assets at the end of the year was £22,896,000 (2018: £21,065,000) and the actuarial value of liabilities was £30,027,000 (2018: £27,564,000).

The movements in the schemes' assets and liabilities were:

	Assets £'000	Liabilities £'000	Total £'000
Year ended 30 June 2019			
Balance at the beginning of the year	172,842	(240,220)	(67,378)
Contributions paid	6,831	–	6,831
Interest on pension schemes	4,902	(5,747)	(845)
Remeasurement loss from GMP equalisation	–	(751)	(751)
Remeasurement gain under IAS 19 and IFRIC 14	4,219	6,054	10,273
Benefits paid	(7,206)	7,206	–
Balance at the end of the year	181,588	(233,458)	(51,870)
Year ended 30 June 2018			
Balance at the beginning of the year	170,708	(237,495)	(66,787)
Contributions paid	4,471	–	4,471
Interest on pension schemes	4,573	(5,822)	(1,249)
Remeasurement gain/(loss) under IAS 19 and IFRIC 14	5,979	(9,792)	(3,813)
Benefits paid	(12,889)	12,889	–
Balance at the end of the year	172,842	(240,220)	(67,378)

The analysis of the amount recognised in the Consolidated statement of comprehensive income and expense was:

	2019 £'000	2018 £'000
Actuarial gain/(loss) arising from:		
– Changes in demographic assumptions	2,937	1,533
– Changes in financial assumptions	(22,941)	556
– Experience adjustment	(4,677)	2,601
Return on plan assets excluding interest income	3,454	6,797
Adjustment to liabilities for IFRIC 14	31,500	(15,300)
Total amount recognised in the Consolidated statement of comprehensive income and expense	10,273	(3,813)

The cumulative amount of actuarial gains and losses recognised in the Consolidated statement of comprehensive income and expense was a loss of £100,804,000 (2018: loss of £111,077,000).

The total deficit of the Group's defined benefit pension schemes, on an IAS 19 basis (excluding any adjustments for IFRIC 14), has increased from £35,878,000 at 30 June 2018 to £51,870,000 at 30 June 2019, primarily as a result of a reduction in the UK scheme discount rate from 2.8% to 2.3%. The latest actuarial report prepared in September 2018 shows a deficit of £70,700,000, which is based on funding to self sufficiency and uses prudent assumptions. IAS 19 requires best estimate assumptions to be used, resulting in the IAS 19 deficit being lower than the actuarial deficit.

For the UK defined benefit scheme, a guide to the sensitivity of the value of the respective liabilities is as follows:

	Variation	Approximate effect on liabilities
UK – discount rate	Increase/decrease by 0.5%	-£21.0m/+£24.3m
UK – future inflation	Increase/decrease by 0.5%	+£18.1m/-£18.8m
UK – mortality	Increased life by one year	+£9.5m
UK – early retirement	One year earlier than assumed	+£5.9m

Following engagement with The Pensions Regulator, the Company and trustees have agreed the terms of a new deficit funding plan for the UK defined benefit pension scheme which supersedes all previous arrangements. The Company has agreed to pay £8,700,000 per annum into the scheme for five years with effect from 1 October 2018. Under the terms of the previous agreement the Company paid all monthly pensions payments and lump sum payments, and transfer payments up to a limit of £1,000,000 in each year. Under the new agreement, all such payments will be met by the scheme.

Notes continued

13. Employee benefits (continued)

A number of UK properties owned by the Company with a book value of £75,200,000 at 30 June 2019 are subject to registered fixed charges and will continue to provide security to the scheme under the new plan. The Company also has an escrow bank account with a balance of £10,490,000 at the end of the year (2018: £10,413,000) which is subject to a registered floating charge. Under the previous plan, the funds were to be released back to the Company over a period of five years. There is no scheduled release of funds back to the Company under the new plan.

In the event a subsequent actuarial valuation results in the combined value of the properties and the escrow bank account exceeding 120% of the actuarial deficit, some of the contingent assets will be released back to the Company. Any remaining contingent assets will be released from charge when the deficit no longer exists.

In line with the previous agreement, the new agreement will continue until 30 June 2031 and any outstanding deficit paid at that time. The agreement will end sooner if the actuarial deficit (calculated on a self-sufficiency basis) is eliminated in the meantime.

The charges may be enforced by the trustees if one of the following occurs: (a) the Company does not pay funds into the scheme in line with the agreed plan; (b) an insolvency event occurs in relation to the Company; or (c) the Company does not pay any deficit at 30 June 2031.

The value of the guaranteed payments under the new plan is lower than the IAS 19 pension scheme deficit at 30 June 2019 and as such, in accordance with IFRIC 14, no adjustment to the scheme's liabilities has been necessary. At 30 June 2018, the increase in liabilities under IFRIC 14 was £31,500,000.

Under the Ireland defined benefit pension scheme deficit funding plan, a property owned by Renishaw (Ireland) Designated Activity Company is subject to a registered fixed charge to secure the Ireland defined benefit pension scheme's deficit.

On 26 October 2018, the High Court reached a judgment in relation to Lloyds Banking Group's defined benefit pension schemes which concluded that the schemes should be amended to equalise pension benefits for men and women as regards guaranteed minimum pension benefits. The issues determined by the judgment arise in relation to most other defined benefit pension schemes and are relevant to the Company's UK defined benefit pension scheme. Following discussions between the Company, the trustees and their respective advisors, we have estimated incremental liabilities to be £751,000, which have been recognised in the Income Statement in Administrative expenses. The estimate has increased the scheme's liabilities by 0.4% and is based on the C2 method which has been approved by the courts and likely to be the most commonly used approach. The Company and trustees along with their respective advisors continue to assess the most appropriate method to achieve the equalisation of benefits.

14. Share-based payments

Deferred annual equity incentive plan

In accordance with the remuneration policy approved by shareholders at the 2017 AGM, the deferred annual equity incentive plan (the Plan) was implemented in relation to the financial year ending 30 June 2018. The 20 July 2018 Remuneration Committee meeting recommended plan rules that were adopted by a resolution of the Board on 24 July 2018. The Committee also approved the grant of awards under the Plan to the participating Executive Directors.

The number of shares to be awarded is calculated by dividing the relevant amount of annual bonus under the Plan by the average price of a share during a period determined by the Committee of not more than five dealing days ending with the dealing day before the award date. These shares must be purchased on the open market and cannot be satisfied by issuance of new shares or transfer of existing treasury shares.

An employee benefit trust (EBT) has been set up to purchase and hold such shares, until transferring to the employee, which will normally be on the third anniversary of the award date, subject to continued employment. Malus and clawback provisions can be operated by the Committee within five years of the award date. During the vesting period, no dividends are payable on the shares. However, upon vesting, employees will be entitled to additional shares or cash, equivalent to the value of dividends paid on the awarded shares during this period. See page 81 of the Directors' corporate governance report for further details of the Plan awards granted.

The total cost recognised in the 2019 Consolidated income statement in respect of the Plan was £157,523 (2018: nil).

No awards have been made in respect of 2019.

15. Cash and cash equivalents

An analysis of cash and cash equivalents at the end of the year was:

	2019 £'000	2018 £'000
Bank balances and cash in hand	49,897	63,417
Short-term deposits	56,929	40,430
Balance at the end of the year	106,826	103,847

The UK defined benefit pension scheme cash escrow account is shown separately within assets. £52,500,000 of the Group short-term deposits balance is held in the Company, with £12,500,000, £20,000,000 and £20,000,000 maturing on 19 July 2019, 14 October 2019 and 6 April 2020 respectively.

16. Inventories

An analysis of inventories at the end of the year was:

	2019 £'000	2018 £'000
Raw materials	46,102	28,094
Work in progress	23,431	29,193
Finished goods	59,493	53,276
Balance at the end of the year	129,026	110,563

During the year, the amount of inventories recognised as an expense in the Consolidated income statement was £185,344,000 (2018: £187,834,000) and the amount of write-down of inventories recognised as an expense in the Consolidated income statement was £1,276,000 (2018: £1,711,000). At the end of the year, the gross cost of inventories which had provisions held against them totalled £14,137,000 (2018: £14,126,000).

17. Provisions

Warranty provision

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	3,453	2,960
Created during the year	2,236	2,775
Utilised in the year	(2,843)	(2,282)
	(607)	493
Balance at the end of the year	2,846	3,453

The warranty provision has been calculated on the basis of historical return-in-warranty information and other internal reports. It is expected that most of this expenditure will be incurred in the next financial year and all expenditure will be incurred within three years of the balance sheet date.

18. Other payables

Balances at the end of the year were:

	2019 £'000	2018 £'000
Payroll taxes and social security	7,333	7,297
Other creditors and accruals	33,732	40,682
Total other payables	41,065	47,979

Other creditors and accruals include decreases in the Group bonuses payable. The Group's exposure to currency and liquidity risk related to trade and other payables is disclosed in note 20.

19. Borrowings

Third party borrowings at 30 June 2019 amounted to £10,399,000. This relates to a five year loan entered into on 31 May 2019 by Renishaw KK, with original principal of JPY 1,447,000,000 (£10,486,000).

For the period 31 May 2019 to 31 July 2019, principal of JPY 12,000,000 is repayable each month, with a variable interest rate of TIBOR +0.32% also paid on monthly accretion. For the period 31 July 2019 to 31 May 2024, principal of JPY 12,000,000 is repayable each month, with a fixed interest rate of 0.81% also paid on monthly accretion.

The remaining principal at 31 May 2024 of JPY 739,000,000 can either be repaid in full at that time, or extended for another five years.

Borrowings are held at amortised cost. There is no difference between the book value and fair value of borrowings, which is estimated by discounting contractual future cash flows, which represents level 2 of the fair value hierarchy defined in note 20.

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	–	–
Additions	10,486	–
Interest	3	–
Repayments	(90)	–
Currency	–	–
Balance at the end of the year	10,399	–

Notes continued

20. Financial instruments

The Group has exposure to credit risk, liquidity risk and market risk arising from its use of financial instruments. This note presents information about the Group's exposure to these risks, along with the Group's objectives, policies and processes for measuring and managing the risks.

Fair value

There is no significant difference between the fair value of financial assets and financial liabilities and their carrying value in the Consolidated balance sheet. All financial assets and liabilities are held at amortised cost, apart from the forward exchange contracts, which are held at fair value, with changes going through the Consolidated income statement unless subject to hedge accounting.

The fair values of the forward exchange contracts have been calculated by a third party expert, discounting estimated future cash flows on the basis of market expectations of future exchange rates, representing level 2 in the IFRS 13 fair value hierarchy. The IFRS 13 level categorisation relates to the extent the fair value can be determined by reference to comparable market values. The classifications are: level 1 where instruments are quoted on an active market; level 2 where the assumptions used to arrive at fair value have comparable market data; and level 3 where the assumptions used to arrive at fair value do not have comparable market data.

Credit risk

The Group's liquid funds are substantially held with banks with high credit ratings and the credit risk relating to these funds is therefore limited. The Group carries a credit risk relating to non-payment of trade receivables by its customers. Credit evaluations are carried out on all new customers before credit is given above certain thresholds. There is a spread of risks among a large number of customers with no significant concentration with one customer or in any one geographical area. The Group establishes an allowance for impairment in respect of trade receivables where recoverability is considered doubtful.

An analysis by currency of the Group's financial assets at the year end is as follows:

Currency	Trade receivables		Other receivables		Cash	
	2019 £'000	2018 £'000	2019 £'000	2018 £'000	2019 £'000	2018 £'000
Pound Sterling	10,628	7,917	12,704	11,466	64,919	67,649
US Dollar	38,724	76,139	935	1,034	7,666	7,693
Euro	29,516	25,944	4,120	3,540	7,846	10,005
Japanese Yen	18,087	20,463	740	691	3,966	4,516
Other	26,196	24,124	5,962	5,257	22,429	13,984
	123,151	154,587	24,461	21,988	106,826	103,847

The above trade receivables, other receivables and cash are predominately held in the functional currency of the relevant entity, with the exception of £20,262,000 of US Dollar-denominated trade receivables being held in Renishaw (Hong Kong) Limited and £6,109,000 of Euro-denominated trade receivables being held in Renishaw UK Sales Limited, along with some foreign currency cash balances which are of a short-term nature.

The ageing of trade receivables past due, but not impaired, at the end of the year was:

	2019 £'000	2018 £'000
Past due 0–1 month	14,999	21,620
Past due 1–2 months	4,438	6,111
Past due more than 2 months	16,486	6,388
Balance at the end of the year	35,923	34,119

Movements in the provision for impairment of trade receivables during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	3,301	3,115
Changes in amounts provided	292	525
Amounts utilised	(512)	(339)
Balance at the end of the year	3,081	3,301

The above provision includes an element of impairment against the net debtor position using a provision matrix to measure expected credit losses, according to IFRS 9. The provision rates are based on historic rates of default, being 0.14% of trade receivables.

20. Financial instruments (continued)

The maximum exposure to credit risk is £265,171,000, comprising the Group's trade and other receivables, cash and cash equivalents and derivative assets.

The maturities of non-current other receivables, being long-term loans to associates and joint ventures and derivatives, at the year end were:

	2019 £'000	2018 £'000
Receivable between 1 and 2 years	1,075	232
Receivable between 2 and 5 years	1,485	11,240
	2,560	11,472

Liquidity risk

The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, without incurring unacceptable losses or risking damage to the Group's reputation. The Group uses monthly cash flow forecasts to monitor cash requirements.

In respect of net cash, the carrying value approximates to fair value because of the short maturity of the deposits. A significant proportion of net cash is affected by interest rates that are either fixed or floating and based on LIBOR, which can change over time, affecting the Group's interest income. Of the net cash subject to floating interest rate charges, an increase of 1% in interest rates would result in an increase in interest income of approximately £220,000.

The contractual maturities of financial liabilities at the year end were:

Year ended 30 June 2019	Carrying amount £'000	Effect of discounting £'000	Gross maturities £'000	Contractual cash flows		
				Up to 1 year £'000	1–2 years £'000	2–5 years £'000
Trade payables	21,513	–	21,513	21,513	–	–
Other payables	41,065	–	41,065	41,065	–	–
Borrowings	10,399	310	10,709	1,120	1,115	8,474
Forward exchange contracts	54,147	–	54,147	18,920	12,626	22,601
	127,124	310	127,434	82,618	13,741	31,075

Year ended 30 June 2018	Carrying amount £'000	Effect of discounting £'000	Gross maturities £'000	Up to 1 year £'000	1–2 years £'000	2–5 years £'000
Trade payables	25,232	–	25,232	25,232	–	–
Other payables	47,979	–	47,979	47,979	–	–
Borrowings	–	–	–	–	–	–
Forward exchange contracts	39,519	–	39,519	22,478	10,490	6,551
	112,730	–	112,730	95,689	10,490	6,551

Borrowings relate to a single loan in Renishaw KK, with a fixed interest rate of 0.81% for the majority of the loan contract. Interest is payable on accretion each year, along with monthly principal repayments. See note 19 for further detail.

Market risk

As noted in the Strategic report under Principal risks and uncertainties, the Group operates in a number of foreign currencies with the majority of sales being made in these currencies, but with most manufacturing being undertaken in the UK, Ireland and India.

The Group enters into US Dollar, Euro and Japanese Yen derivative financial instruments to manage its exposure to foreign currency risk, including:

- Forward foreign currency exchange contracts to hedge a significant proportion of the Group's forecasted US Dollar, Euro and Japanese Yen revenues over the next three and a half years;
- Foreign currency option contracts, entered into alongside the forward contracts above until May 2018 as part of the Group revenue hedging strategy, are ineffective for cash flow hedging purposes. Note 25, 'Alternative performance measures', gives an adjusted measure of profit before tax to reflect the original intention that these derivatives were entered into for hedging purposes. The final option contract will mature in November 2021.
- One-month forward foreign currency exchange contracts to offset the gains/losses from exchange rate movements arising from foreign currency denominated intragroup balances of the Company.

Notes continued

20. Financial instruments (continued)

For both the Group and the Company, the following table details the fair value of these forward foreign currency derivatives according to their accounting treatment.

	2019		2018	
	Nominal value £'000	Fair value £'000	Nominal value £'000	Fair value £'000
Forward currency contracts in a designated cash flow hedge (i)				
Non-current derivative assets	36,152	319	241,930	6,562
Current derivative assets	37,060	340	–	–
Current derivative liabilities	198,339	(18,749)	197,285	(22,325)
Non-current derivative liabilities	671,442	(34,967)	401,817	(16,111)
	942,993	(53,057)	841,032	(31,874)
Amounts recognised in the Consolidated statement of comprehensive income and expense	–	(27,573)	–	14,470
Foreign currency options ineffective as a cash flow hedge (ii)				
Non-current derivative assets	–	991	–	3,016
Current derivative assets	–	2,365	–	1,368
Current derivative liabilities	–	(104)	–	(153)
Non-current derivative liabilities	–	(260)	–	(930)
	–	2,992	–	3,301
Amounts recognised in Gains from the fair value of financial instruments in the Consolidated income statement	–	1,081	–	4,834
Forward currency contracts not in a designated cash flow hedge (iii)				
Current derivative assets	26,671	73	–	–
Current derivative liabilities	19,463	(67)	–	–
	46,134	6	–	–
Amounts recognised in Financial income in the Consolidated income statement	–	76	–	–
Total forward contracts and options				
Non-current derivative assets	36,152	1,310	241,930	9,578
Current derivative assets	63,731	2,778	–	1,368
Current derivative liabilities	217,802	(18,920)	197,285	(22,478)
Non-current derivative liabilities	671,442	(35,227)	401,817	(17,041)
	989,126	(50,059)	841,032	(28,573)

The amounts of foreign currencies relating to these forward contracts and options are, in Sterling terms:

	2019		2018	
	Nominal value £'000	Fair value £'000	Nominal value £'000	Fair value £'000
US Dollar	678,323	(43,689)	578,421	(22,836)
Euro	187,833	(3,501)	163,283	(6,879)
Japanese Yen	122,970	(2,868)	99,328	1,142
	989,126	(50,059)	841,032	(28,573)

The following are the exchange rates which have been applicable during the financial year:

Currency	2019			2018		
	Average forward contract rate	Year end exchange rate	Average exchange rate	Average forward contract rate	Year end exchange rate	Average exchange rate
US Dollar	1.39	1.27	1.29	1.50	1.32	1.35
Euro	1.12	1.12	1.13	1.22	1.13	1.13
Japanese Yen	139	138	144	150	146	149

20. Financial instruments (continued)

For the Group's foreign currency forward contracts and options at the balance sheet date, if Sterling appreciated by 5% against the US Dollar, Euro and Japanese Yen, this would increase pre-tax equity by £39,100,000 and decrease profit before tax by £300,000.

Hedging

In relation to the forward currency contracts in a designated cash flow hedge, the hedged item is a layer component of forecast sales transactions. Forecast transactions are deemed highly probable to occur and Group policy is to hedge at least 75% of net foreign currency exposure for USD, EUR and JPY. The hedged item creates an exposure to receive USD, EUR or JPY, while the forward contract is to sell USD, EUR or JPY and buy GBP. Therefore, there is a strong economic relationship between the hedging instrument and the hedged item. The hedge ratio is 100%, such that, by way of example, £10m nominal value of forward currency contracts are used to hedge £10m of forecast sales. Fair value gains or losses on the forward currency contracts are offset by foreign currency gain or losses on the translation of USD, EUR and JPY based sales revenue, relative to the forward rate at the date the forward contracts were arranged. Foreign currency exposures in HKD and USD are aggregated and only USD forward currency contracts are used to hedge these currency exposures. Sources of hedge ineffectiveness include: changes in timing of the hedged item; reduction in the amount of the hedged sales considered to be highly probable; a change in the credit risk of Renishaw or the bank counterparty to the forward contract; and differences in assumptions used in calculating fair value. For the year-end outstanding cash flow hedges, the change in fair value of the hedged item, being a £27,573,000 gain, is equal to the change in fair value of the forward currency hedge, being a £27,573,000 loss. No ineffectiveness has been recognised in the reporting period.

Capital management

The Group defines capital as being the equity attributable to the owners of the Company, which is captioned on the Consolidated balance sheet. The Board's policy is to maintain a strong capital base and to maintain a balance between significant returns to shareholders, with a progressive dividend policy, whilst ensuring the security of the Group is supported by a sound capital position. The Group may adjust dividend payments due to changes in economic and market conditions which affect, or are anticipated to affect, Group results.

21. Share capital and reserves

Share capital

	2019 £'000	2018 £'000
Allotted, called-up and fully paid 72,788,543 ordinary shares of 20p each	14,558	14,558

The ordinary shares are the only class of share in the Company. Holders of ordinary shares are entitled to vote at general meetings of the Company and receive dividends as declared. The Articles of Association of the Company do not contain any restrictions on the transfer of shares nor on voting rights.

Dividends paid

Dividends paid comprised:

	2019 £'000	2018 £'000
2018 final dividend paid of 46.0p per share (2017: 39.5p)	33,483	28,752
Interim dividend paid of 14.0p per share (2018: 14.0p)	10,189	10,190
Total dividends paid	43,672	38,942

A final dividend in respect of the current financial year of £33,482,729 (2018: £33,482,729) at the rate of 46.0p net per share (2018: 46.0p) is proposed to be paid on 31 October 2019 to shareholders on the register on 27 September 2019.

Own shares held

The EBT is responsible for purchasing shares on the open market on behalf of the Company to satisfy the Plan awards, see note 15 for further detail on this. Own shares held are recognised as an element in equity until they are transferred at the end of the vesting period.

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	–	–
Acquisition of own shares	(404)	–
Balance at the end of the year	(404)	–

On 10 December 2018, 9,639 shares were purchased on the open market by the EBT at a price of £41.66, costing a total of £404,348.

Notes continued

21. Share capital and reserves (continued)

Currency translation reserve

The currency translation reserve comprises all foreign exchange differences arising from the translation of the financial statements of the foreign operations, offset by foreign exchange differences on bank liabilities which have been accounted for in Other comprehensive income and expense and accumulated in equity, on account of them being classified as hedging instruments. The policy to hedge net overseas assets was ended in December 2017. Movements in the currency translation reserve after this date therefore only arise from translation of financial statements of foreign operations and currency movements on intragroup loan balances classified as net investments in foreign operations from December 2018 (see note 4).

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	12,665	10,510
Gain on net assets of foreign currency operations	1,218	4,008
Loss on foreign currency overdrafts held for the purpose of net investment hedging	–	(1,901)
Gain on intragroup loans classified as net investments in foreign operations	827	–
Current tax on translation of net investments in foreign operations	(205)	–
Gain in the year relating to subsidiaries	1,840	2,107
Currency exchange differences relating to associates and joint ventures	72	48
Balance at the end of the year	14,577	12,665

Cash flow hedging reserve

The cash flow hedging reserve, for both the Group and the Company, comprises all foreign exchange differences arising from the valuation of forward exchange contracts which are effective hedges and mature after the year end. See note 20 for further detail on this. These are valued on a mark-to-market basis, are accounted for in Other comprehensive income and expense and accumulated in equity, and are recycled through the Consolidated income statement and Company income statement when the hedged item affects the income statement.

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	(19,389)	(31,049)
Losses on contract maturity recognised in revenue during the year	19,782	14,598
Gains transferred to the Consolidated income statement during the year	–	(4,834)
Deferred tax transferred to the Consolidated income statement	–	1,927
Revaluations during the year	(47,355)	2,779
Deferred tax movement	4,561	(2,810)
Balance at the end of the year	(42,401)	(19,389)

Other reserve

The other reserve relates to additional investments in subsidiary undertakings and share-based payments charges according to IFRS 2 in relation to the Plan.

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	(460)	(460)
Share-based payments charge	158	–
Balance at the end of the year	(302)	(460)

Non-controlling interest

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	(577)	(590)
Share of profit for the year	–	13
Balance at the end of the year	(577)	(577)

The non-controlling interest represents the minority shareholdings in Renishaw Diagnostics Limited – 7.6%.

22. Leases

Leases as lessee

The Group acts as lessee for land and buildings and vehicles in certain subsidiaries and recognises payments as an expense in the Consolidated income statement. The total of future minimum lease payments payable under non-cancellable operating leases were:

	2019		2018	
	Leasehold property £'000	Vehicles £'000	Leasehold property £'000	Vehicles £'000
Due in less than one year	3,338	1,442	3,363	1,329
Due between one and five years	5,211	2,309	4,929	2,988
Due in more than five years	4,090	–	4,019	354
Total future minimum lease payments payable	12,639	3,751	12,311	4,671

	2019		2018	
	Leasehold property £'000	Vehicles £'000	Leasehold property £'000	Vehicles £'000
Payments recognised in Consolidated income statement	3,904	1,536	3,799	1,409

Leases as lessor

The Group acts as lessor for Renishaw manufactured plant and equipment on both an operating and finance lease basis.

Operating leases

Where the Group retains the risks and rewards of ownership of leased assets, it continues to recognise the leased asset in property, plant and equipment, while the lease payments made during the term of the operating lease are recognised in revenue (2019: £1,231,000 and 2018: £1,365,000). Operating leases are on one to five year terms. The total of future minimum lease payments receivable under non-cancellable operating leases were:

	2019 £'000	2018 £'000
Receivable in less than one year	804	1,406
Receivable between one and five years	700	1,383
Total future minimum lease payments receivable	1,504	2,789

Finance leases

Where the Group transfers the risks and rewards of ownership of leased assets to a third party, the Group recognises a receivable in the amount of the net investment in the lease in Trade receivables. The lease receivable is subsequently reduced by the principal received, while an interest component is recognised as financial income in the Consolidated income statement. Standard contract terms are up to five years and there is a nominal residual value receivable at the end of the contract. The total future lease payments are split between the principal and interest amounts below:

	2019			2018		
	Gross investment £'000	Interest £'000	Net investment £'000	Gross investment £'000	Interest £'000	Net investment £'000
Receivable in less than one year	1,348	118	1,230	979	91	888
Receivable between one and five years	5,469	477	4,992	2,115	196	1,919
Total future minimum lease payments receivable	6,817	595	6,222	3,094	287	2,807

23. Capital commitments

Authorised and committed capital expenditure at the end of the year, for which no provision has been made in the Financial statements, were:

	2019 £'000	2018 £'000
Property	18,087	5,142
Plant and equipment	3,995	5,577
Other	280	136
Total committed capital expenditure	22,362	10,855

Notes continued

24. Related parties

Associates, joint ventures and other related parties had the following transactions and balances with the Group:

	Joint ventures		Associate	
	2019 £'000	2018 £'000	2019 £'000	2018 £'000
Purchased goods and services from the Group during the year	908	923	913	577
Sold goods and services to the Group during the year	21,290	19,069	1	8
Paid dividends to the Group during the year	614	507	–	–
Amounts owed to the Group at the year end	167	118	424	314
Amounts owed by the Group at the year end	1,933	324	–	–
Loans owed to the Group at the year end	1,250	1,549	6,144	4,729

Of the loan to the associate party, £3,600,000 relates to a working capital loan agreement set up in March 2017 and extended by £500,000 in March 2018 and £1,000,000 in January 2019. £475,000 of the working capital loan is ring fenced for fixed asset capital expenditure. Interest is charged at 3.5% until 31 December 2019 and at 3% above the Bank of England rate thereafter. The loan is repayable on three months' notice with a repayment date no earlier than 31 December 2019.

There were no bad debts relating to related parties written off during the year (2018: £nil).

By virtue of their long-standing voting agreement, Sir David McMurtry (Executive Chairman 36.23% shareholder) and John Deer (Deputy Chairman, together with his wife, 16.80%), are the ultimate controlling party of the Group. See page 83 of the Governance report for further details in relation to this. The only significant transactions between the Group and these parties are in relation to their respective remuneration, as detailed on p.78-82 of the Directors' corporate governance report.

25. Alternative performance measures

APM's are – Revenue at constant exchange rates, Adjusted profit before tax, Adjusted earnings per share and Adjusted operating profit.

Revenue at constant exchange rates is defined as revenue recalculated using the same rates as were applicable to the previous year and excluding forward contract gains and losses.

	2019 £'000	2018 £'000
Revenue at constant exchange rates:		
Statutory revenue as reported	573,959	611,507
Adjustment for forward contract losses	19,782	14,598
Adjustment to restate current year at previous year exchange rates	(10,346)	
Revenue at constant exchange rates	583,395	626,105
Year-on-year revenue growth at constant exchange rates	-6.8%	

Year-on-year revenue growth at constant exchange rates for 2018 was 17.7%.

Adjusted profit before tax, Adjusted earnings per share and Adjusted operating profit – These measures are defined as the profit before tax, earnings per share and operating profit after excluding gains and losses in fair value from the forward currency contracts which did not qualify for hedge accounting.

The gains or losses from fair value of financial instruments not effective for cash flow hedging have been excluded from statutory profit before tax, statutory earnings per share and statutory operating profit in arriving at Adjusted profit before tax, Adjusted earnings per share and Adjusted operating profit to reflect the Board's intent that the instruments would provide effective hedges.

The Board consider these APM's to be more relevant and reliable in evaluating the Group's performance.

The amounts shown below as reported in revenue represent the amount by which revenue would change had all the derivatives qualified as eligible for hedge accounting.

	2019 £'000	2018 £'000
Adjusted profit before tax:		
Statutory profit before tax	109,944	155,225
Fair value gains on financial instruments not eligible for hedge accounting:		
– reported in revenue	(5,001)	(5,310)
– reported in gains from the fair value of financial instruments	(1,081)	(4,834)
Adjusted profit before tax	103,862	145,081

25. Alternative performance measures (continued)

	2019 pence	2018 pence
Adjusted earnings per share:		
Statutory earnings per share	126.7	181.8
Fair value gains on financial instruments not eligible for hedge accounting:		
– reported in revenue	(5.6)	(5.9)
– reported in gains from the fair value of financial instruments	(1.2)	(5.4)
Adjusted earnings per share	119.9	170.5
	2019 £'000	2018 £'000
Adjusted operating profit:		
Statutory operating profit	99,793	153,189
Fair value gains on financial instruments not eligible for hedge accounting:		
– reported in revenue	(5,001)	(5,310)
– reported in gains from the fair value of financial instruments	(1,081)	(4,834)
Adjusted operating profit	93,711	143,045
Adjustments to the segmental operating profit:		
	2019 £'000	2018 £'000
Metrology		
Operating profit before loss from fair value of financial instruments	95,345	147,841
Fair value gains on financial instruments not eligible for hedge accounting:		
– reported in revenue	(4,745)	(5,066)
Adjusted metrology operating profit	90,600	142,775
	2019 £'000	2018 £'000
Healthcare		
Operating profit before loss from fair value of financial instruments	3,367	514
Fair value gains on financial instruments not eligible for hedge accounting:		
– reported in revenue	(256)	(244)
Adjusted healthcare operating profit	3,111	270

26. Impact of new accounting policies

Comparison to previous revenue recognition standard

As noted earlier in 'Changes to accounting policies' the Group now accounts for all volume rebates and early settlement discounts within Revenue rather than Cost of Sales. This reclassification, together with the net movement in deferred extended warranties referred to in note 1, accounts for the majority of the difference between the results for the period as reported under IFRS 15 and how they would have been reported under IAS 18.

	Balance at 30 June 2019 per IFRS 15 £'000	IFRS 15 adjustment £'000	Balance at 30 June 2019 per IAS 18 £'000
Consolidated balance sheet extract			
Assets			
Deferred tax assets	29,855	(429)	29,426
Contract assets	352	(352)	–
Liabilities			
Contract liabilities	5,631	(2,248)	3,383
Equity			
Retained earnings	597,784	1,467	599,251
– related to current year		197	
– related to transition adjustment		1,270	
Consolidated income statement extract			
Revenue	573,959	1,644	575,603
Cost of sales	(294,969)	(1,390)	(296,359)
Gross profit	278,990	254	279,244
Profit before tax	109,944	254	110,198
Income tax expense	(17,712)	57	(17,655)
Profit for the year from continuing operations	92,232	197	92,429

Revenue recognised in 2019 that was included in the contract liability balance at the beginning of the reporting period, being £1,640,000, was £1,081,000. The remaining balance at 30 June 2019 relates to ongoing extended warranties and maintenance contracts.

Company balance sheet

at 30 June 2019

	notes	2019 £'000	2018 £'000
Assets			
Property, plant and equipment	C.28	147,164	135,430
Intangible assets	C.29	47,113	41,398
Investments in subsidiaries	C.30	288,548	290,362
Investments in associates and joint ventures	C.31	1,468	1,468
Long-term loans to Group undertakings		21,143	–
Long-term loans to associates and joint ventures		750	4,360
Deferred tax assets	C.32	5,037	4,848
Derivatives	20	1,311	9,578
Total non-current assets		512,534	487,444
Current assets			
Inventories	C.33	68,935	57,011
Trade receivables	C.34	55,979	78,104
Short-term loans to Group undertakings		107,363	124,821
Short-term loans to associates and joint ventures		6,644	1,918
Current tax		3,797	–
Other receivables		15,033	11,018
Derivatives	20	2,778	1,368
Pension scheme cash escrow account	13	10,490	10,413
Cash and cash equivalents		63,622	64,856
Total current assets		334,641	349,509
Current liabilities			
Trade payables		11,383	16,041
Short-term loans from Group undertakings		51,996	446
Current tax		–	3,000
Provisions	C.35	2,382	2,900
Derivatives	20	18,920	22,478
Other payables	C.36	66,284	69,275
Total current liabilities		150,965	114,140
Net current assets		183,676	235,369
Non-current liabilities			
Employee benefits	C.37	44,739	60,879
Derivatives	20	35,227	17,041
Total non-current liabilities		79,966	77,920
Total assets less total liabilities		616,244	644,893
Equity			
Share capital	C.38	14,558	14,558
Share premium		42	42
Own shares held	21	(404)	–
Cash flow hedging reserve	21	(42,401)	(19,389)
Retained earnings		644,291	649,682
Other reserve	21	158	–
Total equity		616,244	644,893

The Company reported a profit for the financial year ended 30 June 2019 of £28,478,000 (2018: £189,430,000).

These financial statements were approved by the Board of directors on 1 August 2019 and were signed on its behalf by:

Sir David McMurtry **Allen Roberts**
Directors

Company statement of changes in equity

for the year ended 30 June 2019

	Share capital £'000	Share premium £'000	Own shares held £'000	Cash flow hedging reserve £'000	Retained earnings £'000	Other reserves £'000	Total £'000
Year ended 30 June 2018							
Balance at 30 June 2017	14,558	42	–	(31,049)	499,448	–	482,999
Profit for the year	–	–	–	–	189,430	–	189,430
Other comprehensive income and expense (net of tax)							
Remeasurement of defined benefit pension scheme liabilities	–	–	–	–	(254)	–	(254)
Changes in fair value of cash flow hedges	–	–	–	11,660	–	–	11,660
Total other comprehensive income and expense	–	–	–	11,660	(254)	–	11,406
Total comprehensive income and expense	–	–	–	11,660	189,176	–	200,836
Dividends paid	–	–	–	–	(38,942)	–	(38,942)
Balance at 30 June 2018 as reported	14,558	42	–	(19,389)	649,682	–	644,893
Adjustment for IFRS 15	–	–	–	–	(88)	–	(88)
Balance at 1 July 2018 restated	14,558	42	–	(19,389)	649,594	–	644,805
Year ended 30 June 2019							
Profit for the year	–	–	–	–	28,478	–	28,478
Other comprehensive income and expense (net of tax)							
Remeasurement of defined benefit pension scheme liabilities	–	–	–	–	9,891	–	9,891
Changes in fair value of cash flow hedges	–	–	–	(23,012)	–	–	(23,012)
Total other comprehensive income and expense	–	–	–	(23,012)	9,891	–	(13,121)
Total comprehensive income and expense	–	–	–	(23,012)	38,369	–	15,357
Share-based payments charge	–	–	–	–	–	158	158
Purchase of own shares	–	–	(404)	–	–	–	(404)
Dividends paid	–	–	–	–	(43,672)	–	(43,672)
Balance at 30 June 2019	14,558	42	(404)	(42,401)	644,291	158	616,244

Notes to the Company financial statements

C.27. Accounting policies

The following accounting policies have been applied consistently in dealing with items which are considered material in relation to the financial statements of the Company.

Basis of preparation

The financial statements were prepared in accordance with Financial Reporting Standard 101 'Reduced Disclosure Framework' (FRS 101). In preparing these financial statements, the Company applies the recognition, measurement and disclosure requirements of International Financial Reporting Standards as adopted by the EU (adopted IFRS), but makes amendments where necessary in order to comply with the Companies Act 2006.

The Company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- A cash flow statement and related notes.
- Comparative period reconciliations for share capital, tangible fixed assets and intangible fixed assets.
- Disclosures in respect of transactions with wholly-owned subsidiaries.
- Disclosures in respect of capital management.
- The effects of new but not yet effective IFRSs.
- Disclosures in respect of the compensation of key management personnel.

As the consolidated financial statements of the Company include the equivalent disclosures, the Company has also taken the exemptions under FRS 101 available in respect of certain disclosures required by IFRS 13 'Fair value measurement' and the disclosures required by IFRS 7 'Financial instruments disclosures'.

The financial statements have been prepared on the historical cost basis, except for the fair value of financial instruments. Historical cost is based on the fair value of the consideration given in exchange for the assets. The principal accounting policies are set out below.

Under section 408 of the Companies Act 2006 the Company is exempt from the requirement to present its own profit and loss account.

Going concern

The Company's business activities, together with the factors likely to affect its future development, performance and position are set out in the Strategic report, where also given are details of the financial and liquidity positions. In addition, note 20 in the financial statements includes the Company's objectives and policies for managing its capital, details of its financial instruments and hedging activities and its exposures to credit risk and liquidity risk.

The Company has considerable financial resources at its disposal and the directors have considered the current financial projections. As a consequence, the directors believe that the Company is well placed to manage its business risks successfully.

After making enquiries, the directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for a period of at least 12 months from the date of approval of the financial statements. Accordingly, they continue to adopt the going concern basis in preparing the Annual report.

Investments

Investments in subsidiary and associated undertakings are stated at cost less any provision for permanent impairment losses.

Property, plant and equipment, and depreciation

Property, plant and equipment assets are stated at cost less accumulated depreciation. Depreciation is provided to write off the cost of assets less their estimated residual value on a straight-line basis over their estimated useful economic lives as follows:

Freehold buildings – 50 years

Plant and equipment – 3 to 25 years

Motor vehicles – 3 to 4 years

No depreciation is provided on freehold land.

Inventories

Inventories are valued at the lower of actual cost on a FIFO basis and net realisable value. Cost comprises direct materials and labour plus overheads applicable to the stage of manufacture reached.

Research and development

Expenditure on research activities is recognised in the income statement as an expense as incurred. Expenditure on development activities is capitalised if the product or process is technically and commercially feasible and the Company intends and has the technical ability and sufficient resources to complete development, future economic benefits are probable and the Company can measure reliably the expenditure attributable to the intangible asset during its development.

Accounting policies (continued)

Taxation

The charge for taxation is based on the Company's profit for the year. Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes.

Deferred tax assets are recognised to the extent that it is regarded as probable that they will be recovered.

Employee benefits

The Company operated a contributory pension scheme, of the defined benefit type up to 5 April 2007, after which this scheme was closed for future accruals to existing members and was closed to new members. Since 5 April 2007, the Company has operated a defined contribution scheme.

The scheme is administered by trustees who are independent of the Company finances.

Pension scheme assets in the defined benefit scheme are measured at fair value using market value. Pension scheme liabilities are measured using a projected unit method and discounted at the current rate of return on a high-quality corporate bond of equivalent term and currency to the liability. The expected return on the scheme's assets and the interest on the scheme's liabilities arising from the passage of time are included in other finance income.

The pension scheme's surplus, to the extent that it is considered recoverable, or deficit is recognised in full and presented on the face of the balance sheet. Where a guarantee is in place in relation to a pension scheme deficit, liabilities are reported in accordance with IFRIC 14. To the extent that contributions payable will not be available as a refund after they are paid into the plan, a liability is recognised at the point the obligation arises, which is the point at which the minimum funding guarantee is agreed.

Accruals are made for holiday pay, based on a calculation of the number of days' holiday earned during the year, but not yet taken and also for the annual performance bonus.

Derivative financial instruments

In accordance with its treasury policy, the Company does not hold or issue derivative financial instruments for trading purposes.

The Company uses forward exchange contracts to hedge its exposure to foreign exchange risk arising from operational and financing activities. Forward exchange contracts are recognised at fair value, being the estimated amount that the Company would pay or receive to terminate them at the balance sheet date based on prevailing foreign currency rates. Changes in the fair value of foreign currency derivatives which are designated and effective as hedges of future cash flows are recognised in Other comprehensive income and in the currency hedging reserve, and subsequently transferred to the carrying amount of the hedged item or the Consolidated income statement. The ineffective part of any gain or loss is recognised in the income statement immediately.

Other financial instruments

Loans to associates and joint ventures are initially recognised at fair value and are subsequently held at amortised cost.

Loans to Group undertakings are initially recognised at fair value and are subsequently held at amortised cost using the effective interest rate method. Where such intercompany loans are repayable on demand the Company determines whether any impairment provision is required by assessing the company's ability to repay the loan. Where it is determined that a recipient company does not have the capacity to repay the loan at the balance sheet date, or the loan is not repayable on demand, an expected credit loss model is used to calculate the impairment provision required.

Trade and other current receivables are initially recognised at fair value and are subsequently held at amortised cost less any provision for bad and doubtful debts. Trade and other current payables are initially recognised at fair value and are subsequently held at amortised cost.

Warranty on the sale of products

The Company provides a warranty from the date of purchase, except for those products that are installed by the Company where the warranty starts from the date of completion of the installation. This is typically for a 12-month period, although up to three years is given for a small number of products. A warranty provision is included in the accounts, which is calculated on the basis of historical returns and internal quality reports.

Foreign currencies

Transactions in foreign currencies are translated at the rate of exchange prevailing at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated into Sterling at the foreign exchange rate prevailing at that date. Foreign exchange differences arising on such translation are recognised in the income statement.

Notes to the Company financial statements continued

C.28. Property, plant and equipment

Year ended 30 June 2019	Freehold land and buildings £'000	Plant and equipment £'000	Motor vehicles £'000	Assets in the course of construction £'000	Total £'000
Cost					
At 1 July 2018	91,521	165,599	4,669	3,677	265,466
Additions	4,927	14,996	318	8,503	28,744
Transfers	118	3,304	–	(3,422)	–
Disposals	(30)	(573)	(474)	–	(1,077)
At 30 June 2019	96,536	183,326	4,513	8,758	293,133
Depreciation					
At 1 July 2018	16,857	109,881	3,298	–	130,036
Charge for the year	1,714	14,539	520	–	16,773
Released on disposals	(7)	(379)	(454)	–	(840)
At 30 June 2019	18,564	124,041	3,364	–	145,969
Net book value					
At 30 June 2019	77,972	59,285	1,149	8,758	147,164
At 30 June 2018	74,664	55,718	1,371	3,677	135,430

At 30 June 2019, properties with a net book value of £75,200,000 (2018: £66,759,000) were subject to a fixed charge to secure the UK defined benefit pension scheme liabilities. See note 13 for additional information.

Additions to assets in the course of construction comprise:

	2019 £'000	2018 £'000
Freehold land and buildings	5,806	306
Plant and equipment	2,697	3,693
	8,503	3,999

C.29. Intangible assets

Year ended 30 June 2019	Goodwill £'000	Internally generated development costs £'000	Software licences and intellectual property £'000	Total £'000
Cost				
At 1 July 2018	9,305	131,951	18,553	159,809
Additions	–	18,349	4,107	22,456
Disposals	–	–	(120)	(120)
At 30 June 2019	9,305	150,300	22,660	182,265
Depreciation				
At 1 July 2018	9,305	93,810	15,296	118,411
Charge for the year	–	15,402	1,339	16,741
At 30 June 2019	9,305	109,212	16,635	135,152
Net book value				
At 30 June 2019	–	41,088	6,025	47,113
At 30 June 2018	–	38,141	3,257	41,398

C.30. Investments in subsidiaries

	2019 £'000	2018 £'000
Balance at the beginning of the year	290,362	294,357
Additions	186	–
Impairment	(2,000)	(3,995)
Balance at the end of the year	288,548	290,362

Details of the Company's subsidiaries are given in note C.41.

C.31. Investments in associates and joint ventures

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	1,468	1,468
Additions	–	–
Balance at the end of the year	1,468	1,468

Details of the Company's associates and joint ventures are given in note C.42.

C.32. Deferred tax

Balances at the end of the year were:

	2019			2018		
	Assets £'000	Liabilities £'000	Net £'000	Assets £'000	Liabilities £'000	Net £'000
Property, plant and equipment	–	(9,171)	(9,171)	–	(8,037)	(8,037)
Intangible assets	–	(2,494)	(2,494)	–	(3,151)	(3,151)
Defined benefit pension scheme	7,606	–	7,606	10,349	–	10,349
Derivatives	8,816	–	8,816	5,410	–	5,410
Other	280	–	280	277	–	277
Balance at the end of the year	16,702	(11,665)	5,037	16,036	(11,188)	4,848

Deferred tax assets and liabilities are offset where there is a legally enforceable right of offset and there is an intention to net settle the balances. After taking these offsets into account, the net position of £5,037,000 asset (2018: £4,848,000 asset) is presented as a £5,037,000 deferred tax asset (2018: £4,848,000 asset) in the Company's balance sheet. Where deferred tax assets are recognised, the Directors are of the opinion, based on recent and forecast trading, that the level of profits in current and future years make it more likely than not that these assets will be recovered.

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	4,848	8,796
Movements during the year	189	(3,948)
Balance at the end of the year	5,037	4,848

C.33. Inventories

An analysis of inventories at the end of the year was:

	2019 £'000	2018 £'000
Raw materials	25,947	14,276
Work in progress	22,652	28,251
Finished goods	20,336	14,484
Balance at the end of the year	68,935	57,011

Notes to the Company financial statements continued

C.34. Trade receivables

An analysis of trade receivables at the end of the year was:

	2019 £'000	2018 £'000
Trade receivables	400	461
Amounts owed by Group undertakings	55,579	77,643
Balance at the end of the year	55,979	78,104

C.35. Provisions

Provisions comprised:

	2019 £'000	2018 £'000
Warranty provision	2,382	2,900

Movements during the year were:

	2019 £'000	2018 £'000
Balance at the beginning of the year	2,900	2,390
Created in the year	2,324	2,792
Utilised in the year	(2,842)	(2,282)
	(518)	510
Balance at the end of the year	2,382	2,900

The warranty provision has been calculated on the basis of historical return-in-warranty information and other quality reports. It is expected that most of this expenditure will be incurred in the next financial year and all expenditure will be incurred within three years of the balance sheet date.

C.36. Other payables

An analysis of other payables due within one year at the end of the year was:

	2019 £'000	2018 £'000
Amounts owed to Group undertakings	47,927	48,570
Amounts owed to associated undertakings and joint ventures	177	95
Other taxes and social security	3,350	3,129
Other creditors and accruals	14,830	17,481
Balance at the end of the year	66,284	69,275

Other creditors and accruals include bonuses payable in respect of the year.

C.37. Employee benefits

The Company operated a defined benefit pension scheme, which, at 5 April 2007, ceased any future accrual for current members and was closed to new members. Employees of the Company are now covered by a defined contribution scheme. See note 13 regarding details of charges relating to the UK defined benefit pension scheme liabilities.

The total pension cost of the Company for the year was £15,769,000 (2018: £14,907,000), of which £205,000 (2018: £180,000) related to directors. The latest full actuarial valuation of the scheme was carried out at 30 September 2018 and updated to 30 June 2019 by a qualified independent actuary.

The major assumptions used by the actuary for the scheme were:

	30 June 2019	30 June 2018	30 June 2017
Rate of increase in pension payments	3.3%	3.3%	3.3%
Discount rate	2.3%	2.8%	2.7%
Inflation rate (RPI)	3.4%	3.4%	3.4%
Inflation rate (CPI)	2.4%	2.4%	2.4%
Retirement age	64	64	64

The mortality assumption adopted for 2019 is S2PMA and S2PFA tables, CMI (core) 2018 model with long-term improvements of 1% per annum.

The weighted average duration of the defined benefit scheme obligation is around 24 years.

C.37. Employee benefits (continued)

The assets and liabilities in the scheme were:

	30 June 2019 £'000	% of total assets	30 June 2018 £'000	% of total assets
Market value of assets:				
Equities	104,098	65	100,975	66
Multi-asset fund	50,337	32	48,389	32
Bonds	1,721	1	1,577	1
Cash and other	2,536	2	836	1
	158,692	100	151,777	100
Actuarial value of liabilities	(203,431)	–	(212,656)	–
Deficit in the scheme	(44,739)	–	(60,879)	–
Deferred tax thereon	7,606	–	10,349	–

All equities have quoted prices in active markets in the UK, North America, Europe, Asia-Pacific, Japan and emerging markets.

The movements in the scheme were:

	Assets £'000	Liabilities £'000	Total £'000
Year ended 30 June 2019			
Deficit in scheme at the beginning of the year	151,777	(212,656)	(60,879)
Contributions	5,831	–	5,831
Interest on pension scheme	4,235	(4,987)	(752)
Remeasurement loss from GMP equalisation	–	(751)	(751)
Remeasurement gain under IAS 19 and IFRIC 14	3,717	8,095	11,812
Benefits paid	(6,868)	6,868	–
Deficit in scheme at the end of the year	158,692	(203,431)	(44,739)
Year ended 30 June 2018			
Deficit in scheme at the beginning of the year	150,322	(213,183)	(62,861)
Contributions	3,557	–	3,557
Interest on pension scheme	3,938	(5,150)	(1,212)
Remeasurement gain/(loss) under IAS 19 and IFRIC 14	6,476	(6,839)	(363)
Benefits paid	(12,516)	12,516	–
Deficit in scheme at the end of the year	151,777	(212,656)	(60,879)

The analysis of the amount recognised in the Statement of comprehensive income and expense was:

	2019 £'000	2018 £'000
Actuarial gain/(loss) arising from:		
– Changes in demographic assumptions	2,515	1,417
– Changes in financial assumptions	(20,911)	4,442
– Experience adjustment	(5,009)	2,602
Return on plan assets excluding interest income	3,717	6,476
Adjustment to liabilities for IFRIC 14	31,500	(15,300)
Total recognised in the Statement of comprehensive income and expense	11,812	(363)

C.38. Share capital

	2019 £'000	2018 £'000
Allotted, called-up and fully paid 72,788,543 ordinary shares of 20p each	14,558	14,558

The ordinary shares are the only class of share in the Company. Holders of ordinary shares are entitled to vote at general meetings of the Company and receive dividends as declared. The Articles of Association of the Company do not contain any restrictions on the transfer of shares nor on voting rights.

Notes to the Company financial statements continued

C.39. Related parties

During the year, related parties, these being the Group's associates and joint ventures (see note 12), had the following transactions and balances with the Company:

	Joint ventures		Associate	
	2019 £'000	2018 £'000	2019 £'000	2018 £'000
Purchased goods and services from the Company during the year	78	374	–	256
Sold goods and services to the Company during the year	2,808	3,438	1	8
Paid dividends to the Company during the year	200	200	–	–
Amounts owed by the Company at the year end	177	95	–	–
Loans owed to the Company at the year end	1,250	1,549	6,144	4,729

All transactions were on an arm's length basis. There were no bad debts relating to related parties written off during the year (2018: £nil).

C.40. Capital commitments

Capital commitments at the end of the year, for which no provision has been made in the financial statements, were:

	2019 £'000	2018 £'000
Authorised and committed	10,213	3,464

C.41. Subsidiary undertakings

The following are the subsidiary undertakings of Renishaw plc as at 30 June 2019, all of which are wholly-owned and held by a subsidiary undertaking, unless otherwise stated. The country in which each subsidiary has its registered/principal office is its domicile and country of incorporation. The accounting year-end for each subsidiary undertaking is 30 June unless otherwise stated. The shareholdings in all the subsidiary undertakings are in the ordinary share capital of those undertakings. The principal activities for all the subsidiary undertakings are those of the Company, as set out in the Other statutory and regulatory disclosures on page 83, except as indicated below:

^D Dormant company

^H Holding company

^T Travel agency

* 31 March year end

[^] 31 December year end

[†] Ordinary-A shares

[‡] Ordinary-C shares

Company	Registered Office
Owned by Renishaw plc	
MTT Investments Limited ^D	
Renishaw Advanced Materials Limited ^D	
Renishaw International Limited ^H	
Renishaw Medical Limited ^D	
Renishaw PT Limited ^D	New Mills, Wotton-under-Edge, Gloucestershire, GL12 8JR United Kingdom
Renishaw Software Limited ^D	
Renishaw Transducer Systems Limited ^D	
Renishaw UK Sales Limited	
Wotton Travel Limited ^T	
Measurement Devices Limited ^D	Research Park North, Riccarton, Edinburgh, Scotland, EH14 4AP United Kingdom
Renishaw Diagnostics Limited ^{†‡} (92.4%)	
Renishaw Tehnicni Inženiring d.o.o.	4th Floor, Faculty of Electrical Engineering, University of Ljubljana, Tržaška cesta 25, Ljubljana, 1000 Slovenia

C.41. Subsidiary undertakings (continued)

Company	Registered Office
Owned by MTT Investments Limited	
MTT Technologies Limited	New Mills, Wotton-under-Edge, Gloucestershire, GL12 8JR United Kingdom
Owned by MTT Technologies Limited	
MTT Technologies srl ^P	Piazza Virgilio, 4, 20123 Milano Italy
Owned by Renishaw International Limited	
itp GmbH	Rathausstraße 75-79, 66333, Völklingen Germany
OOO Renishaw [^]	Kantemirovskaya Ulitsa, 58, Moskva, 115477 Russia
Renishaw (Austria) GmbH	Industriestraße 9, Top 4.5, 2353, Guntramsdorf Austria
Renishaw (Canada) Limited	2196 Dunwin Drive, Mississauga, Ontario, L5L 1C7 Canada
Renishaw (Hong Kong) Limited	Ever Gain Plaza Tower 2, 28/F, 88 Container Port Road, Kwai Chung Hong Kong
Renishaw (Ireland) DAC	Swords Business Park, Mountgorry, Swords, County Dublin, K67 FX67 Ireland
Renishaw (Israel) Limited	HaTnufa Street 3, Kraytek Building, PO Box 4, Yokne'am Illit, 2069204 Israel
Renishaw (Korea) Limited	RM#1314, Woolim e-Biz Center, 28 Digital-ro 33-gil, Guro-gu, Seoul South Korea
Renishaw AB	Biskop Henriks väg 2, 176 76, Järfälla Sweden
Renishaw AG	Stachelhofstrasse 2, 8854, Siebnen, Schübelbach Switzerland
Renishaw ApS	c/o Azets Insight A/S, Lyskær 3CD, Lyskær 3, 2730, Herlev Denmark
Renishaw Benelux BV	Nikkelstraat 3, 4823 AE, Breda Netherlands
Renishaw GmbH	Karl-Benz Straße 12, 72124, Pliezhausen Germany
Renishaw Healthcare, Inc.	c/o C T Corporation System (Chicago), 208 South LaSalle Street, Suite 814, Chicago, Illinois, 60604 United States
Renishaw Hungary Kft	Gyár utca 2, Budaörs, 2040 Hungary
Renishaw Ibérica S.A.U.	Gavà Park, Carrer de la Recerca, 7, Gavà, 08850, Barcelona Spain
Renishaw KK	4 Chome-29-8 Yotsuya, Shinjuku-ku, Tokyo, 160-0004 Japan
Renishaw Latino Americana Ltda. [^]	Caçada dos Cravos, 141, Alphaville Comercial, Barueri, São Paulo, 06453-053 Brazil

Notes to the Company financial statements continued

C.41. Subsidiary undertakings (continued)

Company	Registered Office
Renishaw Metrology Systems Limited*	S.No.283, Hissa no.2, S.No.284, Hissa no.2 & 3A, Rasoni Industrial Estate, Village Mann, Taluka Mulshi, Pune, 411057 India
Renishaw México S. de R.L. de C.V.	Iridium 5004, Parque Industrial Milenium, Apodoca, Nuevo León, 66600 Mexico
Renishaw Oceania Pty Limited	c/o KPMG, Tower Two, Collins Square, 727 Collins Street, Docklands VIC 3008 Australia
Renishaw Oy	c/o WaBuCo Oy, Energiakuja 3, Helsinki, 00180 Finland
Renishaw S.A.S.	15 Rue Albert Einstein, 77420, Champs-sur-Marne France
Renishaw S.p.A.	Via dei Prati 5, 10044 Pianezza, Torino Italy
Renishaw s.r.o.	Olomoucká 1164/85, Brno-Černovice, Brno, 627 00 Czech Republic
Renishaw Sp. z.o.o.	ul. Osmańska 12, 02-823, Warszawa Poland
Renishaw Teknoloji Çözümleri LŞ^	Turgut Özal Blv. No:193, Şerifali Mahallesi, 34775, Dudullu Osb, Ümraniye, İstanbul Turkey
Renishaw US Holdings, Inc. ^{H^}	c/o Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware, 19801 United States
Renishaw, Inc.	c/o C T Corporation System (Chicago), 208 South LaSalle Street, Suite 814, Chicago, Illinois, 60604 United States
Owned by Renishaw (Hong Kong) Limited	
Renishaw (Malaysia) Sdn. Bhd.	Upper Penthouse, Wisma RKT, 2, Jalan Raja Abdullah, Chow Kit, 50300 Kuala Lumpur, Wilayah Persekutuan Malaysia
Renishaw (Shanghai) Management Company Limited^	288 Jiang Chang San Lu, Zhabei Qu, Shanghai, 20436 China
Renishaw (Shanghai) Trading Company Limited^	286 Jiang Chang San Lu, Zhabei Qu, Shanghai, 20436 China
Renishaw (Singapore) Pte Limited	988 Toa Payoh North, #06-07/08, 319002 Singapore
Renishaw (Taiwan) Inc.	2F. No. 2, Jingke 7th Road, Nantun District, Taichung, 40852 Taiwan

C.41. Subsidiary undertakings (continued)

Company	Registered Office
Owned by Renishaw US Holdings, Inc.	
Renishaw Fixturing Solutions, LLC [^]	c/o The Corporation Company, 40600 Ann Arbor Road East, Suite 201, Plymouth, Michigan, 48170 United States
Renishaw Properties, Inc.	c/o Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware, 19801 United States
Owned by Renishaw (Ireland) DAC	
Renishaw Mayfield S.A.	Rue de Lausanne 43B, 1110, Morges Switzerland
Owned by Renishaw Mayfield S.A.	
Renishaw Mayfield SARL	31 Rue Ampère, 69680, Chassieu France
Owned by Renishaw Medical Limited	
Renishaw Medical AM Solutions Limited [†]	New Mills, Wotton-under-Edge, Gloucestershire, GL12 8JR United Kingdom
Renishaw Neuro Solutions Limited [†]	

C.42. Associated undertakings and joint ventures

The following are the associated undertakings and joint ventures of Renishaw plc at 30 June 2019. The country in which each entity has its registered/principal office is its domicile and country of incorporation. The accounting year end for each associate undertaking and joint venture is 30 June unless otherwise stated. The shareholdings in all the associated undertakings are in the ordinary share capital of those undertakings unless otherwise stated. The principal activities for all the associate undertakings and joint ventures are those of the Company, as set out in the Other statutory and regulatory disclosures on page 83.

[†] Ordinary-A shares

[^] 31 December year-end

Company	Registered Office
Owned by Renishaw plc	
HiETA Technologies Limited ^{††} (24.9%)	Bristol & Bath Science Park, Dirac Crescent, Emersons Green, Bristol, BS16 7FR United Kingdom
Metrology Software Products Limited (50%)	6F Greensfield Court, Alnwick, Northumberland, NE66 2DE United Kingdom
Owned by Renishaw International Limited	
RLS Merilna tehnika d.o.o. (50%)	Poslovna cona Žeje pri Komendi, Pod vrbami 2, Komenda, 1218 Slovenia

10 year financial record

	note 2019 £'000	note 2018 £'000	note 2017 £'000	note 2016 £'000	2015 £'000	note 2014 £'000	note 2013 £'000	2012 £'000	note 2011 £'000	note 2010 £'000
Results										
Overseas revenue	539,915	580,940	509,212	404,472	469,221	331,682	326,213	313,007	273,989	170,957
UK and Ireland revenue	34,044	30,567	27,595	22,752	25,499	23,816	20,668	18,885	14,761	10,650
Total revenue	573,959	611,507	536,807	427,224	494,720	355,498	346,881	331,892	288,750	181,607
Operating profit	93,711	143,045	108,733	86,952	143,924	70,388	79,071	83,188	79,286	28,095
Profit before tax	103,862	145,081	109,079	87,475	144,196	70,106	79,193	86,046	80,410	28,725
Taxation	16,557	20,942	12,819	14,880	22,850	10,720	15,046	17,008	16,345	5,745
Profit for the year	87,305	124,139	96,260	72,595	121,346	59,386	64,147	69,038	64,065	22,980
	2019 £'000	2018 £'000	2017 £'000	2016 £'000	2015 £'000	2014 £'000	2013 £'000	2012 £'000	2011 £'000	2010 £'000
Capital employed										
Share capital	14,558	14,558	14,558	14,558	14,558	14,558	14,558	14,558	14,558	14,558
Share premium	42	42	42	42	42	42	42	42	42	42
Reserves	568,677	533,994	429,214	366,785	413,918	336,163	262,119	227,799	187,118	144,021
Total equity	583,277	548,594	443,814	381,385	428,518	350,763	276,719	242,399	201,718	158,621
Statistics	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Overseas revenue as a percentage of total revenue	94.1%	95.0%	94.9%	94.7%	94.8%	93.3%	94.0%	94.3%	94.9%	94.1%
Adjusted earnings per share	119.9	170.5p	132.4p	100.4p	167.5p	82.3p	88.9p	95.6p	88.5p	32.3p
Proposed dividend	60.0p	60.0p	52.0p	48.0p	46.5p	41.2p	40.0p	38.5p	35.0p	17.6p

Note

The results and adjusted earnings per share for the years 2010, 2011, 2013, 2014, 2016, 2017, 2018 and 2019 exclude the exceptional items. These were: 2010 – impairment write-down (£1.7m); 2011 – reversal of impairment write-down (£1.7m); 2013 – gain on deferred consideration settlement (£2.9m); 2014 – profit on disposal of shareholding in Delcam plc (£26.3m); and 2016 (£25.8m pre tax loss), 2017 (£8.0m pre tax gain), 2018 (£10.1m pre tax gain) and 2019 (£6.1m pre tax gain) – gains and losses from financial instruments not effective for cash flow hedging. No years prior to 2016 have been adjusted for gains and/or losses from financial instruments not effective for cash flow hedging.

Additional information

Organisations which received significant charitable donations over £2,000 in 2018/19

- Chippenham Town FC, UK
- Gloucestershire Arthritis Trust, UK
- Rowland Hill Almshouses, UK
- The Grand Appeal (Wrong Trousers Day), UK
- Severn Freewheelers EVS, UK
- Vale of Berkeley Railway Trust, UK
- Wotton Defib Awareness Group, UK
- Children in Need, UK
- Barry Romilly Bowls Club, UK
- Tetbury Hospital Trust, UK
- DEC Cyclone Idai Appeal, UK
- Dorothy House Hospice, UK
- Red Nose Day, UK
- Gloucestershire Eye Therapy Trust, UK Friends of Paternoster School, Cirencester, UK
- Maktek Golden Compass CNC Lathe Design Competition, Turkey
- Sassoon General Hospital, India
- Jeevan Jyot Mandal, India
- Pune Marathi Granthalay, India
- Zilla Parishad School, Mahalunge, India
- Janakalyan Rakta Pedhi, India
- Indian Herpetological Societies' Wild Animal Rescue & Rehabilitation Center, India
- Chaitanya Mahila Mandal, India
- Punarutthan Samarasata Gurukulam, India
- Apala Ghar, India
- Zilla Parishad Shala, India

Task Force on Climate-related Financial Disclosures

Renishaw has publicly committed to implementing the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We recognise climate change as the biggest environmental threat the world faces, and one which could pose challenges to our business including our supply chain and operations. We believe that disclosing these climate related risks is an important step in demonstrating our understanding of these risks and efforts to mitigate them. In addition to enhancing business resilience, it also enables us to take advantage of any opportunities it may offer.

This year represents our first disclosure to address the TCFD recommendations and we expect this to develop and evolve over time to reflect our analysis.

Governance

The Board has appointed Allen Roberts, Group Finance Director, as the Director responsible for CSR. Allen, has in turn, appointed Ben Goodare, Group CSR Manager who chairs the CSR Committee. This Committee is responsible for managing our impacts on climate change, as well as the risks that climate change may pose to our business. The Committee meets six times during the year and receives regular updates on our progress against commitments and performance.

Strategy

Our CSR committee has overall responsibility for CSR strategy within our Group. To better understand the climate related impacts that are material to our business we are undertaking a materiality assessment in the forthcoming year. This will enable us to shape our strategic aims for the short and long term to enable us to mitigate climate risks and take advantage of opportunities.

To shape our materiality assessment, we have used risks and opportunities identified through engagement with employee focus groups and disclosures identified in the GRI (Global Reporting Initiative) standards, the Sustainable Development Goals, the CDP questionnaires and other credible organisations.

This process will enable us to identify our exposure to physical climate risks such as rising temperatures, rising sea levels and extreme weather events. Beyond physical risks, we are also assessing any risks and opportunities arising from a transition to a low-carbon world aligned with the Paris Climate Agreement.

The results of our materiality assessment will inform our short and long term CSR strategy and targets.

Risk management

The identification and management of climate-related risks follows our established risk management process. Key elements of the risk management process are set out on pages 38 and 39.

Metrics and targets

We have reduced the emissions from our operations from 2015/16 levels by 62% to the end of this reporting period, and are on track to achieve a 100% reduction by 2050. To help us meet our targets, we have started to move our purchased electricity to 100% from renewable sources and have invested heavily in solar PV at sites across the UK and our Indian manufacturing site. More details on climate change metrics and targets are disclosed on pages 23, 46 and 50 to 51.

Additional information continued

Greenhouse gas emissions

	2019 ^d	2018 ^a	2017 ^a	2016	2015
Scope 1					
Gas consumption	774.95	1,005.51	886.30	771.82	962.30
Owned transport	2,641.09	2,399.93	2,241.78	2,492.30	2,293.66
Generator diesel	35.66	34.96	28.67	26.38	124.31
Heating oil	244.06	188.00	231.48	234.00	41.09
Fugitive emissions	276.11	206.42	266.00	305.73	262.79
Out of scope (bio-fuel blend)	74.70	58.11	58.12	60.85	59.58
Total Scope 1 (tCO₂e)	3,971.87	3,834.82	3,654.23	3,830.24	3,684.15
Scope 2^e					
Location-based					
Purchased heat	5.44	11.74	4.50	19.88	5.44
Electricity	3,911.07	8,596.25	15,746.08	17,003.42	16,963.50
Total Scope 2 (tCO₂e)	3,916.51	8,607.99	15,750.57	17,023.30	16,968.94
Market-based^f					
Electricity	4,730.23	6,351.83	21,659.34	20,853.54	16,963.50
Total Scope 2 (tCO₂e)	4,735.67	6,363.57	21,663.84	20,873.43	16,968.94
Total statutory GHG emissions^c (tCO₂e) market-based	8,707.54	10,198.39	25,318.07	24,703.67	20,653.09
Normalised statutory GHG emissions^c by revenue (tCO₂e/£m) market-based	15.17	16.68	47.16	57.83	41.75
Scope 3					
Business travel	3,835.87	2,900.77	2,638.79	4,717.04	4,030.00
Product distribution	10,544.92	14,345.65	11,048.65	9,534.18	11,482.33
Raw material purchase ^h	2,265.05	1,492.79	1,517.53	1,260.40	1,088.41
Post and communications ⁱ	1,088.53	857.33	773.11	774.00	598.66
WTT and T&D total ^g	1,392.58	2,957.31	4,964.78	5,352.59	5,203.68
Out of scope (bio-fuel blend)	4.21	9.24	9.24	29.49	38.97
Total significant Scope 3 (tCO₂e)	19,126.95	22,553.85	20,942.86	21,638.21	22,403.08
Total GHG emissions (tCO₂e) market-based	27,834.49	32,752.24	46,260.93	46,341.87	43,056.17
Normalised total GHG emissions by revenue (tCO₂e/£m) market-based	48.49	53.56	86.18	108.48	87.03

a thinkstep was engaged to provide independent limited assurance over the greenhouse gas emissions data from the years 2015/16, 2016/17 and 2017/18.

A limited level of assurance was applied. The verification engagement was performed in accordance with the GHG Protocol Corporate Standard (2004) verification requirements and ISO 14064-3. thinkstep has issued an unqualified opinion over the selected data. thinkstep's full assurance statements are available at: www.renishaw.com/CSR.

b 2017/18 figures have been restated due to improvements in our methodology, updated GHG conversion factors and replacing the calculation used for the June 2018 data last year – see footnote d.

c Statutory emissions are Scope 1 and 2 as required by the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013.

d To facilitate the timely capture of information, this disclosure uses internally reported data from July to May and the June data is given as an average of the previous three months. This will be restated next year if a significant difference is seen.

e Renishaw uses the market-based method for calculating Scope 2 emissions for our total emissions to account for our efforts in generating and purchasing low-carbon energy. The location-based method is provided for disclosure only and all intensity, net and gross emissions shown are calculated using scope 2 market-based method.

f Market-based electricity is used where it is available to us. This is currently only within the UK and Europe. Where market-based factors are not available residual grid mix factors and location-based factors are used in their place.

g Well to Tank and Transmission and Distribution losses total, use location-based conversion factors for calculations.

h Raw material purchase figures are based on metal purchased by weight in the UK and office paper purchased across the UK. We are working on how to increase the scope of this data to other raw materials.

i This is based on post and communications used within the UK, we are working on how to increase the scope of this data to overseas operations in the future.

Independent assurance statement

Greenhouse gas verification statement

thinkstep was commissioned by Renishaw plc to verify its greenhouse gas (GHG) data, covering the financial year ended 30 June 2018 (1 July 2017 – 30 June 2018).

The reviewed GHG data includes all scope 1 except Fugitive Emissions and scope 2 emissions as well as limited scope 3 emissions.

The corporate carbon footprint considered all of Renishaw's material locations around the world. In addition, Renishaw's scope 3 emissions data from business travel (air travel, rail travel and road travel in employee-owned vehicles) was reviewed. The review considered the greenhouse gases CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃.

The Renishaw GHG inventory calculation followed the "Financial Control" approach (organisational boundary).

A limited level of assurance was applied. The verification engagement was performed in accordance with the GHG Protocol Corporate Standard (2004) verification requirements and ISO 14064-3.

Renishaw was assessed against the GHG Protocol Corporate Standard (2004) reporting requirements (scope 1 and 2 emissions), and the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Assurance Conclusion

Based on the process and procedures conducted, there is no evidence that the Renishaw GHG inventory is not materially correct and is not a fair representation of Renishaw's GHG data and information, and has not been prepared in accordance with the GHG Protocol:

Scope 1 emissions: 3,834.82 tonnes CO₂-equivalent

Scope 2 emissions – Location Based: 8,607.99 tonnes CO₂-equivalent

Scope 2 emissions – Market Based: 6,363.57 tonnes CO₂-equivalent

Commentary

- The GHG inventory is based on measured and estimated activity data. Estimates are calculated and included where measured data is not available or is not yet available, following the guidance specified in Renishaw's carbon management documentation.
- Certain minor Renishaw emissions sources were excluded from Renishaw's reported emissions (e.g. small Renishaw sales offices). This had no material impact on the overall Renishaw emissions profile.

Independence

This is the fourth year that thinkstep has undertaken a verification and provides an opinion statement with regard to Renishaw's scope 1 and scope 2 GHG emissions data. The staff that have undertaken work on this assurance engagement provide no consultancy services to Renishaw plc. Our processes are designed to ensure that the work we undertake with clients is free from bias and conflict of interest.

Limitations of Assurance Statement

The findings presented here are not intended to be used as advice or as the basis for any decisions, including, without limitation, financial or investment decisions.

Additional information continued

Glossary

AGM – Annual General Meeting	kW – kilowatt – an amount of power equal to 1,000 watts
AM – additive manufacturing (3D printing)	kWh – kilowatt hour – an amount of energy equivalent to delivering 1 kW of power for an hour
APAC – Asia Pacific	LIBOR – London inter-bank offered rate
APMs – alternative performance measures	LR – the FCA's Listing Rules
Brexit – UK exit from the EU	MRO – maintenance, repair and overhaul
Governance Code – UK Corporate Governance Code 2016	NCI – non-controlling interest
the Code – Group Business Code	OCI – other comprehensive income
Company – Renishaw plc	P&L – profit and loss account
CAD – computer aided design	PBT – profit before tax
CMM – co-ordinate measuring machine	RIS – Regulatory Information Service
CNC – computer numerically controlled	R&D – research and development
CPI – consumer price index	RCC – Renishaw Charities Committee
CRM – customer relationship management	RIDDOR – Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013
CSR – corporate social responsibility	Scope 1 – Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, generators, vehicles, etc.
EBT – Employee Benefit Trust	Scope 2 – GHG emissions from the generation of purchased electricity consumed by the company.
EMEA – Europe, Middle East and Africa	Scope 3 – Indirect GHG emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company.
EPS – earnings per share	SEEG – stereoelectroencephalography
ERP – enterprise resource planning	STEM – science, technology, engineering and mathematics
EU – European Union	tCO₂e – tonnes of carbon dioxide equivalent
EUR – Euro	TCFD – Task Force on Climate-related Financial Disclosures
FCA – Financial Conduct Authority	thinkstep – thinkstep Ltd.
FRC – Financial Reporting Council	TIBOR – Tokyo inter-bank offered rate
FX – foreign exchange	TPR – The Pensions Regulator
GBP – Great British Pound or Pound Sterling	TSR – total shareholder return, calculated as change in share price, assuming dividends are immediately reinvested
GDNF – Glial Cell Line-Derived Neurotrophic Factor	UK – The United Kingdom of Great Britain and Northern Ireland
GHG – greenhouse gas	USD/US\$ – United States Dollar
Group – Renishaw plc and its subsidiaries	
H&S – health and safety	
HKD – Hong Kong Dollar	
HR – human resources	
IFRS – International Financial Reporting Standards	
ISMB – Renishaw's International Sales and Marketing Board	
KPI(s) – key performance indicator(s)	

Trade marks

The following trade marks, which are registered and owned by Renishaw plc and its subsidiaries, appear throughout this Annual Report.

Equator™	neuroinfuse™	neuromate®	QuickLoad™	SPRINT™
MODUS™	neurolocate™	QUANTiC™	REVO®	

Shareholder information

Ordinary shares

The Company has one class of ordinary 20p shares listed on the London Stock Exchange under code RSW, ISIN number GB0007323586.

Registrars

For all enquiries about shareholders' holdings, transfer and registration of shares and changes of name and address, contact the Company's registrars, Equiniti Limited:

Equiniti
Aspect House
Spencer Road
Lancing
West Sussex
BN99 6DA

Telephone: 0371 384 2169 (UK callers)
+44 121 415 7047 (international callers)

Website: www.shareview.co.uk

Calls are charged at the standard geographic rate. Calls outside the UK will be charged at the applicable international rate. Lines are open from 8:30am to 5:30pm (UK time), Monday to Friday (excluding English and Welsh public holidays).

AGM

The 2019 AGM will be held on Thursday 24 October 2019 at the Company's headquarters at New Mills, Wotton-under-Edge, Gloucestershire, GL12 8JR at 12 noon. The Notice of Meeting is set out in a separate circular to shareholders. Shareholders holding shares in the Company through a nominee service should arrange to be appointed as a corporate representative or a proxy in respect of their shareholding in order to attend and vote at the meeting.

Financial reports

The Annual Report and copies of previous financial reports are available at www.renishaw.com/investor. The half-year results and the preliminary announcement of the full-year results are published on our website promptly after they have been released through a Regulatory Information Service.

Financial calendar

Annual General Meeting

24 October 2019

Half year

31 December 2019

Half-year results

January 2020

Trading update

May 2020

Final dividend

Ex-div date 26 September 2019
Record date 27 September 2019
Payment date 31 October 2019

Interim dividend (provisional)

Ex-div date 5 March 2020
Record date 6 March 2020
Payment date 6 April 2020

Registration details and Company Secretary

General Counsel & Company Secretary

Mark Noble

Registered office

New Mills
Wotton-under-Edge
Gloucestershire
GL12 8JR

Telephone: +44 (0)1453 524524
Email: companysecretary@renishaw.com
Website: www.renishaw.com/investor

Registered number

01106260 (England and Wales)

Auditor and corporate advisors

Auditor

Ernst & Young LLP

Solicitors

Norton Rose Fulbright LLP
Burgess Salmon LLP

Corporate broker

UBS

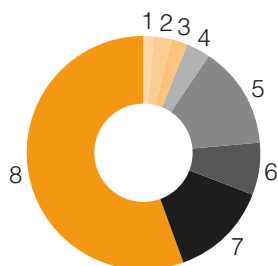
Principal bankers

Lloyds Bank plc

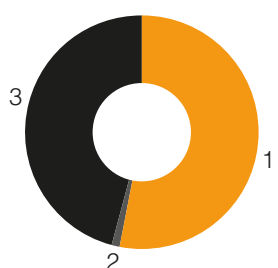
Shareholder information continued

Shareholder profile

Shareholdings	%
1 1 – 5,000	1.5
2 5,001 – 25,000	2.5
3 25,001 – 50,000	2.2
4 50,001 – 100,000	3.3
5 100,001 – 500,000	14.1
6 500,001 – 1,000,000	7.4
7 1,000,001 – 3,000,000	13.5
8 more than 3,000,000	55.4



Shareholdings	%
1 Directors	53.1
2 Individuals	1.2
3 Institutions	45.7



Share fraud

We are aware some of our shareholders have received unsolicited calls or correspondence, offering to buy or sell their shares for a price in excess of the current market price. The callers can be very persuasive and extremely persistent and often have professional websites and telephone numbers to support their activities. These callers will sometimes imply a connection to Renishaw and provide incorrect or misleading information. Please be aware this is likely to be a scam – the safest thing to do is hang up.

Dealing with an unauthorised firm means you will not be eligible for compensation under the Financial Services Compensation Scheme. If you receive any unsolicited investment advice the Financial Conduct Authority (FCA) advises the following:

- make sure you get the correct name of the person and organisation and make a record of any other information they give;
- check they are properly authorised by the FCA before getting involved by visiting www.fca.org.uk/register and contacting the firm using the details on the register;
- the FCA also maintains a list of unauthorised overseas firms who are targeting or have targeted UK investors and any approach from such firms should be reported to the FCA so the information can be kept updated; and
- report the matter to the FCA on their consumer helpline 0800 111 6768 (overseas callers dial +44 207 066 1000) or using the share fraud reporting form available at www.fca.org.uk/consumers/report-scam-unauthorised-firm.

If you have already paid money to share fraudsters contact Action Fraud on 0300 123 2040 (overseas callers dial +44 300 123 2040) or their online fraud reporting tool at www.actionfraud.police.uk/reporting-fraud-and-cyber-crime. Action Fraud will be particularly interested if you sent money to a bank account or other type of money transfer.

Remember: if it sounds too good to be true it probably is.

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