Delivering Excellence Through
Innovation & Technology

RICARDO

Ricardo plc
Annual Report & Accounts 2018

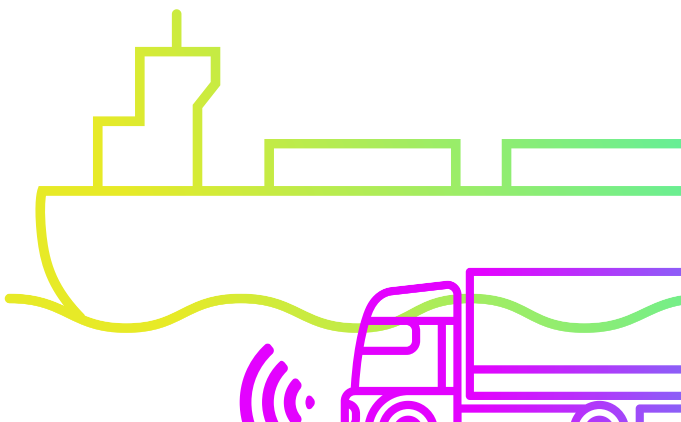
Who we are

Ricardo is a global engineering, technical, environmental and strategic consultancy business. We also manufacture and assemble low-volume, high-quality and high-performance products. Our ambition is to be the world's pre-eminent organisation focused on the development and application of solutions to meet the challenges within the markets of Transport & Security, Energy and Scarce Natural Resources & Waste.

Drawing on over 100 years of commitment to research and development, Ricardo's team of over 3,000 engineers, consultants, scientists and support staff, delivers innovative and class-leading products and services for the benefit of a broad client base.

Our clients include the world's major transportation original equipment manufacturers and operators, energy companies, financial institutions, and government agencies.

The delivery of our products and services is made possible by our people, who are at the heart of our business and who are the bedrock of our success. Ricardo cultivates the talent and the engineering and scientific excellence of its professionals and invests in their development for the benefit of the individual, for our organisation, and for our stakeholders. At Ricardo, our community is bound together by a simple desire for developing solutions to complex problems, and is driven by our corporate values of Respect, Integrity, Innovation, and Passion.



RICARDO

This year

Waste

We are working on a high-profile waste policy review for the Environmental Services Association ('ESA') – the trade body representing the UK's resource and waste management industry.

JAC HyBoost 48V Hybrid M4 MPV

Ricardo completes multi-year development programme to deliver JAC's first 48V enabled vehicle.

Emissions

Ricardo's vehicle emissions team deploys the latest remote sensing technology to measure the emissions from over 300,000 vehicles.

Scarce natural resources

Notable wins have been secured under the Circular Economy Business Support Framework, which assists SMEs to realise the benefits of adopting circular economy approaches to their processes, products and services.

Cyber security

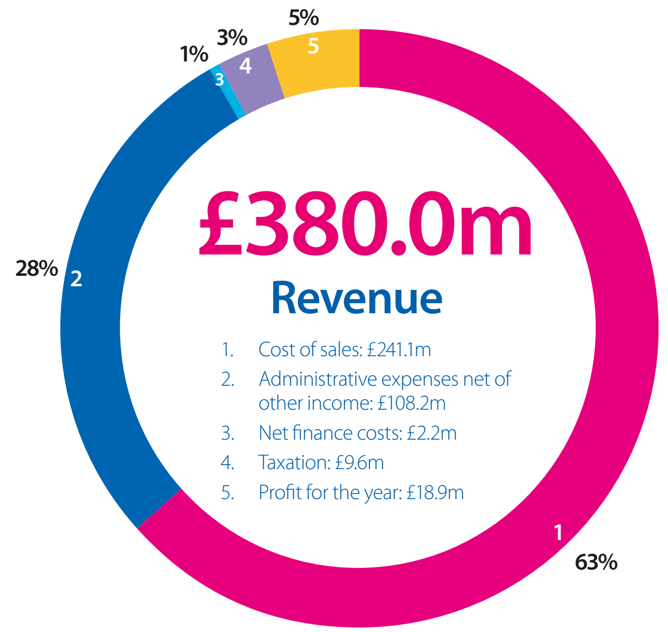
Our Centenary Innovation Centre hosts the 2017 *HackTrain* event, with teams of software developers and designers taking on various coding challenges set by the UK rail industry.

Automotive battery systems

Ricardo delivers its first battery manufacturing concept programme for a prestigious electric sports car.

Winter Olympics

Ricardo Rail plays a key role in readying South Korea's latest high-speed railway in time to serve the venues of the 2018 Winter Olympic Games.



Celsius

The *Celsius* project, which investigates factors affecting the temperature of transformers and cables in electricity sub-stations, has collected 130 million measurements.

Defence

Acquisition and integration of Control Point Corporation – now known as Ricardo Defense, Inc. – into the Group's existing Ricardo Defense business in the US.

Active Response

Our new energy innovation project, *Active Response*, is trialling an electricity network that automatically reconfigures itself, moving spare capacity to meet demand. This has the potential to reduce carbon emissions by 448,000 tonnes by 2030 in the UK.

Battery development

Ricardo is awarded a multi-million Euro programme from a premium German automaker for full service battery test and development.

High-performance engine assembly

Ricardo's production exceeds 120 engines per week as advanced end-of-line test capabilities go live.

Bugatti Chiron

Successful first year of transmission production for the groundbreaking 1,500 hp Bugatti Chiron.

Eurostar

Ricardo Certification helps pave the way for Eurostar's first-ever direct London-Amsterdam service.

Maglev

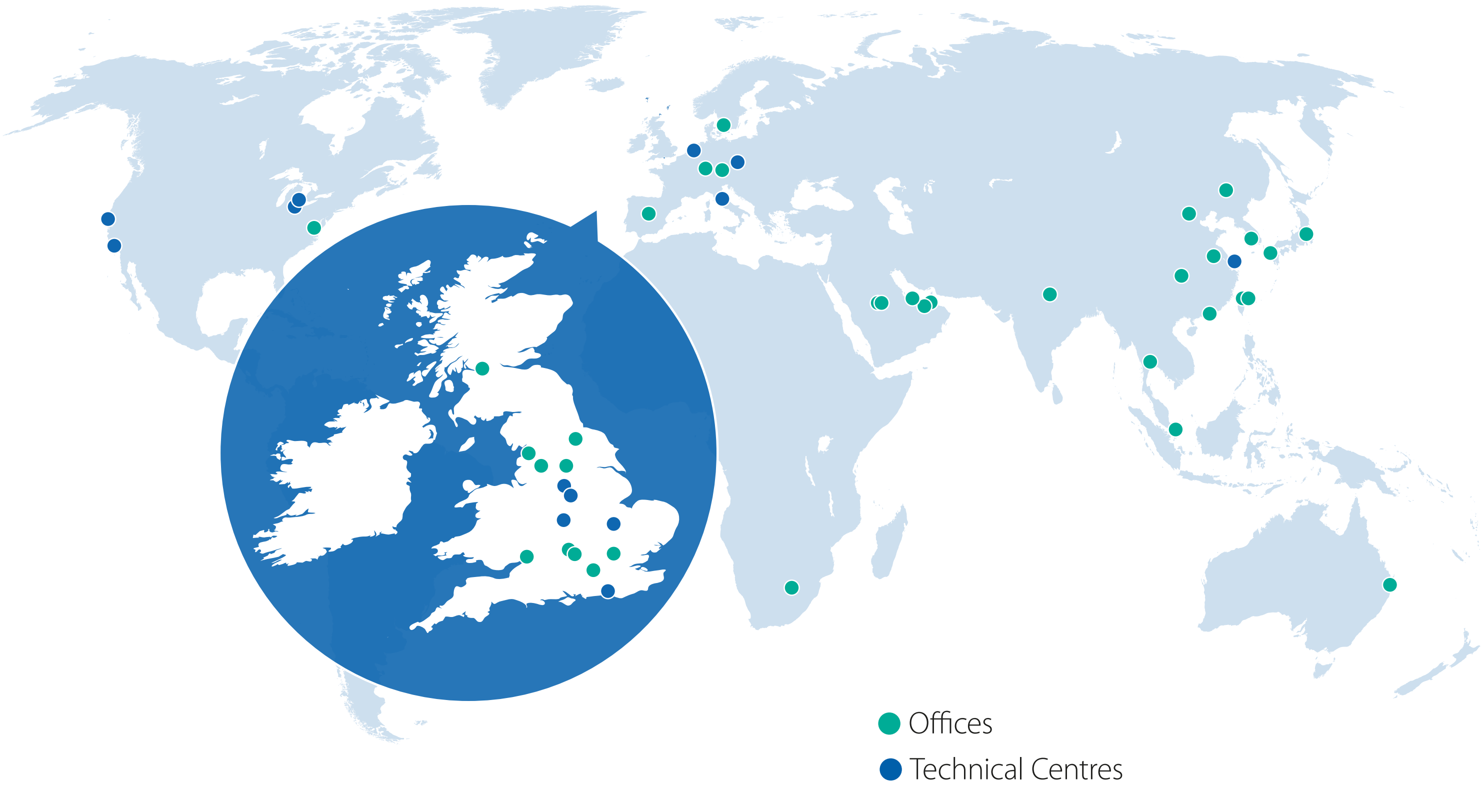
Ricardo Rail helps ensure that Beijing's first magnetic levitation rail system is ready for operation.

Railway Challenge winners

Our UK graduates collect first prize in the annual IMechE contest to design and build a miniature locomotive.

Where we are

3,000+ dedicated and talented people in our global team of experts situated in key locations around the world.



Our people

3,000+ people **85** nationalities **48** sites **21** countries

What we do

Technical Consulting

Automotive systems

Rail consulting

Environmental consulting

Strategic consulting

Independent assurance

We provide engineering, technical, environmental and strategic consultancy services to clients across a range of market sectors. We also provide accreditation and independent assurance services to clients in the rail sector.

Performance Products

Niche manufacturing

Computer-aided engineering software

Simulation software

We manufacture and assemble high-quality prototypes and niche volumes of complex engine, transmission and vehicle products. We also develop advanced virtual engineering tools, such as computer-aided engineering and simulation software for conventional and electrified powertrains, as well as complex physical systems such as water networks.

Who we work with

Original equipment manufacturers

Energy companies

Financial institutions

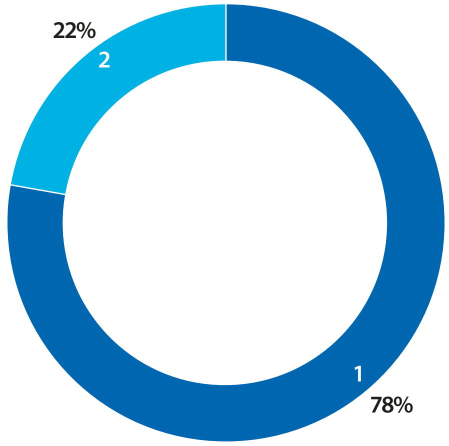
Government agencies

Order intake at a glance

Order intake for the year ended 30 June 2018 of £413m split by:

Our operating segments

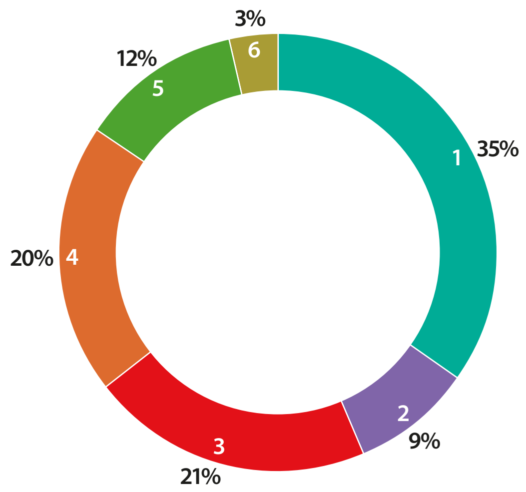
Our businesses aggregate into two distinct reportable operating segments.



1. Technical Consulting
2. Performance Products

Our market sectors

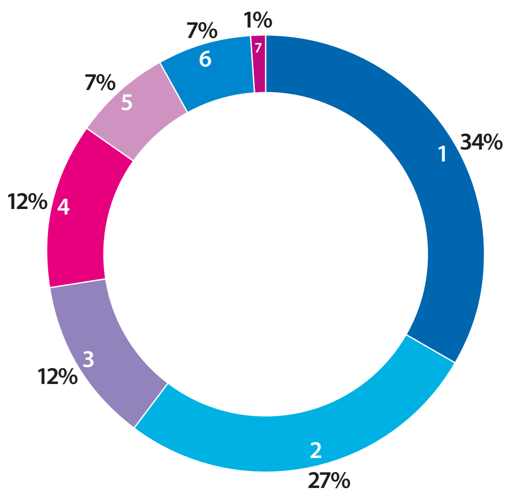
Our strategy of diversification into adjacent market sectors has continued to provide balance to our order intake.



1. Automotive
2. Off-Highway & Commercial Vehicles
3. High-Performance Vehicles & Motorsport
4. Rail
5. Energy & Environment
6. Defence

Our geographies

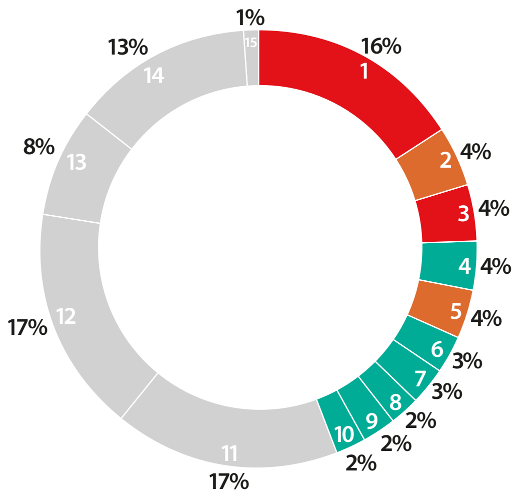
The operations of the business in our selected market sectors span many different regions of the world.



1. UK
2. Mainland Europe
3. North America
4. China
5. Japan
6. Rest of Asia
7. Rest of the World

Our customers

Our order intake arises from a customer list that includes the world's major transportation original equipment manufacturers and operators, energy companies, financial institutions and government agencies.

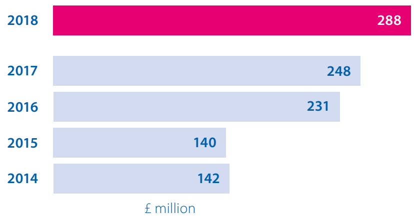


1-10. Top 10
11. UK
12. Mainland Europe
13. North America
14. Asia
15. Rest of the World

Financial highlights

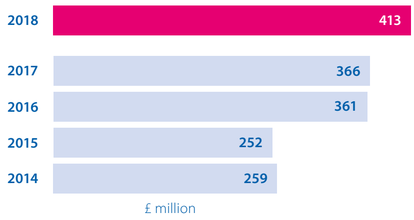
Order book

£288m
+16%



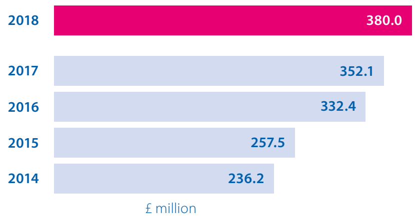
Order intake

£413m
+13%



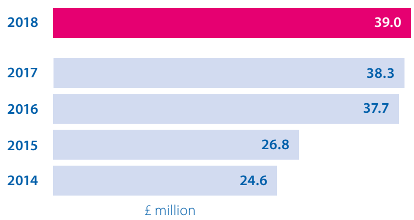
Revenue

£380.0m
+8%



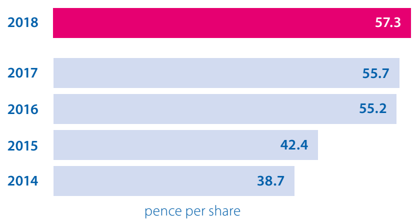
Underlying(1) profit before tax

£39.0m
+2%



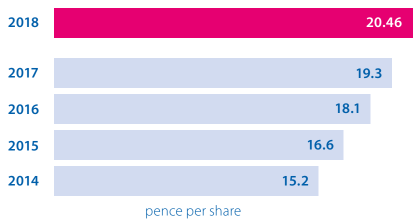
Underlying(1)(2) basic earnings per share

57.3p
+3%



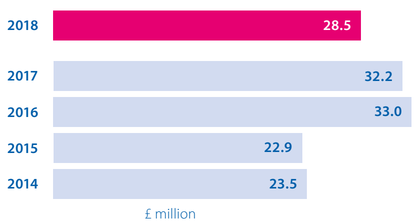
Dividend per share (paid and proposed)

20.46p
+6%



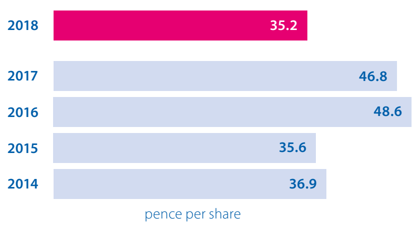
Statutory profit before tax

£28.5m
-11%



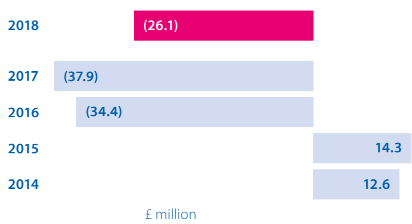
Statutory basic earnings per share

35.2p
-25%



Net (debt)/funds

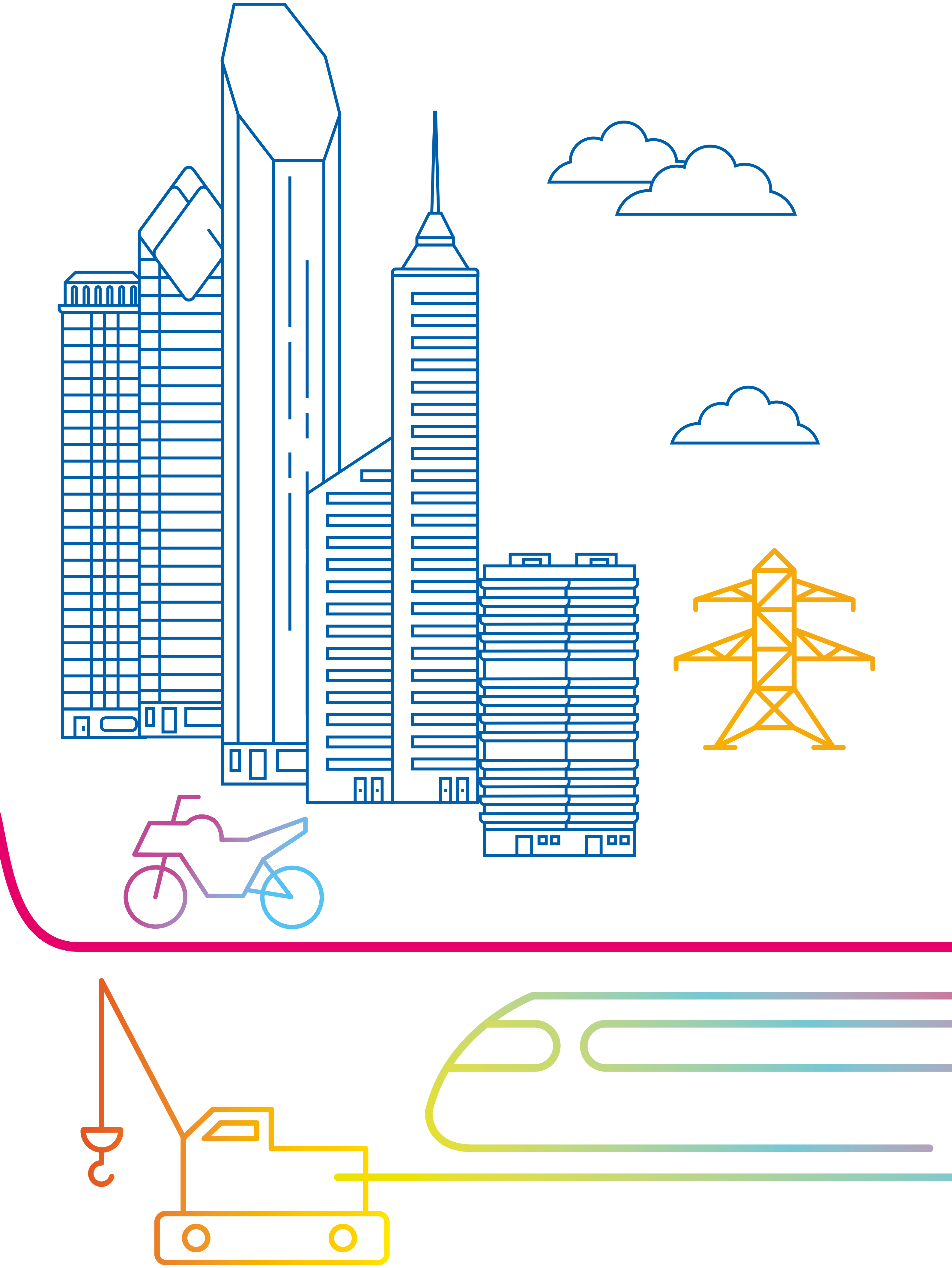
£(26.1)m
+31%



(1) Underlying measures exclude the impact on statutory measures of specific adjusting items, comprised of amortisation of acquired intangible assets of £4.3m (2017: £4.0m), acquisition-related expenditure of £1.4m (2017: £1.7m) and reorganisation costs of £4.8m (2017: £0.4m). Underlying measures are considered to provide a more useful indication of underlying performance and trends over time and can be found, together with a reconciliation to equivalent statutory measures, on the Consolidated Income Statement in the financial statements on page 116.

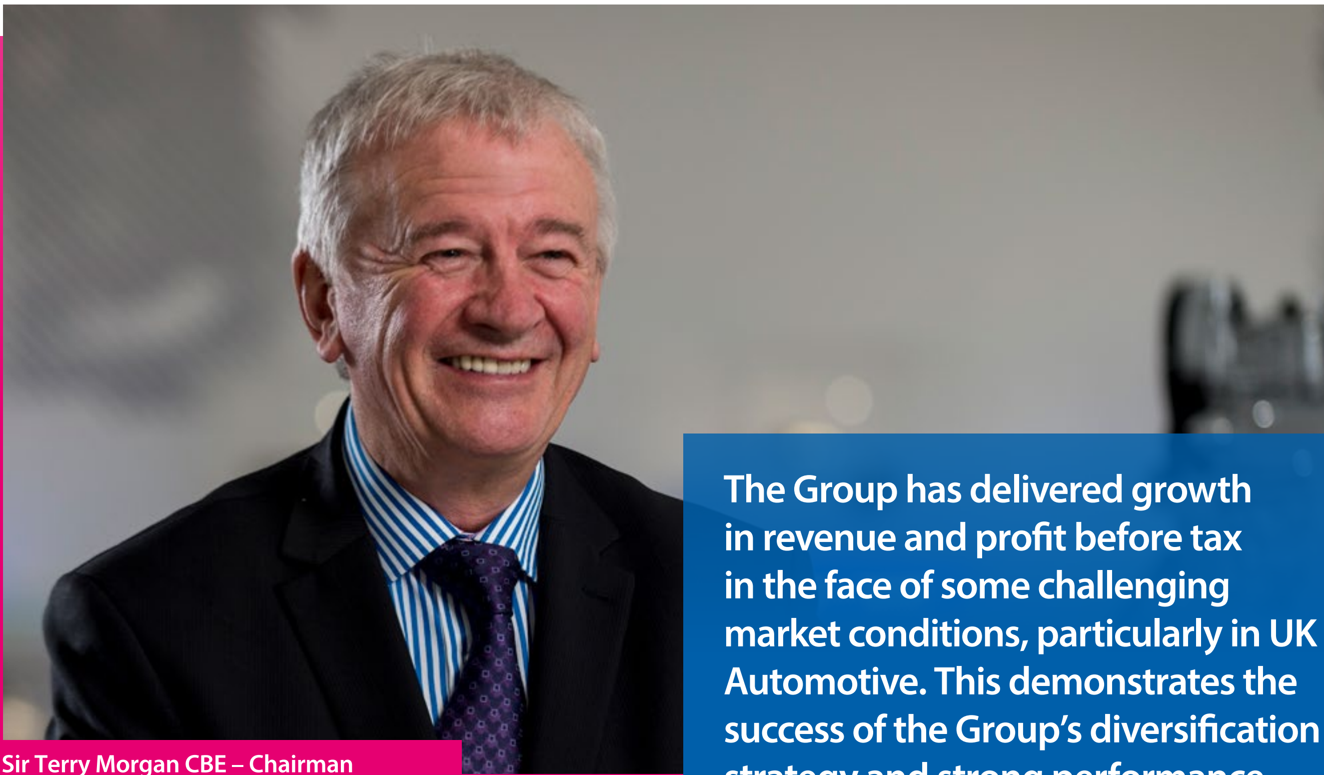
(2) Underlying earnings also exclude the tax impact on statutory earnings of specific adjusting items of £(0.9)m (2017: £(1.4)m), together with the impact of non-recurring tax charges of £2.2m for the derecognition of net deferred tax assets as a result of the reorganisation activities during the year.

Further detail on specific adjusting items is given in Note 4 to the financial statements on page 130.



Strategic report

Chairman's statement



Sir Terry Morgan CBE – Chairman

The Group has delivered growth in revenue and profit before tax in the face of some challenging market conditions, particularly in UK Automotive. This demonstrates the success of the Group's diversification strategy and strong performance from its recent acquisitions.

Results

For the year ended 30 June 2018, the Group delivered revenue of £380.0m and underlying profit before tax of £39.0m, together with an underlying basic earnings per share of 57.3 pence.

As set out in more detail in the Chief Executive's Statement on pages 10 to 12 and the Financial Review on pages 28 to 31, the Group achieved good overall order intake and increased revenue, with modest growth in underlying profit before tax and earnings per share.

Challenging conditions in certain markets have resulted in mixed performance across the divisions, but overall the Group has delivered underlying profit growth, demonstrating its resilience and the success of its diversification strategy.

The Group has continued to build on its strategic objectives through carefully targeted acquisitions and disposals. The acquisition of Control Point Corporation has had an instant positive impact, delivering performance in line with expectations. The successful sale of test assets in the US and Germany has streamlined the operations in those countries, making the Group more efficient and aligned to customer demands.

The Group's performance against its strategic objectives is outlined on pages 16 and 17. We also continued to invest in research and development (as described on pages 26 and 27), in our people and in our facilities.

People

I would like to thank all of our employees for their hard work and professionalism over the last year. As set out on pages 32 and 33, Ricardo is a people business and our employees underpin everything that the Group achieves.

Notable achievements during the year have included Ricardo Strategic Consulting being named by Forbes as among America's leading management consultants, for the third consecutive year. Ricardo was also recognised by the Ford Motor Company with a Gold World Excellence Award for exceeding expectations and achieving the highest levels of excellence in quality, delivery, value and innovation.

Ricardo Energy & Environment was recognised by the United Nations' Task Force on Emission Inventories and Projection ('TFEIP') for compiling the most complete emissions inventory: in addition, it was acknowledged by the *Financial Times* as one of the UK's leading management consultants for 2018.

In January 2018 I was delighted to present the *Ricardo Young Engineer/Scientist of the Year Award* to Anas Obaid for his work in our Ricardo Rail business. Anas is based in our Dubai office and has demonstrated a high level of responsibility: he has had a significant level of client interface in a challenging growth region for Ricardo, even though he is still early in his career.

I would also like to congratulate all those other individuals and team members who have won awards under

Ricardo Rail's Anas Obaid (centre) receives the *Ricardo Young Engineer/Scientist of the Year Award*

the various Ricardo recognition programmes during the year, together with those members of staff who have gained academic success or peer-group recognition in their chosen career paths.

Corporate governance

The Board firmly believes that robust corporate governance and risk management are essential to maintain the stability of the Group and its financial health. I am reporting separately on Corporate Governance on pages 70 to 75 of this Annual Report.

I am delighted that the FTSE4Good Index Series has confirmed Ricardo's continued inclusion for demonstrating strong Environmental, Social and Governance ('ESG') practices. This continued achievement bears testament to our commitment to the highest standards of corporate governance, which ultimately produces a better business and supports long-term performance.

FTSE4Good

The Board

Ian Lee retired from the Board following the close of the AGM on 8 November 2017 and we thank him again for his contribution to the Board and guidance as Chair of the Audit Committee. Ian was succeeded by Bill Spencer from this date. Bill has already overseen the audit tender process, following which the Board will be recommending KPMG LLP as Ricardo's external auditors for shareholder approval at our AGM in November 2018. Details of the audit tender process are set out on page 80 of this Annual Report. I would like to take this opportunity to thank PricewaterhouseCoopers LLP for all their years of service as auditors to Ricardo plc.

There have been no further changes to the Board and I would like to thank each of our Non-Executive Directors for their counsel during the year.

Dividend

The Board has declared a final dividend of 14.71 pence per share to give a total dividend of 20.46 pence, an increase of 6% on the prior year. This is in line with the Board's policy to pay progressive dividends and reflects its continued confidence in the prospects of the Group.

Outlook

The Ricardo strategy is underpinned by trends which will affect an ever-increasing number of people around the globe, with a growing population, mass urbanisation, poorer air quality, climate change, stringent emissions legislation and natural resource scarcity.

We enter the new financial year with renewed confidence and despite an uncertain political and economic climate in the year ahead, Ricardo is well positioned for future growth with another record year-end order book and a strong pipeline of opportunities across all our sectors.

Sir Terry Morgan CBE
Chairman

Chief Executive's statement

Dave Shemmans – Chief Executive Officer

In this financial year, Ricardo saw solid revenue growth and an increase in the order book to record year-end levels. We also successfully acquired and integrated Control Point Corporation. Our global presence and strategy of sector diversification helped the business to mitigate the continued impact of uncertainty currently in the UK market. Our growing order intake, particularly in Asia, reflects our clients' continued demand for our high-quality products and services.

Our test facilities in Chicago and Southern Germany were sold during the year to ensure we continue to move with the trend towards electrification. Actions were taken in our UK Automotive business to respond to issues relating to a disrupted flow of orders in the second half of the year and a small number of challenging projects relating to the new WLTP emissions legislation.

We enter the new financial year with a more agile business and a confident and positive outlook. Ricardo's global capabilities and presence in a number of growing markets, together with its strong order book, all provide a solid foundation for continued growth.

Strategy

Ricardo has developed into a diversified consultancy, manufacturing and product assembly business, primarily serving the automotive, rail, and environmental markets, and with a balanced portfolio of short- and long-term programmes.

We have expanded and adapted the business through organic and acquisitive actions and our engineering and consulting businesses are all linked by common long-term trends – urbanisation, the management of scarce natural resources, emissions control, and climate change. These are the drivers of growth in the markets we serve. Our consulting businesses also share common strategic, engineering and technical competencies, which allow us to deliver value-enhancing services and products to our clients, pulling in expertise from across the Group.

This year the increase in infrastructure spending continued unabated in Asia and benefited our Rail business, which won a number of consulting, certification and assurance contracts in countries such as South Korea, China and Taiwan.

Reduction in CO_2 remains a top global priority and we have seen increased emphasis on air quality driven by the public debate on NO_2 emissions. In the transportation sector, this supported the continued increase in demand for both the electrification of vehicles and improved efficiency of the combustion engine, as well as innovative and more efficient methods of vehicle operation, such as autonomous vehicle technology.

Also in this year, the global debate on waste management, sustainability and a circular economy has put particular emphasis on the use of plastic and plastic waste, with a number of countries and international organisations developing strategies to reduce the use of plastic and increase the recyclability of plastic waste to reduce pollution.

Ricardo has the strategic and technological competencies to support clients all over the world to develop innovative solutions that address these global issues. Our Automotive business has helped its clients address the challenges of electrification, through the application of Ricardo's technology and experience in electrified vehicle development. Our Energy & Environment business has worked with cities and international organisations around the world to establish long-term and cost-effective strategies and solutions to bring about significant improvements in local air quality and the management of water as a scarce natural resource, as well as minimising the environmental impact of plastic and increasing its reuse.

Our people are critical to the delivery of our strategy, so ensuring that they have the right skills, technologies and assets is key to the agility and adaptability of our business. We invest in our people through apprenticeship programmes, graduate recruitment, and industry hires and we invest in the research and development of new technologies, both internally and through technological partnerships.

Group overview
Strategic report
Case studies
Corporate governance
Financial statements
Additional information

Further information on the execution of our strategy can be found on pages 16 and 17.

Highlights from the year

We closed the year with good order intake of £413m and a record year-end order book of £288m. A strong contribution to the growth in order intake came from our Rail and Automotive Technical Consulting businesses in Asia, and our Performance Products business, within which we were also pleased to receive the first orders for the High-Mobility Multipurpose Wheeled Vehicle ('HMMWV') brake kit programme in the US. We also saw strong order intake relating to electric vehicles. The Group saw growth in revenue of 8% to £380.0m (2017: £352.1m) and in underlying profit before tax of 2% to £39.0m (2017: £38.3m). Further details on the results for the year are provided in the Financial Review on pages 28 and 31.

Despite the good overall order intake and revenue growth for the Group, the underlying operating profit did not grow at the same rate. Although our Automotive business in the US ended the year with a loss that was a considerable improvement on the prior year, this was offset by the impact of a challenging year in our European Automotive business. This was caused by both a reduced level of orders in the UK driven by market uncertainty, together with reduced margins on the delivery of a small number of challenging projects in the year, including the calibration of engines to be compliant with latest European emission standards. Towards the end of the financial year we welcomed the return of order intake in the European Automotive business to more normal levels. In addition, our Energy & Environment business increased its headcount in anticipation of growth beyond that which was achieved, leading to performance that was lower than expectation.

Ricardo Software is able to apply its automotive simulation and analysis tools to the water industry
(see case study 'Software innovation for a resilient and secure water supply' on pages 50 to 53)

This year we have undertaken a number of activities to increase the operational efficiency and agility of our Automotive businesses across the globe, which impacted performance in the year. We have completed the reorganisation of our operations in Germany, with the sale of our test operation in Schechingen, while in the US we have sold our Chicago Technical Center and upgraded and refocused our test capability at our Detroit Technical Center.

Earlier in the year we completed the acquisition of Control Point Corporation, subsequently renamed Ricardo Defense, Inc. The business brings additional

Ricardo assisted with the design, development, and now the manufacture of the transmission for the 1,500 hp Bugatti Chiron *(see case study 'An advanced transmission for the ultimate super sports car' on pages 62 to 65)*

Supporting the sustainability of airports *(see case study 'Creating sustainable airports' on pages 46 to 49)*

clients and expertise in programme management, software development and cyber security, and enhances our ability to provide clients in the classified US defence sector with a more extensive range of products and services. The new business has performed strongly and its integration into our existing Defence business is progressing well.

The continued increase in digitalisation and connectivity technologies makes cyber security critical for governments and businesses across many industries. We have signed two agreements with Roke to drive towards improved cyber resilience and deliver world-class and trusted cyber assurance solutions for clients within the transportation sector, and in critical commercial and national infrastructure sectors. These solutions will help our clients to protect their products, systems and businesses from cyber risks.

Ricardo's success is a result of our people, their skills and their technical expertise, innovation and motivation. Examples of how Ricardo's community has delivered excellence and created value for its clients across the world are summarised below and presented in the Case Studies section between pages 44 and 65.

- **Creating sustainable airports:** Ricardo's Energy & Environment infrastructure team advises airport operators on how to meet the challenge of managing demand for rapid growth in air transportation while minimising the environmental impact of airport operations. Ricardo assists airports in the UK and across the world in a number of areas critical to the sustainability of their operations, including air quality, noise and greenhouse gas ('GHG') emissions and water treatment strategy.

- **Software innovation for a resilient and secure water supply:** Ricardo's Software business, together with the water practice of our Energy & Environment business, is working with Southern Water on a research and development project to adapt Ricardo's *IGNITE* software – an advanced form of complex system design and optimisation software – and apply it in the water sector to enable the simulation of water distribution networks across cities and wider regions. Southern Water intends to use the new water system simulation package as a strategic tool to guide future capital investment decisions to deliver security of supply and quality of service to its clients in the future.

- **Towards zero-emissions freight in California:** Experts from Ricardo are helping regulators, technology developers and truck manufacturers in programmes to put zero- and near-zero-emissions trucks onto the highways of California – a part of the world that is at the forefront of reducing emissions.

- **Safety, assurance and interoperability:** Ricardo Rail serves the international rail industry with a comprehensive portfolio of technical competencies to support some of the most challenging aspects of rail system engineering. In addition, Ricardo Certification provides independent assurance services to the rail industry. In South Korea, Ricardo is proud to have played its part in the preparations for the Pyeongchang 2018 Winter Olympics by performing the independent safety assessments of the Automatic Train Protection ('ATP') system on the 60km Pyeongchang-Gangneung section of the new build. In parallel, Ricardo was also appointed as the Independent Safety Assessor for the signalling technology of the new Beijing S1 'maglev' line – the first in the Chinese capital to operate with magnetic levitation.

- **An advanced transmission for the ultimate super sports car:** Building on its longstanding relationship with Bugatti, Ricardo has assisted with the design, development, and now the manufacture of the advanced transmission for the ground-breaking 1,500 hp Bugatti Chiron. Ricardo applied technical solutions from its Formula 1 activities, as well as techniques, advanced materials and innovative manufacturing processes derived from the aerospace sector.

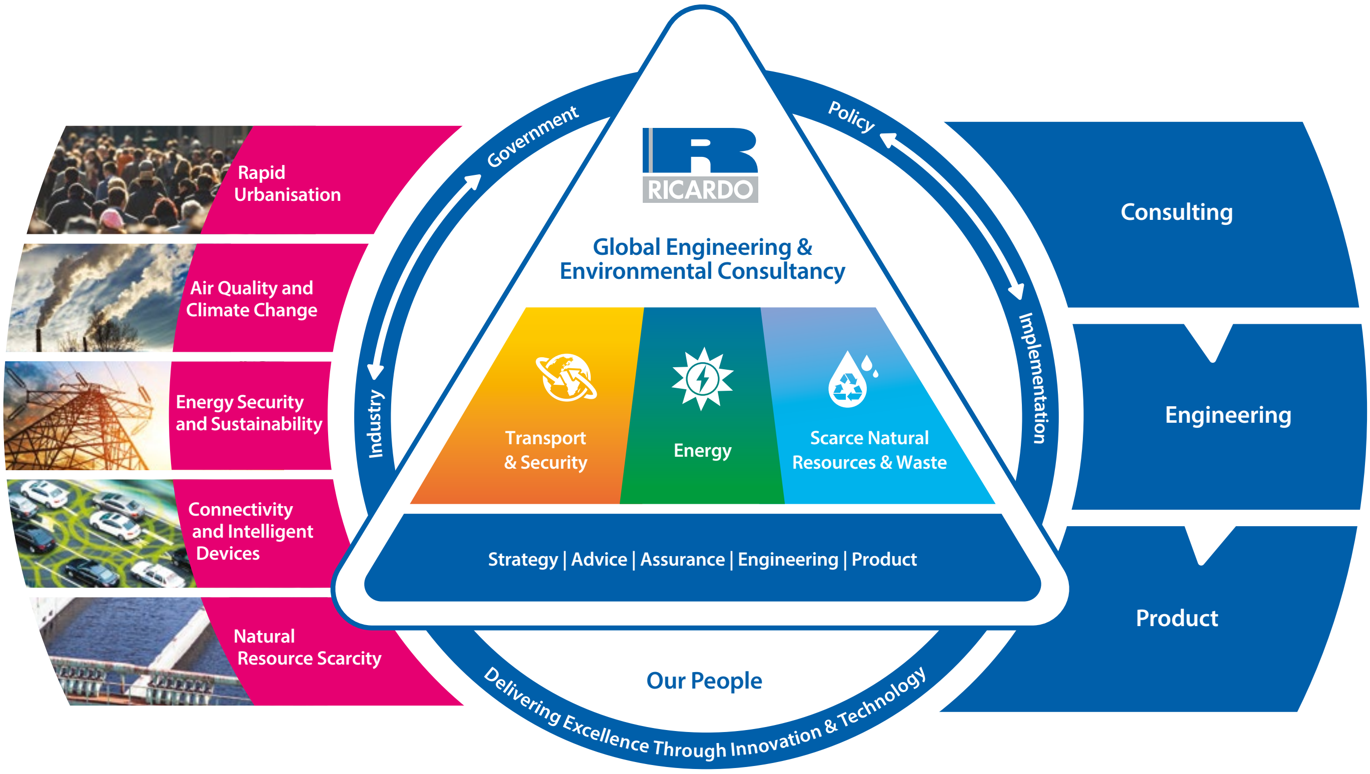
Outlook

We enter the new financial year with a more agile business and a confident and positive outlook. Ricardo's global capabilities and presence in a number of growing markets, together with its strong order book, all provide a solid foundation for continued growth.

Dave Shemmans
Chief Executive Officer

Our strategy

Our mission is to be the world's leading organisation for engineering, technical and environmental consultancy within the markets of Transport & Security, Energy, and Scarce Natural Resources & Waste.



See pages 10 and 11 for further information.

Strategic objectives

1 Performance growth

Profitable growth delivered by focusing on future market demands driven by technology change, client needs, and prevailing or impending policies and regulation

2 Risk mitigation

Reducing risk through the avoidance of business cyclicality and external dependency, whether geographic, technical, industry sector or client-related

3 World-class talent

Ensuring an environment which attracts, develops and motivates a diverse, world-class team and fosters industry thought leadership

4 Operational excellence

Maintenance of an optimised cost base through an efficient global operation and the development of leading-edge tools, processes and capabilities to maximise value from our resources

5 Added value for clients

Provision of in-demand products and services through our commitment to market-leading research, development and innovation to provide maximum and enduring benefits to our customers

See pages 16 and 17 for further information.

Market overview

Megatrends	 **Rapid urbanisation**	 **Air quality and climate change**	 **Energy security and sustainability**
Market drivers	• Growth in international high-speed rail alongside increased expenditure in urban mass-transit systems; • Increasing demand for autonomous and intelligent transport technologies; • Development of smart cities; and • Increasing demand for solutions which improve energy efficiency and reduce carbon emissions, while promoting resilience of both the security of supply and the price of energy.	• Air quality identified as a key global health concern; • Increasingly challenging long-term greenhouse gas emissions targets set as part of Paris Agreement; • Increasing number of cities around the world banning diesel and petrol vehicles over the next 10 to 20 years to reduce pollution; • Continued interest in alternative fuels, hybrid technologies and electrification; and • Stricter fuel economy and CO_2 regulations in most developed countries.	• Government and consumer focus on renewable energy options (wind, tidal, solar, and geothermal); • Consumer demand shifting to a greater reliance on electrified end uses as electric vehicles and heat pumps become alternatives to petroleum-fuelled vehicles and natural gas heating; and • Focus on decarbonisation of the energy sector and development of active carbon capture systems.
Ricardo	• Working with cities across the world on policy, optimisation, validation and integration of smart city systems; • Recognised industry solutions provider for vehicle electrification and autonomous vehicle systems; • Provider of consulting and engineering assurance services for the rail sector; and • Ricardo web-based urban roadmap tool helps city authorities develop urban transport roadmaps that address the most pressing environmental, social and economic issues faced by their transportation systems.	• Technology leadership in vehicle fuel economy, engines, drivelines, lightweight materials, powertrain electrification and battery electric vehicles; • Respected international authority on urban air quality; • Longest established specialist air quality team in the world; • World-leading experience in helping the public and private sectors to address climate change; • Cutting-edge technology for the measurement and monitoring of vehicle and industrial emissions; and • World leader in vehicle emissions reduction and aftertreatment technology.	• Leading capability in power sector investment planning, renewable electricity and heat transmission and distribution, smart grids, international electricity markets and industry regulation; • World-leading experts with deep understanding of technical and economic challenges of developing intelligent networks in urban energy systems and in rural and off-grid settings; • Supporting governments and public sector organisations to define energy and electric vehicle strategies and policy; and • Ricardo's comprehensive approach to electrified vehicle development, *R-Intelect* ('Integrated Electrification'), combines a focus on functional system engineering with the application of an integrated model-based development toolset.

Connectivity and intelligent devices

- Increasing focus in the rail sector on 'intelligent and digital railway', advanced signalling solutions and 'big data' for increased safety and efficiency;
- Development of autonomous driving technologies;
- Data resilience has become a systemic challenge and private and public organisations must contribute to the reliability of the digital environment; and
- Next-generation technologies including cyber, intelligence gathering and defence electronics, critical to the modernisation of defence platforms.

- Expertise in commercial vehicle platooning technology and participation in demonstration projects in Europe, Asia and North America;
- Ricardo and Roke collaboration is delivering strategic-level cyber security support, services and tools to protect customers in the automation and transportation sectors;
- Industry-leading data optimisation and analytics capabilities for the rail sector and other sectors which Ricardo operates in;
- Developer of advanced predictive maintenance systems for rolling stock and rail infrastructure; and
- Near real-time remote monitoring technology for international air quality, marine emissions and energy grid distribution performance.

Natural resource scarcity

- Water scarcity is impacting industries and countries;
- Biodiversity, oceans and forests are under increasing stress;
- Growth of the circular economy as momentum develops for the shift from a linear to a more sustainable economic model that promotes the regenerative use of materials; and
- Increasing emphasis on waste reduction in all sectors of the economy.

- Development and application of complex system optimisation technology and processes drawn from automotive and other industries to reduce energy consumption;
- Helping governments (including the Scottish Government, a global leader in circular economy implementation) and public and private sector organisations to develop and apply circular economy strategies; and
- Ricardo's extensive research in waste treatment technologies, including its processes, suppliers, advantages and limitations, supports customers in the categorisation of different technologies in terms of capacity, suitable feedstock, outputs, and energy recovery efficiency.

Competitive landscape

Ricardo serves customers across a number of industries and markets, all of which are highly competitive.

Our customers include governments, government organisations, public authorities and inter-governmental and international financial organisations, together with publicly and privately-owned businesses of different sizes.

Ricardo's Technical Consulting businesses, which primarily operate in the Automotive, Rail and Energy & Environment sectors, serve all the major transportation OEMs – including the increasing number of new entrants into the electric vehicles and autonomous segments of the market. It also serves the major Tier 1 suppliers, niche component suppliers and some of the world's largest rail administrations, as well as other public and private sector clients around the world.

We compete in international markets against a small number of large consultancies and a larger number of small, specialised consultancies present in national and local markets. These competitors include engineering, environmental and strategy consultancies, as well as providers of certification and assurance services.

Our Performance Products business competes with divisions of large automotive OEMs and niche volume manufacturers in a number of high-performance markets. We also compete with a range of software developers active within our chosen markets.

Ricardo's key differentiators are its leading engineering, scientific, technical, and strategic capabilities, harnessed through its investment in research and development. Ricardo also has a long and proven track record in the development of advanced niche volume production solutions in the automotive and other high-performance markets.

Our dedicated and talented people are recognised for their expertise to deliver class-leading and innovative products and services within the industries we serve.

Strategic performance

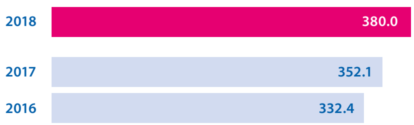
The Board monitors performance indicators related to our strategic objectives

1 **Performance growth:** profitable growth delivered by focusing on future market demands driven by technology change, client needs, and prevailing or impending policies and regulation

More detail on these principal risks together with how they are mitigated is presented on pages 41 and 42

Performance indicator | Commentary | Principal risks

Revenue
£m

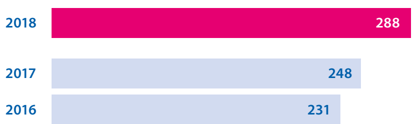


The 8% increase in revenue is primarily due to higher volumes of engine and transmission sales in the Performance Products business, together with increased Technical Consulting activity in the Rail business across Asia. Technical Consulting revenue includes £10.3m from the Control Point Corporation business acquired during the year.

More details of this are described in the Financial Review section on pages 28 to 31, and also in the Technical Consulting and Performance Products sections on pages 18 to 23 and 24 to 25, respectively.

Principal risks: Contracts; Customers and markets

Order book
£m

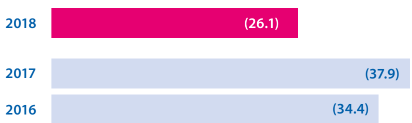


We closed the year with another record year-end order book of £288m, up 16% on prior year. This includes the first orders for the Humvee brake kit programme in the US and £5m from the Control Point Corporation business acquired during the year.

Strong growth in order intake came from our Rail and Automotive businesses in Asia, as well as Performance Products. We also saw strong order intake relating to electric vehicles. Although market uncertainty reduced the level of second half orders in the UK Automotive business, order intake returned to more normal levels in the last month of the financial year.

Principal risks: Customers and markets

Net debt
£m



The Group has generated net cash of £11.8m in the year. This includes £4.6m spent on acquisitions net of cash acquired, £1.7m of acquisition-related payments, and a net £2.3m cash inflow from restructuring activities. This also includes £4.4m of payments in respect of the defined benefit pension scheme.

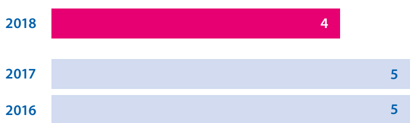
The Group's continued focus on the management of working capital has driven a reduction in overall net debt in the year, despite the increase in revenue.

Principal risks: Contracts; Financing; Defined benefit pension scheme

2 **Risk mitigation:** reducing risk through the avoidance of business cyclicality and external dependency, whether geographic, technical, industry sector or client-related

Performance indicator | Commentary | Principal risks

Sector diversity
Number of sectors exceeding 10% of revenue

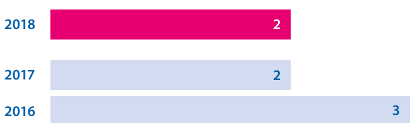


Four of our six sectors exceeded 10% of revenue, demonstrating that the Group remains well diversified across its critical market sectors.

Revenue in our Off-Highway & Commercial Vehicles sector was 10.7% in the prior year but dropped below 10% in the current year. This was due to the mix of workable multi-year orders in this sector.

Principal risks: Customers and markets; Technology

Customer dependency
Number of customers exceeding 5% of revenue



The number of customers from whom revenue was generated that exceeded 5% of total revenue has stabilised over the last three years and remains consistently low.

Revenues from one customer represent £61.4m (16%) of total revenue.

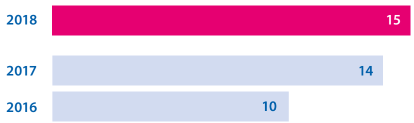
Whilst we retain a small number of key client relationships, we continue to have a diverse customer base.

Principal risks: Customers and markets

3 **World-class talent:** ensuring an environment which attracts, develops and motivates a diverse, world-class team and fosters industry thought leadership

Performance indicator

Employee and knowledge retention
Voluntary employee turnover % per annum



Commentary

The voluntary attrition rate of 15% continues to be at a relatively high level, but remains similar to the prior year and is consistent with current expectations.

This was primarily due to very active employment markets for our engineers and scientists around the world. In some cases, competitors directly and aggressively target our employees.

In addition, the level of attrition was impacted by some significant changes to organisational structures within our Automotive business.

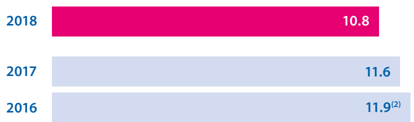
Principal risks

People

4 **Operational excellence:** maintenance of an optimised cost base through an efficient global operation and the development of leading-edge tools, processes and capabilities to maximise value from our resources

Performance indicator

Underlying[1] operating profit margin
%



Commentary

The reduction in the Group's underlying[1] operating profit margin is principally driven by the Technical Consulting segment where the impact of uncertainty in the UK Automotive market led to depressed order intake, particularly in the second half, combined with the impact of a small number of difficult and complex projects in the year.

In addition, our Energy & Environment business recruited ahead of anticipated growth that was lower than expected, leading to a decline in profitability compared to the prior year.

Further details are described in the Financial Review on pages 28 to 31.

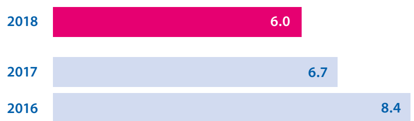
(1) excluding specific adjusting items as described on page 5.
(2) 2016 has been restated to include the impact of income from RDEC claims on a like-for-like basis with the subsequent years presented.

Principal risks

Contracts
Customers and markets

Performance indicator

Environment
tCO_2e per employee for scope 1 and scope 2 emissions



Commentary

Scope 1 emissions vary based on project mix. We encourage improvements to reduce underlying emissions and improve effective use of resources on projects.

Our emissions per employee decreased again this year, partly due to the reduction in tonnes of carbon dioxide equivalent ('tCO_2e') per kWh in UK electricity generation. This is due to the continued reduction in the UK's dependency on coal, together with a growing proportion of the UK's electricity being generated from renewable sources.

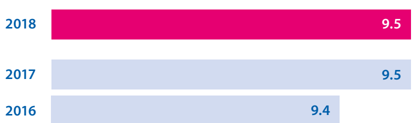
Principal risks

Laws and regulations

5 **Added value for clients:** provision of in-demand products and services through our commitment to market-leading research, development and innovation to provide maximum and enduring benefits to our customers

Performance indicator

Research and development spend
£m



Commentary

R&D spend was consistent with prior years. The reported spend includes amounts capitalised in respect of development costs around the Group and reflects our investment in developers of our software products, together with new technology, tools and processes in our European Automotive and Energy & Environment businesses.

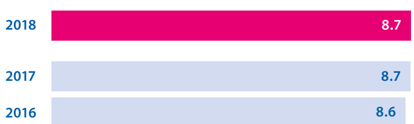
Further details of active projects are described on pages 26 and 27.

Principal risks

Technology
Customers and markets

Performance indicator

Customer satisfaction
Ratings out of 10 across a range of measures



Commentary

Customer satisfaction remains consistently strong at over 8 out of 10 over the past three years.

Principal risks

Contracts
Customers and markets

Technical Consulting

Performance

Ricardo's Technical Consulting business generates around 80% of the Group's revenue and underlying operating profit from its global sectors including Rail, Automotive, Off-Highway & Commercial Vehicles, Energy & Environment, and Defence.

Order intake in the year stood at £324m (2017: £288m) and there has been a good balance of new orders within Technical Consulting across all core regions, with good levels of diversification across different market sectors. Highlights can be found on pages 20 to 23. As set out in Note 2 to the financial statements, revenue has grown by 3% to £288.3m (2017: £280.5m) and underlying operating profit decreased by 3% to £31.9m (2017: £32.8m). The underlying operating profit margin decreased to 11.1% (2017: 11.7%) due to the mix of orders, an increase in the level of material content and some disruption in the flow of orders into our UK Automotive operation, which led to operational inefficiency. In addition, the delivery of a small number of challenging, complex projects impacted margins.

Our Rail business delivered another year of strong performance and won one of its largest ever assurance projects in Taiwan. The global rail market continues to show positive growth trends, driven by infrastructure investment to support urban and inter-urban mobility – particularly in Asia and the Middle East. The rail industry is striving to exploit new digital technology to improve operational efficiency, availability and overall cost, and to help meet the demand for more efficient public transport. Ricardo Rail, with its extensive engineering consulting and assurance service offering, is well positioned to benefit from these drivers and enjoy access to out-of-sector expertise – in fields such as cyber resilience and autonomous technology – through our other Technical Consulting businesses.

The Automotive sector is undergoing significant change, driven firstly by the move towards increased electrification to deliver the global requirement for CO_2 reduction, and secondly by the continued focus on cutting tailpipe emissions to improve quality of life in urban centres. New European emissions legislation has resulted in more extensive engine calibration requirements, the scope and complexity of which is proving challenging for the industry as a whole. These parallel changes, together with the opportunity for new entrants to move into the electrified market without the traditional OEMs' burden of historic capital invested in combustion engine technology, have created a very unsettled backdrop to the automotive sector. Our strategic consulting business has had a busy year assisting its automotive clients within this changeable market.

We are seeing a strong market in Asia, particularly in China and Japan. In the year we have acquired new customers on the west coast of the US: these customers are new to the automotive market and are focused on rapid product development. We have also worked with traditional customers in new areas such as electric and hybrid vehicle

development, battery development and systems integration. We have however, also seen some disruption of order flows from some traditional customers who are looking to navigate the industry change. This was particularly noticeable in the UK during the second half of the financial year, when the effects of the reduction in sales of diesel vehicles were magnified by the continued uncertainty around Brexit.

This disruption in UK order flows, together with the project challenges discussed on the previous page, led to inefficiency and some over-capacity in our UK operations, which had an adverse impact on margins. We were pleased to see a return to more normal levels of orders towards the end of the year and into the start of the new financial year.

The US Automotive business improved markedly in the year with a significantly reduced loss which offset the weakness in the UK business. The business broke even in the second half of the year.

Our Automotive business based in China performed well, driven by a doubling of order intake from China

Visualisation of NO_2 in London, modelled by Ricardo's *RapidAir*® air quality modelling system

and South East Asia, much of which was related to electrification and hybridisation.

Consistent with the general industry direction towards increased electrification, we followed our strategy of reducing international combustion-focused test facilities to create a more flexible cost base, disposing of our test facilities in Chicago and Southern Germany.

Ricardo Energy & Environment continued its focus on international CO_2 reduction and the future impacts of climate change, and on climate mitigation plans. Projects included the preparation of plans for rising sea and river level defence systems and the protection of residential properties and ecologies in the UK, as well as applying our strategic consulting expertise to assist a high-profile wind turbine manufacturer with production planning and their business improvement plans.

High on the agendas of our governmental, local authority and industrial clients were real-world emissions monitoring and air quality simulations in cities and for shipping. Also important were future regulations and policies on emissions and the electrification of transport, which includes the readiness of the electricity network for the roll-out of vehicle charging infrastructures.

We have also seen an increased focus on waste and recycling, with plastics and the reduction of their use becoming a very productive area of business. Our water consulting activity benefited from the current Asset Management Planning ('AMP') cycle in the UK, which ensures water supply and resilience for coming decades against rising populations and temperatures, and from the 2019 Price Review ('PR19'), driven by the focus of the UK Water Services Regulation Authority on innovation around leakage reduction and the resilience of the water network.

We have been exploiting our cross-sector expertise to benefit our clients in the water sector. One noticeable piece of work is the application of our complex automotive system modelling software, *IGNITE*, to the modelling of Southern Water's network in the Brighton region in the UK, to assist with capital investment planning. We believe that this is an innovative piece of software that can be applied across the water industry and beyond.

Overall order intake for Energy & Environment was similar to last year, although performance was impacted by recruitment for higher levels of growth than actually achieved.

Ricardo Defense, a business which now combines the capabilities of our existing defence business in the US with those of Control Point Corporation acquired during the year, has won a number of new contracts across the globe in land defence and in the marine sector, both surface and sub-surface.

Ricardo has opened its new power electronics laboratory at the Santa Clara Technical Center

Business model

Ricardo's Technical Consulting business provides innovation-focused engineering, technical and environmental consulting services to private and public sector customers, primarily in the automotive, rail and environmental markets, together with accreditation and independent safety assurance services in the rail sector. Our services are delivered for a scope of work which is specific to our customers' needs and tend to have a fixed price. Our projects range in length from a few weeks or months to programmes that extend over several years.

Management of projects, resources and customer relationships are key skills to enable efficient delivery of our services. Those services are based on the application of intellectual property, know-how and knowledge developed through our investment in research and development ('R&D') and our participation in collaborative R&D programmes in several industries and geographies, as well as on the expertise of our staff. Our capabilities are complemented by a wide range of design, test and development tools and equipment.

People are at the heart of Ricardo's business and our teams consist of experienced professional engineers, scientists and economists – many of whom are regarded as among the best in the world within their chosen field – together with a thriving graduate and apprenticeship recruitment programme.

Our global infrastructure helps us to meet the needs of our customers in the different industries and sectors we serve. Ricardo now has 48 sites in 21 countries, with technical centres in the US, the UK, the Netherlands, Italy, the Czech Republic and China, supported by offices where a local presence is needed to service our customers. Engineers from the technical centres are deployed on projects across the globe using common engineering processes.

Market sector highlights

Rail

Ricardo Rail delivered a strong performance for the year with some significant project wins amongst its order intake. The appointment to provide assurance services for a new metro system serving suburban Taipei in November 2017, for example, was one of the largest single contracts the business has ever secured and means Ricardo's expertise will be utilised in the system's construction through to 2025.

Other notable assignments during the year included providing technical support for the introduction of bi-mode Hitachi rolling stock to the UK network, system integration testing of a new tram system for the city of Utrecht in the Netherlands, and the approvals for a new rail freight service across Saudi Arabia.

The professionalism of our teams was also evident in our support for a new high-speed rail link in South Korea that was commissioned to serve the 2018 Winter Olympics venues around Pyeongchang. Despite the strict deadlines of this high-profile national project, our assessors skilfully conducted on-site audits to ensure the signalling technology was compliant with relevant standards, allowing the line to open on schedule and ahead of the start of the Games in February 2018. See our Case Study on pages 58 to 61 for further information.

Ricardo Certification, a separate and independent business of Ricardo Rail, successfully maintained its multiple accreditations and appointments, and over the course of the year expanded its accredited activities into Dubai and Qatar.

A significant number of projects have been approved during the financial year including:

- More than 60 (2017: 30) Safety Assessment Reports as an Assessment Body under the EU Common Safety Method Risk Assessment and Evaluation Regulations, principally from the UK, the Netherlands, Denmark and Spain;
- Over 360 (2017: 80) certificates as a Notified Body or Designated Body

Ricardo Motorcycle's annual conference in Milan is now an established fixture on the calendar of the international motorcycle industry

Photo: Leif Jorgensen

Ricardo Certification was the Independent Safety Assessor for the recently opened Phase 2 of the light rail project connecting the cities of Aarhus and Odder in Denmark

under national regulations that satisfy the requirements of the EU Interoperability Directive, principally from the UK, the Netherlands, Denmark and Spain;

- More than 60 (2017: 50) Accredited Independent Safety Assessment ('ISA') reports, principally from Spain and China; and
- Over 60 (2017: 50) Railway Product Certifications, all from China.

Automotive

During the year, while CO_2 reduction remained a top global priority for the sector, the public debate shifted the focus of consumers and governments onto air quality and, in particular NO_2 emissions. This resulted in a continued increase in the demand for all aspects of vehicle electrification, from mild hybrids to full battery electric vehicles ('BEVs').

We have secured a range of programmes in vehicle systems, hybrid and electric systems and advanced drivelines, and in the core powertrain areas of our business, focused on both new and existing product upgrades. This year we saw an increase in order intake in connection with vehicle electrification programmes which accounted for 26% (2017: 15%) of order intake for Technical Consulting and 21% (2017: 17%) of total Group order intake.

R-Intelect is our integrated approach to electrified vehicle development and it forms the basis of our differentiated solution approach for electrified vehicles. We continue to invest in advanced combustion and transmission solutions and other key technologies in areas related to improvements in overall vehicle system efficiency, such as lightweighting, intelligent drivelines and vehicle electrification. In addition to these areas, the Ricardo collaboration with Roke to develop cyber security solutions for vehicles is attracting much interest from new and existing customers. The collaborative capabilities of both organisations are also leading to further opportunities in both the rail and energy sectors.

Ricardo Motorcycle, which delivers complete development of motorcycles,

Ricardo provided technical assistance to Toyota's Project Portal fuel cell truck project, including areas of design, vehicle build, testing and development, and is currently supporting vehicle trials

scooters and urban mobility vehicles, including their powertrains, has seen growth driven by tightening emissions legislation, increased consumer demand for higher capacity motorcycles in developing markets, and growing interest in electric motorcycles.

Off-Highway & Commercial Vehicles

Growth continued in the medium- and heavy-duty sectors, particularly in Asia, and we have secured several large engine and transmission projects across both sectors. Our order book and pipeline of opportunities across Europe and Asia includes a broad mix of largely engine and transmission programmes. In the US, there was continued focus on powertrain and trailer efficiency, emissions control and the use of hydrogen fuel cells, driven by tighter standards for the emission of greenhouse gases and nitrogen oxides. In the medium-duty market, compliance requirements for in-service On-Board Diagnostics ('OBD') has driven increased engine test activity.

Commercial vehicle platooning remains an important growth market and Ricardo has developed a class-leading capability for control strategy and safety case development.

In the off-highway market, Asia is showing renewed growth – especially in transmissions and drivelines – and activity is increasing in Europe. In the medium-term we expect solid customer demand for our services to meet EU, US and Asian emissions regulations and 2020 emissions targets. Our focus in the medium- and long-term is on assisting customers with the introduction of new technologies for efficiency improvements such as electrification and autonomy.

Ricardo provides the power generation and marine markets with services in failure analysis, investigation, and specialist design and development. In these markets we see increasing demand for high-speed diesel generator sets and main propulsion systems for marine vessels, and for the conversion of engines for gas or dual-fuel operation.

Energy & Environment

This year our Energy & Environment business has seen a broadening of its client base and service offerings. The surge of interest in plastic and its impact on the environment has created new demand from customers and we have been working with organisations across the supply chain to ensure that where plastic needs to be used, the environmental impact is minimised, and at the end of its life the plastic is captured and reused or recycled.

We have won a number of projects in the UK to support leading national organisations in the development and evaluation of resources efficiency and waste management policies and systems.

Our UK experience has resonated well and our work on waste and resources has seen growing interest from around the world, especially in Australia where we have already secured a number of projects.

We continue to support customers across the globe with our air quality services and products. In China, we are providing support to a number of cities to establish long-term, cost-effective air quality action plans to bring about significant improvements in air quality and health whilst maximising co-benefits such as reductions in greenhouse gas emissions. A key project, commissioned by the Asian Development Bank ('ADB'), is providing detailed evaluation of policy options using Ricardo's *RapidAir®* air quality modelling system and is designed to support the billion-dollar investments being made by ADB in north-eastern China.

Africa is urbanising faster than any other region in the world and by 2050 more than 20% of the world's total urban

Ricardo is working to ensure the environmental impact of plastic waste is minimised

Ricardo's NCEC has expanded beyond the chemicals sector to report different types of incidents – for example, fires, floods, explosions and break-ins

population is expected to live in cities in sub-Saharan Africa. The region contains some of the lowest greenhouse gas emitting countries in the world, but many are investing in infrastructure to support population growth and economic development. There is a narrow window of opportunity to avoid high carbon 'lock-in' and to support climate-resilient development by factoring climate change into long-term investments and planning decisions. Ricardo is working with nine cities in six countries in sub-Saharan Africa, on behalf of the C40 Cities Climate Leadership Group, to build capacity within local government and develop common tools and frameworks. This will enable action planning for transformational, long-term and low-carbon development, consistent with limiting the rise in global temperatures to 1.5 degrees Celsius and achieving sustainable development goals.

In the UK we have seen high demand for our services in air quality: much of this demand comes through our support of UK cities, which are under intense pressure to accelerate the delivery of cleaner air to achieve compliance with air quality standards and consequent improvements to public health. Our work, in close partnership with local government leaders, is shaping the design of 'Clean Air Zones' through the identification of targeted options, tailored to local circumstances, that cut air pollution and public exposure through locally deliverable action.

We have also seen a steep increase in our work on water resource management, attributable to the statutory plans that the UK's water companies are required to produce every five years. These plans set out the strategy for securing reliable, sustainable water supplies over the next 25 years and beyond. We have provided strategic environmental assessment and planning for the delivery of those plans for 12 water companies, ensuring that they met the stringent requirements for environmental assessment, including resilience of the water supply system and ecosystem services assessments.

Our National Chemical Emergency Centre ('NCEC') has further broadened its offering by using its complementary skills and capabilities as the world's leading chemical emergency response centre to create a service for businesses outside of the chemicals sector to report different types of incidents – for example, fires, floods, explosions and break-ins. The business also offers planning and training on crisis and business continuity. The new offering has been successful and the business has seen increasing customer demand for these new services.

Defence

In the US, our existing Ricardo Defense Systems entity completed the acquisition of Control Point Corporation, now known as Ricardo Defense, Inc., which has delivered a strong performance in the year. The integration of the acquisition is progressing well, and the combined Ricardo Defense business has won a number of new contracts and offers an expanding range of services to improve safety, reduce costs, and minimise risk for defence forces on land and at sea.

In the UK, we are delivering contracts to develop new engine and transmission designs for land vehicles for an overseas customer.

Outlook

We have a good order book across all regions and sectors and we saw orders for the Automotive business in the UK recover at the end of the second half of the year. The good order book and our balanced portfolio of businesses within the markets of Transport & Security, Energy, and Scarce Natural Resources & Waste give us confidence in the growth of future revenue and underlying profit.

Performance Products

Performance

The Performance Products business accounts for around 20% of the Group's revenue and underlying operating profit. A large proportion of the revenue is generated through the supply of products and services to a single customer.

As described in Note 2 to the financial statements, revenue increased by 28% to £91.7m (2017: £71.6m) and underlying operating profit increased by 16% to £9.3m (2017: £8.0m). Operating profit margins reduced to 10.1% (2017: 11.2%). Profit was higher than the prior year, primarily due to increased volumes in respect of the engine supply contract for McLaren, a full year of production of transmissions for the Bugatti Chiron and an increased demand for Porsche Cup transmissions. Order intake in the year increased by 14% to £89m (2017: £78m), with the Aston Martin order received in the prior year being more than offset by the increased demand in this financial year from McLaren, Bugatti and Porsche.

The business continues to focus on the development of long-term strategic relationships with customers, and the consistent achievement of high-quality and on-time delivery of our products in order to win new and large contracts.

Further details of activities within the year can be found within the market sector highlights on page 25.

Business model

Ricardo's Performance Products business manufactures and assembles high-quality prototypes and niche volumes of complex engine, transmission and vehicle products.

These products are designed either by our motorsport products design team, Ricardo's Technical Consulting business or by our customers. We manage the complete supply chain and earn revenue either for the products that we supply or for the manufacturing or assembly services that we provide.

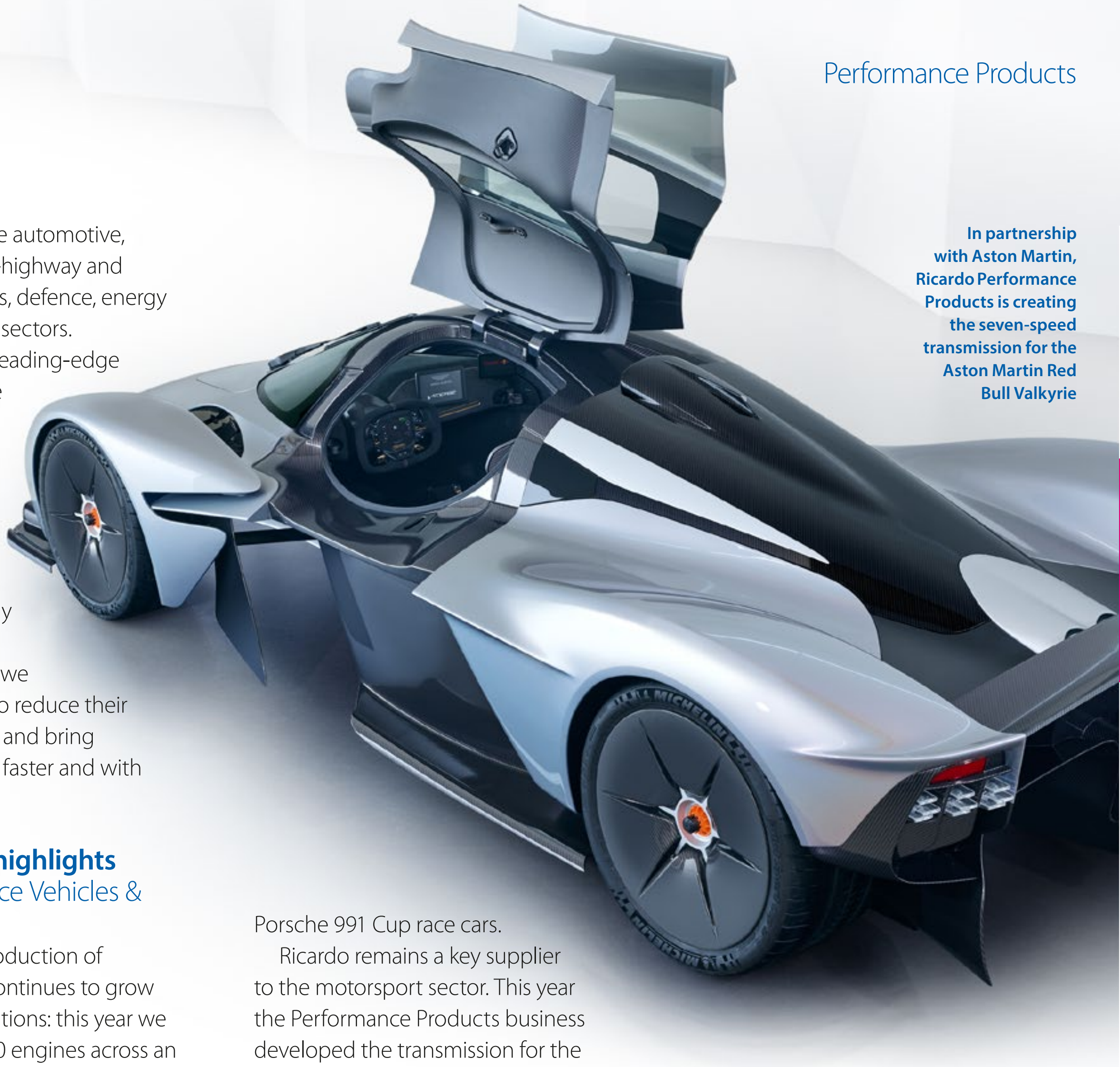
Our programmes typically extend over many years and several of them include agreements for the supply of spare parts and other support services.

At the heart of our technology is our people and their skills and capabilities in product design and development, production and operations management, supply chain management and industrial engineering.

Our operations include a highly flexible transmissions manufacturing facility at our Midlands Technical Centre, and our engine assembly facility at our Shoreham Technical Centre, backed up by Ricardo's global support network with technical and engineering centres in the US, the UK, the Netherlands, Italy, the Czech Republic and China.

The Performance Products business also includes the activities of Ricardo Software, which develops advanced virtual engineering tools for conventional and electrified powertrains, as well as complex physical systems such as water networks. Our computer-aided engineering ('CAE') software and technical support services are provided to both long-established and new-entry customers from around

The DS E-Tense FE 19 Season 5 Formula E car: its transmission was designed collaboratively by Ricardo and Groupe PSA



In partnership with Aston Martin, Ricardo Performance Products is creating the seven-speed transmission for the Aston Martin Red Bull Valkyrie

the world across the automotive, rail, motorcycle, off-highway and commercial vehicles, defence, energy and environmental sectors.

Our proprietary leading-edge simulation software enables users to quickly and accurately design, analyse and optimise new products. Through technology exploration and process innovation we enable customers to reduce their development costs and bring products to market faster and with greater confidence.

Market sector highlights

High-Performance Vehicles & Motorsport

Demand for the production of McLaren engines continues to grow in line with expectations: this year we delivered over 4,300 engines across an increased number of engine variants, including the McLaren 540C, 570S Coupé, 570GT, 570S Spider, 720S and the Senna.

We manufacture and assemble the world's most advanced transmissions and we made good progress in the preparations for the supply contract for the Aston Martin Red Bull Valkyrie hypercar transmission. We also continued to support Bugatti with the supply of the complete driveline system for the Chiron, together with the supply of transmissions for the Porsche 991 Cup race cars.

Ricardo remains a key supplier to the motorsport sector. This year the Performance Products business developed the transmission for the M-Sport Bentley GT customer racing programme and continued to support key manufacturers within the Formula E Championship for the second consecutive season.

We continue to manufacture for Formula One, the Japanese Super Formula Championship, Indy Lights and the World Series Formula V8 3.5. We also operate supply programmes of Ricardo-designed transmissions for BMW, the Multimatic-built Ford GT3, the M-Sport World Rally Championship Ford Fiesta and the Hyundai R5 Rally car.

Ricardo Defense has received its first orders and started production of its bespoke anti-lock brake and electronic stability control system for the US military's Humvee

Defence

In the UK, Ricardo supports the British Army's fleet of Cougar and Weapons Mount Installation Kit ('WMIK') vehicles with the supply of spare parts.

In the US, Ricardo Defense has received its first orders and started production of our bespoke anti-lock brake and electronic stability control system for the High-Mobility Multipurpose Wheeled Vehicle ('HMMWV', or Humvee). The system is proven to be effective at reducing loss of control and the occurrence of single-vehicle crashes, saving the lives of its occupants as a result. We continue to work closely with both the U.S. Army and major suppliers to deliver this important technology onto the vehicles.

Outlook

We have a strong order book and pipeline of new opportunities in a range of market sectors and geographies – and that, together with the aftermarket opportunities of many of our programmes, gives us confidence in the continued growth of the Performance Products business.

Research and Development

Mark Garrett – Chief Operating Officer

Sustained investment in R&D continues to power our diverse business. Our focus is on developing technology that is both beneficial to our customers and aligned with the long-term market drivers that influence their demands. Through our client relationships we can understand their needs and provide the most valued support. This allows us to identify potential opportunities for multi-sector innovation and create opportunities through the establishment of new business models.

Ricardo Innovations is a division that leads the development of new technology and innovative solutions that help our clients to meet the global challenges of urbanisation, energy security and efficiency, increased environmental and emissions regulations and rising demand for scarce natural resources.

Ricardo's Technical Consulting business operates across the automotive, environmental and rail sectors, all of which require R&D. To support our wide-ranging portfolio of R&D projects, we segment our portfolio by customer needs and our strategic areas of R&D, which are: core capability and consulting services, multi-sector innovations, and new business models.

Our research portfolio and R&D projects are shown below:

<table>
<tr><th></th><th>Low carbon solutions</th><th>Low carbon solutions / Improving air quality</th><th>Improving air quality</th><th>Improving transport safety</th><th>Managing scarce natural resources</th></tr>
<tr><td>Core capability and consulting services</td><td>Imperium
Thomson
Alliance
ULTRAN
Hybrid Synthesis
EcoChamps
Low Mass Gear</td><td>HDGAS
HIFI-Elements
PaREGEn
DIEPER
REWARD
Powerdrive</td><td>Batt Sense
DownToTen</td><td>CAV Comfort</td><td></td></tr>
<tr><td>Multi-sector innovations</td><td></td><td>Future Radar</td><td></td><td>5StarS</td><td></td></tr>
<tr><td>New business models</td><td>Metal Joining</td><td>Dolphin N2 – CryoPower
AMRC</td><td></td><td>Ricardo – Roke Cyber Security</td><td>Water Initiative
No Dig Pipe Fixer
OWDIn
TorqueLife
MultiLife
SensorLife</td></tr>
</table>

The following sections highlight the key technical achievements of our existing portfolio.

Core capability and consulting services

Connected road and traffic preview data for reduction in real-world CO_2 emissions

Integrating road and traffic preview data and predictive models into powertrain control algorithms has improved fuel consumption in long-haul trucks by 7%. Ricardo's technology simulates and assesses the performance and behaviour of the vehicle, along with the impact of interactions with traffic. This demonstrates the benefit of integrating data concerning traffic, topology and the environment, to improve Ricardo's powertrain control strategies and to reduce CO_2 emissions.

Cost-effective, next-generation hybrid technologies

Our new 48V electric motor and inverter represents the very latest thinking in cost-effective electric motor design for volume passenger car applications and contributes towards a 20% increase in overall powertrain fuel efficiency. The new e-machines achieved a 50% increase in power density compared to the baseline design.

Managing thermal performance of e-machines efficiently is a real challenge. Ricardo has developed a new thermoelectric generator and multi-temperature cooling circuit, which further raised fuel economy by 1%.

Integrated toolchain for optimised hybrid vehicle powertrains

Our improved Integrated Model-Based Development ('IMBD') capability can deliver technology vehicle demonstrator projects up to 15% faster and at reduced cost by minimising physical testing and calibration time. This results in rapid hardware evaluation of different configurations and the speeding up of the selection of an optimum solution, all within specified design constraints and whilst minimising CO_2 emissions.

By assessing multiple performance parameters in parallel, our IMBD capability enables OEMs to reduce the number of hardware validation cycles required to arrive at an optimum solution.

Efficient lean gasoline engine with ultra-fine particulate control

Ricardo's lean combustion advanced gasoline engine technology is being demonstrated on a Jaguar XE vehicle. Gasoline engine configurations continue to play an important role in passenger car fleets. The new engine technology will improve emissions performance by 50% compared to current Euro 6d levels; it will reduce CO_2 emissions by 15% and provide enhanced control of ultra-fine particulates down to 10 nanometres.

The Jaguar XE demonstrator vehicle will be available for evaluation in 2019.

Multi-sector innovations

Digital resilience

Leading the drive towards improved cyber security, Ricardo and Roke signed an agreement to deliver world-class and trusted cyber-assurance solutions for transportation, commercial and critical national infrastructure clients. Cyber resilience is a boardroom concern in organisations across all of Ricardo's markets, so the unique combination of Ricardo's leading technical and assurance domain capability, teamed with Roke's understanding of cyber threats, provides a unique value proposition. The programme has also expanded into customer applications of Ricardo's Rail and Energy & Environment businesses.

This joint capability complements the UK Government's funded programme to develop a cyber assurance framework for the automotive sector and develop a 'five-star' rating system equivalent to that of the European New Car Assessment Programme ('NCAP').

New business models

Dolphin N2

Dolphin N2, an independent entity to Ricardo, has been created to further develop a novel engine technology concept, *CryoPower*, whose initial development has been handled by Ricardo over the last 10 years. This revolutionary split-cycle engine reduces CO_2 output by 30% and potentially eliminates NOx and soot emissions altogether. The *CryoPower* engine achieves this by injecting liquid nitrogen during the combustion process, achieving superior thermodynamic performance.

As well as providing a breakthrough in environmental performance for heavy-duty engines and decentralised power generation, the technology reduces operating costs by 20%.

Financial review

Ian Gibson – Chief Financial Officer

The Group has delivered revenue growth of 8% in the financial year and underlying profit before tax has increased by 2%, against a backdrop of market uncertainty. Reduced performance in our UK Automotive and Energy & Environment businesses has adversely impacted underlying operating profit, but this has been offset by growth in our other Technical Consulting businesses, together with a strong performance from Control Point Corporation, which was acquired during the financial year. The sale of Automotive test assets in the US and Germany makes us more agile for the future. We have also seen good levels of growth within Performance Products. Our cash performance has been excellent, with the Group's net debt reducing year-on-year, driven by a strong working capital performance. We enter the next financial year with another record year-end order book of £288m.

GROUP RESULTS

The Group's headline financials are presented on page 5. The Group increased its order intake to £413m during the year, an increase of £47m on the prior year. Order intake increased across both Technical Consulting and Performance Products. Within Technical Consulting, there was a good mix of orders across all market sectors, albeit UK Automotive declined compared to the prior year. The financial year ended with another record year-end order book of £288m (2017: £248m), a 16% increase on the prior year. The order book includes £5m from Control Point Corporation ('CPC'), a US-based defence engineering, software development and fleet management organisation, which was acquired in September 2017.

Total Group revenues grew to £380.0m, representing an 8% increase on the prior year (2017: £352.1m). Underlying operating profit, which excludes specific adjusting items as set out in more detail in Note 4 to the financial statements, has increased by 1% to £41.2m (2017: £40.8m), with the margin reducing from 11.6% to 10.8%. Underlying profit before tax increased by 2% to £39.0m (2017: £38.3m).

Underlying operating profit and profit before tax both include £1.0m from CPC. On an organic basis, underlying operating profit and profit before tax both reduced by 1% compared to the prior year. The performance of CPC has been reported in the Technical Consulting segment.

We have experienced some mixed performance across the Group. We have seen particularly good results within Performance Products. Within Technical Consulting, reduced performance in our UK Automotive and Energy & Environment businesses has been offset by growth in our other Technical Consulting businesses, together with a strong performance from CPC.

Reported profit before tax for the year decreased by 11% to £28.5m (2017: £32.2m). The decrease is primarily as a result of £4.8m of reorganisation costs, incurred as a result of the restructuring of the Automotive businesses in the US and Germany. This was partially offset by a

Headline Group performance

		Underlying	
	Reported revenue	Operating profit	Profit before tax
FY 2017/18 (£m)	**380.0**	**41.2**	**39.0**
Less performance of acquisitions:			
Control Point Corporation (£m)	(10.3)	(1.0)	(1.0)
Organic FY 2017/18 (£m)	**369.7**	**40.2**	**38.0**
FY 2016/17 (£m)	352.1	40.8	38.3
Growth (%)	**8**	**1**	**2**
Organic growth (%)	**5**	**(1)**	**(1)**
Constant currency organic growth (%)	**6**	**(1)**	**-**

net increase in income from claims under the Research & Development Expenditure Credit ('RDEC') scheme of £1.4m. Net acquisition-related expenditure in the year was £1.4m (2017: £1.7m).

Closing net debt reduced to £26.1m from £37.9m in the prior year. This included £6.3m of consideration paid in respect of CPC (£4.6m net of cash acquired), £1.7m of acquisition-related payments and a £2.3m net cash inflow from restructuring activities. The strong cash performance was driven by the continued focus on working capital across the Group.

SEGMENTAL RESULTS

The segmental results for the Group's operating segments (above, right) are as follows:

Segmental results

Reported revenue	Technical Consulting	Performance Products	Total
FY 2017/18 (£m)	**288.3**	**91.7**	**380.0**
Less performance of acquisitions (£m)	(10.3)	-	(10.3)
Organic FY 2017/18 (£m)	**278.0**	**91.7**	**369.7**
FY 2016/17 (£m)	280.5	71.6	352.1
Growth (%)	**3**	**28**	**8**
Organic growth (%)	**(1)**	**28**	**5**

Underlying operating profit	Technical Consulting	Performance Products	Total
FY 2017/18 (£m)	**31.9**	**9.3**	**41.2**
Less performance of acquisitions (£m)	(1.0)	-	(1.0)
Organic FY 2017/18 (£m)	**30.9**	**9.3**	**40.2**
FY 2016/17 (£m)	32.8	8.0	40.8
Growth (%)	**(3)**	**16**	**1**
Organic growth (%)	**(6)**	**16**	**(1)**

Technical Consulting results

Segmental operating results for Technical Consulting are discussed on pages 18 to 20. Technical Consulting had revenues and underlying operating profits of £288.3m (2017: £280.5m) and £31.9m (2017: £32.8m), respectively. Excluding CPC, organic operating profit was £30.9m.

Our Automotive and Off-Highway & Commercial Vehicles businesses in Europe experienced a decline in profitability as a result of both the uncertainty in the market, which depressed order intake, particularly in the UK in the second half of the year, and the delivery of a number of challenging projects in the year, which impacted margins. We have seen orders recover to a more normal level in June and July, and we have taken action to improve project delivery in the future. In June 2018 we sold our Schechingen Technical Centre ('SchTC') in Germany and significantly reduced the footprint of our other German site in Schwäbisch Gmünd. These actions took fixed cost out of the business, making us more agile for the future.

Similarly, we completed the sale of our Chicago Technical Center ('CTC') in April 2018, with a positive impact on the results of the Automotive and Off-Highway & Commercial Vehicles businesses in the US, which ended the year with a significantly reduced loss compared to prior year. The business was break-even for the second half of the year. We are also working on an increased number of projects in the area of electrification, highlighting the success of our efforts to reposition the US business.

We have continued to see an increase in order intake in Automotive in Asia, which has led to further revenue and profit growth in the year. The order book and pipeline of opportunities remains strong.

Asia has also been a key growth market for our Rail business, which has had another strong year, securing a number of multi-year contracts with a number of Asia's key rolling stock OEMs and rail operators.

The Energy & Environment business has seen a similar level of order intake compared to the prior year, although profitability has been impacted by recruitment for higher levels of growth than achieved.

CPC has performed well since it was acquired in September 2017.

Performance Products results

Segmental operating results for Performance Products are discussed on page 24. Performance Products had a strong year, as revenues increased on the prior year by 28% to £91.7m (2017: £71.6m) and underlying operating profits increased on the prior year by 16% to £9.3m (2017: £8.0m).

The current year performance was driven by increased volumes of engines for McLaren and transmissions for both Bugatti and Porsche, as well as growth in new software licence sales in Asia.

Basis of preparation

The financial statements have been prepared in accordance with International Financial Reporting Standards ('IFRS') and International Financial Reporting Standards Interpretations Committee ('IFRS IC') interpretations adopted by the European Union ('EU') and the Companies Act 2006 applicable to companies reporting under IFRS. The Group's principal accounting policies are detailed in Note 1 to the financial statements on pages 120 to 127. Those accounting policies that have been identified as being particularly sensitive to complex or subjective judgements or estimates are disclosed in Note 1(c) to the financial statements on pages 120 and 121.

We have completed our work to assess the potential impact of both IFRS 9 '*Financial instruments*' and IFRS 15 '*Revenue from contracts with customers*', both of which become effective to the Group for the year commencing 1 July 2018. As set out in more detail in Note 1(x) to the financial statements, the expected transitional impact from the retrospective application of IFRS 15 is a reduction to opening reserves as at 1 July 2017 of £5.5m. This adjustment reflects the requirement of IFRS 15 to recognise revenue on performance obligations, either in combination or separately, dependent upon whether those obligations are distinct from one another in the context of the contract with the customer. The expected transitional impact from the application of IFRS 9 is a reduction to opening reserves as at 1 July 2018 of £1.8m.

Acquisitions and acquisition-related intangible assets

As set out in more detail in Note 12 to the financial statements, the Group acquired the entire issued share capital of CPC on 8 September 2017, for a total consideration, including expected earn out payments, of £8.0m ($10.5m). This investment added goodwill of £3.4m ($4.4m) to a new Ricardo Defense cash-generating unit. Acquisition-related intangible assets were identified, with a net book value at year-end of £1.9m ($2.5m).

The Group incurred net acquisition-related expenditure of £1.4m (2017: £1.7m) during the year, £0.8m of which was in respect of CPC, with the remainder primarily relating to fees incurred on an aborted acquisition and integration costs in respect of prior acquisitions. The acquisition-related expenditure and amortisation of acquisition-related intangible assets have been charged to the Consolidated Income Statement as specific adjusting items.

Restructuring activities

During the year the Group completed the sale of CTC and SchTC and significantly reduced its footprint in Schwäbisch Gmünd.

The sale of CTC was completed on 2 April 2018 for a consideration of £4.1m ($5.5m), generating a profit on sale of the assets of £1.4m ($1.9m). In addition, £0.7m ($0.9m) of professional fees, contractor costs and redundancy costs were incurred as a result of the asset sale and wider restructuring process in the US.

The sale of SchTC was completed by year-end for a total consideration of £4.4m (€5.0m), generating a profit on disposal of £0.2m (€0.2m). Of the total proceeds, £2.5m (€2.8m) for the land and buildings was held in escrow at year-end and received post year-end following approval from the German land registry. Redundancy costs of £0.3m were also incurred.

Redundancy costs of £2.7m (€3.0m) were incurred in relation to the downsizing of our footprint in Schwäbisch Gmünd, of which £1.8m (€2.0m), in addition to the SchTC redundancy costs, remained unpaid as at 30 June 2018, as these were paid during or at the end of notice periods. Professional fees and other costs of £1.8m (€2.0m) were incurred due to the activities in Germany.

Certain back-office functions were migrated from the Shoreham Technical Centre ('STC') to the newly set up Prague shared service centre. Redundancy, contractor and other transition costs of £0.5m were incurred. Redundancy costs of £0.4m were also incurred in the UK for members of the senior management team as a result of the restructuring of the business.

The combined cost of these activities was £4.8m in the year, with a net cash inflow of £2.3m.

Research and Development

The Group continues to invest in R&D and spent £9.5m (2017: £9.5m) before government grant income of £1.6m (2017: £2.4m). Costs capitalised this year in accordance with IFRS were £5.1m (2017: £3.1m) and reflect the impact of investment in developers in our Software business, and new technology, tools and processes in our European Automotive and Energy & Environment businesses. An overview of current R&D activities is presented on pages 26 and 27.

The total Research and Development Expenditure Credit ('RDEC') recognised in the current year is £8.0m (2017: £6.6m). This comprises an estimated RDEC credit in respect of the current year of £6.9m (2017: £5.2m), together with £1.1m (2017: £1.4m) arising from the routine amendment of open applications as a result of further analysis of the qualifying expenditure incurred.

Net finance costs

Finance income was £0.4m (2017: £0.2m). Finance costs were broadly in line with the prior year at £2.6m (2017: £2.7m), giving net finance costs of £2.2m (2017: £2.5m).

Taxation

The total tax charge for the year was £9.6m (2017: £7.4m), with the total effective rate of tax being 33.7% (2017: 23.0%). The increase reflects the impact of improved performance in our US operations, combined with the derecognition of a net deferred tax asset of £2.2m (€2.5m) (2017: £1.5m (€1.7m)) relating to historic losses in Germany, due to the restructuring activities completed in the year.

Ricardo 's Performance Products engine assembly plant at the Shoreham Technical Centre

The underlying effective tax rate was 21.3% (2017: 23.0%), with the decrease on the prior year driven by a change in the mix of profits across the territories in which the Group operates and a reduction in tax rates in certain territories, including the UK.

A deferred tax asset of £5.5m ($7.2m) (2017: £5.9m ($7.7m)) relating to R&D tax credits in the US continues to be recognised. The Directors have considered the recoverability of this asset and remain satisfied that it is probable that sufficient taxable profits will be generated in the foreseeable future, against which the recognised assets can be utilised.

Earnings per share

Basic earnings per share decreased by 25% to 35.2p (2017: 46.8p). The Directors consider that an underlying earnings per share provides a more useful indication of underlying performance and trends over time. Underlying basic earnings per share for the year increased by 3% to 57.3p (2017: 55.7p).

Basic earnings per share, with a reconciliation to an underlying basic earnings per share, which excludes the net-of-tax impact of specific adjusting items, is disclosed in Note 10 to the financial statements on page 134.

Dividend

The total (paid and proposed) dividend for the year has increased by 6% to 20.46p per ordinary share (2017: 19.3p) and amounts to £10.9m (2017: £10.3m). The proposed final dividend of 14.71p (2017: 13.88p) will be paid on 23 November 2018 to shareholders who are on the register of members at the close of business on 9 November 2018, subject to approval at the Annual General Meeting on 15 November 2018.

Capital investment

Cash expenditure on property, plant and equipment was £7.7m (2017: £6.3m) as we continue to invest in our business operations. This expenditure included new and upgraded test cell equipment and IT hardware.

Net debt

Closing net debt was £26.1m (2017: £37.9m). The Group had a net cash inflow of £11.8m (2017: £3.5m), after £4.6m (2017: £1.9m) of consideration paid in respect of acquisitions, net of cash acquired, £1.7m of acquisition-related payments (2017: £4.4m), and a £2.3m net cash inflow (2017: £0.4m outflow) from restructuring activities. The composition of net debt is defined in Note 34 to the financial statements on page 156.

The Group's focus on the management of working capital has driven the reduction in net debt in the year. Significant progress has been made across the Group in ensuring timely billing and cash collection throughout the year.

Banking facilities

At the end of the financial year, the Group held total facilities of £90.9m (2017: £91.1m), which included committed facilities of £75.0m (2017: £75.0m). Of the committed facilities, a £35.0m facility is available until September 2019 and £40.0m is available until April 2020. In addition, the Group has uncommitted facilities including overdrafts of £15.9m (2017: £16.1m), which mature throughout the next financial year and are renewable annually.

Committed facilities of £49.8m (2017: £59.7m) net of direct issue costs were drawn primarily to fund acquisitions. These are denominated in Pounds Sterling and have variable rates of interest dependent upon the Group's adjusted leverage, which range from 1.6% to 2.6% above LIBOR and are repayable in the year ending 30 June 2020.

After the year-end on 20 July 2018, the Group completed a refinance of its banking facilities, entering into a new £150m Revolving Credit Facility ('RCF') which provides the Group with committed funding for the next five years through to July 2023 primarily for acquisitions and strategic investments. This multi-currency facility has a variable interest rate which ranges from 1.4% to 2.2% above LIBOR and is dependent upon the Group's adjusted leverage.

Foreign exchange

On consolidation, income and expense items are translated at the average exchange rates for the period. The Group is exposed to movements in the Pound Sterling exchange rate, principally from work carried out with customers that transact in Euros, US Dollars and Chinese Renminbi. Compared to the previous financial year, the average value of Pound Sterling strengthened against the US Dollar (6.3%) and Chinese Renminbi (1.5%). The marginal negative impact on profit from this was partially offset by Sterling weakening against the Euro (3.0%).

Had the current year results been stated at constant exchange rates, revenue would have been £3.1m higher and underlying profit before tax would have been £0.3m higher. Reported profit before tax would have been £0.4m higher.

Pensions

The Group's defined benefit pension scheme operates within the UK. The accounting deficit measured in accordance with IAS 19 '*Employee Benefits*' was £4.6m before tax (2017: £22.2m), or £3.8m after tax (2017: £18.1m).

The £17.6m reduction in the pre-tax pension deficit since the prior year was due to the positive return on plan assets of £2.1m, and the effect of using updated census data giving a gain of £7.0m, together with £4.3m of cash contributions paid to the scheme during the financial year. There was also a further favourable movement of £7.7m primarily from an increase in the discount rate assumption to 2.85% (2017: 2.60%), offset by £3.0m from the use of an updated set of mortality assumptions and £0.5m of net interest cost on the scheme. The value of the scheme's assets at year-end was £131.0m, in line with the prior year (2017: £131.0m).

Ricardo has committed to continue to pay £4.3m throughout the next financial year to fund the pension deficit, increasing to £4.6m per annum from July 2019 until September 2022.

Our people

The Power of You was the title of the leadership event held at our Shoreham Technical Centre in July 2017 and it set the scene for this financial year. One hundred managers from all divisions and regions of Ricardo came together to be inspired by an exploration of themes around leadership and personal empowerment to contribute, to add value and to do the best possible jobs for our customers as well as to take charge of their own development.

True to this theme of empowerment, Ricardo strives to provide every employee with the opportunity to be their best and play to their strengths every day at work. With that goal in mind, we promote a diverse and inclusive culture and endeavour to offer the right career opportunities for all – women and men, engineers and support staff – and to value a specialist contribution as much as a management role. From the beginning, we encourage our employees to actively engage in their own career development by stretching their wings, broadening their horizons and experience, and deepening their knowledge. In addition to any formal training, this might be through taking part in one of our various internal strategic or improvement-oriented projects, working on a customer project at a different technical centre or on-site at a customer, or by going on an international assignment.

Finding and retaining the right people to support our growth strategy remains a key task. We are proud to be able to attract a significant number of graduates, young professionals and acknowledged industry experts every year into all divisions and regions of our organisation, which confirms that we are an employer of choice. We are very conscious of our responsibilities as an employer and we make sure that our new employees have the best possible experience in joining Ricardo and throughout their employment with us – in terms of both personal development as well as competitive remuneration and benefits packages.

As we are particularly keen to grow our young engineering talent base, continued effort goes into the enhancement of our apprentice and graduate schemes. In Ricardo Automotive and Ricardo Rail, our established international graduate schemes give our graduates an exciting mix of learning on-the-job as part of real-life customer projects, classroom training for technical and interpersonal skills, and international exposure through our graduate exchange programmes. In the UK, we have also introduced additional apprenticeship programmes across all divisions: this mirrors the UK Government's push for more apprentice positions through the apprenticeship levy introduced in April 2017. In close collaboration with the relevant universities, new courses are about to be implemented to support the further development of our young engineers under the umbrella of the levy.

In line with our vision of a Ricardo culture that not only promotes excellence but also diversity and inclusion, we have continued to concentrate our efforts on promoting female career advancement in general and especially in science and engineering roles. This includes

OUR PEOPLE

Sujith Kollamthodi
Practice Director – Policy, Strategy & Economics
Ricardo Energy & Environment

"I've been a Practice Director at Ricardo for the last six years, originally focusing just on sustainable transport issues, but more recently my role has expanded to cover our policy-related work in the fields of transport, climate change, air quality, industrial emissions, energy regulation and carbon markets.

The key megatrends affecting my work relate to climate change, air pollution and urbanisation, and the ways in which all of these factors will affect the whole economy in the very near future. For example, I am currently looking at the impacts of future mass electrification of the vehicle fleet on emissions, air quality, electricity demand, infrastructure needs and consumer costs, amongst other issues. It's a fascinating time to be working in this field."

hiring female apprentices, graduates and professionals and reviewing our internal promotion processes to exclude any implicit gender bias. We have also amended our employer branding to be more appealing to women and have modified our on-boarding process for female technical staff, including a mentoring programme and inclusion training for managers.

Going forward, we will continue driving along the path we have started out on, with an overall increase in female representation across the Group of 3 percentage points over the last two financial years. The publication of our Gender Pay Gap in our UK entities with over 250 employees revealed that we are well within the industry average. Details can be found in our public Gender Pay Gap Report on www.ricardo.com.

To demonstrate our commitment to diversity at the highest echelons of the organisation, our Chairman, Sir Terry Morgan, and Chief Executive Officer, Dave Shemmans, have joined the *30% Club*. This is a cross-sector initiative of business leaders with the mission to support gender diversity on all levels of an organisation from entry level to board positions, and with a target to achieve 30% female representation across its members. The philosophy of reaching that target through collaborative, concerted business-led efforts and the implementation of unbiased work environments, policies and cultures rather than enforced quotas fits exactly with our own philosophy. We will now use that branding to promote our diversity objectives in job advertisements and social media.

Our business is built on having the best talent in the world and this mission is at the heart of what we do. Our strategy is to contribute to safety and sustainability in mobility and energy generation while protecting scarce natural resources. Our people make this happen. A little bit more, every day.

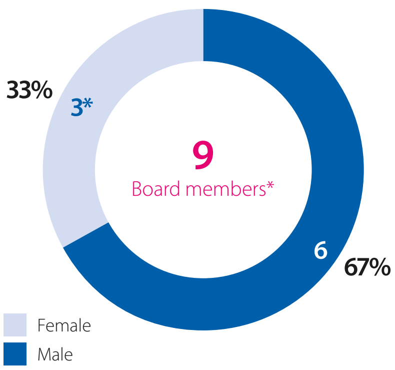
OUR PEOPLE

Najla Knidiri
Senior Consultant
Ricardo Certification, Denmark

At Ricardo Certification in Denmark, we work as a team together with our colleagues in the Netherlands, the UK and Spain, delivering a range of certification and assurance services to international rail clients. One of my main responsibilities is as Project Manager for the Danish Signalling Programme, one of the largest projects of its kind in the European rail industry.

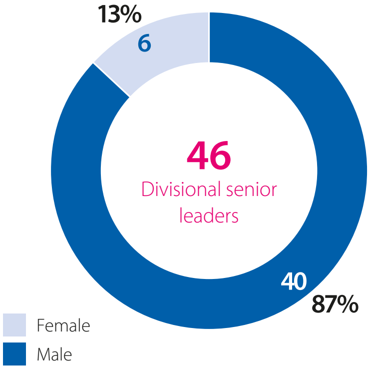
I enjoy the opportunity to work with very skilled people all over the world. Having lived in five countries and three continents, I really appreciate the multicultural character and international reach of Ricardo. This brings opportunities for ongoing learning and development, not just in terms of the technical facets of the job, but also the human and strategic aspects as well. Together with the support of the worldwide Ricardo organisation, all of this helps us to provide excellent service to our clients.

Board members

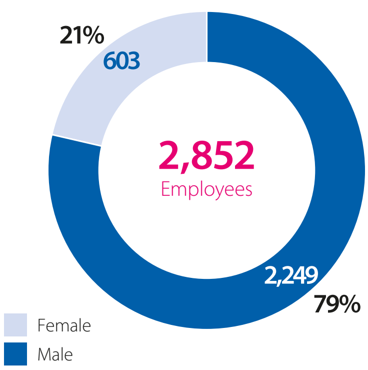


* Includes Company Secretary

Senior leadership



All employees



Corporate responsibility and sustainability

Why it matters to Ricardo

Ricardo has a proactive and engaged approach to corporate responsibility and sustainability. The environment is a key driver for our strategy and is seen in many of our activities, where *Delivering Excellence Through Innovation & Technology* provides the central focus for all of our teams. This is embedded in what we do and the solutions we deliver:

- Helping governments and cities address climate change, emissions, air quality, energy and waste challenges;
- Providing policy and technical advice across the public and private sector to improve the environmental, social and economic performance of the transport sector;
- Developing new combustion systems and engineering solutions to meet the next steps in vehicle emissions regulations;
- Improving vehicle fuel economy and energy efficiency through engine developments, lightweight vehicle structures and transmissions, hybrid vehicle systems and vehicle electrification, renewable energy and rail operating efficiency;
- Improving rail safety through the provision of safety audit services, innovative safety products and the assurance activities of Ricardo Certification, providing third party independent oversight on new railways, rolling stock and safety-critical technologies (see pages 58 to 61); and
- Providing chemical emergency response advice to emergency services and industry through our National Chemical Emergency Centre ('NCEC').

We rely on innovation, talent, skills and customer care from our employees, in whom we invest and develop for the benefit of all our stakeholders. Our values and policies are designed to ensure that we and our suppliers operate ethically and honestly, and meet human rights obligations.

Ricardo's employees are engaged as active members of the communities where most of our larger sites operate, with a strong focus on working to promote Science, Technology, Engineering and Maths ('STEM') subjects in schools and colleges, as this links directly to the next generation of engineers and scientists who will be the core of our future value chain.

As a responsible employer, we seek to protect and care for our employees by providing a safe and healthy work environment and by minimising the environmental impact of our operations.

The environment – a strategic driver in action

The environment is at the heart of what we do and is embedded in our strategy, shown on page 13:

- Transport & Security activities are driven by worldwide trends in climate change, emissions and fuel economy legislation;
- Energy activities are similarly driven by the need to provide more sustainable and efficient solutions for power generation from renewable and clean energy sources; and

- Scarce Natural Resources & Waste activities provide solutions to improve air quality, reduce environmental impact and improve efficiency in the use of natural resources and waste management.

We support these markets with research and development activities to enhance our capabilities. This is described on pages 26 and 27.

Environmental thought leadership

As an organisation, Ricardo is renowned for providing strategic consultancy on a wide range of technical and environmental issues. As a result, we regularly provide key thought leadership through many different forms. These range from attending and co-chairing the technical working group meetings of a broad range of national and international bodies, through to speaking at events, running webinars and providing practical information on our website.

This support is directly aimed at helping governments and organisations to reduce their environmental impact and stem the effects of climate change: the aim is to position Ricardo as a 'go-to expert' in the relevant markets.

Throughout this financial year, Ricardo has been supporting organisations seeking to develop strategic approaches to the effective adoption and implementation of electric vehicles ('EVs'). This includes supporting the European Commission with developing EV and autonomous vehicle policy and developing fleet electrification strategies for a number of organisations, including an organisation with one of the largest EV fleets in the UK.

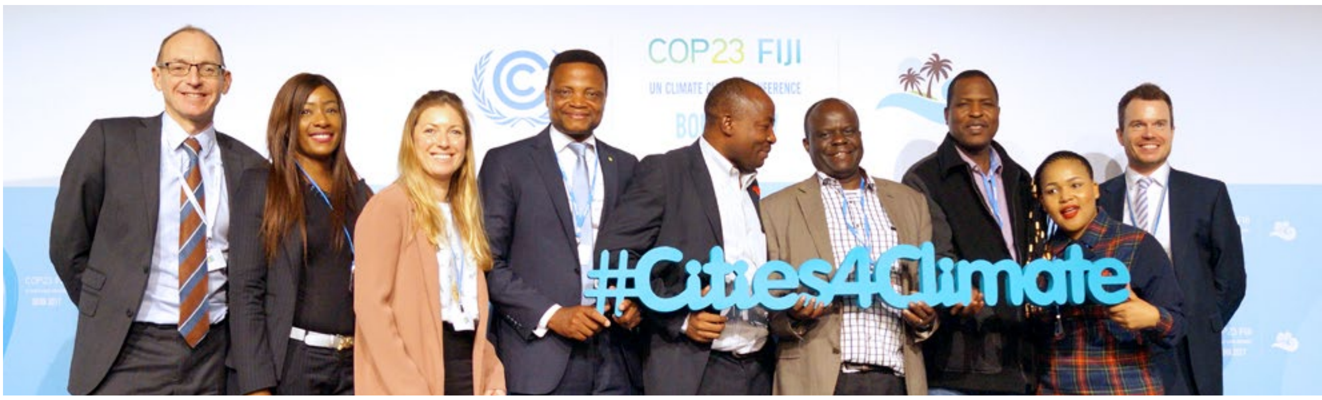
Based on our experience and expertise in EVs, Ricardo has delivered thought leadership through white papers – for example, *Driving automotive electrification* – which was downloaded by more than 900 people. In November 2017, Ricardo delivered the first in its series of thought-leadership webinars focused on fleet electrification, which was presented to over 200 attendees from around the world.

Ricardo's sustainable transport experts have been supporting Heathrow Airport with its clean vehicle partnership, helping the airport's fleet operators to support Heathrow's sustainability goals outlined in *Heathrow 2.0* – the airport's plan for sustainable growth.

Environmental benefits

Ricardo delivers many positive environmental outcomes which are the result of the work we undertake in the Technical Consulting business. These can be categorised as:

- Ricardo-funded and customer-funded engineering projects to develop low-emission and high-efficiency technologies for incorporation into products around the world;
- Lower carbon usage through the delivery of engineering projects which lead to more efficient consumer products being manufactured by our customers;
- Environmental consultancy, largely undertaken by Ricardo Energy & Environment; and
- Improvements in operating efficiency carried out by Ricardo Rail for rail operators and rolling stock manufacturers.



Ricardo Energy & Environment has been working with the C40 Cities Climate Leadership Group as an implementation partner for a project supporting nine of Africa's largest cities in their efforts to tackle climate change

These products and services will have an impact on the future levels of emissions, waste, energy usage, water consumption and noise across the sectors we serve. The cumulative benefits of projects we complete each year saves many multiples of our operational carbon footprint over the life of the products we engineer.

The very nature of Ricardo Energy & Environment's consultancy work provides a further significant environmental benefit: we work with businesses, governments and international organisations to help find solutions to some of the most pressing environmental challenges.

We have a comprehensive environmental consulting capability which provides:

- Excellence in thought leadership around economic, societal and environmental interactions;
- Extensive understanding of the climate change challenges facing organisations, including scarcity of natural resources, strategic sustainability and energy management;
- Deep understanding of policy drivers, environmental strategy, and economics, providing insight and project delivery for business and industry; and
- Modelling and data management to identify and realise value for organisations.

Operational environmental impact and greenhouse gas emissions

Ricardo is committed to keeping the environmental impact of the Group's facilities and activities to a minimum, as well as ensuring that our services have positive impacts on society. The Board's commitment to this is embodied in our environmental policy, which is available through our intranet and to the public through our website, www.ricardo.com. The drivers for this policy are as follows:

- Delivering services that enable strategic improvements for our customers and the end users of their products and services;
- The need for continuous improvement; and
- The desire to be responsible members of the local communities in which Ricardo operates.

The impact of our operations, particularly testing and manufacturing, are the largest contributors to our operational carbon footprint and greenhouse gas ('GHG') emissions. Our testing for customer and research programmes primarily uses fuels and electrical energy, in addition to that required for heating some of our buildings. The full effect of the sale of our Chicago and Schechingen test facilities on the Group's emissions will be experienced next year. Our manufacturing energy use is predominantly power for machine tools and assembly facilities and gas used in our heat treatment plant. Our Scope 2 use is all electricity. We do not currently measure our Scope 3 emissions.

We comply with the Companies Act 2006 (Strategic and Directors' Report) Regulations 2013 on GHG emissions and have stated our comparative history in our Strategic Performance on page 17. As this requires the inclusion of fuels used in engine and vehicle testing, variability in results year-on-year can be expected due to the varied mix in types of test and engine size.

Projects to reduce energy consumption and manage waste responsibly are actively encouraged and have become more important as unit fuel costs increase; waste streams have also become more significant as the manufacturing activities of our Performance Products business have grown.

We focus our operational carbon footprint improvements on underlying energy efficiency prior to the use of fuels for testing. We continue to use tonnes of carbon dioxide equivalent ('tCO_2e') per employee as an intensity measure.

This year we continued to calculate our market-based Scope 2 emissions in the UK, as well as our location-based emissions, which have been reported below using UK Government and International Energy Agency ('IEA') factors in accordance with the GHG Protocol's Scope 2 guidance. Our UK operations are our biggest consumer of electricity. The supply we procure includes some coal and natural gas, but over 50% is from renewable or zero-emissions sources. This means that when using the market-based approach, our Scope 2 emissions are reduced by around 45%. Even so, we still strive to continually reduce our underlying consumption.

Other environmental impacts include waste streams, which are monitored to identify potential improvement opportunities and to ensure legislative compliance. Higher risk areas of our facilities, such as fuel storage and distribution systems, have containment and inspection regimes which meet local legislative requirements.

Many of Ricardo's customers require certification for their key suppliers in respect of the environmental management system standard, ISO 14001. We are accredited to this standard in the majority of our locations. The achievement of the standard is defined by appropriate policies, processes and procedures as part of the management system in each division. Many of these are closely linked to both quality and health and safety procedures.

The suite of ISO certifications and the supporting internal and external audit programmes are used to check policy effectiveness, share best practice, identify improvement opportunities and ensure compliance. Staff training in health and safety and environmental matters is a priority and is reviewed annually as part of normal appraisal processes.

HRH The Duke of Kent visits the engine assembly facility at Ricardo's Shoreham Technical Centre

tCO_2e per employee

tCO_2e ('000s)	2018	2017	2016
Scope 1*	**8.6**	8.1	11.4
Scope 2	**8.9**	10.2	10.9
Total tCO_2e ('000s)	**17.5**	18.3	22.3
tCO_2e per employee	**6.0**	6.7	8.4

(*) The operational control test is applied to determine if an emission is within Scope 1.

Governance – corporate responsibility

The Board reviews the key elements of corporate responsibility on an annual basis. To underline the importance of integrity in all relationships between employees and stakeholders, we have ethics, fraud prevention and whistleblowing policies which are communicated to all employees. A summary of these is communicated externally through our Code of Conduct, which includes the policy elements to meet our human rights obligations.

Under our ethics policy we do not permit bribery, anti-competitive or corrupt business practices in any dealings. Under our fraud prevention policy, we do not allow intentional acts by one or more individuals within the business to use deception or theft to gain unjust or illegal advantage. Under our whistleblowing policy, we provide a procedure for any employee to raise any malpractice concerns in an appropriate manner, with protection to the whistleblower. Ethics and whistleblowing policies and reports are reviewed annually by the Audit Committee.

Modern slavery

We implemented the requirements of the Modern Slavery Act 2015 and have published an updated statement for this financial year on our website. This subject is reviewed annually by the Audit Committee.

Ricardo's Chief Operating Officer, Mark Garrett (rear, centre), with fellow volunteers on a mission of the eyesight charity, See Kenya, which works to reduce blindness and provide specialist eye care services to marginalised communities in Kenya

Human rights

The Group firmly believes in the principles behind the Universal Declaration of Human Rights. We support this by having a strong commitment to compliance with laws and regulations in the regions in which we operate, and by expecting the same from our suppliers. We articulate this through our Values and Code of Conduct, the relevant policy elements of which are:

- Being honest, ethical and above reproach with each other and with our stakeholders in all our business dealings;
- Treating all others as we would like to be treated ourselves;
- Not engaging in activity that can be considered as trafficking in persons, including the use of forced labour, child labour or procurement of immoral services for the performance of contracts;
- Not harassing or discriminating against any employee or job applicant, either directly or indirectly;
- Encouraging all our employees to take an active role against all forms of discrimination and harassment; and
- Employing or contracting with staff who are appropriately vetted and have the proven right to work in the country of employment for the type of work being undertaken.

The Group's position on human rights is supported through a number of ethics and employment policies which are designed to ensure we conduct business in a legal and ethical manner at all times.

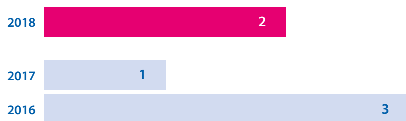
Health and safety

Ricardo is committed to compliance with local health and safety legislation, to a safe working environment and to a very low level of reportable accidents. We support training in health and safety awareness, impending changes in relevant legislation and other specialist health and safety subjects. Health and safety activities are verified by regular internal audits and inspections and certification to OHSAS 18001 in our technical centres and larger offices in the US, the UK, the Netherlands, Germany, Italy and the Czech Republic. Our health and safety policy is available through our intranet and to the public through our website.

We recognise the level of reportable accidents as a primary performance indicator. The number of reportable accidents increased in this financial year, but the overall level is still low and shows the continued success of our health and safety policies. We continue to focus on reducing accidents and near-misses as part of our commitment to continuous improvement and loss prevention.

Health and safety

Reportable accidents*



(*) Based on current definitions of the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations ('RIDDOR')

Ricardo engineers enthusing school and college students at STEM events and visits to Ricardo

Suppliers

Relations with our suppliers are essential in achieving client and shareholder satisfaction. Our policy is that key suppliers should be certified to ISO 9001 and ISO 14001 standards, and all suppliers are encouraged to obtain these certifications. Local suppliers are used where commercially practical. There are no significant supply contracts which are essential to the business of the whole Group, and we are not reliant upon any suppliers that would jeopardise the independence of the business.

Initiatives are managed by our Head of Global Procurement and savings are delivered by consolidating the supply base and reducing the total cost of doing business. We strongly encourage our suppliers to comply with our Code of Conduct or their own equivalent policies.

Local communities

It is our policy and objective to make a positive contribution to all regions and communities in which we operate, particularly in education in areas local to our main sites. Many of the larger Ricardo offices support local community activity and give charitable donations, particularly where employees participate in community or charitable fundraising activities. The focus is on creating sustainable links and on improving the image and understanding of the business and the engineering profession in the community.

Community engagement in promoting Science, Technology, Engineering and Maths ('STEM') subjects and diversity has been a key part of our employee involvement.

A wide range of activities have been undertaken, including:

- Close partnerships with secondary schools near to our larger UK sites, supporting curriculum delivery and teacher engagement in STEM;
- Many of our UK graduates are automatically enrolled as STEM ambassadors when they join the business;
- Sponsorship of regional 'Big Bang' STEM events where over 11,000 students attended to experience opportunities from many employers; and
- Ricardo Software supports university teaching with its products in 200 locations across approximately 40 countries.

We also work with our local communities to provide business input on economic regeneration, and we actively engage in local partnerships, particularly in the area where our Shoreham Technical Centre is located, where we are the largest private sector employer.

Donations

We often match staff donations to charitable activities, particularly where there is active staff participation in events. Financial contributions to charities in the year to 30 June 2018 were £36,237 (2017: £35,652). The effectiveness of these policies is informally measured by community feedback.

Risk management and internal control

The Board has overall accountability for ensuring that risk is effectively managed across the Group. We consider that effective risk management is critical to the achievement of Ricardo's strategic objectives and the long-term sustainable growth of our business. Such systems are designed to manage, rather than eliminate, the risk of failure to achieve Ricardo's objectives and can only provide reasonable assurance against material misstatement or loss.

Risks are reviewed by all business areas on a half-yearly basis and measured against a defined set of likelihood and impact criteria. Risks are measured both before and after the mitigating effect of the application of compensating controls. This is captured and reported consistently, enabling the risk information to be consolidated and ranked. The key risks are then summarised in the Group's risk profile and submitted to the Board for review and approval.

As part of the bi-annual risk management process, Directors and senior managers are required to certify that they have established effective controls to manage risk and to comply with legislation, as well as with the Group's policies and procedures.

Ricardo's internal control and monitoring procedures include:

- Clear and understood responsibilities by both line and financial management for the maintenance of good financial controls and the production of accurate and timely management information;
- Requirement for divisional Finance Directors to confirm on a monthly basis that appropriate controls are in place and to identify any exceptions, with the outcome being reviewed by the Group Financial Controller and Group Risk Manager & Head of Internal Audit;
- Divisional Finance Directors have line management responsibility to their Managing Directors, but with an independent reporting line to the Chief Financial Officer;
- Control of key financial risks through clearly set authorisation levels and appropriate segregation of accounting duties;
- Control of key project risks through project delivery and review systems;
- Control of other key business risks through a number of processes and activities recorded in the Group's risk register;
- Detailed monthly forecasting and reporting of trading results, financial position and cash flow, with regular review by management of variances from budget and forecast;
- Review and reporting by the internal audit function on divisional compliance with internal procedures and financial controls; and
- Review and implementation of recommendations in reports on internal control by external auditors.

To ensure our risk process drives continuous improvement across the business, we monitor the ongoing status and progress of key action plans against each risk on a half-yearly basis. Risk is a key consideration in all strategic decisions made at Board level. In the June 2018 risk review cycle, risks associated with our customers, suppliers, employees and finances included the continued consideration of the potential impact of Brexit. Where these affect our principal risks, the approach to mitigation is discussed on pages 41 and 42.

The Group has risk management processes in place for projects and other business risks. Contract risks are managed through a project management process which is closely linked to measurement of financial performance. The majority of active Technical Consulting projects are reviewed on a monthly basis within divisions. In addition, the highest risk category projects are independently reviewed by the Group either on a quarterly basis or once significant milestones are deemed to have been achieved. Non-contract risks are owned by the Group functions and divisional Managing Directors. These non-contract risks are analysed and reviewed regularly and are recorded in the Group's risk register in liaison with the Group Risk Manager & Head of Internal Audit, who has an independent reporting line to the Chairman of the Audit Committee. The Group's approach to risk management is to identify key risks early and to remove, control or minimise the impact of them before they occur.

Risk transfer is managed through insurances by the Group Risk Manager under the direction of the Chief Financial Officer. The insurance programme is reviewed annually by the Board to ensure that it continues to meet business needs as the risk profile changes.

Risk appetite is managed through a number of internal controls, authority limits and insurance excesses. The Group's risk appetite was reviewed during the year as part of the Board's review of risks and stated as an internal policy document.

The Group's internal audit function provides assurances on divisional systems of internal control, risk management and compliance with applicable legislation and regulations. This is complemented by internal audits required as part of maintaining certifications to international standards for management systems. The effectiveness of these risk management and internal audit processes are reviewed annually by the Audit Committee.

Financial risks faced by the Group comprise capital risk, liquidity risk, credit risk and market risk (comprising interest rate risk and foreign exchange risk). The Group's objectives, policies and strategies in respect of these risks are set out in Note 24 to the financial statements on pages 144 to 148.

The Company complies with the UK Corporate Governance Code by ensuring that:

- Risks are either classified as strategic or operational and as either internally or externally driven;
- Risks are evaluated on a gross and net risk basis; and
- The Chief Executive Officer reviews the higher-rated risks on the Group's risk register with the Audit Committee twice each year, in the presence of the other Executive Directors and the Chairman.

Principal risks and uncertainties

In common with all businesses, the Group faces risks and uncertainties on a daily basis. It is the effective management of these risks that places us in a better position to be able to achieve our strategic objectives and to embrace opportunities as they arise.

Set out below and on the following page are the details of the Group's principal risks, the mitigating activities in place to address them, and the additional actions implemented to further reduce the net risk to the Group. It is recognised that the Group is exposed to a number of additional risks and uncertainties beyond those listed which may also have an adverse effect on the business, but these are currently deemed to be less material or are not presently known to management. The mitigation of these principal risks is within the Group's risk appetite, which is reviewed annually by the Audit Committee.

Movement in risk

Reduced risk | No change | Increased risk

Principal risk	Impact	Mitigation
Customers and markets (No change) The Group is largely dependent on a dynamic, increasingly diverse and politically volatile marketplace, particularly in Automotive, which is exposed to many external political and economic pressures. These include the reducing sales of diesel vehicles, impacted by the continued uncertainty around Brexit, as well as competition and structural change caused by concerns over the global economy, our capacity and cost base, environmental climate change, and technology.	This could cause changes or uncertainty in the product plans of major customers or government policy, leading to delays in the placement of new orders or insourcing of activity, the redirection, deferral or curtailment of existing contracts, slippage in payments or variations in demand for resources, and availability of R&D funding. The precise timing of the receipt of orders and the utilisation of our resources to generate revenue and profit may give some volatility in our ability to forecast future performance.	These risks are mitigated by the strategy of diversifying the business to reduce exposure to any one specific customer, territory or market sector. The result is that challenges currently being faced in the UK Automotive business are mitigated by high levels of activity in other parts of the Group, such as Rail and Performance Products. The success of this strategy is measured by the key performance indicators for customer dependency and sector diversity shown on page 16 and by the geographic spread of revenue, as disclosed in Note 3(b) to the financial statements. In the event of a sudden downturn in a market sector or the wider economy, contingency plans are quickly deployed to minimise the impact on short-term performance and to preserve cash whilst protecting the long-term needs of the Group's stakeholders. The impact of insolvency risk is mitigated by robust working capital management and the use of credit insurance where this is economically available. The potential impact of Brexit continues to be closely monitored and is one of many economic uncertainties which the Group faces. The Group's UK businesses have mitigated some risks by trading with European customers through its existing European entities, and we await clarity from UK Government on the impact of customs and tax matters on our supply chain for goods and services.
Contracts (No change) The majority of the Group's revenue arises from fixed price contracts for engineering, technical, environmental and strategic consultancy services, together with accreditation and independent assurance services, with an increasingly broad range of projects, customers and geographies. There is a risk that the obligation to complete the agreed scope of these contracts may be carried out by Ricardo in a longer timescale or in a less cost-efficient manner than initially estimated, thus reducing profit margins. In product supply contracts, there is a risk of product liability, recall or warranty claims and dependency on specialist suppliers. Contracts denominated in foreign currencies can be subject to exchange rate risk.	Failure to perform on contracts within estimated cost and delivery timescales could impact profitability. Faulty products or the infringement of the rights of others, could potentially subject the business to increased costs, a claim from a customer, reputational damage or reduced opportunity for repeat business. Failure of production processes or product validation could lead to warranty or recall claims. Failure or poor performance of a supplier could disrupt delivery to customers and increase operating costs. Unmanaged adverse foreign exchange rate movements on contracts could also affect profitability.	These risks are proactively managed by clearly defined lead qualification, bidding, contracting and project management processes, whereby projects are initially categorised according to their risk level and their performance is continually assessed throughout the life of the project, which in turn dictates the level of approval or review required. Internal procedures are in place to ensure that the technical content of our output is of high quality and meets customer requirements without infringing the rights of others, and within time and cost estimates. Led by the Chief Operating Officer, we remain focused on the continuous improvement of the processes related to project leadership, which is a competency that is core to our strategy. Procurement processes are in place to assess critical suppliers and selections are often made with the involvement of the customer. In product supply contracts, there are rigorous quality assurance processes in place to reduce the risk of product liability, warranty and recall claims. Significant contracts in foreign currencies are hedged to protect against volatility in exchange rates.
People (No change) Ricardo is a diverse business that is knowledge-driven and people-led, with a focus on attracting and retaining the best talent. Recruiting, developing and retaining knowledge and talent in the right locations is essential.	The failure to recruit, develop or retain the very best talent would restrict growth and the execution of our strategy, and would have an impact on delivery and customer relationships.	The Group is focused on a model of 'bringing in and bringing on' the best talent. We aim to ensure that we actively develop and manage staff to encourage their optimum contribution, we foster mobility and professional development, and we provide appropriate remuneration and working conditions. We are monitoring the potential impact of Brexit on employee mobility and our ability to recruit EU nationals for UK roles and to place UK nationals in EU roles. We believe that our range of geographic locations in Europe will continue to make us an employer of choice. Our IT infrastructure enables us to share work and mitigates mobility issues. Our people as stakeholders are discussed further on pages 32 and 33.

Principal risk	Impact	Mitigation
Technology The business is driven by changes in technology to meet the needs of markets, sectors and regulators on varying time scales.	If the Group invests in the wrong technologies, it could lose marketplace advantage and levels of business activity could reduce. If there are movements in the implementation of new regulations, which in turn accelerate or delay customer programmes dependent on new technology, the time taken to deliver returns from our R&D programmes may also increase.	Our R&D programmes are developed through a mixture of customer consultation, long-range forecasting, thought leadership and deep technology roadmap development. Many of our programmes are collaboratively developed and delivered with customers, partners, governments and suppliers, which creates strong links to the market and ensures the output is relevant and credible. The programmes are approved and delivered by Ricardo Innovations, a division which operates within Ricardo as a global R&D organisation, singularly focused on the delivery and exploitation of approved R&D programmes. This enables staff and facilities across multiple geographies to be dedicated to relevant programmes, which accelerates the delivery of our innovative products and services to the market and promotes the exploitation of developed intellectual property and know-how. Further details of a selection of our current R&D programmes are given on pages 26 and 27.
Laws and regulations The Group's operations are subject to an increasingly wide range of evolving domestic and international laws and regulations, including restrictions, standards and tax legislation.	Non-compliance with, or changes to, laws and regulations including restrictions, standards and tax legislation could expose the Group to fines, penalties or reputational damage, or result in trading restrictions which could have a materially adverse impact on the business, or impede the Group's ability to recover certain available tax-related credits.	To mitigate these risks, the Group has a number of defined policies and operating procedures in place, and takes professional advice where considered necessary, to ensure that the Group acts upon the latest advice available based on current and expected changes in legislation. Our Code of Conduct, which is published on www.ricardo.com to increase awareness and to make it available to external stakeholders, ensures that employees and others act with the highest ethical standards and within local legal and regulatory requirements. In addition, the Group's internal audit programme includes within its remit the review of compliance with applicable legislation and regulations, and awareness of key Group policies and procedures. These policies and procedures are updated as regulations change and as a result of our continuous drive to adopt best practice. We aim to anticipate the effects of working in new countries and new sectors, particularly within our Rail business which operates in a growing list of territories and cultures, each with its own regulations, standards and laws with which we need to comply. Unsettled tax credits claimed within a financial year are recognised to an appropriate level at which management is highly confident of full recovery, and in a manner that is consistent with both current legislation and professional advice. We have updated a number of processes and policies to address the General Data Protection Regulation ('GDPR') and have provided online training to all staff.
Defined benefit pension scheme The Group has a UK defined benefit pension scheme which currently has a funding deficit. The uncertainty of Brexit continues to have the potential to increase volatility.	Any decline in the value of the pension fund assets, improvement in mortality assumptions, long periods of high inflation or future decreases in interest rates could increase the funding deficit and require additional funding contributions in excess of those currently expected.	The current UK funding plan was agreed on the basis of a valuation undertaken at 5 April 2017 and anticipates deficit recovery contributions being made until September 2022. The Group closed the pension fund to future accrual on 28 February 2010. In addition, the Group regularly monitors the performance of the pension fund.
Financing The Group is in a net debt position, having drawn on available facilities primarily to fund acquisitions.	There is a risk of the Group being unable to secure sufficient funds or the cost of funds and facilities being high.	This risk is managed by robust cash and working capital management, regular improvement initiatives, monitoring actual cash flows to budgets and forecasts, maintaining good relationships with the Group's bankers and ensuring sufficient borrowing facilities are in place at all times to support the Group's funding requirements to deliver on its growth strategy, with additional headroom available to meet possible downside scenarios. The Group has ample headroom in its facilities and covenants and renewed its borrowing facilities in July 2018, increasing the committed facility to further support the Group's growth strategy and extending the term to 2023. Further details of the Group's borrowing facilities and other financial risks can be found in Notes 22 and 24 to the financial statements, respectively.
Information security Ricardo has valuable intellectual assets comprised of propriety, customer, and supplier data.	The theft or loss of intellectual assets could result in reputational damage, loss of competitive advantage, business disruption and financial penalties.	Ricardo has adopted an information governance framework based on the ISO 27001 information security standards. Dedicated information security resources monitor and manage our threat profile. Information security risks are discussed by our IT function on a monthly basis and are formally reviewed by the Group IT Director each quarter. External penetration tests are conducted to augment our control regime. The outputs from the information security risk register are integrated with the Group's enterprise risk management process. The Group IT Director is ultimately accountable for managing information security resilience, which includes cyber risk, and bi-annual briefings are made to the Audit Committee.

Viability statement

The 2018 UK Corporate Governance Code was published in July 2018, but it is not due to take effect for Ricardo until 1 July 2019. On that basis, the Directors have assessed the prospects of the Group in accordance with provision C.2.2 of the 2016 UK Corporate Governance Code for this year ended 30 June 2018. We will consider any changes to be made to our governance processes in respect of the viability statement prior to when the 2018 Code becomes effective.

The context supporting the assessment

The Group's prospects are underpinned by its business model and strategy, which can be found on pages 10 to 25. The Group continues to follow a balanced approach to its strategy, which is subject to ongoing monitoring and development as described herein. The underlying operating profit of the Group has grown on average by 10% over the last five years and the Group has a closing year-end order book of £288m, of which 36% is expected to be workable beyond 12 months from the year-end. Our order book comprises the value of all unworked purchase orders received.

The Group continues to be focused on global engineering, technical, environmental and strategic consultancy, together with the development of longer-term, multi-year contracts and relationships, underpinned by global macro trends. The Board has considered the risk appetite and profile of the Group in this context, and has determined that this remains appropriate for the Group as a whole.

Assessing the Group's prospects

The Group's prospects are assessed primarily through its annual strategy review and business planning processes, which cover a five-year period and a three-year period, respectively, and are both led by the Chief Executive Officer.

The strategy review is a forward-looking process and is undertaken by the divisions, with full participation by members of the Board, which results in a five-year strategic plan. Part of the Board's role is to review the performance of the Group in the last financial year and to consider whether the strategic plan remains appropriate. This includes an assessment of changes in the market and competitive environment, together with macroeconomic, political, social and technological changes. Actions are implemented as necessary to continue to support the strategic plan.

Detailed business plans are also prepared during the last quarter of each financial year by all divisions, and relevant functions are involved, including Finance and Treasury, which are then reviewed and approved by the Board. The first year of the business plan forms the Group's annual operating budget. This is subject to a re-forecast on a monthly basis. The second and third years are based on the overall content of the year one business plan together with the strategic plan, having been flexed for known or anticipated events.

Assessment of viability

The three-year business plan reflects the best estimate of the future prospects of the Group and has been stress-tested for the following scenarios:

- 20% reduction in revenue, offset by associated cost savings;
- 5% increase in LIBOR interest rates; and
- A further scenario combining both of the above.

The impact of each of these scenarios on the Group's detailed financial plan has been quantified and presented to the Board as part of the approval process. These scenarios, which are based on aspects of the Group's principal risks and uncertainties, including customers and markets, contracts, and financing as set out on pages 41 and 42, represent severe but plausible circumstances that the Group could experience.

The results of our stress testing showed that the Group would be able to withstand the impact of these scenarios occurring over the period of the plan, by making adjustments to its operating activities within the normal course of business.

The Group also performed reverse stress testing on its financial plan using these scenarios to identify the point at which its banking covenants would be breached, as this would represent a serious threat to the Group's liquidity. None of the scenarios required were considered to be plausible, and more severe actions would be taken to preserve the liquidity of the Group.

Viability statement

The Directors have assessed the prospects of the Group over the three-year period to 30 June 2021 and confirm that their assessment of the principal risks and uncertainties facing the Group was robust. A three-year period was selected for the following reasons:

- This period reflects the detailed business planning cycle;
- Customer lead times and typical engineering programmes are no longer than three years; and
- Although the strategic plan covers a five-year period, the Group's order book and pipeline of opportunities does not extend significantly beyond three years.

Whilst the Directors have no reason to believe the Group will not be viable over a longer period, given the inherent uncertainty involved, the stress testing scenarios considered as part of the three-year business plan, together with the reasons outlined herein, a three-year period is deemed most appropriate.

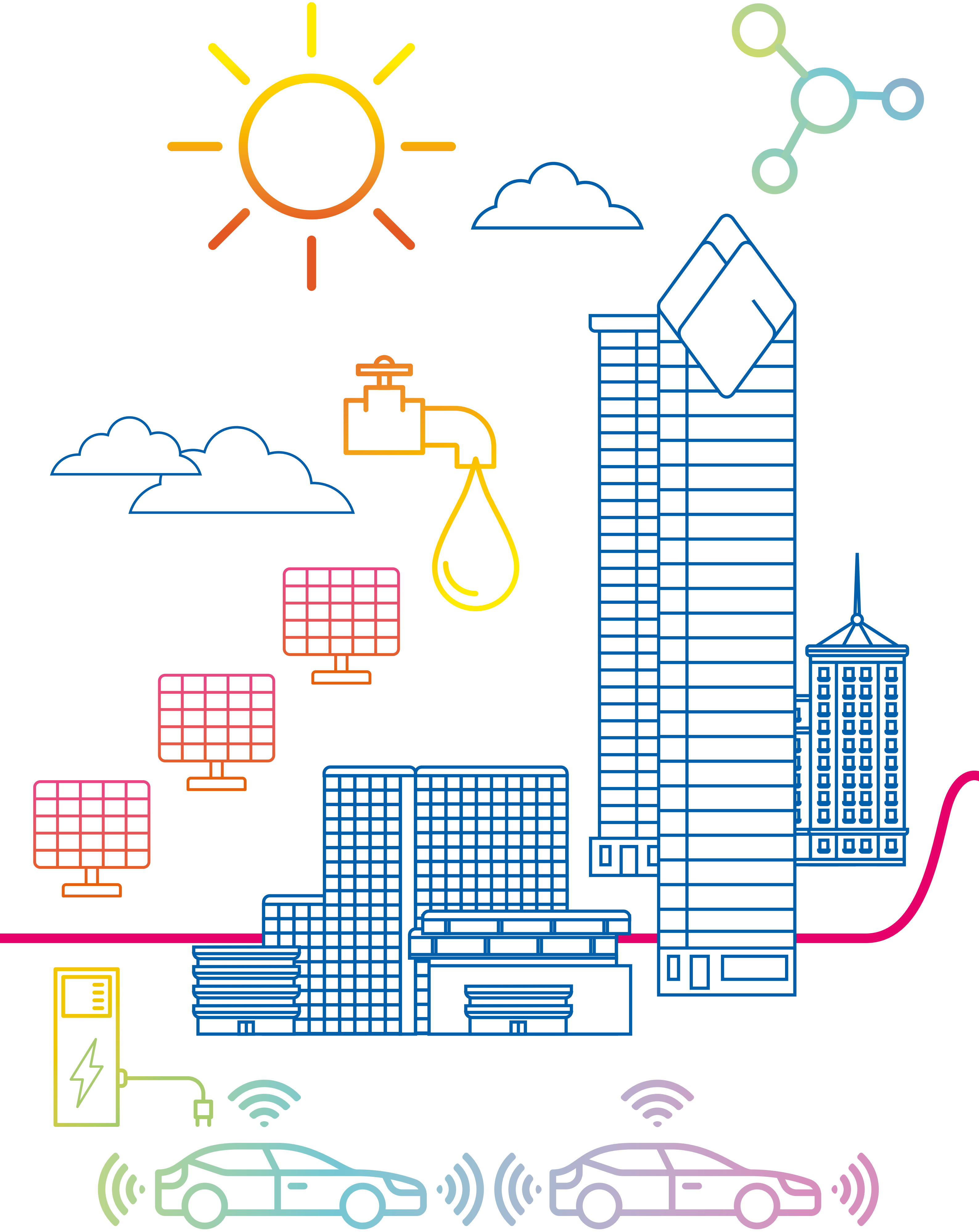
Based on their assessment of prospects and viability, the Directors confirm that they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the three-year period ending 30 June 2021.

Going concern

Given the viability statement provided above, the Directors therefore considered it appropriate to prepare the financial statements on a going concern basis, as explained in Note 1(a) to the financial statements on page 120.

Our 2018 Strategic Report, from page 6 to page 43, has been reviewed and approved by the Board of Directors on 12 September 2018

Dave Shemmans, Chief Executive Officer



Case studies

Creating sustainable airports

With global air passenger numbers predicted to double by 2036, Ricardo is helping airport operators meet the dual challenges of managing demand for rapid growth while minimising the environmental impact of their operations.

According to the International Air Transport Association's ('IATA') forecast published in late 2017, global passenger numbers are expected to increase to 7.8 billion by 2036, a near doubling of the 4 billion today. Perhaps even more surprisingly, the UK is expected to remain one of the world's top five markets for air travel (measured in terms of passengers travelling to, from and within), behind China, the United States, India and Indonesia.

The UK is a densely populated and well-developed part of Europe, so environmental concerns are understandable with any new infrastructure development. Planning regulations and government targets place strict limits on the allowable levels of noise, emissions and the carbon intensity of the commercial operation of each airport. As such, there is a clear business incentive to make operations as sustainable as possible, to enable any desired expansion or development to proceed within these limits.

While Ricardo provides services to airports in many parts of the world, the UK is currently its largest market. With demand growing, almost all UK airports have ambitions to expand and develop their operations, and this is an area in which Ricardo Energy & Environment's infrastructure team is ideally placed to assist. This team combines the technical expertise across Ricardo's specialist practices – including air quality, water, waste and recycling, and energy – in order to serve a common customer base in airports and other major areas of infrastructure.

Air quality, emissions and sustainability

Key themes that cut across many of the other specialist areas of airport consultancy are those of air quality, noise and greenhouse gas ('GHG') emissions. The level of focus on air quality can depend heavily on the topography of the area: with some urban airport locations this can be a significant issue, while others are sited in comparatively remote locations where pollution can disperse quickly. Noise and GHG emissions, however, are an almost universal focus for airport operators.

Ricardo assists in addressing all of these emissions concerns – air quality in particular. The team has been actively engaged in the monitoring of air quality at UK airports for almost 30 years, collecting and monitoring data, undertaking modelling, performing assessments and managing inventories.

Ground transportation is a significant element of the GHG emissions of an airport, and one of the key drivers for sustainability tends to be reducing emissions through managing the flow of people, services, and cargo to, from and within the airport. At London Heathrow airport, Ricardo co-ordinates and delivers the Clean Vehicle Partnership – an initiative which aims to promote best practice in sustainable fleet management by providing free advice, guidance and training to reduce emissions, and facilitating collaborative working and sharing of information amongst Heathrow's fleet operators. Initiatives recognised under this scheme have been the replacement of escort vehicles and ancillary fleets under 3.5 tonnes with electric vehicles, and the adoption of zero-emission aircraft push-back tugs for short-haul operations.

For the aircraft too, a similar target for emissions reduction through electrification can be achieved through the avoidance of running the auxiliary power unit ('APU'). One solution is the provision of grid power hook-ups while on stand: these can deliver benefits in terms of reducing noise as well as exhaust emissions.

Water treatment

For much of the year, the water that falls onto the buildings and hard surfaces of an airport will be essentially clean except for dust, and it can be discharged without treatment. For the water falling on the buildings, there is the opportunity to develop grey water systems to allow the offset of potable water supplies: for example, for use in toilet flushing systems. However, surface water run-off presents a greater challenge during the winter months due to widespread contamination with aircraft and runway de-icing chemicals.

Again, Ricardo's expert advice in this highly specialist area can pay dividends for customers. In a recently completed project, an airport that had previously discharged untreated run-off water all year round into a local stream needed to move on from this approach to ensure environmental protection compliance. The airport had been quoted several million pounds for a treatment plant installation, a solution that would additionally consume considerable energy and chemicals on an ongoing basis. Instead, Ricardo evaluated a range of alternative options, and was able to demonstrate that with the local soil structure, a soakaway-based system with appropriate treatment would be significantly more cost effective and would deliver all of the required environmental benefits. Ricardo went on to complete the necessary risk assessments and help the airport obtain the required permits for the scheme, which yielded multi-million pound cost savings. As a result of this project, Ricardo has received a number of enquiries from other operators to assist with their water treatment strategies.

The Ricardo advantage

The combined skills and expertise of the Ricardo Energy & Environment infrastructure team, together with the organisation's impartiality and objectivity, provide significant added value for airport operators. With expertise across a very wide range of disciplines, the team can bring in additional specialists in all areas from advanced power systems technologies to public transport, with the latter spanning everything from electric vehicles to buses, and from trams to high-speed rail. As Ricardo is completely independent of any particular product, technology or construction solution, the team can offer completely impartial recommendations, ensuring that fully objective advice is provided for both commercial and environmental sustainability.

Software innovation for a resilient and secure water supply

A research and development collaboration between Ricardo and Southern Water shows that advanced automotive technology can help the water industry in strategic planning for future resilience against the challenges of urban development, population growth and climate change.

Water is essential to almost every aspect of life in our towns and cities. For everywhere from housing, schools and hospitals, to offices, retail and commerce, a clean and reliable supply of water is both fundamental for health and a crucial enabler for a wide range of manufacturing operations. But with increasing urbanisation and rising populations, the water sources and supply infrastructure of many urban centres are becoming increasingly stressed; the situation is being exacerbated by the escalating impact of climate change in the form of the increased frequency of severe weather events such as flash flooding and prolonged periods of drought. For the operators of urban water systems, it is therefore a major objective to gain access to innovations that can improve the resilience of existing distribution assets and enable the most resource-efficient planning of networks against future needs.

Southern Water is a utility company that knows these challenges well. Operating across an area of southern England extending through Kent, Sussex, Hampshire and the Isle of Wight, it supplies almost 530 million litres of drinking water from 94 water supply works to almost 2.4 million people each day. Keen to explore new avenues for innovation in its operations, Southern Water – which is headquartered in Worthing, West Sussex, UK – is collaborating with Ricardo's engineers at the nearby Shoreham Technical Centre on an R&D project that could shape the future of strategic planning of water distribution networks.

Automotive software toolchains – an opportunity for water

The idea behind the research – the brainchild of experts from Ricardo Software and the water practice of Ricardo Energy & Environment, together with colleagues at Southern Water – is to adapt an advanced form of complex system design and optimisation software and apply it in the water sector. At first sight, the challenges of the strategic planning of water supplies might appear very different to those of designing and optimising complex automotive systems. The automotive industry makes intensive use of simulation software to optimise complex control, thermal, electrical, and thermodynamics-based systems and their interactions. The application of advanced simulation software allows interactive optimisation of these systems as their complexity increases. The thinking behind the project is that although the water distribution network of a town, city or region exists on a different scale, it still obeys the same laws of physics as other vehicle systems and, therefore, similar system analysis and optimisation processes can be adapted to the water sector.

The collaboration has seen Ricardo and Southern Water engineers working to adapt Ricardo's *IGNITE* software to enable the simulation of city and regional water distribution networks. This includes the development of new building-block models into a library of water system 'components' including reservoirs, pumping stations, abstraction points, treatment works and metered areas, built around a web-based technology infrastructure.

The first phase of the current R&D project will model the water distribution network of the city of Brighton & Hove, UK. This city is projected to have a significant increase in population over the coming years but is currently heavily reliant upon ground water abstraction, with obvious risks to supplies if overused. Once this first city has been modelled, the partners intend to extend modelling to include other zones within its distribution area. If the project is successful, Southern Water intends to use the new water system simulation package as a strategic tool to guide future capital investment decisions – such as how and where they will need to replace assets within the network, and where they will secure future water supplies from, enabling the organisation to deliver supply security and service quality to customers in the future.

Extending to other utilities

Beyond the area covered by Southern Water, Ricardo will seek to apply this new water system simulation tool for the benefit of other utilities within the UK as well as elsewhere in the world. The new tool will be the first such Ricardo Software product to arise from the cross-sector synergies between Ricardo Software and Ricardo Energy & Environment. As the project with Southern Water is demonstrating, simulation, optimisation, advanced sensors, prognostics and control system technologies are common to both the automotive and utility industries and enable Ricardo to deploy automotive-derived knowledge and techniques with great benefits to the water sector.

Ricardo is investing heavily in cross-sector technology transfer and software product development in response to significant demand for advanced virtualisation tools. By drawing on its expertise across the market sectors in which the Technical Consulting business primarily operates, including automotive, rail, energy and environment, and defence, Ricardo is exploring novel approaches to deliver innovative solutions and greater value to its global customers.

Towards zero-emissions freight in California

Experts from Ricardo are helping regulators, technology developers and truck manufacturers in programmes to put zero- and near-zero-emissions trucks onto the highways of California.

The State of California has for many decades set its own goals to reduce air pollution and greenhouse gas ('GHG') emissions. This arrangement recognises the unique circumstances affecting Southern California in particular, where the region surrounding Los Angeles is home to around half of the state's population and represents the second most populated urban area within the United States.

This urbanisation, coupled with the enclosed topography of the air basin of Southern California and its warm climate and long hours of sunshine, makes the region highly susceptible to smog. For these reasons California often finds itself at the forefront of the nation's emission-reduction efforts and, in setting its goals for the future, it has prioritised the reduction of street-level ozone and the avoidance of potential carcinogens: its vision is to reduce GHG emissions to 80% of 1990 levels by 2050. These goals represent two very significant challenges for the heavy transportation sector. Firstly, it will need to develop zero- or near-zero-emissions technologies to meet short-term air quality targets and, secondly, it will also need to provide a pathway to deep well-to-wheels GHG emissions reductions in the longer term.

Evaluating heavy-duty zero-emission vehicle projects for CARB

Ricardo is working with the California Air Resources Board ('CARB') to quantify the emission-reduction benefits and performance of a wide range of advanced technology demonstration vehicles. These are vehicles that have been developed under recent CARB investment initiatives aimed at helping to pull forward zero-emissions vehicle technology in the commercial vehicle and bus transportation sectors.

In each case, Ricardo is comparing new technologies with those of current conventionally fuelled vehicles, assessing their economic viability and commercialisation readiness for wider adoption within the industry. The work involves the monitoring and analysis of over 140 advanced technology demonstrator vehicles. Some of these are based on battery-electric powertrains, while others will feature technologies such as hydrogen fuel cells, compressed or liquefied natural gas ('CNG' or 'LNG') range extenders, diesel plug-in hybrids, and co-operative intelligent transportation systems across truck, bus and off-road applications. In carrying out this work, Ricardo is using its proprietary Total Cost of Ownership ('TCO') model as well as its model for quantitative adoption rates, to assess the competitive positioning of the technologies and the key steps required for their large-scale commercialisation. The Ricardo TCO model comprises a detailed build-up of capital expenditures and operating costs incurred over the ownership period of the vehicle, and includes benchmarked vehicle prices, duty-cycle based miles per gallon, itemised scheduled and unscheduled maintenance costs, future fuel prices and required infrastructure investment.

A commercial zero-emission vehicle roadmap for Southern California

Alongside its work for CARB, Ricardo is also working with the South Coast Air Quality Management District and the National Renewable Energy Laboratory to develop a detailed technology- and economics-based adoption forecast for

Ricardo provided technical assistance to Toyota's Project Portal fuel cell truck project, including areas of design, vehicle build, testing and development, and is currently supporting vehicle trials

future low-emissions heavy transportation. The project is considering a wide range of technologies, including ultra-low-NOx CNG and diesel combustion engines, as well as zero tailpipe emissions technologies such as fuel cell and battery-electric.

Given the extremely wide range of heavy vehicle types and duty cycles found on Southern California's highways, it is recognised that there will not be a single zero- or near-zero-emissions technology solution that would be universally appropriate. For these reasons, the Commercial Zero Emission Vehicle ('ComZEV') roadmap project is focusing on identifying the barriers and opportunities so that it can match advanced technology options to key commercial medium- and heavy-duty vehicle applications. By assessing those applications that present the most attractive commercial case, it is intended to identify the most likely early adopters for a given scenario, with a view to modelling the resulting impacts upon fleet emissions over time.

Helping pave the way for fuel cell trucks

The California Fuel Cell Partnership ('CaFCP') is an industry-government collaboration that aims to accelerate market introduction of fuel cell electric vehicles to help create a cleaner, more energy-diverse future. Ricardo is collaborating with the CaFCP to provide economic modelling tools that will enable the assessment of the total cost of ownership of future fuel cell trucks, and the hydrogen stations necessary to support commercial operation.

Crucially for the work with the CaFCP, the Ricardo TCO toolset is supplemented with economic models of refuelling facilities that convey insights on capital and operational expenses incurred when installing and operating new infrastructure. The insights provided will therefore help the CaFCP in assessing the likely future requirements for a hydrogen refuelling infrastructure for heavy-duty fuel cell fleets.

Assisting Toyota in its fuel cell truck application

Toyota's 'Project Portal' has designed and demonstrated a heavy-duty hydrogen fuel cell system for Class 8 truck use at the Ports of Los Angeles and Long Beach. Ricardo provided technical assistance to the project across a wide range of engineering functions, including systems integration and packaging of the fuel cells, power electronics, hydrogen tanks, cooling systems, batteries, electric motors and transmissions.

The Project Portal platform is designed to provide the target performance required to support port drayage operations. The truck generates more than 670 hp and almost 1,800 Nm of torque from two Mirai fuel cell stacks and a 12 kWh battery – a relatively small battery to support Class 8 load operations. The concept's gross combined weight capacity is 36 tonnes, and its estimated driving range is more than 320 km per fill under normal drayage operation.

Informed strategic foresight

Ricardo's expertise in zero- and near-zero-emissions technologies such as battery-electric and hybrid powertrains, combined with its leadership in CNG, LNG and other low-emissions combustion systems, makes its objective strategic advice extremely valuable to those tackling the challenges faced by transportation in California. Now with a presence firmly established in the Golden State, Ricardo is fast becoming the technology and strategic management consultant of choice in helping California towards a zero-emissions future for freight transport.

Ricardo was appointed as the Independent Safety Assessor for the signalling technology of the new Beijing S1 maglev line

Safety, assurance and interoperability

Regulatory compliance is crucial for the many interrelated participants in the railway system. Everyone, from the manufacturers of rolling stock, signalling systems and station and trackside equipment, to service operators, network authorities and governments, needs to be on the same page – and here, Ricardo leads the world in supporting a global client base.

Ricardo was proud to have played its part in the preparations for the Pyeongchang 2018 Winter Olympics, helping to ensure the new Gangneung KTX high-speed line

Safety is universally a critical consideration on the world's railways, a fact that is reflected in the highly regulated nature of all aspects of the industry in almost all international jurisdictions. Beyond safety, the need for interoperability imposes an additional layer of necessary regulation. Operators must be able to provide cross-border services, and equipment and vehicle manufacturers need to be able to supply overseas markets safe in the knowledge that their products will operate as intended. Ensuring compliance with this complex multi-layered, multi-jurisdiction regulation is thus a major role and highly important for the Ricardo Rail and Ricardo Certification businesses around the world.

Olympic achievement

In South Korea, Ricardo was proud to have played its part in the preparations for the Pyeongchang 2018 Winter Olympics, helping to ensure the new Gangneung KTX high-speed line opened on schedule and ahead of the Games. The new route provides a coast-to-coast link across the north of the country, from Incheon airport on the west coast to the north-east port city of Gangneung, passing through both Seoul and the Games venues in Pyeongchang.

> *Ricardo was proud to have played its part in the preparations for the Pyeongchang 2018 Winter Olympics*

Construction of the line was a central component of South Korea's infrastructure commitments included in its bid to host the 2018 Games. The route introduces direct rail services from Seoul to Pyeongchang for the first time, its high-speed services taking around one hour and providing an alternative to road connections that can take up to three hours. The route was completed on schedule in December 2017.

Ricardo performed the independent safety assessments of the Automatic Train Protection ('ATP') system on the 60 km Pyeongchang-Gangneung section of the new build, ensuring the signalling technology was fully compliant with required technical standards. Through on-site audits and in-depth document reviews, Ricardo's Seoul-based team verified the quality management systems for the design, manufacture, installation, testing and commissioning of the ATP system, verifying that the requirements of international technical standards had been met.

Beijing Maglev

In parallel with the new line in South Korea, Ricardo was also appointed as the Independent Safety Assessor for the signalling technology of the new Beijing S1 maglev line, the first in the Chinese capital to operate with magnetic levitation and serving a 10 km route through the western districts of Shijingshan and Mentougou.

Ricardo Rail's Beijing team has been closely involved throughout the final stages of the project, making every effort to assure the new line's safety through a series of assessments and on-site audits. Under particular scrutiny have been the design, installation, testing and documentation of the system-critical safety components such as the automatic train supervision and protection, automatic train operation, and the computer interlocking subsystem.

The unique characteristics of maglev technology – for example, the special track and switch layout, as well as axle counter configurations – require specialist consideration. As such, the Ricardo team has hosted workshops with stakeholders to apply a risk-based approach, ensuring potential challenges were identified and resolved as the project moved towards completion.

Preliminary services commenced in late 2017, with services operating with an initial fleet of ten locally manufactured six-car maglev trains, each with the capacity for around 1,000 passengers and capable of operating at speeds of up to 80 km/h.

Great Western

While customers celebrated new lines, rolling stock and signalling projects completed with Ricardo's support in China, South Korea and many other nations, a major milestone was reached in the UK in late 2017 with the launch of the first passenger services by Great Western Rail using the bi-mode Class 800 Intercity Express Train built by Hitachi Rail Europe. This new fleet now operates between London, South Wales and Bristol, and will soon extend to services across the south west peninsula.

Ricardo was appointed by Hitachi Rail Europe to provide technical support throughout the development of the new trains, including safety case and risk assessment, and infrastructure compatibility. In addition, Ricardo also provided support with reliability, availability and maintainability assessment, electromagnetic compatibility consultancy, human factors and fire safety evaluation.

A comprehensive and growing service portfolio

Ricardo Rail is one of very few service partners that can offer the international rail industry both a comprehensive portfolio of technical competencies to support some of the most challenging aspects of rail system engineering, as well as independent assurance services provided by Ricardo Certification.

Synergies with other parts of the Ricardo organisation are also being explored, with a view to bringing new services to rail and enabling other sectors to benefit from rail expertise. As an example, Ricardo Rail and Ricardo Certification experts are collaborating with Ricardo Automotive on autonomous vehicle safety assurance. There are also potential opportunities with Ricardo Energy & Environment, where some markets are currently not regulated but may move towards an independent assessment model in the future.

In these circumstances, the existing accreditations that form the basis of certification work in rail will serve to demonstrate to prospective customers that Ricardo has the requisite expertise and competence to carry out a range of assessments that can be applied to these emerging and innovative areas.

Ricardo was appointed by Hitachi Rail Europe to provide technical support throughout the development of the bi-mode Class 800 Intercity Express for use by Great Western Rail, including safety case and risk assessment, and infrastructure compatibility


Chiron

An advanced transmission for the ultimate super sports car

Building on its longstanding relationship with Bugatti, Ricardo has assisted with the design and development and is now manufacturing the advanced transmission for the groundbreaking 1,500 horsepower Bugatti Chiron, the most remarkable super sports car ever to be marketed.


BUGATTI

No other production car is as powerful or as astonishingly fast as a Bugatti. The 16-cylinder, quad-turbo Veyron debuted in 2005 with the promise of bringing unrivalled performance to the public road – at the same time as delivering the sophistication to arrive in style and luxury at La Scala or The Ritz. Ricardo was proud to have been an important part of the Veyron programme, designing, developing and manufacturing the 400+ km/h machine's highly advanced dual-clutch gearbox and all-wheel drive transmission system.

Now, with the Veyron's successor in production at Bugatti's *Atelier* in Molsheim, France, the elite marque has reaffirmed its faith in Ricardo with a contract to supply a further evolution of the pioneering Veyron transmission. Yet this is no simple repeat order. For the new Chiron two-seater super sports car the stakes are raised still further: with outputs of 1,500 hp and torque of 1,600 Nm the new Bugatti is by a wide margin the most powerful and luxurious road car ever to be marketed. And for the transmission manufactured by Ricardo, these figures offer a major challenge in dealing with immense stresses and the sudden bursts of power generated – which can go beyond those found in the highest performing racing cars.

Named after Louis Chiron, the multiple Grand Prix winner for Bugatti in the 1920s and 30s and the marque's most successful driver, the ultra-exclusive Chiron builds upon the reputation of the Veyron and is expected to signal a high-water mark in extreme sports cars powered by pure combustion engines. The task facing Ricardo's world-class transmission experts was a double-edged one. Not only did the new Chiron transmission have to handle almost 30% more torque right through the W16 engine's rev range, but it had to sustain this remarkable performance all the way through to the car's top speed of 420 km/h.

For the transmission engineer the combination of massive torque and high rotational speeds is a daunting challenge, especially if the vehicle is to maintain the supreme refinement and composure required of an elite model priced at a seven-figure sum. The task was further compounded by the need for strict control of the transmission's weight and package size; this came in spite of the move to a larger dual-clutch module in order to cope with the much higher and even more unrelenting loads being channelled through the system.

Close co-operation on engineering

The engineering development phase, with Ricardo working very closely with Bugatti, resulted in a final design that was scarcely any heavier than the original transmission, and whose casing was just 10 mm longer. Though much of the additional weight was due to increased sizing on the highly stressed components, the net increase was kept to an absolute minimum thanks to the selection of advanced lightweight materials and the very latest techniques for machining and finishing of the gearbox's high-precision shafts, gears and other internal components. In particular, and again in close collaboration with Bugatti, Europe was combed for highly specialised subcontractors to handle some of the unique and complex operations involved in such a power-dense transmission.

The driveline on a super-high performance all-wheel drive sports car such as this Bugatti does of course consist of much more than just the gearbox, advanced though that already is. For the Chiron application, Bugatti updated the design of the rear axle to provide enhanced oil flow to keep temperatures down during intense driving; the front axle, by contrast, required minimal design changes as its torque throughput is deliberately restricted by the centre differential and protective clutch arrangement in the same way as its predecessor, the Veyron.

Technologies from aerospace and Formula 1

To combine these extremes of performance in a design that is both user friendly and reliable in everyday service, Ricardo turned to technical solutions from its extensive Formula 1 activities, as well as to techniques, advanced materials and innovative manufacturing processes more familiar to aerospace engineers. Many of the suppliers selected by Ricardo and Bugatti come from those exalted sectors too, yet with Bugatti being a member of the extensive Volkswagen Group network there was also access to leading mainstream suppliers where their components and processes were able to meet the very demanding specifications laid down by the supercar manufacturer.

The quick ramp-up of production at Ricardo's globally recognised advanced transmissions facility in the UK enabled a smooth commercial launch of the new car, and by February 2018 manufacturing output of the Chiron dual-clutch transmission ('DCT') had already exceeded previous records set by Ricardo during the 10 years of Veyron production. This was achieved through continued investment in Ricardo's world-class machining centre that provides many of the Chiron's transmission sub-components and by leading a number of continuous improvement initiatives through the Chiron's global supply chain.

Ricardo and Bugatti have been partners since 2000, and with the 500-unit production run of the Chiron transmission set to continue for a further five years, the co-operation between the two organisations will have spanned over two full decades – a convincing demonstration to their shared values of innovation, engineering integrity, and top-quality precision manufacturing.

Corporate governance

Board of Directors

Dave Shemmans *BEng*
Chief Executive Officer

Dave Shemmans joined Ricardo in 1999. He was appointed to the Board as Chief Executive Officer Designate in February 2005 and became the Chief Executive Officer on 4 November 2005. Prior to joining Ricardo, he was managing director of a subsidiary of Powergen plc. He has also gained consulting experience in both listed and private companies. He is a graduate of the Harvard Business School. Dave was appointed non-executive director of Sutton and East Surrey Water plc on 1 September 2014.

Mark Garrett *CEng, FIMechE, FREng*
Chief Operating Officer

Mark Garrett joined Ricardo in 1998 and was appointed Chief Operating Officer in 2010. Prior to joining Ricardo, Mark spent 14 years in various powertrain-related roles in the Rover Group, including at the BMW Engineering Centre in Munich. He is a Chartered Engineer and a Fellow of both the Institution of Mechanical Engineers and the Royal Academy of Engineering. Mark was also appointed as non-executive chairman of Secured By Design Limited on 25 November 2016.

Ian Gibson *BSc, ACA*
Chief Financial Officer

Ian Gibson was appointed Chief Financial Officer on 1 July 2013. A member of the Institute of Chartered Accountants in England and Wales, Ian is a finance professional with more than 30 years of commercial experience. He was previously chief financial officer of Cable & Wireless Worldwide plc, where he spent a total of 17 years in a number of senior financial management positions. Prior to this, Ian spent 12 years at Deloitte where he worked in both the London and Toronto offices.

Sir Terry Morgan *CBE, FREng*
Non-Executive Director and Chairman

Sir Terry Morgan was appointed Non-Executive Director on 2 January 2014 and Chairman on 29 October 2014. He is currently non-executive chairman of Crossrail Limited, High Speed Two (HS2) Limited and London City Airport. He was previously non-executive chairman of The Manufacturing Technology Centre Limited, and NSARE Limited (the National Skills Academy for Railway Engineering). Sir Terry was also previously a non-executive director of Boxwood Limited and the Department of Energy & Climate Change.

Patricia Ryan *LLB (Hons)*
Group General Counsel and Company Secretary

Patricia Ryan is a qualified solicitor. She joined Ricardo's legal department in 2002 and was appointed Group General Counsel in 2005 and Company Secretary in November 2008. Patricia holds an honours degree in law from the University of Westminster. Patricia achieved the Certificate of Investor Relations from the Investor Relations Society in February 2017.

Peter Gilchrist *CB*

Non-Executive Director, Senior Independent Director and Chairman of the Remuneration Committee

Peter Gilchrist was appointed Non-Executive Director on 1 December 2010, Chairman of the Remuneration Committee on 14 November 2013 and Senior Independent Director on 1 July 2015. Peter's military career in the British Army spanned almost four decades and he has previously been Master-General of the Ordnance and an executive director in the Defence Procurement Agency. Peter is currently non-executive chairman of Enterprise Control Systems Limited and is a non-executive director of Orcogen Limited.

Malin Persson *MSc*

Non-Executive Director

Malin Persson was appointed Non-Executive Director on 4 January 2016. Malin held a number of senior executive roles during her employment by the Volvo Group between 1995 and 2012. She is an elected member of the Royal Swedish Academy of Engineering Sciences and has an MSc in Industrial Engineering and Management from the Chalmers University of Technology in Gothenburg.

Bill Spencer *BSc, FCMA, MCT*

Non-Executive Director and Chairman of the Audit Committee

Bill was appointed Non-Executive Director on 24 April 2017 and Chairman of the Audit Committee at the close of the AGM on 8 November 2017. For 15 years until 2010, he was the CFO of Intertek Group plc and has since held audit committee chair roles at UK Mail plc and Exova Group plc. Currently Bill is the senior independent director and audit and risk committee chairman of Northgate plc. He is a Chartered Management Accountant and Corporate Treasurer and has a BSc in Management Sciences from the University of Manchester.

Laurie Bowen *BSc, MBA*

Non-Executive Director

Laurie Bowen was appointed Non-Executive Director on 1 July 2015. Laurie has over 30 years of international leadership experience at IBM, British Telecom, Tata Group and Cable & Wireless Communications. She now serves as CEO for the Americas division of Telecom Italia Sparkle and is based in Miami, Florida. Laurie has an MBA, a BSc in Electrical Engineering and a BSc in Computer Science from Washington University in St. Louis, Missouri.

Ian Lee *BA, CA, CPA*

Former Non-Executive Director and Chairman of the Audit Committee

Ian Lee was appointed Non-Executive Director and Chairman of the Audit Committee in 2008. He was a former audit partner of Ernst & Young and a member of their UK Governing Council. Ian was also a non-executive director and chairman of the audit committee of Clyde Process Solutions plc. Ian Lee stepped down from the Board at the close of the AGM on 8 November 2017.

Corporate governance statement

Sir Terry Morgan CBE – Chairman

CHAIRMAN'S OVERVIEW

I am pleased to introduce the Corporate Governance Statement for the year ended 30 June 2018. Governance is an important contributor to the success of Ricardo and the Board is committed to ensuring that appropriate standards of governance are maintained throughout the Group.

This report sets out the ways in which we comply with good corporate governance principles. It describes how the Board and its committees work, and also our approach to risk management and internal control.

The Board recognises the importance of considering the Company's responsibilities and duties to both its shareholders and broader stakeholder group, and this has been at the heart of our culture and decision-making process for many years. The Directors' duties under section 172 of the Companies Act 2006, to promote the success of the Company, help to underpin the good governance which is at the centre of what we do, and the Board receives regular briefings and updates on corporate governance at its Board and Committee meetings.

The Board has been briefed on the recently published 2018 UK Corporate Governance Code which is due to take effect for Ricardo from 1 July 2019. We will further review this and decide what changes need to be made to our governance processes.

Sir Terry Morgan CBE

UK CORPORATE GOVERNANCE CODE

The Board confirms that the Company has complied with the provisions of the UK Corporate Governance Code 2016 ('the Code') throughout the year ended 30 June 2018.

This report describes how the Company has applied the principles and standards set out in the Code during the year and sets out our activities relating to the main sections of the Code:

A. Leadership;
B. Effectiveness;
C. Accountability;
D. Remuneration; and
E. Relations with shareholders.

The Code and associated guidance are publicly available on the Corporate Governance and Stewardship page of the Financial Reporting Council's website, www.frc.org.uk/directors/corporate-governance-and-stewardship.

SECTION A: LEADERSHIP
A1: The Role of Ricardo's Board

Our role is to provide entrepreneurial leadership and we recognise that we are collectively responsible for the long-term success of the Group.

We set strategy and oversee its implementation by the executive team. We assess business opportunities and seek to ensure that appropriate controls are in place to assess and manage risk. We are responsible for reviewing the executive team's performance and we oversee senior-level succession planning within the Group.

We agree the Company's values and standards and ensure that the Company's obligations to its shareholders are met.

We have a formal schedule of matters reserved for our approval which are not delegated to the executive team.

These include:
- Strategy;
- Acquisitions and disposals (above a certain size);
- Annual budgets;
- Capital expenditure (above a certain amount);
- Financial results;
- Overseeing systems of internal control, governance and risk management;
- Dividends; and
- Appointment and removal of Directors and the Company Secretary.

Our Board has Nomination, Audit and Remuneration Committees and we delegate certain responsibilities to them. These committees comprise our independent Non-Executive Directors (save for the Nomination Committee, which includes the Chief Executive Officer) and all play a key role in supporting the Board. The full schedule of matters reserved for the Board, together with the written terms of reference for each committee which are reviewed annually, are available on our website, www.ricardo.com or on request from the Company Secretary.

The Board in financial year 2017/18

There are seven scheduled Board meetings per year, and otherwise as required. Details of attendance at scheduled Board and Committee meetings are shown in the table below.

If any Director is unable to attend a meeting, they discuss their views and comments with the relevant Chairman in advance, so that their position can be represented at the meeting. In Sir Terry Morgan's absence at the June 2018 Board meeting, Peter Gilchrist, as Senior Independent Director, chaired that meeting.

Board meetings focus on driving Ricardo's strategy, developing strong leadership, succession planning, reviewing financial business performance, monitoring risks and protecting the strength of our relationships with clients, employees and other stakeholders. Our agendas allow time for debate and long-term strategic discussion. Our forward planner gives Board members visibility of what is on future agendas for their consideration.

A number of the key matters considered by the Board during the year under review are set out in the table below:

Meeting in FY 2017/18	Significant matters under review
July 2017	• FY 2017/18 budget approval; • Risk management and internal control; and • Matters reserved for the Board and Committees' terms of reference
September 2017	• Preliminary results and Annual Report; • Final dividend; and • Annual General Meeting ('AGM')
November 2017	• Strategy review; and • Review of Board objectives
January 2018	• Annual review of insurance, health, safety and environment
February 2018	• Interim results and Interim Report; • Interim dividend; • Key performance indicators; and • Human resources
April 2018	• Treasury review
June 2018	• FY 2018/19 divisional budget presentations

In each meeting the Board receives reports from the Chief Executive Officer and the Chief Financial Officer together with reports and updates on health and safety as well as potential acquisition and disposal activities.

Board and Committee meeting attendance

	Board meetings	Committee meetings		
		Audit	Remuneration	Nomination
Number of scheduled meetings in the year	7	3	4	1
Number attended by each member:				
Dave Shemmans	7	-	-	1
Ian Gibson	7	-	-	-
Mark Garrett	6	-	-	-
Sir Terry Morgan CBE	6	-	4	1
Peter Gilchrist CB	7	3	4	1
Laurie Bowen	6	3	4	1
Malin Persson	7	3	4	1
Bill Spencer	6	3	4	1
Ian Lee*	3	2	2	-

(*) Ian Lee resigned on 8 November 2017.

Board objectives

The Company is confident that the Board and the wider leadership team have the experience and track record to meet the Company's aims of delivering long-term growth and successfully managing the challenges of an expanding international group. The Board sets its specific future objectives at the end of each financial year and these reflect the particular focus of the Company in the year ahead. Progress against each objective is tracked by the Company Secretary and reviewed with the Chairman and the Board at the mid-year point.

Induction

There is a written framework for the full, formal and tailored induction of new directors, which includes site visits, meetings with senior management and advisors, and the provision of corporate documentation to facilitate their understanding of our business, its operations, key markets and risks.

A2: Division of responsibilities

There is a clear division of responsibilities between the Chairman and the Chief Executive Officer, which is documented, clearly understood and approved by the Board.

Sir Terry is primarily responsible for leading the Board and ensuring its effectiveness. Dave Shemmans has direct responsibility for the Group on a day-to-day basis and is accountable to the Board for the financial and operational performance of the Group.

Dave Shemmans chairs the Executive Committee, which meets formally at least three times a year. The Executive Committee is primarily responsible for developing and implementing our corporate strategy and policies.

The responsibilities of the Senior Independent Director are also documented and include the provision of an additional channel of communication between our Chairman and the Non-Executive Directors. The Senior Independent Director also provides an additional point of contact for our shareholders should they have concerns that communication through normal channels has failed to resolve or where these contacts are inappropriate.

A3: The Chairman

Sir Terry sets the Board agenda in consultation with the Chief Executive, other Board members and the Company Secretary. On appointment as Chairman in October 2014, the Board considered Sir Terry to be independent in accordance with the Code provisions.

A4: Non-Executive Directors

Peter Gilchrist has been the Senior Independent Director throughout the year under review. Bill Spencer became Chairman of the Audit Committee on 8 November 2017. All current Non-Executive Directors held office throughout the year under review.

On a number of occasions during the year, the Chairman met the other Non-Executive Directors without the attendance of the Executive Directors. There were several other occasions during the year when discussions between various Directors took place on an informal basis. In addition to formal Board meetings, the Chairman maintains regular contact with the other Directors to discuss specific issues.

SECTION B: EFFECTIVENESS

B1: Board composition and independence

As at 30 June 2018, our Board comprised five Non-Executive Directors and three Executive Directors as follows:

Dave Shemmans	Chief Executive Officer
Ian Gibson	Chief Financial Officer
Mark Garrett	Chief Operating Officer
Sir Terry Morgan CBE	Non-Executive Chairman (independent at time of appointment)
Peter Gilchrist CB	Independent Non-Executive Director, Senior Independent Director and Chairman of the Remuneration Committee
Laurie Bowen	Independent Non-Executive Director
Malin Persson	Independent Non-Executive Director
Bill Spencer	Independent Non-Executive Director and Chairman of the Audit Committee

Biographies of Directors, giving brief details of their experience and other commitments are set out on pages 68 and 69. The wide-ranging experience and backgrounds of the Non-Executive Directors enable them to debate and constructively challenge management in relation to the strategy and performance of the Group.

The Board has concluded that Sir Terry Morgan, Peter Gilchrist, Laurie Bowen, Malin Persson and Bill Spencer are independent in character and judgement. Sir Terry Morgan is also the non-executive chairman of Crossrail Limited and High Speed Two (HS2) Limited. Crossrail Limited is a current customer of the Group and therefore a related party, as disclosed in Note 37 to the financial statements. High Speed Two (HS2) Limited is a potential customer of the Group in the future. As part of the Board's conclusion on the independence of its members, these relationships have been considered and determined to be immaterial to this assessment.

The Company has procedures in place to ensure that the Board's power to authorise conflicts of interest are operated effectively and that such procedures have been followed during the year under review.

B2: Appointments to the Board

At the close of the AGM on 8 November 2017, Ian Lee resigned from the Board and following Bill Spencer's election as a Non-Executive Director, he was appointed Chairman of the Audit Committee.

Our Board has continued to discuss matters relating to succession planning and talent management for leadership succession.

There is a rigorous and transparent procedure for appointments that is described in the Nomination Committee report on page 76.

Non-Executive Directors are appointed for specified terms of three years, which can be extended by agreement provided that the individual's performance continues to be effective.

Diversity

Our Board and Committee is committed to promoting equality of opportunity for all employees and job applicants, free from all forms of discrimination. Ricardo is an inclusive employer and values diversity of skills, knowledge, background, industry, international experience and gender in its employees and aims to recruit the best person for the role in all its positions across the Group.

Our Committee appreciates that a diverse range of backgrounds is an important part of succession planning at all levels in the Group. Our Committee continually monitors tenure profile and is very conscious of the need to continue to promote diversity at Board level and throughout the Group. Upon engagement of external search consultants, our Board requires that full account of all aspects of diversity are considered in preparing candidate lists.

Details of female representation elsewhere within the Group is set out on page 33.

B3: Commitment

The Chairman and the Non-Executive Directors have provided assurances to the Board that they remain fully committed to their respective roles and can dedicate the necessary amount of time to attend to the Company's affairs.

During the year, Malin Persson reduced her non-executive roles and now holds six other appointments.

Both Malin and the Board are aware of the concerns expressed by some shareholders and proxy voting companies about the number of non-executive positions held by her.

Under the Code there is no limit to the number of external non-executive director positions a director may hold.

We would like to reiterate that, before appointment, Malin assured the Board that she could devote sufficient time to her role as Non-Executive Director. Since appointment, Malin has attended every Board and Committee meeting. Malin is always well briefed and actively engages in all Board and Committee meetings, providing constructive challenge, insight and guidance.

Outside of the Board and Committee schedule, Malin always makes herself available to the Company when called upon to do so and continually seeks to increase her understanding of Ricardo by meeting senior executives and visits to different sites.

Malin has demonstrated, and continues to demonstrate, her commitment and availability to the Company. The Board will keep this matter under review.

The Board is satisfied that each of the Non-Executive Directors is able to devote sufficient time to the Company, and its affairs, to effectively discharge their duties.

Letters of appointment for the Non-Executive Directors are available for inspection by shareholders at each AGM and during normal business hours at the Company's registered office.

Executive Directors must obtain the prior consent of the Board before accepting a non-executive directorship in any other company. Executive Directors may retain the fees from any such directorship. Two Executive Directors, Dave Shemmans and Mark Garrett, held non-executive directorships during the year under review.

B4: Professional development

The Board and its Committees are kept informed of corporate governance and relevant regulatory developments as they arise through the Company Secretary.

In addition, we keep ourselves informed about the Group's activities through a structured programme of presentations from each of the businesses within the Group and from a number of Group functional leaders. During the year under review we received presentations from the Group HR Director and the Group Risk Manager & Head of Internal Audit, together with specific presentations on key projects for the business.

There are regular presentations to the Board from employees of the Group who have been identified by their peers and managers as potential high achievers.

Directors are updated continually on the Group's business with information on monthly financial performance and by means of additional presentations on matters including insurance, treasury, health and safety, and environmental risk management.

The Audit Committee is routinely briefed on accounting and technical matters by senior management and by the external auditors.

The Remuneration Committee receives updates on remuneration trends and market practices as part of its regularly scheduled business, and during the year under review FIT Remuneration Consultants LLP provided updates on the proposals and reporting requirements for executive remuneration.

Training for Directors is available as required and is provided mainly by way of external courses. A register of the training that individual Directors have undertaken is maintained by the Company Secretary and is reviewed by the Chairman individually with each Director as part of the Board evaluation process.

The Board considers that it is the primary responsibility of each Director to identify the individual training and development needs that he or she requires.

B5: Information and support

The Chairman is responsible for ensuring the Directors receive accurate, timely and clear information, with Board and Committee papers being circulated sufficiently in advance of meetings.

All Directors have access to the advice and services of the Company Secretary and each Director has been informed that, in the furtherance of his or her duties, they are entitled to seek independent professional advice at the expense of the Company. The Company arranges appropriate insurance cover in respect of legal actions against its Directors. In addition, the Company has entered into indemnities with its Directors as described on page 104.

B6: Board evaluation

The Board undertakes a formal review of its performance and that of its Committees each year. The externally facilitated review conducted in the 2016/17 financial year concluded that the Board was strong and effective, with each Director actively contributing to the effectiveness of the Board and the Committees of which he or she was a member during that year.

Following the external review, the Board set itself improvement actions and objectives. In 2017, the Board reviewed the evaluation findings, agreed improvement actions and noted progress had been made in all areas. The Board also recognised that succession planning is an area that continues to require focus.

Additionally, Ricardo's external auditors and remuneration consultants provide an evaluation of the performance of our Audit and Remuneration Committees, respectively.

It is proposed that a further externally facilitated review will be conducted in 2019.

B7: Re-election

In accordance with the Company's Articles of Association and the Code, all Directors will retire at the AGM in November 2018 and, being eligible, will offer themselves for re-election. The Board recommends that each of the Directors should be re-elected by the shareholders because each continues to be effective and demonstrates commitment to the role that each of them performs.

SECTION C: ACCOUNTABILITY

This Report provides shareholders with a clear assessment of the Group's position and prospects, supplemented, as required, by other periodic financial and trading statements.

C1: Financial and business reporting

The Statement of Directors' Responsibilities for preparing the Annual Report, the Directors' Remuneration Report and the financial statements in accordance with applicable law and regulations is set out on page 107.

The Group's business model is set out within the Strategic Report on pages 20 and 24.

The Directors statement relating to going concern and the Viability Statement are set out on pages 120 and 43, respectively.

C2: Risk management and internal control

Each year, the Board undertakes a comprehensive review of the principal risks and uncertainties facing the Group and how those risks may impact the Group's prospects.

Overall responsibility for systems of internal control rests with the Board. The Board's arrangements for the application of risk management and internal control principles are detailed on pages 40 to 42.

C3: Audit committee and auditors

The Board has delegated oversight of the relationship with the Group's and the Company's external auditors to the Audit Committee. Their work is outlined in the Audit Committee report on pages 77 to 81.

SECTION D: REMUNERATION

Please refer to the Directors' Remuneration Report on pages 82 to 103 for further information, and in particular:

D1: Level and components of remuneration

Please refer to pages 84 to 95.

D2: Procedure

Please refer to pages 96 to 103.

The Non-Executive Directors have never been employees of the Company, nor have they participated in any of the Company's share schemes, pension schemes or bonus arrangements.

The Non-Executive Directors receive no remuneration from the Company other than the Directors' fees disclosed, and travel expenses. Their fees are determined by the Board as a whole on the recommendation of the Chief Executive Officer.

No Director is involved in deciding their own fees.

SECTION E: RELATIONS WITH SHAREHOLDERS

E1: Shareholder dialogue

The Chief Executive Officer and the Chief Financial Officer regularly meet with institutional shareholders to foster a mutual understanding of objectives, answer their questions and to keep them updated on our performance and plans.

These meetings range from one-to-one discussions to group presentations and investor conference calls following our results announcements. Any presentations provided in these meetings are uploaded to our website and comments are fed back to us.

In 2017, the Chairman of the Remuneration Committee engaged with shareholders, accounting for over half of the issued share capital, to consult on the Directors' remuneration policy, resulting in a 93.98% vote in favour of the policy at the 2017 AGM.

The Chairman is always available to meet with key shareholders and met the Company's largest shareholder in July 2018 to discuss various corporate governance matters. No significant issues were raised or actions required.

In addition, the Senior Independent Director and the Chairman of the Audit Committee are available for discussions with major shareholders, if required.

The Chairman also looks to shareholder groups' annual voting guidelines to better understand their policies on governance and voting.

For an independent view, Investec and Liberum, the capital markets advisory firms, provide us with regular reviews of major investors' views on company management and performance. Surveys of shareholder opinion are normally carried out following announcements of results and are circulated to the Board.

As required by the Code, the Board considers that its Non-Executive Directors, including the Senior Independent Director, have a good level of understanding of the issues and concerns of major shareholders.

E2: Ricardo's Annual General Meeting

The Company's Annual General Meeting is an opportunity to meet private investors. It is intended that all Directors of the Company will be available to answer questions at the 2018 AGM.

The Notice of Meeting sets out the resolutions being proposed at the AGM on 15 November 2018 at 10:00am. Shareholders can vote separately on each proposal.

Last year, apart from the resolution re-electing Malin Persson, which received 76.39% of the vote, all resolutions were passed with votes ranging from 94.04% to 99.99%. Shareholders unable to attend the AGM are encouraged to vote in advance of the meeting.

The AGM in November 2017 was attended by all Directors in office at the time of the meeting. The Directors encourage the participation of all shareholders, including private investors, at the AGM and as a matter of policy the level of proxy votes (for, against and vote withheld) lodged on each resolution is declared at the meeting and displayed on the Company's website.

Ricardo's website, www.ricardo.com, contains a wealth of information, including:

- Latest Ricardo news, stock exchange announcements and press releases; and
- Annual report and investor presentations.

The Corporate Governance Statement was approved by the Board of Directors on 12 September 2018 and signed on its behalf by:

Terry Morgan

Sir Terry Morgan CBE
Chairman

Nomination committee report

Sir Terry Morgan CBE – Chairman of the Nomination Committee

CHAIRMAN'S OVERVIEW

The primary objectives of the Committee are to support the Board in fulfilling its responsibilities to ensure that firstly, there are formal, rigorous and transparent processes in place for the appointment of new Directors, both to the Board and to senior management positions, and secondly, that there are effective, deliverable and well thought-through succession and contingency planning processes in place across the Group for all key positions.

In the forthcoming year we will continue to focus on talent management and succession planning for management below Board level.

Sir Terry Morgan CBE

COMPOSITION

The Nomination Committee, which is chaired by Sir Terry Morgan, comprises the independent Non-Executive Directors, Peter Gilchrist, Ian Lee (until his retirement on 8 November 2017), Laurie Bowen, Malin Persson and Bill Spencer (since his appointment on 24 April 2017), together with the Chief Executive Officer, Dave Shemmans. The Committee has one scheduled meeting per year, which is supplemented by ad hoc meetings as necessary and informal meetings between the Committee members.

RESPONSIBILITIES

The Committee:

- evaluates the balance of skills, knowledge and experience of the Board;
- monitors the leadership needs and succession planning of the Company;
- considers the training needs of the executive and non-executive members;
- regularly reviews the structure, size and composition of the Board; and
- makes recommendations to the Board for executive and non-executive appointments.

Before such recommendations are made, descriptions of the roles and skills required in fulfilling these roles are prepared for particular appointments. To attract suitable candidates, appropriate external advice is taken and interviews conducted by at least two members of the Nomination Committee to ensure a balanced view.

When an appointment of a non-executive director is made, a formal letter is sent clearly setting out what is expected regarding time commitment, committee membership and involvement outside of Board meetings. The chosen candidate is required to disclose to the Board any other significant commitments before the appointment can be ratified.

No additional appointments to the Board were made during the year under review.

The Chairman of the Committee is the Chairman of the Board, Sir Terry Morgan, except when a new Chairman of the Board is being sought, in which case it is the Senior Independent Director.

Non-Executive Directors, including the Chairman, are subject to rigorous review when they continue to serve on the Board for any term beyond six years.

SUCCESSION PLANNING

Board member	Date of appointment	Tenure (years)
Dave Shemmans	April 2005	13
Ian Gibson	July 2013	5
Mark Garrett	July 2008	10
Sir Terry Morgan CBE	January 2014	4
Peter Gilchrist CB	December 2010	7
Laurie Bowen	July 2015	3
Malin Persson	January 2016	2
Bill Spencer	April 2017	1
Ian Lee*	August 2008	10

(*) Ian Lee retired from the Board on 8 November 2017.

Following our review of Laurie Bowen's performance during her three-year tenure and determining her continued independence as a Non-Executive Director, the Committee unanimously recommended to the Board the renewal of her appointment. The Board approved this renewal at the appropriate time.

The Committee has spent time looking at succession planning for the Executive Directors as well as for the Board over the medium term. We have also discussed talent management and succession planning for the top-performing senior managers within the business.

Sir Terry Morgan CBE
Chairman of the Nomination Committee

Audit committee report

Bill Spencer – Chairman of the Audit Committee

CHAIRMAN'S OVERVIEW

I took over as Chairman of the Audit Committee on Ian Lee's retirement at the AGM in November 2017. It was a smooth transition and on behalf of the Audit Committee, I would like to thank Ian for all his support and guidance during this process.

As in previous years, the Audit Committee has taken an active role in discussing and evaluating risk, as delegated by the Board, to ensure that appropriate challenge and guidance is provided to management.

This year the Committee also led a rigorous external audit tender process and the Board will recommend the appointment of KPMG as the external auditors for the year ending June 2019 at the 2018 AGM. Details of the audit tender process are provided on page 80.

I hope that you will find this report useful and I would welcome any comments.

Bill Spencer

COMPOSITION

The Audit Committee, which is chaired by myself, Bill Spencer, comprises the independent Non-Executive Directors; Peter Gilchrist, Laurie Bowen and Malin Persson. Until his retirement as a Non-Executive Director and Chairman of the Audit Committee at the close of the AGM on 8 November 2017, Ian Lee attended the July and September 2017 Committee meetings in anticipation of his planned succession. The competence and experience of the members of the Audit Committee is set out on pages 68 and 69 and is considered to be relevant to the sectors in which Ricardo operates.

As the Committee's Chairman, I have recent and relevant financial experience and a professional accountancy qualification, which is considered desirable by the Financial Reporting Council's Guidance on Audit Committees, issued in April 2016. The Chairman, Executive Directors and the Company's external auditors have standing invitations to attend all Committee meetings. In addition, the Committee meets our external auditors and the Head of Internal Audit without management being present at least once a year. The Committee has three scheduled meetings per year and ad hoc meetings as required. As set out on page 74, the performance of the Audit Committee has been evaluated and is considered to be effective.

RESPONSIBILITIES

The Committee is established by, and is responsible to, the Board. Its main responsibilities are to:

- Monitor and be satisfied with the truth and fairness of both the Group's consolidated and the Company's standalone financial statements before submission to the Board for approval;
- Review the Group's risk profile and the effectiveness of the Group's risk management processes, internal controls and systems;
- Review the effectiveness of the internal audit function and to ensure that it is appropriately resourced;
- Make recommendations to the Board in relation to the appointment and re-appointment of the external auditors and their remuneration, before appointment or re-appointment by the shareholders in general meeting;
- Review the scope and planning of the external audit and be satisfied with the auditors' independence, objectivity and effectiveness on an ongoing basis;
- Review the content of the Annual Report & Accounts and advise the Board on whether, when taken as a whole, it is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy;
- Oversee the annual process that executive management uses to enable the Board to re-confirm the continued operational and financial viability of the Group;
- Establish and oversee the Group's arrangements for employee disclosure and fraud and bribery prevention arrangements within the Group; and
- Determine the policy relating to any non-audit services performed by the external auditors.

The Audit Committee is authorised by the Board to seek and obtain any information it requires from any officer or employee of the Company and to obtain external legal or other independent professional advice as is deemed necessary by it.

The topics covered by the Committee during the financial year included:

- Reviewed significant financial reporting matters, judgements and estimates, and changes in accounting policies applicable in the preparation of the consolidated interim and year-end financial statements;
- Considered reports prepared by the Chief Financial Officer and external auditors, on the results of the interim review procedures and annual audit, including internal control matters;
- Evaluated processes in place to assure the integrity of the Annual Report & Accounts, and that the information

presented, when taken as a whole, is fair, balanced and understandable and contains the information necessary for shareholders to assess the Group's position and performance, business model and strategy.

- Considered significant matters raised by the internal audit function arising from internal audits performed during the year, including the scope of the internal audit plan for the following year;
- Evaluated the Group's risk profile, risk appetite and the effectiveness of internal control systems, together with risk management, ethics and whistleblowing processes, on which no significant failings or weaknesses were identified;
- Assessed the results of the application of agreed assumptions to assess and re-confirm the continued operational and financial viability of the Group for a period of three years from the date of this report;
- Evaluated the external auditors' independence and effectiveness, including compliance with the Group's policy in respect of the provision of non-audit services;
- Led an external audit tender process and recommended the successful firm's appointment to the Board; and
- Reviewed the terms of reference of the Committee.

Significant financial reporting matters considered by the Audit Committee

The Committee receives and considers reports from the Chief Financial Officer and senior management in relation to the critical accounting judgements and the key sources of estimation uncertainty, as well as the proposed disclosure of these as set out in Note 1(c) to the financial statements on page 120 and 121, together with the outcome of the interim review and annual external audit in respect of these matters.

The Committee supports PricewaterhouseCoopers LLP ('PwC') in displaying the necessary professional scepticism their role requires. Following discussions with management and the external auditor, the Committee approved the proposed disclosure of critical accounting judgements and key sources of estimation uncertainty.

The Committee considered the following significant financial reporting matters, judgements and estimates in approving the financial statements for the year ended 30 June 2018:

Revenue recognition on fixed price contracts

The Group derives a significant proportion of its revenue within the Technical Consulting business from fixed price contracts that may extend for a substantial period of time and span a number of reporting periods. All contracts are based on detailed proposals issued to customers which are approved in accordance with the Group's authority limits and may require Board approval where contract values dictate. Revenue and margin performance are measured based on costs incurred to date as a percentage of total expected costs. Management judgement and experience is required to determine the completeness of those forecasts, the recoverability of the costs incurred and the extent to which revenue is recognised on contracts in progress. Unforeseen future events may adversely impact the accuracy of those forecasts and judgements on recoverability.

Project risk is assessed and determined at the proposal stage of a contract and is refreshed throughout the life of a contract on a regular basis. The risk rating of a contract is initially categorised into five levels based upon its value, with one being the lowest and five being the highest. The risk category of a contract in progress is then determined from the application of quantitative and qualitative criteria. As a contract progresses the project is allocated a 'red', 'amber' or 'green' rating to categorise its performance against a number of factors, including cost, cash and working capital, schedule, customer satisfaction, technical quality, and resource capability and availability.

High-risk and high-value ('Category 4 and 5') contracts which experience significant challenges are categorised internally as 'red' contracts; these are monitored and controlled by senior management and reported as appropriate to the Board as part of the monthly performance review. Net Group project over and underspends are also monitored and reported to the Board on a monthly basis.

As at 30 June 2018, 11 Technical Consulting contracts with a net exposure of £2.9m for recoveries against additional costs incurred were categorised as 'Red Category 4 and 5', out of a portfolio in excess of 3,000 contracts and with a value in excess of £750m.

A summary of the specific facts and circumstances of each 'Red Category 4 and 5' contract is presented bi-annually by senior management to the Committee at the February and September meetings each year. The significant judgements taken by senior management to assess the extent to which receivable balances on such contracts are recoverable from customers is considered and challenged by the Committee. Following these meetings, the Committee satisfied itself with these judgements taken by management with regards to the Red Category 4 and 5 contracts. In addition, these contracts were subjected to a more focused level of audit work during the external audit process.

Recoverability of capitalised development costs

Certain directly attributable costs incurred in the development of an intangible asset are capitalised. These costs are recognised as an asset once the Group has determined that it has the intention and the necessary resources to complete the relevant project, that it is probable the resulting asset will generate economic benefits for the Group and that the attributable expenditure can be measured reliably. Determining whether it is probable that the resulting asset will generate economic benefit requires management judgement.

During the year ended 30 June 2018, £5.1m of development costs were capitalised and amortisation of £2.9m was charged. The net book value of development assets as at 30 June 2018 after reclassification adjustments and foreign exchange of £0.2m was £10.4m.

The Committee received reports from senior management detailing their analysis and the assumptions used when assessing whether the costs incurred during the year met the requirements for capitalisation under IFRS. The reports also assessed whether future economic benefits support the recoverability of all development assets. The Committee reviewed, challenged and evaluated the significant judgements taken and was satisfied that both the level of capitalisation during the year and the year-end carrying value of development assets were appropriate. In addition, this matter was a key focus for the external audit.

Taxation

The Group holds a £5.5m ($7.2m) deferred tax asset, primarily in relation to R&D tax credits in the US. A key management judgement is the extent to which deferred tax should be recognised in respect of these R&D tax credits and recovered against future profits generated by our tax group in the US.

Management's judgement also included the derecognition of a net deferred tax asset of £2.2m (€2.5m), of which £2.4m (€2.7m) related to the deferred tax asset on historic losses in Germany. The asset was derecognised due to the significant restructuring activities undertaken in Germany as part of the reorganisation of the Automotive business. It is considered unlikely that the remaining operation can generate sufficient profits in the foreseeable future against which the asset can be utilised.

In addition, the Group operates in an increasing number of territories around the world where legislation related to taxation is complex and open to interpretation, and its impact on the Group is inherently uncertain. In preparing the Group's financial statements management made judgements on the existence of risks in respect of permanent establishment and transfer pricing, and where appropriate, provisions are established and maintained on the basis of amounts expected to be paid to the relevant tax authorities.

The Committee received reports and detailed analysis from senior management which included the assumptions used and judgements made when assessing the recoverability of the deferred tax asset in the US. The Committee critically evaluated and challenged the appropriateness of management's business plans and expectations which underpin future taxable profits in the US. The Committee was satisfied that the carrying value of the deferred tax asset in the US was appropriate. The Committee also considered and was satisfied with the judgements made by management in respect of the derecognition of the deferred tax asset in Germany, and the provision for uncertain tax positions across the Group. In addition, these matters were a key focus of the external audit.

Impact of new accounting standards

During the year the Group has completed its impact assessment of IFRS 9 '*Financial instruments*' and IFRS 15 '*Revenue from contracts with customers*', both of which became effective to the Group from 1 July 2018. The expected transitional impact of IFRS 9 and IFRS 15 is a reduction to retained earnings of £1.8m and £5.5m, respectively. Further detail is given in Note 1(x) to the financial statements on pages 126 and 127.

Internal audit

As set out in the Strategic Report on page 40, internal audit is considered by the Committee to be a key function for effective risk management. Internal audit and risk comprises both the Group risk and internal audit function. Whilst the Group risk function facilitates and manages the risk process that is ultimately owned by the Board, internal audit is accountable to the Audit Committee.

Internal audit is centrally managed and is led and resourced by suitably skilled and experienced staff from head office or parts of the Group independent from the business or function being audited.

Where relevant, external specialists are used to supplement internal resources when specialist knowledge is required. This approach not only ensures independence in the process but also the relevance of the recommendations and the sharing of best practice around the Group.

The following examples illustrate how internal audit work supports Group risk management whilst driving improvements to our control environment and adding value in core business areas:

- Project reviews look at a range of risk and process control areas across different divisions: these reviews identify best-practice techniques and ensure that findings identified and lessons learned have been applied and shared across the Group;
- Selected in-depth process reviews to evaluate control risks and efficiency, leading to re-evaluation of risks during the risk review processes; and
- Testing of controls and process awareness in our fraud and bribery risk assessment.

Management actions from all of our internal audits are tracked to completion and the status of these actions is reported to the Audit Committee to ensure that the risks identified are appropriately addressed.

As part of the annual process the Committee's review of the effectiveness of the internal audit function includes:

- The internal audit process, the audit plan and resources;
- The internal audit reports and management's response to the findings and recommendations; and
- Meetings with the Head of Internal Audit without management being present; additionally, the Head of Internal Audit is invited to attend audit committees where considered appropriate.

The Audit Committee considers that the internal audit process is an effective tool in the overall context of the Group's risk management system.

Whistleblowing, ethics and fraud prevention

Internal audit scope includes a review of compliance with Group policies and procedures, including those established for whistleblowing, ethics, bribery and fraud prevention policies.

The whistleblowing policy is designed to deal with concerns, which must be raised without malice, in relation to specific malpractice issues that fall outside the scope of other company policies and procedures. The whistleblowing policy is promoted through the staff briefing process and the Company's intranet site. The whistleblowing policy is overseen by the Chairman of the Audit Committee and has been reviewed during the year.

External audit

The external auditors are required to give the Committee information about policies and processes for maintaining their independence and compliance with requirements regarding the rotation of audit partners and staff.

Both the Board and the external auditors have for many years had safeguards in place to avoid the possibility that the auditors' objectivity and independence could be compromised.

The Audit Committee confirms that during the year it has maintained formal and transparent arrangements for considering corporate reporting, risk management and internal control and for maintaining an appropriate relationship with the external auditors.

The year ended 30 June 2018 coincided with the conclusion of the five-year rotation cycle of the incumbent audit partner, Andrew Paynter. EU Regulation and the Competition & Markets Authority's Order would limit PwC's future tenure to no more than two years. As set out in last year's Audit Committee report, the external audit services contract was put out to tender during the year.

PwC were appointed as our external auditors in 1990 and no formal tender for audit services had ever been undertaken since their appointment. Given the length of PwC's tenure as the Group's external auditors, PwC was not invited to take part in the audit tender process. I would like to take this opportunity to thank PwC, Andrew Paynter, and his team, for all their many years of dedicated service as external auditors to the Group, providing valued challenge and a robust approach to the audit.

Subsequent to a detailed audit tender process outlined in the following table, the Board recommended the appointment of KPMG LLP ('KPMG') as the Group's external auditors for the year ending 30 June 2019 and a resolution to approve this recommendation will be put to shareholders at the AGM on 15 November 2018.

Audit tender process

BDO LLP, Deloitte LLP, Ernst & Young LLP and KPMG LLP were invited to tender and all firms decided to participate. Grant Thornton LLP were not invited to tender because they currently provide tax compliance and advisory services across the Group.

The audit tender process undertaken by the Audit Committee during the year was in accordance with best practice and the Committee's terms of reference, and is set out below:

October 2017	• Process commenced and considered suitable firms to determine their capability, experience, international reach and local presence.
November 2017	• Selection panel appointed: Bill Spencer, Peter Gilchrist, Laurie Bowen, the Chief Financial Officer and Financial Reporting Manager; and • Each firm confirmed its participation and that no conflicts of interest will exist by 1 July 2018.
December 2017	• Evaluation criteria and ranking methodology agreed; and • Online data room populated and Request For Proposal ('RFP') drafted.
February 2018	• RFP issued and access provided to online data room;
March 2018	• Each firm held meetings with senior leadership and key Group functions; and • Proposals submitted by each firm, including responses to technical challenges.
April 2018	• Proposals reviewed by, and presentations given to, the selection panel; • Two firms selected by ranking against agreed evaluation criteria; and • Lead partners from two preferred firms presented to the Board.
May 2018	• Board recommended appointment of preferred firm for shareholder approval at 2018 AGM.

The key areas covered by the agreed evaluation criteria were: audit quality and approach; competency and experience; cultural fit and behaviour; use of technology; relevance of proposal; focus of presentation; understanding of the business; and value for money. The selection panel determined that KPMG and Deloitte best met these criteria and both firms were put forward to present to the Board. After due consideration, the Board recommended the appointment of KPMG, subject to shareholder approval at the AGM in November 2018.

In anticipation of shareholder approval of the proposed appointment of KPMG, management and the Committee have been working with KPMG and PwC to ensure that there will be a seamless transition between auditors. KPMG attended the Committee meeting in September 2018.

Non-audit services

The Board has agreed upon a policy that is compliant with both EU Audit Regulation and the FRC's Ethical Standard for the provision of non-audit services from which the external auditors are prohibited, together with the provision of permissible non-audit services.

The external auditors are prohibited from the provision of many types of non-audit service, including any of the following:

- Preparation of accounting records, financial statements or tax computations;
- Design and implementation of internal controls and risk management procedures;
- Services to the legal, treasury, internal audit, payroll or human resources functions;
- Actuarial or litigative valuations;
- Promoting, dealing in, or underwriting shares;
- Secondments to decision-making managerial positions; or
- Any other service which is prohibited by UK ethical guidance.

The policy for the provision of permissible non-audit services, which are otherwise not included in the above list of prohibited non-audit services, is as follows:

- Approval of any permissible non-audit service which the external auditor must or is best placed to undertake (including audit-related services such as fees payable in respect of an interim review) where the cost is estimated to exceed £50,000 is delegated to the Audit Committee Chairman and Chief Financial Officer;
- All other permissible non-audit services not estimated to exceed £50,000 are pre-approved and delegated to the Chief Financial Officer on the basis that the cost and nature of those services is not considered to be significant; and
- The external auditors are prohibited from providing further permissible non-audit services in any financial year if the total of non-audit services incurred would exceed a cap calculated as 70% of the average agreed external audit fees for the preceding three-year period with the same external audit firm.

Fees for non-audit services paid to the external auditors during the year were 29% (2017: 66%) of the audit fee. The split and ratio between audit and non-audit fees for the year ended 30 June 2018 and information on the nature of non-audit fees are disclosed in Note 6, *'Auditors' remuneration'*, to the financial statements.

Based on our annual review of the nature and scale of the services provided by the external auditors and discussion with the lead audit partner, we concluded that these services did not cause any concerns regarding the objectivity or independence of the external auditors.

Other business relationships

There are instances where our Energy & Environment business enters into business relationships or joint arrangements with the external auditors to pursue commercial opportunities, either as a prime contractor, sub-contractor or as part of a consortium, with either party or a third party being the project manager.

These business relationships are considered acceptable to the extent that the resulting relationships remain immaterial to both organisations and do not compromise the auditors' independence. In addition, the following arrangements would lead to a conclusion that the relationship with the auditor is material, and hence they are not permitted:

- Co-branding, profit-sharing or other joint sharing of economic benefit; or
- Any member of the audit firm's audit engagement team having client-facing involvement.

All bids must be structured to ensure that no commonality of interest exists, or could be perceived to exist, between the two parties, and all bids have to be approved both within the audit firm's senior management and within Group Finance. Bids over £100,000 also require the approval of the Audit Committee Chairman.

Independent auditors' effectiveness

The independent auditors' quality and effectiveness is assessed on its own merits on an annual basis after the completion of each audit. The Committee carries out a formal effectiveness assessment of the external auditors, including:

- The continuity and objectivity of the audit partner and audit team;
- Effectiveness of audit planning, execution and reporting;
- The role of management in ensuring an effective audit; and
- Communication with and support of the Audit Committee.

The assessment was completed with input from an internal questionnaire completed by senior management and relevant finance personnel. The Committee also considered the external auditors' annual transparency report on its own internal quality control procedures.

Appointment of independent auditors

Subsequent to a detailed audit tender process, the Board has recommended the appointment of KPMG LLP as the Group's external auditors for the year ending 30 June 2019. A resolution to approve the Board's recommendation will be proposed to shareholders at the Annual General Meeting on 15 November 2018.

Bill Spencer
Chairman of the Audit Committee

Directors' remuneration report

Peter Gilchrist CB – Chairman of the Remuneration Committee

PART 1 – CHAIRMAN'S OVERVIEW

Dear Shareholder,
Ricardo's approach to managing the business is based on ensuring long-term, sustainable results. Dave Shemmans, supported by his leadership team and over 3,000 committed and talented employees, has continued to implement a clear strategy of diversification in terms of our business activities and international coverage, cost management and efficiency improvement. In the last year, this has included the acquisition of Control Point Corporation and the divestment of our testing businesses in Chicago and Southern Germany.

Nevertheless, the business environment remains challenging. Ricardo's order book is strong and is up 16% on last year. Demand is solid in Asia and orders relating to electric and hybrid vehicles have grown as a proportion of the total. In the UK, orders from Automotive customers declined in the second half of the financial year as a result of market uncertainty. Total Group revenue grew by 8% but underlying profit before tax ('PBT') was £39.0m which was just above the threshold performance standard set by the Committee for the purposes of the annual bonus.

The importance of project delivery and good working capital management to Ricardo's long-term success and financial performance also reinforces the significance of the personal objectives which the Committee sets for each of the Executive Directors.

Decisions made in 2017/18 and pay outcomes

Throughout the course of the year, the Committee has been mindful that Ricardo's total shareholder return ('TSR') has grown by 171.5% over the last five financial years. This compares with 78.7% for the FTSE Small Cap Index (excluding investment trusts). The TSR chart on page 87 shows Ricardo's TSR performance over the last nine years on a relative basis. In short, Ricardo has delivered and continues to deliver strong returns to shareholders.

During the year, the Committee increased the base salaries of the Executive Directors by 4% from 1 January 2018. This was in line with the average for UK employees approved by the Board.

The determination of the annual bonus for the year has been an important decision. Annual bonus payments ranged from 32% to 46% of maximum for the financial year. An element of bonus was paid in respect of profit before tax performance and maximum bonus was paid in relation to the net debt target. Each Executive Director received an element of bonus based on the achievement of their personal objectives and the level of achievement varied by individual (see page 89). Half of the bonus will be deferred into shares for three years in order for each Executive Director to be awarded any bonus-linked shares. You may recall that last year no bonuses were paid even though the Executive Directors had performed well against their personal objectives and hence no bonus-linked shares were awarded. The details of the targets and how we assessed personal performance are shown on pages 88 and 89.

Long-term incentive awards

	(% of salary)		
Role	LTIP shares	Bonus-linked shares	Total award
Chief Executive Officer ('CEO')	100%	27%	127%
Chief Finance Officer ('CFO')	55%	23%	78%
Chief Operating Officer ('COO')	55%	16%	71%

In October 2017, based on Ricardo's earnings per share ('EPS') growth and relative TSR performance over the three-year performance period, 74% of the long-term incentive plan ('LTIP') and the bonus-linked shares awarded in 2014 vested.

The Committee has reflected upon the EPS target range for the LTIP and bonus-linked shares which will be awarded in October 2018. We have agreed the EPS target range for the shares under award linked to EPS as 60 pence to 69 pence. This is based on careful analysis of the forecasts implied by Ricardo's three-year business plan, the long-term strategy and analysts' expectations. The Committee has always taken the view that the target range should be very stretching at the top end of the range and achievable at the bottom end, provided that Ricardo delivers a level of performance which meets or is near to the three-year budget. We have also taken account of the range of previous vesting outcomes (see page 87) – 35% to 100% over the last nine years – which the Committee believes reflects both the quality of Ricardo's longer-term performance and the robustness of the targets set historically.

Based on the decisions on annual bonus, the long-term share-based awards to be made in October 2018 to each of the Executive Directors, as a percentage of salary, will be as per the table above.

The Committee also increased the Chairman's fee – see page 90 for details.

Conclusion

Last year our Directors' Remuneration Policy and the Annual Report on Remuneration both received over 90% of votes in favour at the Annual General Meeting held on 8 November 2017 and I am grateful for this support. Part 2 of this Directors' Remuneration Report contains the Annual Report on Remuneration and, for reference, Part 3 contains the Directors' Remuneration Policy. If you have any questions, feel free to contact me through Ricardo's Group Legal Counsel and Company Secretary, Patricia Ryan, at patricia.ryan@ricardo.com.

Peter Gilchrist CB
Chairman of the Remuneration Committee

SUMMARY OF THE KEY ELEMENTS OF EXECUTIVE DIRECTORS' PAY IN 2017/2018

	Dave Shemmans CEO	Ian Gibson CFO	Mark Garrett COO
Base salary (effective 01/01/2018)	£500,032	£321,896	£280,927
Other benefits	• Company car allowance: £17,500; • Private fuel; • Private medical insurance; and • Life assurance.	• Company car allowance: £12,000; • Private fuel; • Private medical insurance; and • Life assurance.	• Company car allowance: £12,000; • Private fuel; • Private medical insurance; and • Life assurance.
Pension	21.2%(1) of salary (over Lower Earnings Limit)	20% of salary (over Lower Earnings Limit)	20% of salary (over Lower Earnings Limit)
Annual bonus with deferral of half of any bonus earned	• Maximum opportunity of 125% of salary; • Based on PBT (60%), net debt (15%) and personal targets (25%); and • 50% of any bonus to be deferred into shares for three years.	• Maximum opportunity of 100% of salary; • Based on PBT (60%), net debt (20%) and personal targets (20%); and • 50% of any bonus to be deferred into shares for three years.	• Maximum opportunity of 100% of salary; • Based on PBT (15%), global Automotive profit (45%), net debt (20%) and personal targets (20%); and • 50% of any bonus to be deferred into shares for three years.
Long-term incentive shares			
(A) Bonus-linked shares(2)	62.5% of salary	50% of salary	50% of salary
(B) Long-term incentive plan(3)	100% of salary	55% of salary	55% of salary
Total maximum annual award of shares (A + B)	162.5% of salary	105% of salary	105% of salary
Share ownership and retention policy	• A minimum of 100% of base salary; • Net value of all vested shares to be retained until holding met; and • Year-end holding is 194% of base salary.	• A minimum of 100% of base salary; • Net value of all vested shares to be retained until holding met; and • Year-end holding is 93% of base salary.	• A minimum of 100% of base salary; • Net value of all vested shares to be retained until holding met; and • Year-end holding is 455% of base salary.

(1) This reflects legacy pension arrangements.
(2) Maximum award on grant of bonus-linked shares:
- An award of shares with a value on grant of half the gross equivalent of any annual bonus declared;
- Vests approximately four years from the start of the bonus performance period if executive still in service and additional performance criteria are met over a three-year period: 50% EPS growth, 50% TSR vs. FTSE Small Cap Index (excluding financial services companies and investment trusts); and
- Net value of all vested shares to be retained until share ownership requirement met.

(3) Face vaue of annual award of long-term incentive plan shares:
- Subject to three-year performance conditions: 50% EPS growth, 50% TSR vs. FTSE Small Cap Index; and
- Net value of vested shares to be retained until share ownership requirement met.

PART 2 – ANNUAL REPORT ON REMUNERATION

This section of the report explains how Ricardo's 2017 remuneration policy has been implemented during the financial year ended 30 June 2018. The paragraphs in this Annual Report on Remuneration that have been audited are indicated as such herein.

The Remuneration Committee

During the year under review the Committee was chaired by Peter Gilchrist. The Committee also comprised Sir Terry Morgan, Laurie Bowen, Malin Persson, Bill Spencer and Ian Lee (who retired from the Board and the Committee on 8 November 2017).

The Non-Executive Directors serving on the Committee have no personal financial interest (other than as shareholders) in matters to be decided, no potential conflicts of interest arising from cross-directorships and no day-to-day involvement in running the business. Biographical details of the members of the Committee are shown on pages 68 and 69; details of attendance at the meetings of the Committee during the year ended 30 June 2018 are shown on page 71.

Advisors to the Remuneration Committee

The Committee is supported by the Group HR Director (Timothy Hargreaves), the Group Head of Remuneration and Pensions (Mark Jarvis) and the Company Secretary (Patricia Ryan). The Chief Executive Officer (Dave Shemmans) may attend the Committee's meetings by invitation and is consulted in respect of certain proposals. The Chief Financial Officer (Ian Gibson) may be invited to attend meetings to address specific matters. Neither the Chief Executive Officer nor the Chief Financial Officer is consulted or involved in any discussions in respect of their own remuneration.

During the year, FIT Remuneration Consultants LLP and Shepherd and Wedderburn LLP (who have been jointly appointed by the Committee following a competitive tender process) provided independent advice on matters under consideration by the Committee and updates on legislative requirements and market practice.

FIT Remuneration Consultants' fees for this work amounted to £33,015 (calculated based on a mixture of fixed fees and time spent). Shepherd and Wedderburn's fees for advising the Committee amounted to £31,710 (also calculated based on a mixture of fixed fees and time spent). Shepherd and Wedderburn also advises Ricardo on the design, implementation and operation of its various share incentive plans.

FIT Remuneration Consultants are members of the Remuneration Consultants Group and their work is governed by its Code of Conduct. Shepherd and Wedderburn is a law firm and is regulated accordingly. Having carefully considered all relevant factors and using its judgement, the Committee is satisfied that the advice provided on executive remuneration is objective and independent and that no conflict of interest arises.

Voting outcome at AGM

The AGM for the financial year ended 30 June 2017 was held on 8 November 2017. The result of the vote on the remuneration report is set out below. The remuneration policy in operation during the year was also approved by shareholders at the 2017 AGM; details of this approval are also set out in the table below.

	Annual Report on Remuneration approved at 2017 AGM		Directors' Remuneration Policy approved at 2017 AGM	
Votes[1]	%	Number	%	Number
For, including discretion	99.6	36,791,869	94.0	35,127,967
Against	0.4	150,347	6.0	2,224,774
Total votes cast	100.0	36,942,216	100.0	37,352,741
Withheld[1]		2,261,883		1,851,358

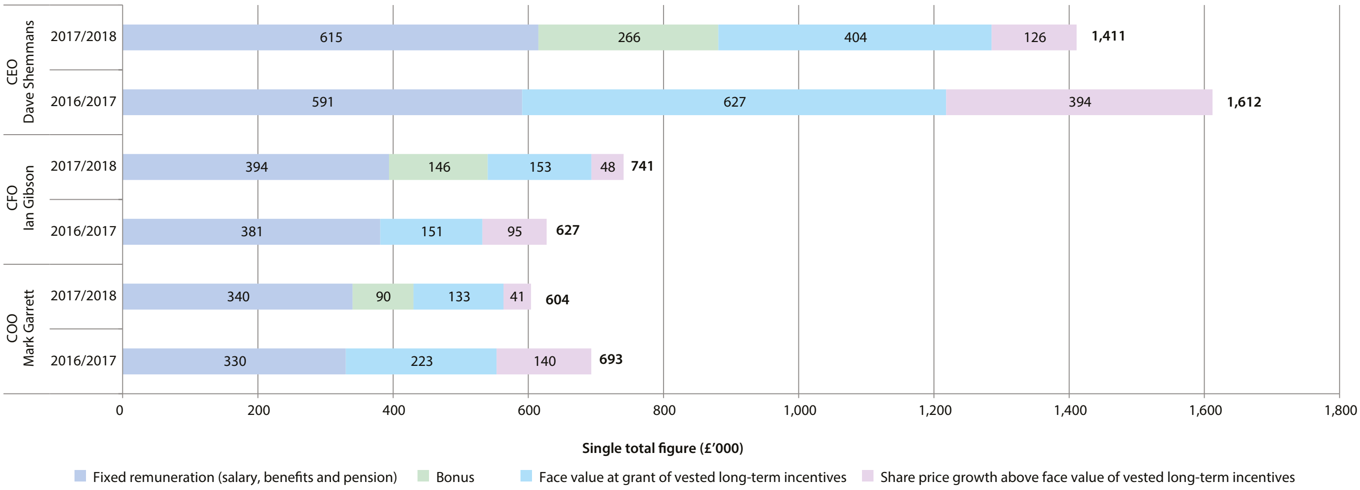
(1) Excludes withheld votes. A vote withheld is not a vote in law and so is not counted for the purposes of the calculation of the proportion of votes 'for' and 'against' a resolution.

Performance at a glance in FY 2017/2018

Bonus performance measures		Long-term incentive performance outcomes in respect of awards vested in October 2017	
PBT (adjusted)	**Net debt (adjusted)**	**3-year EPS growth**	**3-year TSR growth**
£38.8m **(FY 2017/2018)** *£38.1m* *(FY 2016/2017)*	**£(19.1)m** **(FY 2017/2018)** *£(34.8)m* *(FY 2016/2017)*	**RPI +11.0% p.a.** **(overall 42.9% to 30 June 2017)** *RPI +14.6% p.a.* *(overall 56.0% to 30 June 2016)*	**31.4%** **(between median and upper quartile to October 2017)** *89.2%* *(above upper quartile to October 2016)*

The closing mid-market price of the Company's shares on 30 June 2018 was 960.0 pence (2017: 777.0 pence). The highest closing price during the year was 1,075.0 pence and the lowest closing price during the year was 696.5 pence.

Pay at a glance in FY 2017/2018



Single total figure table (audited)

The table below sets out the remuneration received by the Executive Directors and Non-Executive Directors during the year. This should be considered in conjunction with the TSR performance graph on page 87.

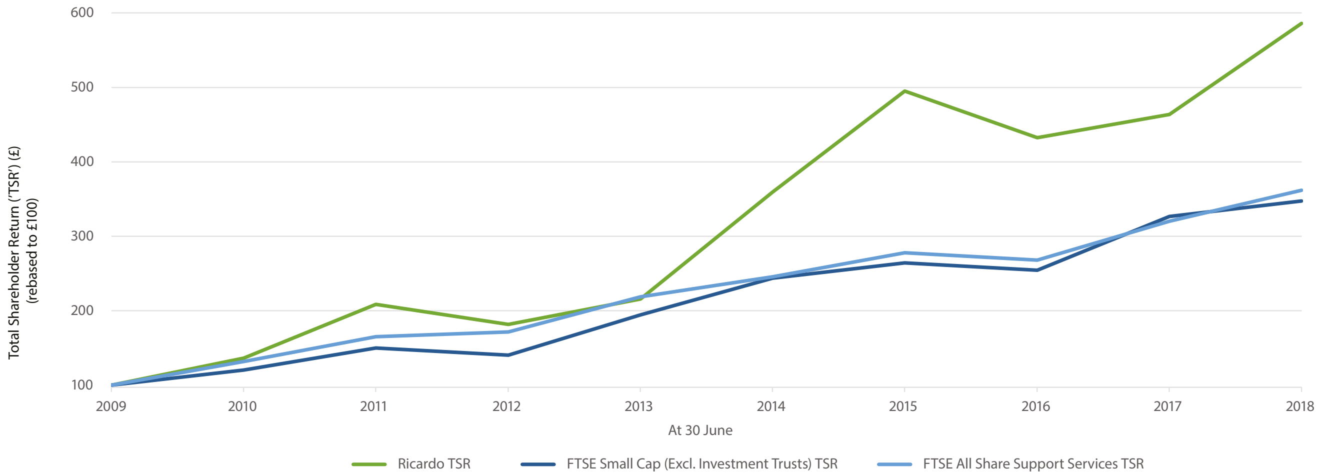
		Fixed remuneration			Short-term variable remuneration in respect of 17/18			Long-term variable remuneration – performance periods ending 17/18			
	Financial year	Base salary and fees £'000	Benefits[1] £'000	Pension £'000	Bonus (cash element)[2] £'000	Bonus (deferred element) £'000	Total £'000	Bonus-linked shares[3] £'000	LTIPs[4] £'000	Total £'000	Total £'000
EXECUTIVE DIRECTORS											
Dave Shemmans	**2017/2018**	**490**	**22**	**103**	**133**	**133**	**266**	**103**	**427**	**530**	**1,411**
	2016/2017	474	22	95	-	-	-	325	696	1,021	1,612
Ian Gibson	**2017/2018**	**316**	**16**	**62**	**73**	**73**	**146**	**50**	**151**	**201**	**741**
	2016/2017	305	16	60	-	-	-	-	246	246	627
Mark Garrett	**2017/2018**	**276**	**10**	**54**	**45**	**45**	**90**	**42**	**132**	**174**	**604**
	2016/2017	266	14	50	-	-	-	148	215	363	693
NON-EXECUTIVE DIRECTORS											
Sir Terry Morgan CBE	**2017/2018**	**147**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**147**
	2016/2017	141	1	-	-	-	-	-	-	-	142
Peter Gilchrist CB	**2017/2018**	**62**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**64**
	2016/2017	59	2	-	-	-	-	-	-	-	61
Ian Lee[5]	**2017/2018**	**19**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**22**
	2016/2017	53	3	-	-	-	-	-	-	-	56
Laurie Bowen[6]	**2017/2018**	**47**	**47**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**94**
	2016/2017	45	66	-	-	-	-	-	-	-	111
Malin Persson	**2017/2018**	**47**	**6**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**53**
	2016/2017	45	8	-	-	-	-	-	-	-	53
Bill Spencer[7]	**2017/2018**	**51**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**52**
	2016/2017	10	-	-	-	-	-	-	-	-	10
Total	**2017/2018**	**1,455**	**107**	**219**	**251**	**251**	**502**	**195**	**710**	**905**	**3,188**
	2016/2017	1,398	132	205	-	-	-	473	1,157	1,630	3,365

(1) Further information on benefits for the Executive Directors can be found on page 88. The benefits for Non-Executive Directors represent reimbursement of expenses incurred (including any associated personal tax charges) while travelling for business and committee meetings.
(2) Further details of the annual bonus can be found on page 88.
(3) Further details of the bonus-linked share award vestings in the year can be found on page 93.
(4) Further details of the LTIP award vestings in the year can be found on page 92.
(5) Ian Lee retired as a Director on 8 November 2017.
(6) Laurie Bowen's benefits largely consist of travel expenditure to and from the United States.
(7) Bill Spencer was appointed as a Director on 24 April 2017.

Following the year-end, the Committee considered whether there were any circumstances that could or should result in the recovery or withholding of any sums pursuant to the Company's clawback arrangements. The conclusion reached by the Committee was that it was not aware of any such circumstances.

Pay for performance – TSR performance graph and CEO pay history

TSR for the years from 30 June 2009 to 30 June 2018



Source: Thomson Reuters Datastream

The chart above shows Ricardo's TSR performance for the past nine years against the FTSE Small Cap index (excluding investment trusts). In the Committee's opinion, the FTSE Small Cap index (excluding investment trusts) represents an appropriate index against which the Company should be compared when considering the Company's size. The FTSE All Share Support Services index is also shown for information. The remuneration of the CEO, Dave Shemmans, for the same period is represented in the table below.

Financial year	Single figure of CEO's total remuneration £'000	Annual variable element award rates against maximum opportunity %	Long-term incentive vesting rates against maximum opportunity %
2017/2018	1,411	43	74
2016/2017	1,612	-	100
2015/2016	2,291	63	100
2014/2015	1,367	59	67
2013/2014	760	38	N/A[(1)]
2012/2013	1,546	75	77
2011/2012	979	58	35
2010/2011	1,116	97	46
2009/2010	708	19	36

(1) The performance period for awards made in November 2011 ended in October 2014 and so its vesting rate is included in the 2014/2015 row of the table above. The vesting rate is not applicable for the 2013/2014 row because the performance period for awards made in October 2010 ended in June 2013 and so the applicable vesting rate is included in the 2012/2013 row of the table above.

CEO remuneration compared to employees

The table below compares the percentage change in the CEO's remuneration and the percentage change in employees' remuneration between FY 2016/2017 and FY 2017/2018. The average bonus paid to all employees across the Group also increased year-on-year. The change in the employees' annual bonus represents the average percentage change in bonuses for employees across the Group as a whole, with individual performance against target varying between divisions.

	CEO %	All employees %
Base salary	4	4
Benefits	-	-
Annual bonus	See note (1) below	56

(1) The year-on-year change in CEO bonus cannot be shown as no annual bonus was paid to the CEO in respect of the 2016/2017 financial year.

Relative importance of pay spend

The following table sets out the total amounts spent on remuneration for all employees, the dividends declared and other significant distributions to shareholders in FY 2016/2017 and FY 2017/2018.

	FY 2016/2017	FY 2017/2018	% change
Total remuneration spend (£m)	166.5	175.0	5.1%
Key management remuneration as a percentage of total remuneration spend[1] (%)	3	3	-%
R&D expenditure[2] (£m)	9.5	9.5	-%
Distribution to shareholders[3] (£m)	10.3	10.9	5.8%

(1) The key management personnel are the Board of Directors, together with the Managing Directors who have the authority and responsibility for planning, directing and controlling the Group's activities and resources within the market sectors in which the Group operates. Further details on key management remuneration can be found on page 132. This measure was chosen in order to give greater context for the scale of key management remuneration within Ricardo.
(2) Further details on R&D expenditure can be found on pages 17 and 30. This measure was chosen because of the importance to Ricardo's business of developing its R&D portfolio.
(3) The only distributions made by the Company over these years were in the form of dividends.

Detailed breakdown of pay in FY 2017/2018

Base salary

Base salaries were reviewed with effect from January 2018. As described in the policy section on page 97, a number of factors are taken into account when salaries are reviewed, principally: market levels of total pay for comparable roles in companies of a similar size, complexity and sector; the individual's experience, scope of responsibilities and performance; and the salary increases for employees across the Group. The increase for each Executive Director (and the Group-wide average approved in FY 2017/2018) was 4%.

Current salary levels from 1 January 2018 are:

- Dave Shemmans: £500,032
- Ian Gibson: £321,896
- Mark Garrett: £280,927

Other benefits (audited)

The Company provides other cash benefits and benefits in kind to its Executive Directors. These include a company car or cash alternative, private fuel, private medical insurance, life assurance and permanent health or disability insurance. The car allowance levels remain unchanged and set at £17,500 p.a. for Dave Shemmans and at £12,000 p.a. for Ian Gibson and Mark Garrett.

Non-Executive Directors can recover travel and accommodation expenses for carrying out their duties and do not receive any other benefits. If tax is payable by a Non-Executive Director on expenses received, these may be paid gross of tax.

Pension (audited)

(a) The defined benefit scheme is closed and there are no active members. During the year ended 30 June 2018, the transfer value in respect of the Chief Executive Officer has increased by £23,000 on the prior year to £625,000.

The CEO's Normal Retirement Date ('NRD') is 16 June 2031, at which point he will receive his pension at the date of leaving the fund, increased for the period in deferment until his NRD. If he decides to retire early, he will receive an immediate pension calculated as for retirement at NRD but reduced for early payment.

(b) With respect to defined contribution pension schemes:

	Employer contributions payable in the year £'000	Cash in lieu £'000
Dave Shemmans	5	98
Ian Gibson	-	62
Mark Garrett	3	51

Annual performance-related bonus (audited)

For the year ended 30 June 2018, the maximum annual performance-related bonus opportunity was 125% of salary for the Chief Executive Officer and 100% of the salary for the other Executive Directors. To determine the amount of bonus payable for the year, the Committee assessed the level of achievement against the financial measures and targets set in respect of:

- Group profit before tax (60% for both the CEO and CFO, and 15% for the COO);
- global Automotive profit (45% for the COO);
- Group net debt at year-end (15% for the CEO and 20% for the other Executive Directors); and
- the achievement of specified individual objectives (25% for the CEO and 20% for the other Executive Directors).

The choice of these measures, and their respective weightings for each individual, reflected the Committee's belief that any incentive compensation should be tied both to the overall performance of the Group and to those areas of the business that the relevant individual can directly influence.

The targets set by the Committee take into account several factors such as the business plan, management's expectations and brokers' forecasts.

A sliding scale of targets for each financial measure of the Group was set at the start of the 2017/2018 financial year:

Performance achieved	Element payable
Threshold	-
On-target	50%
Maximum	100%
Between any two points	Straight-line percentage

The personal objectives of the Executive Directors were different for each individual and were ascribed different weightings. Examples of the areas of focus and types of personal objectives that were set include:

- Identifying value-creating opportunities for inorganic growth;
- Developing management succession planning to ensure Group-wide diversity;
- Identifying and managing the perceived opportunities and risks of Brexit;
- Simplifying and improving management and corporate reporting;
- Career development across functions or areas of the business;
- Budgeting for and commercial application of R&D; and
- Continuous improvement of project delivery.

The Committee, supported by the Chairman of the Board in the case of Dave Shemmans, and supported by Dave Shemmans in the case of the other Executive Directors and members of the leadership team, sets the personal objectives at the start of the year. The Committee usually identifies strategic areas which each Executive Director is asked to focus on and seeks to ensure that all personal objectives are specific, measurable and are indirect drivers of financial performance and value creation. They usually set five objectives and weight them in accordance with their relative importance. At the end of the year, based on a formal and qualitative assessment of performance against each objective, the Committee decides how well each individual has performed overall. Across the senior leadership group including the Executive Directors, the assessment of performance ranged from 50% to 90% in respect of the personal objectives. The appraisal of performance against the personal objectives was 80% for the CEO, 90% for the CFO and 50% for the COO.

The following table sets out the financial targets and the performance outcomes in respect of the Executive Directors' bonus scheme for the 2017/2018 financial year.

	Weighting (% of maximum opportunity)			Performance required (£m)			Actual performance (£m) (adjusted)(1)			Pay-out (% of maximum opportunity)		
Measure	**CEO**	**CFO**	**COO**	**Threshold**	**On-target**	**Maximum**	**CEO**	**CFO**	**COO**	**CEO**	**CFO**	**COO**
Profit before tax(2)	60	60	60	38.3	40.3	42.3	38.8	38.8	38.8	7.5	7.5	1.875
Group net debt balance	15	20	20	(34.0)	(30.0)	(28.0)	(19.1)	(19.1)	(19.1)	15	20	20
Personal objectives	25	20	20	0%	75%	100%	80%	90%	50%	20	18	10
Total pay-out (% of maximum opportunity) = (a)										**42.5**	**45.5**	**31.875**
Maximum opportunity (% of base salary) = (b)										**125**	**100**	**100**
Total pay-out (% of base salary) = (a) x (b)										**53.125**	**45.5**	**31.875**

(1) The actual underlying profit before tax of £39.0m was adjusted by £0.2m to £38.8m for acquisition-related expenditure. The actual net debt balance of £(26.1)m was adjusted by £7.0m to £(19.1)m for unbudgeted Control Point Corporation net consideration, acquisition-related expenditure and reorganisation costs.

(2) The profit element of the COO's bonus was further split between the Group profit before tax target described above (25%) and a global Automotive profit target (75%). Global Automotive profits were below the threshold standard required for any payout to be made, therefore the pay-out shown above for the profit element solely relates to the Group profit before tax target.

The performance of the Group over the year included a 2% increase in underlying profit before tax to £39.0m (2017: £38.3m) and a year-end net debt of £(26.1)m (2017: £(37.9)m).

The adjusted underlying Group profit before tax was £38.8m, which resulted in the Group profit target being achieved at a level of 12.5%. The adjusted net debt of £(19.1)m was above the maximum target and therefore the maximum bonus is payable. For the avoidance of doubt this performance would have exceeded the maximum target regardless of whether or not the net debt adjustments were made. The Committee reviewed the adjustments to both profit before tax and net debt in light of its bonus principles, which take account of materiality and the need for consistency. The achievement of the cash target was also reviewed by the Audit Committee. Finally, the Remuneration Committee also considered whether the outturn from the assessment of the specific bonus targets reflected the overall performance of the Group during the year and was satisfied that this was the case.

One half of any bonus paid to an Executive Director is subject to a policy of compulsory deferral into ordinary shares, via the deferred share bonus plan ('DBP'), the release of which is dependent on continued employment for a three-year period from the award date.

Long-term incentive awards vesting during the financial year (audited)

Awards under the LTIP made in October 2014 vested in October 2017 on the basis of EPS and TSR performance over performance periods, the last of which ended in October 2017. The performance conditions applicable to these awards are summarised below:

Relative TSR portion (50%)

Relative TSR performance against the FTSE Small Cap (excluding financial services companies and investment trusts)	Vesting level
Below median	-
Median	25%
Upper quartile (or above)	100%
Between median and upper quartile	Straight-line basis

EPS growth portion (50%)

EPS growth performance	Vesting level
Less than RPI + 3% p.a.	-
RPI + 3% p.a.	25%
RPI + 10% p.a.	100%
Between RPI + 3% and RPI + 10% p.a.	Straight-line basis

Over the three-year performance period, Ricardo was ranked between the median and the upper-quartile of the TSR comparator group, giving a vesting level for this portion of 48.1%. Ricardo's TSR over the period was 31.4% against a median of 21.0% and an upper quartile of 62.1%. The EPS figure for the year resulted from growth of 36.6% in real terms, which represented compound growth of RPI + 11.0% p.a., compared to the base year, with the result that the EPS target was achieved to a level of 100%. The overall vesting level for this award was 74.05%. The number and value of shares which vested in October 2017 in respect of awards granted to each of the Executive Directors in October 2014 are set out on pages 92 and 93 of this report. The Committee was satisfied that there had been a sustained improvement in the overall performance of the Group over the three years in question.

Non-Executive Directors' fees

Current Non-Executive Directors' fees as of 1 January 2018 are as follows:

	£'000
Chairman's total fees	150
Other Non-Executive Director's fees:	
Basic fee	48
Additional fee for Audit and Remuneration Committee Chairs	8
Additional fee for the Senior Independent Director	8

The above table reflects a 4.8% increase in the Chairman's total fees and a 4% increase in the basic fee for Non-Executive Directors, Committee Chair fees and Senior Independent Director's fee, relative to the prior year.

Payments to past directors and in respect of loss of office (audited)

No payments have been made to past directors of the Company or in respect of loss of office in the financial year.

Long-term incentive awards granted during the financial year (audited)

Awards were made to the Executive Directors under the LTIP in November 2017. No bonus-linked share awards were made under the DBP rules because no bonuses were paid to Executive Directors in respect of the 2016/2017 financial year.

Long-term incentive plan ('LTIP')

	Chief Executive Officer David Shemmans	Chief Financial Officer Ian Gibson	Chief Operating Officer Mark Garrett
Type awarded		Performance shares(1)	
Basis for award (% of base salary)	100	55	55
Date of award		8 November 2017	
Number of shares	57,927	20,510	17,899
Share price(2) (£)	8.30	8.30	8.30
Face value of award (£)	480,794	170,233	148,562
% which would vest for the achievement of threshold performance	25	25	25
End of performance period		35 days after release of preliminary results announcement in respect of the 2019/2020 financial year (expected to be October 2020)	

(1) As the LTIP awards are granted in the form of performance share awards, no 'exercise price' is payable in order to receive any vested shares.
(2) Average of the share prices over the five days up to and including 7 November 2017.

The vesting of these awards will be based on Ricardo's three-year relative TSR (50%) and EPS growth (50%) performance summarised in the table below. The relative TSR measure was chosen by the Committee to link the remuneration of Executive Directors to the performance experienced by shareholders and further align their interests. The EPS measure was chosen to reward sustained profit growth and align with one of our key performance indicators. In addition, no part of an award will vest unless the Committee is satisfied that the achievement against the TSR and EPS performance condition is a genuine reflection of the underlying performance of the Group over the performance period.

Relative TSR portion (50%)

Relative TSR performance against the FTSE Small Cap (excluding financial services companies and investment trusts)	Vesting level
Below median	-
Median	25%
Upper quartile (or above)	100%
Between median and upper quartile	Straight-line basis

EPS growth portion (50%)

Adjusted EPS for the final year in the performance period (2019/2020)	Vesting level
Less than 65p	-
65p	25%
Equal to or greater than 75p	100%
Between 65p and 75p	Straight-line basis

Performance target setting and those applying to outstanding awards

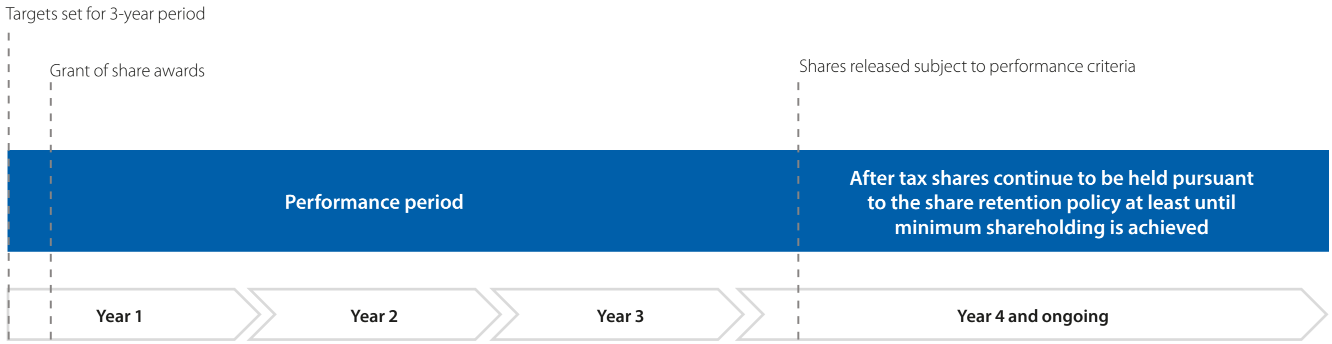
As shown in previous Directors' Remuneration Reports, the Committee has a track record of setting stretching EPS targets which are carefully calibrated to outperform the business plan and market expectations. Similarly, the TSR measure only awards full vesting where our performance is in the upper quartile of the FTSE Small Cap Index (excluding financial services companies and investment trusts).

The performance targets applicable to outstanding LTIP and bonus-linked share awards are as follows: For awards in years ended 30 June 2015, 2016 and 2017, maximum vesting of the EPS portion required growth of RPI + 10% per annum. The EPS target to achieve threshold vesting for awards granted in the years ended 30 June 2015, 2016 and 2017 require performance in excess of RPI + 3% per annum. As explained in last year's Directors' Remuneration Report, for awards in the year ended 30 June 2018, the Committee decided to move away from expressing our targets as growth percentages in excess of RPI. The reason for this change was to simplify and enhance the 'line of sight' for participants, and also to recognise the international scope of Ricardo.

The performance condition applicable to the TSR portion of awards has remained constant through this period and is the same as set out above for awards granted in the year ended 30 June 2018. The number and value of shares which were awarded to each of the Executive Directors in the year ended 30 June 2018 are set out in the table above.

Directors’ interests in shares provisionally awarded under the LTIP (audited)

The following chart sets out in graphical form how the LTIP operates:



For details of the share retention policy, see page 94.

The Directors’ interests in shares provisionally awarded under the LTIP are as follows:

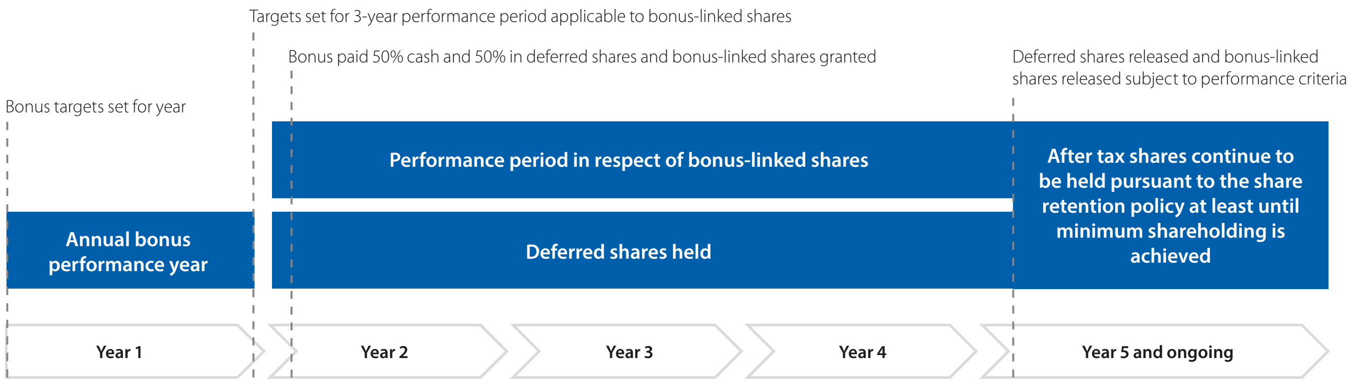
	3-year cycle ending	Award date[1]	Share price at award date in pence	Number of provisional shares					Vesting date
				At 1 July 2017	Awarded	Lapsed	Vested	At 30 June 2018[3]	
Dave Shemmans	2017	Oct 14	635.20	69,269	-	(17,976)	(51,293)	-	30/10/2017
	2018	Oct 15	904.80	50,088	-	-	-	50,088	19/10/2018
	2019	Oct 16	954.30	48,915	-	-	-	48,915	25/10/2019
	2020	Nov 17[2]	830.00	-	57,927	-	-	57,927	08/11/2020
Ian Gibson	2017	Oct 14	635.20	24,525	-	(6,365)	(18,160)	-	30/10/2017
	2018	Oct 15	904.80	17,734	-	-	-	17,734	19/10/2018
	2019	Oct 16	954.30	17,318	-	-	-	17,318	25/10/2019
	2020	Nov 17[2]	830.00	-	20,510	-	-	20,510	08/11/2020
Mark Garrett	2017	Oct 14	635.20	21,404	-	(5,555)	(15,849)	-	30/10/2017
	2018	Oct 15	904.80	15,477	-	-	-	15,477	19/10/2018
	2019	Oct 16	954.30	15,114	-	-	-	15,114	25/10/2019
	2020	Nov 17[2]	830.00	-	17,899	-	-	17,899	08/11/2020

(1) Awards made under the rules of the Ricardo plc 2014 Long Term Incentive Plan: performance conditions as outlined on page 91.
(2) The face value at the date of grant of the awards made in November 2017 was £480,794 for Dave Shemmans; £170,233 for Ian Gibson; and £148,562 for Mark Garrett.
(3) The mid-market closing price of the Company’s shares on 30 June 2018 was 960.0p (2017: 777.0p).

The value of the October 2014 award vesting was £427,209 for Dave Shemmans; £151,251 for Ian Gibson; and £132,003 for Mark Garrett, inclusive of an additional compensatory cash payment (£7,119 for Dave Shemmans; £2,521 for Ian Gibson; and £2,200 for Mark Garrett) that was made because these awards did not receive any benefit from the November 2017 final dividend, due to a technical timing issue. The market price per share of these shares that vested on 30 October 2017 was 819.0p.

Directors' interests in shares provisionally awarded under the DBP (audited)

The following chart sets out in graphical form how the DBP operates:



For details of the share retention policy, see page 94.

The Directors' interests in shares provisionally awarded under the DBP are as follows:

	Type of Award	Award date	Deferral/ performance period	Share price at award date in pence	Number of provisional shares At 1 July 2017	Awarded	Dividend shares(1)	Lapsed	Vested	At 30 June 2018(3)
Dave Shemmans	Deferred	Oct 14	3 years	635.20	17,719	-	298	-	(18,017)	-
	Bonus-linked shares(2)	Oct 14	3 years	635.20	16,640	-	280	(4,391)	(12,529)	-
	Deferred	Oct 15	3 years	904.80	19,262	-	423	-	-	19,685
	Bonus-linked shares(2)	Oct 15	3 years	904.80	18,509	-	-	-	-	18,509
	Deferred	Oct 16	3 years	954.30	19,730	-	433	-	-	20,163
	Bonus-linked shares(2)	Oct 16	3 years	954.30	19,336	-	-	-	-	19,336
Ian Gibson	Deferred	Oct 14	3 years	635.20	8,605	-	145	-	(8,750)	-
	Bonus-linked shares(2)	Oct 14	3 years	635.20	8,082	-	136	(2,133)	(6,085)	-
	Deferred	Oct 15	3 years	904.80	9,812	-	215	-	-	10,027
	Bonus-linked shares(2)	Oct 15	3 years	904.80	9,431	-	-	-	-	9,431
	Deferred	Oct 16	3 years	954.30	9,799	-	215	-	-	10,014
	Bonus-linked shares(2)	Oct 16	3 years	954.30	9,604	-	-	-	-	9,604
Mark Garrett	Deferred	Oct 14	3 years	635.20	7,301	-	123	-	(7,424)	-
	Bonus-linked shares(2)	Oct 14	3 years	635.20	6,859	-	115	(1,810)	(5,164)	-
	Deferred	Oct 15	3 years	904.80	8,271	-	181	-	-	8,452
	Bonus-linked shares(2)	Oct 15	3 years	904.80	7,949	-	-	-	-	7,949
	Deferred	Oct 16	3 years	954.30	8,411	-	184	-	-	8,595
	Bonus-linked shares(2)	Oct 16	3 years	954.30	8,244	-	-	-	-	8,244

(1) Amounts allocated include shares equivalent to dividends on provisional deferred award shares and vested bonus-linked shares.
(2) Bonus-linked shares awarded under the rules of the Ricardo plc 2011 Deferred Bonus Plan: performance conditions as outlined on page 91.
(3) The mid-market closing price of the Company's shares on 30 June 2018 was 960.0p (2017: 777.0p).

The value of the October 2014 Deferred award vesting was £147,559 for Dave Shemmans; £71,663 for Ian Gibson; and £60,803 for Mark Garrett. The market price per share of these shares that vested on 30 October 2017 was 819.0p.

The value of the October 2014 Bonus-linked shares vesting was £102,613 for Dave Shemmans; £49,836 for Ian Gibson; and £42,293 for Mark Garrett. The market price per share of these shares that vested on 30 October 2017 was 819.0p.

Directors' shareholdings (audited)

The interests of Directors and their connected persons in ordinary shares as at 30 June 2018, including any interests in share options and shares provisionally awarded under the LTIP and DBP are presented in the table below.

At 12 September 2018, the interests in shares of the Directors who were still in office were unchanged from those at 30 June 2018.

	Shareholding as at 30 June 2018		Not subject to performance conditions	Subject to performance conditions
	No. of shares	% of base salary(1)	Deferred awards(2)	Long-term incentives (Bonus-linked shares and LTIP awards)(2)
EXECUTIVE DIRECTORS				
Dave Shemmans	101,085	194	39,848	194,775
Ian Gibson	31,256	93	20,041	74,597
Mark Garrett	133,223	455	17,047	64,683
NON-EXECUTIVE DIRECTORS				
Sir Terry Morgan CBE	15,000	N/A	-	-
Peter Gilchrist CB	4,970	N/A	-	-
Laurie Bowen	4,000	N/A	-	-
Malin Persson	1,500	N/A	-	-
Bill Spencer	8,000	N/A	-	-
Ian Lee(3)	13,876	N/A	-	-

(1) For Executive Directors only (i.e. those who are subject to the share retention policy). Percentages calculated by reference to the mid-market closing price of the Company's shares on 30 June 2018 which was 960.0p (2017: 777p).
(2) Deferred awards and bonus-linked shares were granted pursuant to the rules of the Ricardo plc 2011 Deferred Bonus Plan and LTIP awards were granted pursuant to the rules of the Ricardo plc 2014 Long Term Incentive Plan.
(3) As at 8 November 2017, the date that Ian Lee retired as a Director.

Share retention policy

In order to foster greater alignment between our Executive Directors and our shareholders, the Board operates a share retention policy for the Executive Directors with the intention that each Executive Director will own shares in the Company with a value at least equal to one times annual base salary. Unvested awards granted under the Company's employee share schemes do not count towards this target. As at 30 June 2018, Dave Shemmans and Mark Garrett met this shareholding requirement. Although Ian Gibson has made clear strides towards the required minimum shareholding level during the year, having joined the Company on 1 July 2013, he has not yet met this level and will be expected to retain all vested shares net of tax from the LTIP and DBP until the minimum shareholding has been achieved.

Dilution limits

The number of shares that may be issued under all Ricardo employee share plans in any ten-year rolling period will be restricted to 10% of the issued ordinary share capital of the Company and 5% of the issued ordinary share capital of the Company for discretionary employee share plans.

At the end of the year under review, the Company's overall dilution was 4.79%, of which 4.35% related to discretionary employee share plans. The Company operates an employee benefit trust ('EBT') which has principally been used to facilitate the operation of the LTIP and DBP arrangements. Any new shares issued to the trust are, however, included in the dilution limits noted above.

Executive Director Board positions with other companies during FY 2017/2018

Executive Directors may, with the prior consent of the Board, hold a non-executive directorship with another company.

On 1 September 2014, the Company's Chief Executive Officer was appointed as a non-executive director of Sutton and East Surrey Water plc. He is permitted to retain the associated fees which, for the year from 1 July 2017 to 30 June 2018 (inclusive), amounted to £34,313.

On 25 November 2016, the Company's Chief Operating Officer was appointed as the non-executive chairman of Secured By Design Limited. He is permitted to retain the associated fees which, for the year from 1 July 2017 to 30 June 2018 (inclusive), amounted to £20,000.

Implementation of remuneration policy in the following year

The Committee anticipates the implementation of the 2017 Policy in FY 2018/2019 to be similar to that of FY 2017/2018.

The Committee will:

- Review base salary levels for the Executive Directors with effect from 1 January 2019;
- Set and review the performance targets for the FY 2018/2019 annual bonus and the LTIP awards to be made in 2018 to ensure continued alignment to strategy;
- Make awards under the LTIP; and
- Make awards under the DBP, where necessary.

The Committee has so far considered the target range to apply to the EPS portion of performance awards to be made under the Company's long-term incentive arrangements later on in FY 2018/2019. In order to ensure that the target range remains challenging in light of market expectations of the Company's EPS performance to the year ending 30 June 2021, the Committee has determined that:

- No part of the EPS portion of these awards will vest if the Company's EPS for the final year in the performance period is lower than 60p;
- 25% of this portion will vest where the final year EPS is 60p;
- 100% of this portion will vest where the final year EPS is greater than or equal to 69p; and
- Vesting will take place on a straight-line basis between 60p and 69p.

The target range has been set on the basis of Ricardo's business plan, recognising the international nature of the business, and also reflects our long-term strategy and consensus forecasts.

Where the EPS performance period ends before 30 June 2021 (the final year of the performance period), the Committee retains the discretion to amend these targets and the corresponding vesting levels accordingly.

The targets applicable to the TSR portion of these awards will be the same as those which applied to awards granted last year.

Threshold performance (for which 25% of this portion will vest) is generally intended to align to the anticipated performance of the relevant market and our competitors. If the maximum performance is achieved, we would expect to have significantly outperformed the relevant market and our competitors.

The Committee believes that TSR and EPS are appropriate measures for the LTIP as they are strongly aligned to shareholder value creation. In particular, the normalised EPS performance targets are considered by the Committee to be suitably stretching and will reward the leadership team only if they perform very well. When calibrating performance targets, the Committee takes into account the economic and market outlook, the business plan and investor expectations at the time of each award. Shareholders should also note that the long-term incentive awards to be granted in October 2018 will be higher than those made in 2017 because no bonuses were paid to Executive Directors for the 2017/2018 financial year and therefore no bonus-linked shares were awarded.

The Directors' Remuneration Report, comprising the Chairman's Overview in Part 1, the Annual Report on Remuneration in Part 2 and the Directors' Remuneration Policy in Part 3 was approved by the Board on 12 September 2018 and signed on its behalf by:

Peter Gilchrist CB
Chairman of the Remuneration Committee

PART 3 – DIRECTORS' REMUNERATION POLICY

Introduction

This Directors' Remuneration Policy provides an overview of the Company's policy on Directors' pay that is designed to align with, and support, Ricardo's strategic plan and operates over the three years from the AGM held on 8 November 2017 (the '2017 AGM') until the AGM to be held in 2020. This policy permits the execution of remuneration arrangements that were agreed when the previous policy was in effect. There have been no changes of substance to the text of the policy that was approved at the 2017 AGM. A copy of the originally approved text is in the 2017 Annual Report & Accounts, which is available on our website at: www.ricardo.com. We have, however, updated the 'remuneration outcomes' chart on page 101 and the page references, for ease of use.

In accordance with the requirements of Companies Act 2006, the policy contained in this part was subject to a binding vote at the 2017 AGM and took effect immediately upon receipt of such approval from shareholders.

The Remuneration Committee – what we do

The Committee's primary purpose is to make recommendations to the Board on the Group's framework or broad policy for executive remuneration. The Board has also delegated responsibility to the Committee for determining the remuneration, benefits and contractual arrangements of the Chairman and the Executive Directors. No individual is involved in deciding his or her remuneration.

The Committee has written terms of reference, which are available at www.ricardo.com, and its responsibilities include:

- determining and agreeing with the Board the policy for executive remuneration and monitoring and considering the policy for, and structure of, senior management remuneration taking into account that the ultimate decision-making responsibility for the remuneration of the senior management team (other than the Executive Directors) lies with the Chief Executive Officer;
- agreeing the terms and conditions of employment for Executive Directors, including their individual annual remuneration and pension arrangements, and reviewing such provisions for senior management;
- agreeing the measures and targets for any performance-related bonus and share schemes;
- agreeing the remuneration of the Chairman of the Board;
- ensuring that, on termination, contractual terms and payments made are fair, both to the Company and the individual, so that failure is not rewarded and the duty to mitigate loss is recognised wherever possible; and
- agreeing the terms of reference of any remuneration advisors it appoints.

Taking shareholders' views into account

When considering Ricardo's remuneration policy and its implementation, the Committee is always keen to ensure that it takes into account the views and opinions of all the relevant stakeholders in the business. In particular, when preparing its policy for approval at the 2017 AGM, the Committee undertook a programme of engagement with the Company's largest institutional investors and their representative bodies in order to better understand their perspective on our previous pay practices and the proposed policy for 2017-2020. Shareholders were given an early opportunity to raise any questions and in finalising the proposals a number of questions were raised and answered: for example, on the use of the same performance measures in respect of the deferred bonus matching shares and the change in nomenclature to the bonus-linked shares. Both are designed to simplify Ricardo's long-term incentive arrangements.

In the spirit of continuous improvement and in order to ensure that our remuneration policy continues fully to support achievement of business objectives and delivery of value to shareholders, the Committee will continue to review our policy periodically in the context of the changing business environment. Any material future changes to policy will be discussed with shareholders in advance.

Consideration of employment conditions elsewhere in the Company

While Ricardo does not consult directly with employees on the subject of Directors' remuneration, the remuneration packages for each Executive Director and their fixed and variable elements are reviewed annually. This process takes into account a number of factors, including the following:

- individual and business performance;
- pay arrangements for similar roles in other companies and consultancy organisations of Ricardo's size, complexity and international reach;
- risk management; and
- pay and employment conditions of employees of the Group.

The Remuneration Committee also looks at the differential between the CEO's pay and Ricardo's average employee earnings over time.

Overview of Ricardo's remuneration policy for 2017-2020

The objective of Ricardo's executive remuneration policy is to support the business strategy and timescales of an international consultancy business by not only rewarding the standard of performance and the outcomes that our shareholders require, but also encouraging share ownership and fostering alignment of interest between the Executive Directors and shareholders. We do this by setting base levels of salary that are competitive, compared with companies of similar size and complexity to Ricardo, and providing other remuneration package elements, namely the short-term annual bonus plan and long-term incentive arrangement, that only pay for performance. Taken together, our two variable pay platforms focus on growing the profitability of the business, its resilience, the achievement of discrete non-financial targets and linking executive outcomes with the shareholder experience both by delivering rewards in the form of Ricardo shares and also by using a relative total shareholder return performance measure over the longer term.

The remuneration policy that was approved by shareholders at the 2017 AGM is:

- simple and straightforward;
- well-understood, both internally and externally;
- competitive but fair; and
- aligned to performance.

THE STRUCTURE OF OUR DIRECTORS' REMUNERATION PACKAGE – THE POLICY TABLE

Pay element and link to strategy	Maximum	Operation	Framework for assessing performance
Base salary *To provide a core level of remuneration to enable the Company to attract and retain skilled, high-calibre executives to deliver its strategy.*	Base salary increases will not ordinarily be more than 10% p.a. with exceptional increases over the normal maximum limit capped at 25% p.a. However, generally speaking, increases will be in line with salary increases for employees across the Group.	Salary levels are reviewed annually in January each year. Pay is set by considering market levels of total pay for comparable roles in companies of similar size, complexity and sector, as well as each individual Director's experience, scope of responsibilities and performance and the salary increases for employees across the Group. Ricardo places a strong emphasis on internal succession planning. This emphasis may mean that talented individuals are promoted rapidly. In such circumstances, the Committee's policy is to set a relatively low base salary initially and then increase this to a market competitive level for the role over time. This may mean relatively high annual salary increases as the individual gains experience in the new role. We will notify shareholders where this is the case.	None
Other benefits *To provide market-competitive benefits.*	The total value of benefits will not exceed 10% of base salary p.a., save in the case of relocation.	The Company provides other cash benefits and benefits in kind to Executive Directors in line with market practice. These include a company car or cash alternative, private fuel, private medical insurance, life assurance and permanent health and disability insurance. The benefits arrangements are reviewed on an annual basis. The Committee reserves the right to provide further benefits where this is appropriate in the individual's particular circumstances (for example, costs associated with relocation as a result of the Director's role with the Company). Certain other employees are eligible for the same or similar benefits described above depending on their role, seniority and geographical location.	None
Pension *To offer market-competitive retirement benefits.*	For the Chief Executive Officer, the pension contribution is 21.2% of salary over the Lower Earnings Limit due to legacy pension arrangements. For all other Executive Directors, the pension contribution is 20% of salary over the Lower Earnings Limit.	The Company operates a defined contribution scheme, the Ricardo International Pension Scheme ('RIPS'). The policy for Executive Directors (save for the CEO's legacy pension arrangements described opposite) continues to be a pension contribution of 20% of base salary only over the Lower Earnings Limit. Contributions are made up to the adjusted annual allowance limit and the rest is paid as cash in lieu of pension. Executive Directors may only choose to opt out of the RIPS where they are close to, or have exceeded, the pension lifetime allowance and have applied for fixed protection from HMRC. Under such circumstances, Executive Directors will receive a cash payment in lieu of pension. On death in service, all Executive Directors, subject to the medical requirements of the insurance company, are entitled to a lump sum of four times annual salary at date of death. Early retirement is available with the consent of the Company and the pension scheme trustees if the individual is over 55 or retiring due to ill health. The same policy approach applies to all employees although contribution levels vary by seniority.	None

Pay element and link to strategy	Maximum	Operation	Framework for assessing performance
Pay for performance: **Annual bonus** *To reward the annual delivery of financial and operational targets.*	Maximum opportunity of 125% of base salary for the CEO and 100% of salary for other Executive Directors.	**Bonuses are awarded by reference to performance against specific targets measured over a single financial year.** One half of any bonus paid to an Executive Director will be paid out shortly after the assessment of the performance targets has been completed. The remainder of the bonus will be compulsorily deferred into ordinary shares, the vesting of which is normally subject to continued employment for a three-year period from the award date. The cash element of the bonus is not payable unless the individual remains in employment at the payment date. The principal purpose of this bonus deferral mechanism is to: • provide for further alignment of executives' and shareholders' interests; • provide an additional retention element; and • encourage Executive Directors to build up a shareholding in accordance with our share retention policy. Dividends and dividend equivalents for each deferral period may also be paid in respect of shares under award to the extent that shares have vested in participants. Bonus arrangements exist for certain other employees throughout the Group on terms that are applicable to their role, seniority and geographical location, although typically at lower levels of maximum opportunity to reflect that a greater proportion of Executive Directors' remuneration is performance based. **Malus and clawback:** Annual bonuses (including any element deferred into shares) may be subject to malus and/or clawback provisions if certain events occur in the period of three years from the end of the financial year to which they relate. These events include the Committee becoming aware of: • a material misstatement of the Company's financial results; • an error in the calculation of performance conditions; and/or • an act committed by the relevant participant that could have resulted in summary dismissal by reason of gross misconduct or which has caused significant reputational damage to the Group. The mechanism through which malus and clawback can be implemented enables the Committee to take various actions including: • reducing outstanding incentive awards; and • requiring a cash payment to be made by participants.	The measures and targets applicable to the annual bonus scheme (and the different weightings ascribed to them) are set annually by the Committee in order to ensure they are relevant to participants and take account of the most up-to-date business plan and strategy. A significant majority (at least 50%) of the bonus opportunity will normally be determined by reference to performance against Group key performance indicators such as: • profit before tax; and • net debt. Any remaining part of a Director's bonus will normally be based on the achievement of personal objectives which relate to delivery of the business strategy. Examples include the development and efficient execution of the strategic plan, developing the business in emerging markets, identifying opportunities for inorganic growth and succession planning. A payment scale for different levels of achievement against each performance target is specified by the Committee at the outset of each year – this ranges from 0% for performance below threshold, up to 100% for full satisfaction of the relevant target.

Pay element and link to strategy	Maximum	Operation	Framework for assessing performance
Pay for performance: **Long-term incentives** Bonus-linked shares *To link short-term and long-term performance.* Performance shares under the long-term incentive plan ('LTIP') and bonus-linked shares *To focus motivation on the long-term performance of the Group and reward shareholder value creation.* *To encourage share ownership and alignment with shareholders.*	Maximum opportunity in aggregate of 162.5% of salary for the CEO and 105% of salary for other Executive Directors.	**Bonus-linked shares – performance measured over an aggregate four-year period:** Assuming that a satisfactory level of performance is achieved over the financial year in which the annual bonus is assessed (the first year in the four-year aggregate performance period) which results in a bonus being paid, Executive Directors will be granted a bonus-linked share award over further shares (up to a maximum of 1 for 1) in relation to the deferred element of the bonus. Consequently, in a year when there is no annual bonus, no bonus-linked share award will be made, thus providing a well-understood and automatic mechanism for reducing the overall quantum of awards in the year where performance targets have not been met in full. Bonus-linked share awards will be granted pursuant to the rules of the Ricardo plc 2011 Deferred Bonus Plan (the 'DBP'), for which shareholder approval was given at the 2011 Annual General Meeting. **LTIP – performance measured over a three-year period:** Performance share awards under the LTIP are made on an annual basis to the Executive Directors and a small group of other senior executives. **Dividends and equivalents** Dividends and dividend equivalents for each performance period may also be paid in respect of shares under award to the extent that shares have vested in participants. **Malus and clawback:** Long-term incentive awards may be subject to malus and/or clawback provisions if certain events occur after their grant but before the expiry of the period of two years from the end of the relevant performance period. These events include the Committee becoming aware of: • a material misstatement of the Company's financial results; • an error in the calculation of performance conditions; and/or • an act committed by the relevant participant that could have resulted in summary dismissal by reason of gross misconduct or which has caused significant reputational damage to the Group. The mechanism through which malus and clawback can be implemented enables the Committee to take various actions including: • reducing outstanding incentive awards; and • requiring a cash payment to be made by participants. Finally, where the vesting of a deferred bonus share award is reduced, the vesting of any associated bonus-linked share award will accordingly be reduced.	In addition to the initial performance period to determine whether bonus-linked share awards are made, the vesting of all long-term incentives is subject to both continued employment and the extent to which performance conditions measured over a further specified three-year period are met. The measures and targets applicable to the long-term incentive awards will consist of challenging shareholder return, financial and/or strategic measures. The particular measures and targets to apply (and the different weightings ascribed to them) will be set annually by the Committee in order to ensure they are relevant to participants, challenging to achieve and take account of the most up-to-date business plan and strategy. The current weightings between the two long-term incentive measures that we use are equal; however our policy is simply for financial and/or shareholder return targets to make up at least 50% of awards. 25% of each element of an award will vest for achieving the threshold performance target with 100% of the awards being earned for maximum performance (with straight-line vesting between these points). Further details of the performance conditions applicable to awards to be made in FY 2018/2019 are set out on pages 94 and 95.

Pay element and link to strategy	Maximum	Operation	Framework for assessing performance
Chairman and other Non-Executive Directors *Helps recruit and retain high-quality experienced individuals.* *Reflects time commitment and role.*	Company's Articles of Association place a limit on the aggregate annual level of Non-Executive Directors' and Chairman's fees (currently £500,000).	The fees for Non-Executive Directors are set in line with prevailing market conditions and at a level that will attract individuals with the necessary experience and ability to make a significant contribution to the Group's affairs. Non-Executive Directors receive an annual basic fee plus an additional fee for acting as the Chairman of the Audit or Remuneration Committee or the Senior Independent Director. An additional fee may be paid for membership of the Technical Exploitation Board ('TEB'). No Non-Executive Director is currently a member of the TEB. The Chairman of the Board receives an annual fee payable monthly with no additional fees for chairing Board committees. They also receive reimbursement for travel and incidental costs (including any associated personal tax charges) incurred in furtherance of company business.	None

Notes to the policy table:

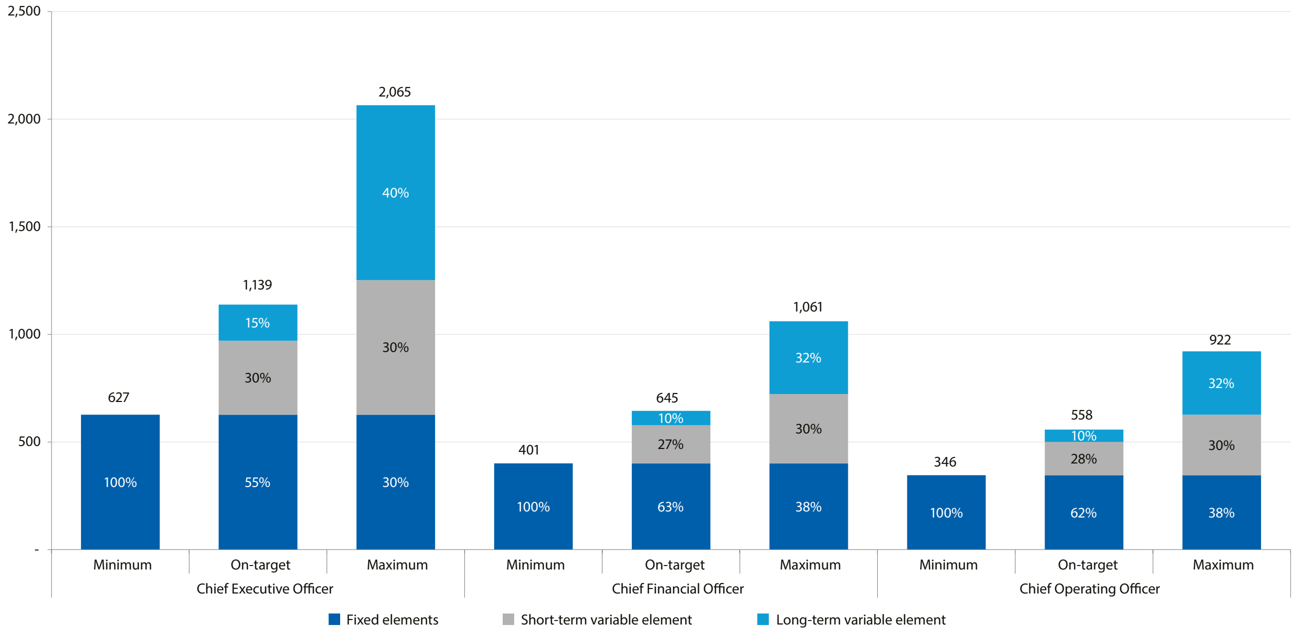
1. The changes to the 2014 Directors' Remuneration Policy consisted of:
   a. ceilings on the elements of our policy which were not capped, namely base salary and benefits;
   b. simplifying our long-term incentive arrangements so that the so-called deferred bonus matching shares became the bonus-linked shares; and
   c. aligning and extending the malus and clawback provisions which already applied to certain of our share plans across the LTIP, the annual cash bonus, deferred bonus shares and bonus-linked shares.
2. Where maximum amounts for elements of remuneration have been set within the Policy, these will operate simply as caps and are not indicative of any aspiration.
3. A description of how the Company intends to implement the Policy set out in the tables on pages 97 to 100 during the financial year to 30 June 2019 is provided on pages 94 and 95.
4. The Committee reserves the right to make any remuneration payments and/or payments for loss of office (including exercising any discretions available to it in connection with such payments) notwithstanding that they are not in line with the Policy (as set out on pages 97 to 100) where the terms of the payment were agreed:
   (i) before 29 October 2014 (the date the Company's first shareholder-approved Directors' Remuneration Policy came into effect);
   (ii) before the Policy came into effect, provided that the terms of the payment were consistent with the shareholder-approved Directors' Remuneration Policy in force at the time they were agreed; or
   (iii) at a time when the relevant individual was not a Director of the Company and, in the opinion of the Committee, the payment was not in consideration for the individual becoming a Director of the Company. For these purposes payments include the Committee satisfying awards of variable remuneration and, in relation to an award over shares, the terms of the payment are agreed at the time the award is granted.
5. Ricardo's variable pay may have any performance conditions applicable to the relevant element amended or substituted by the Committee if an event occurs which causes the Committee to determine that an amended or substituted performance condition would be more appropriate and not materially less difficult to satisfy. The Committee may make adjustments, where these are fair and reasonable, to measures or targets to take account of, for example, the implications of acquisitions and disposals.
6. Long-term incentive awards can be granted in a variety of forms such as performance shares, nil-cost options or forfeitable shares and the Committee reserves the right to grant long-term incentive awards with the same economic effect but in any of these different contractual forms (including in cash). Long-term incentive awards can also be adjusted in the event of any variation of the Company's share capital or any demerger, delisting, special dividend or other event that may affect the Company's share price.
7. Under the terms of long-term incentive award performance conditions, where any company becomes unsuitable as a member of the comparator group as a result of, for example, a change of control or delisting, the Committee has the discretion to treat that company in such manner as it deems appropriate (including replacing it with another organisation).
8. In the event of a change of control, long-term incentive awards will normally vest at that time, taking into account the extent to which any performance criteria have been met (over the shortened performance periods) and the time elapsed since grant.

All-employee share plans

For its UK employees the Company operates from time to time tax-advantaged share plans. These are a Share Incentive Plan ('SIP') and Save As You Earn share option ('SAYE') scheme and they are intended to encourage share ownership and wider interest in the performance of the Company's shares. Executive Directors are eligible to participate in these arrangements up to the applicable statutory limits. The SIP provides for partnership, matching, free and dividend shares. Equivalent arrangements operate from time to time for non-UK employees.

Illustrative remuneration outcomes at different performance levels

Ricardo's pay policy seeks to ensure the long-term interests of Executive Directors are aligned with those of shareholders. The remuneration packages for each Executive Director and their fixed and variable elements are reviewed annually. The scenario chart below presents remuneration outcomes for the current Policy under minimum, on-target and maximum scenarios.



The target scenario broadly illustrates the remuneration level when budgeted performance is achieved. The disclosures in the chart above reflect the 2017/2018 financial year data on the basis of the assumptions set out below.

- Fixed elements comprise current base salary, pension and other benefits. For example, for the CEO, fixed elements comprise base salary of £500,032, pension (pension contribution and cash in lieu) of 21.2% of base salary above the Lower Earnings Limit and benefits equal to those received in the 2017/2018 financial year;
- For minimum performance, Executive Directors receive only the fixed elements of pay;
- For target performance, an assumption of 55% of bonus pay-out and threshold vesting (25%) in respect of long-term incentives has been applied;
- For maximum performance, an assumption of maximum bonus pay-out and maximum vesting in respect of long-term incentives has been applied; and
- No share price increase has been assumed and this means that the single total figure in any year may be higher than the maximum shown above.

Recruitment remuneration policy

New Executive Directors will be appointed on remuneration packages with the same structure and elements as described in the policy table starting on page 97. Annual bonus and long-term incentive awards will be within the limits described in the policy table.

For external appointments, although we have no plans to offer additional benefits on recruitment (and indeed did not do so for our last Executive Director appointment) the Committee reserves the right to offer such benefits when it considers this to be in the best interests of the Company and shareholders and in order to protect a new Director against additional costs. The Committee may agree that the Company will meet certain relocation expenses as appropriate.

The Company may make an award to compensate a new recruit for the value of any remuneration relinquished when leaving a former employer. Any such award would reflect the nature, timescales and performance requirements attaching to that relinquished remuneration. The Listing Rules exemption 9.4.2 may be used for the purpose of such an award. Shareholders will be informed of any such payments as soon as practicable following the appointment.

For an internal appointment, any variable pay element awarded in respect of the prior role may be allowed to pay out according to its terms, adjusted as relevant to take into account the appointment. In addition, any other ongoing remuneration obligations existing prior to appointment may continue, and will be disclosed to shareholders at the earliest opportunity.

On the appointment of a new Chairman or Non-Executive Director, fees will be set taking into account the experience and calibre of the individual. Where specific cash or share arrangements are delivered to Non-Executive Directors, these will not include share options or other performance-related elements.

The Board's policy on setting notice periods for Directors is that these should not exceed one year. It recognises, however, that it may be necessary in the case of new executive appointments to offer an initial longer notice period, which would subsequently reduce to one year after the expiry of that period. All future appointments to the Board will comply with this requirement.

Termination remuneration policy

The contractual termination provision is payment in lieu of notice equal to one year's base salary or, if termination is part way through the notice period, the amount of base salary relating to any unexpired notice to the date of termination.[1] There is an obligation on Directors to mitigate any loss which they may suffer if the Company terminates their service contract. The Committee will take such mitigation obligation into account when determining the amount and timing of any compensation payable to any departing Director. No compensation is paid for summary dismissal, save for any statutory entitlements.

The cash element of the bonus is not payable unless the individual remains in employment at the payment date.

Share-based awards will lapse unless the individual concerned leaves for one of a number of specified 'good leaver' reasons which are: death; injury, illness or disability; redundancy; or retirement. The Committee retains the discretion to prevent awards from lapsing depending on the circumstances of the departure and the best interests of the Company. Awards which do not lapse on cessation of employment may vest on their originally anticipated vesting date (although the Committee retains the discretion to allow vesting at cessation, depending on the circumstances under the applicable rules). These awards will also usually be subject to a time pro-rating reduction to reflect the unexpired portion of the performance or deferral period concerned, although the Committee will retain the discretion to disapply this pro-rating. Awards that are subject to performance conditions will usually only vest to the extent that these conditions are satisfied.

Executive Directors will also be entitled to a payment in respect of any accrued but untaken holiday and statutory entitlements on termination.

In the event that any payment is made in relation to termination for an Executive Director, this will be fully disclosed.

(1) For Ian Gibson the contractual termination provision is payment in lieu of notice equal to one year's base salary, car allowance and pension allowance, to the extent that these benefits are paid in cash.

Executive Directors' service contracts

The current Executive Directors' service contracts contain the key terms shown in the table below:

Provision	Detailed terms
Remuneration	• Salary, pension and benefits; • Company car or cash allowance; • Private health insurance for Director and dependants; • Life assurance and death in-service benefits; • Permanent health and disability insurance; • Director's liability insurance; • 30 days' paid annual leave; • Participation in annual bonus plan, subject to plan rules and at the discretion of the Committee; and • Eligible to participate in share plans, subject to plan rules and at the discretion of the Committee.
Notice period	• 6 months' notice by the Director and 12 months' notice by the Company.
Termination payment	• See separate disclosure on page 102.
Restrictive covenants	• During employment and for 6 months after leaving.(1)

(1) Except for Ian Gibson who is restricted for 12 months after leaving.

The Executive Directors' service contracts are available for inspection, on request, at the Company's registered office.

Non-Executive Directors – fees and letters of appointment

The Committee determines the Chairman's fees. The Chairman and the Executive Directors determine the fees to other Non-Executive Directors. No Director is present for any discussion or decision about his or her own remuneration. The fees are reviewed each January.

The Non-Executive Directors do not participate in any of the Company's share incentive schemes, pension schemes or bonus arrangements, nor do they have service agreements. They are appointed for a period of three years by letter of appointment and are entitled to one month's notice of early termination for which no compensation is payable. The unexpired term of the Non-Executive Directors' appointments as at 30 June 2018, are:

Non-Executive Director	Unexpired term of appointment
Sir Terry Morgan CBE	18 months
Peter Gilchrist CB	16 months
Laurie Bowen	1 month
Malin Persson	6 months
Bill Spencer	22 months

Directors' report

Patricia Ryan – Group General Counsel and Company Secretary

The Directors present their report and the audited consolidated financial statements of Ricardo plc for the year ended 30 June 2018.

Dividends

The Directors recommend the payment of a final ordinary share dividend of 14.71 pence per ordinary share on 23 November 2018 to shareholders who are on the register of members at the close of business on 9 November 2018, which together with the interim dividend paid on 6 April 2018 makes a total of 20.46 pence per ordinary share for the year (2017: 19.3 pence).

Acquisitions and disposals

The acquisition of Control Point Corporation was completed on 8 September 2017 and has subsequently been renamed Ricardo Defense, Inc., a wholly-owned subsidiary of Ricardo Defense Systems LLC.

The disposals of our test facilities in Chicago, Illinois, United States and Schechingen, Germany, were completed on 2 April 2018 and 30 June 2018 respectively.

Events after the reporting date

The refinancing of the Group's banking facilities to increase its debt capacity to £150m was completed after the reporting date on 20 July 2018.

Research and Development

The Group continues to devote effort and resources to the research and development of new technologies. Costs of £9.5m have been incurred, of which £5.1m has been capitalised and £4.4m has been charged to the Consolidated Income Statement during the year.

Board of Directors

The current Directors of the Company at the date of this report appear on pages 68 and 69. At the close of the Annual General Meeting on 8 November 2017, Ian Lee retired from the Board and, following his election, Bill Spencer was appointed as Chairman of the Audit Committee.

All other Directors held office through the financial year under review.

Directors' interests in shares

Directors' interests in shares and share options are contained on pages 92 to 94 of the Directors' Remuneration Report.

Directors' indemnities

The Company has entered into deeds of indemnity in favour of each of its Directors under which the Company agrees to indemnify each Director against liabilities incurred by that Director in respect of acts or omissions arising in the course of their office or otherwise by virtue of their office.

Where such deeds are for the benefit of Directors, they are qualifying third party indemnity provisions as defined by section 309B of the Companies Act 1985 or section 234 of the Companies Act 2006, as applicable. At the date of this report, these indemnities are therefore in force for the benefit of all the current Directors of the Company.

On 30 June 2014, Ricardo UK Limited and Ricardo-AEA Limited, subsidiaries of the Group, entered into qualifying third party indemnity provisions as defined by section 234 of the Companies Act 2006 in favour of their Directors, under which each Director is indemnified against liabilities incurred by that Director in respect of acts or omissions arising in the course of their office or otherwise by virtue of their office and such provisions remain in force as at the date of this report.

Employee information

The Company provides employees with various opportunities to obtain information on matters of concern to them and to improve awareness of the financial and economic factors that affect the performance of the Company. These include bi-annual presentations to all members of staff, department and team briefings and meetings with employee representatives that take place throughout the year.

All companies within the Group strive to operate fairly at all times and this includes not permitting discrimination against any employee or applicant for employment on the basis of race, religion or belief, colour, gender, disability, national origin, age, military service, veteran status, sexual orientation or marital status. This includes giving full and fair consideration to suitable applications for employment from disabled persons and making appropriate accommodations so that if existing employees become disabled they can continue to be employed, wherever practicable, in the same job or, if this is not practicable, making every effort to find suitable alternative employment and to provide relevant training.

Change of control provisions

There are a number of agreements that take effect, alter or terminate upon a change of control of the Company following a takeover bid, such as commercial contracts, bank facility agreements, property lease arrangements and employees' share plans. None of these are considered to be significant in terms of their likely impact on the business of the Group as a whole.

Management report

The management report required by the provisions of the Disclosure and Transparency Rules is included within the Strategic Report and has been prepared in consultation with management.

Share capital

As at 31 August 2018, the Company's share capital is divided solely into 53,406,250 ordinary shares of 25 pence each, all of which are fully paid. The ordinary shares are listed on the London Stock Exchange.

All ordinary shares rank equally for all dividends and distributions that may be declared on such shares. At general meetings of the Company, each member who is present (in person, by proxy or by representative) is entitled to one vote on a show of hands and, on a poll, to one vote per share.

With respect to shares held on behalf of participants in the all-employee Share Incentive Plan, the trustees are required to vote as the participants direct them to do so in respect of their plan shares. There are no restrictions on voting rights and no securities carry special voting rights with regard to the control of the Company.

Awards granted under the Company's share plans are satisfied either by shares held in the employee benefit trust or by the issue of new shares when awards vest. The Remuneration Committee monitors the number of awards made under the various share plans and their potential impact on the relevant dilution limits recommended by the Investment Association. Based on the Company's issued share capital as at 30 June 2018, the overall dilution was 4.79% (i.e. under the 10% limit for all plans in any rolling 10-year period) and 4.35% for discretionary employee share plans (i.e. under the 5% limit for discretionary employee share plans in any rolling 10-year period).

The Company was given authority to purchase up to 15% of its existing ordinary share capital at the 2017 AGM. That authority will expire at the conclusion of the 2018 AGM unless renewed. Accordingly, a special resolution to renew the authority will be proposed at the forthcoming AGM.

The existing authority for Directors to allot ordinary shares will expire at the conclusion of the 2018 AGM. Accordingly, an ordinary resolution to renew this authority will be proposed at the forthcoming AGM. In addition, it will be proposed to give the Directors further authority for a period of one year to allot ordinary shares in connection with a rights issue in favour of ordinary shareholders. This is in accordance with guidance issued by the Association of British Insurers. If the Directors were to use further authority in the year following the 2018 AGM, all Directors wishing to remain in office would stand for re-election at the 2019 AGM.

Details of these resolutions are included with the Notice of AGM enclosed with this report.

Resolutions at the Annual General Meeting

The Company's AGM will be held on 15 November 2018. Accompanying this report is the Notice of AGM which sets out the resolutions to be considered and approved at the meeting, together with some explanatory notes. The resolutions cover such routine matters as the renewal of authority to allot shares, to disapply pre-emption rights and to purchase own shares.

Substantial shareholdings

The Company has been notified, as at 31 August 2018, of the following material interests in the voting rights of the Company under the provisions of the Disclosure and Transparency Rules.

Shareholders	Number of shares	% of issued share capital
Standard Life Aberdeen plc	5,833,216	10.92
Hargreave Hale	3,258,476	6.10
JP Morgan Asset Management	2,794,503	5.23
Aviva Investors	2,664,176	4.99
Royal London Asset Management	2,621,367	4.91
Invesco Asset Management	2,308,136	4.32
Baillie Gifford & Co. Limited	2,153,387	4.03
NN Investment Partners B.V.	2,116,794	3.96
Columbia Threadneedle Investments (UK)	2,031,263	3.80
Schroder Investment Management	1,835,114	3.44
Charles Stanley & Co. Limited	1,645,862	3.08

Donations

During the year the Group made various charitable donations which are summarised in the Corporate Responsibility and Sustainability Report on page 39. The Group made no political donations during the year to 30 June 2018.

Independent auditors

Following a tender process for external audit services, a resolution to appoint KPMG LLP as independent auditors of the Group and Company will be proposed at the AGM.

Going concern

Having assessed the principal risks and the other matters discussed in connection with the Viability Statement on page 43, the Directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements.

Branches outside the UK

The Company has no overseas branches outside the UK. A number of the Group's subsidiaries have overseas branches outside the UK, which are disclosed in their local statutory financial statements.

Additional information

Certain information that is required to be included in the Directors' Report can be found elsewhere in this document as referred to below, each of which is incorporated into the Directors' Report by cross-reference:

- An indication of the likely future developments in the Group's business can found in the Strategic Report, on pages 9, 12, 23 and 25;
- Information on greenhouse gas emissions can be found on pages 36 and 37;
- The Group's statement on corporate governance can be found in the Corporate Governance Statement on pages 70 to 75; and
- The Group's financial risk management objectives and policies in relation to its use of financial instruments and its exposure to capital, liquidity, credit and market risk, to the extent they are material, are set out in Note 24 to the financial statements on pages 144 to 148.

The Directors' Report was approved by order of the Board on 12 September 2018 and signed on its behalf by:

Patricia Ryan

Patricia Ryan
Group General Counsel and Company Secretary

Statement of Directors' responsibilities
in respect of the financial statements

The Directors are responsible for preparing the Annual Report, the Directors' Remuneration Report and the audited consolidated financial statements in accordance with applicable law and regulation.

Company law requires the Directors to prepare financial statements for each financial year. Under that law the Directors have prepared the Group and Parent Company financial statements in accordance with International Financial Reporting Standards ('IFRS') as adopted by the European Union. 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 Parent Company and of the profit or loss of the Group and Parent Company for that period. In preparing the financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- state whether applicable IFRS as adopted by the European Union have been followed for the Group and Parent Company financial statements, subject to any material departures disclosed and explained in the financial statements;
- make judgements and accounting estimates that are reasonable and prudent; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group and Parent Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Group and Parent Company's transactions and disclose with reasonable accuracy at any time the financial position of the Group and Parent Company and enable them to ensure that the financial statements and the Directors' Remuneration Report comply with the Companies Act 2006 and, as regards the Group financial statements, Article 4 of the IAS Regulation.

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

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

The Directors consider that 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 and Parent Company's position and performance, business model and strategy.

Responsibility statement of the Directors in respect of the Annual Report

Each of the Directors, whose names and functions are listed in the Board of Directors section of the Annual Report on pages 68 and 69, confirm that, to the best of their knowledge:

- the Group and Parent Company financial statements, which have been prepared in accordance with IFRS as adopted by the European Union, give a true and fair view of the assets, liabilities, financial position and profit of the Group and Parent Company; and
- the Strategic Report includes a fair review of the development and performance of the business and the position of the Group and Parent Company, together with a description of the principal risks and uncertainties that it faces.

Disclosure of information to the auditors

In accordance with Section 418 of the Companies Act 2006, each Director in office at the date of approval of the Directors' Report confirms that:

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

Dave Shemmans
Chief Executive Officer

Ian Gibson
Chief Financial Officer

12 September 2018

Financial statements

Independent auditors' report
to the members of Ricardo plc

REPORT ON THE AUDIT OF THE FINANCIAL STATEMENTS

Opinion

In our opinion, Ricardo 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 2018 and of the Group's profit and the Group's and the Parent Company's cash flows for the year then ended;
- have been properly prepared in accordance with International Financial Reporting Standards ('IFRS') as adopted by the European Union and, as regards the Parent Company's financial statements, as applied in accordance with the provisions of the Companies Act 2006; and
- 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, included within the Annual Report & Accounts (the 'Annual Report'), which comprise: the Consolidated and Parent Company Statements of Financial Position as at 30 June 2018, the Consolidated Income Statement and the Consolidated Statement of Comprehensive Income, the Consolidated and Parent Company Statements of Changes in Equity, and the Consolidated and Parent Company Statements of Cash Flow for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Our opinion is consistent with our reporting to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ('ISAs (UK)') and applicable law. Our responsibilities under ISAs (UK) are further described in the 'Auditors' responsibilities for the audit of the financial statements' section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the Group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided to the Group or the Parent Company.

Other than those disclosed in Note 6 to the financial statements, we have provided no non-audit services to the Group or the Parent Company in the period from 1 July 2017 to 30 June 2018.

Our audit approach

Overview

Materiality	• Overall Group materiality: £1,950,000 (2017: £1,900,000), based on 5% of profit before tax and specific adjusting items; and • Overall Parent Company materiality: £1,852,500 (2017: £1,805,000), based on 1% of total assets capped at a level below the overall Group financial statement materiality level.
Audit scope	• We audited the complete financial information of five reporting units (2017: five), with procedures on specific balances at five further reporting units (2017: six); and • As a result, audit procedures have been conducted at reporting units representing 70% of the Group's profit before tax and specific adjusting items, and 77% of revenue.
Key audit matters	• Revenue recognition on fixed price contracts in the Technical Consulting business (Group); • Recoverability of capitalised development costs (Group); and • Taxation (Group).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the Directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain.

We gained an understanding of the legal and regulatory framework applicable to the Group and the industries in which it operates, and considered the risk of acts by the Group which were contrary to applicable laws and regulations, including fraud. We designed audit procedures at Group and significant component level to respond to the risk, recognising that the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. We focused on laws and regulations that could give rise to a material misstatement in the Group and Parent Company financial statements, including, but not limited to, the Companies Act 2006, the Listing Rules, pensions legislation, UK tax legislation and equivalent local laws and regulations applicable to significant component teams. Our tests included, but were not limited to, inquiries with legal counsel, sending legal confirmations, and reviewing legal expenses incurred throughout the year. There are inherent limitations in these audit procedures and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we would become aware of it.

We did not identify any key audit matters relating to irregularities, including fraud. As in all of our audits we also addressed the risk of management override of internal controls, including testing journals and evaluating whether there was evidence of bias by the Directors that represented a risk of material misstatement due to fraud.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. This is not a complete list of all risks identified by our audit.

Key audit matter	How our audit addressed the key audit matter
Revenue recognition on fixed price contracts in the Technical Consulting business (Group) *Refer to page 78 ('Revenue recognition on fixed price contracts' within the Audit Committee Report), Notes 1(c), 1(e) and 20 to the financial statements for the Directors' disclosures of the related accounting policies, judgements and estimates for further information.* Contract accounting is used in the Group's Technical Consulting businesses, which contributes the majority of the Group's revenue, at £288.3m (2017: £280.5m). The contracts are inherently complex and may span a number of reporting periods. They therefore require judgements by management related to the stage that the contract has reached and estimates of the costs to complete the work, that could lead to an under or overstatement of revenue and profit, either intentionally or in error. In contract accounting the amounts recorded in the Consolidated Statement of Financial Position depend on the relationship between the work done and forecast costs to come, the invoicing schedule agreed with the customer and the cash payments received. The Consolidated Statement of Financial Position at 30 June 2018 showed amounts recoverable on contracts ('AROC') of £52.6m, net trade receivables of £64.4m and payments received in advance on contracts of £25.3m primarily in respect of the Technical Consulting business. We carried out procedures on each of these balances in the course of our work as described opposite. AROC represents work done that has not yet been invoiced and we focused on the risk that it, or the trade receivables for work that had been invoiced prior to the year-end, would not be recoverable in full. Management assesses the contract-related AROC and trade receivable balances to ensure sufficient confidence over the likely recoverability of these balances.	We tested the key controls over contract accounting in the Technical Consulting business, including the controls over recording work done, invoicing and cash receipts. We also obtained the position paper prepared by management and attended the 'Red CAT4' (high-risk and underperforming contracts) review meetings in January and July 2018 with the Chief Financial Officer and the divisional Managing and Finance Directors, at which the performance of these contracts was discussed. We were satisfied that a robust process had been undertaken in the contract reviews and that the outcomes were reflected in the year-end positions in the financial statements. We also tested a sample of contracts by meeting with the relevant project managers and engineers to analyse the contracts in detail. These meetings included discussion and evaluation of the key project risks and adherence to billing schedules, together with the key estimates used in the long-term contract accounting calculations such as costs to complete and contingencies held, which were all reconciled to the project records. Where appropriate, we obtained the relevant contracts and other supporting information and validated the data included in the calculations and management's assumptions for costs to complete based on the contractual requirements. We found that management was able to provide reasonable explanations and appropriate supporting evidence for the various judgements taken. We discussed significant AROC and trade receivable positions with management and performed testing to assess the recoverability of these. We were able to confirm that the positions were consistent with the relevant invoicing schedules and payment plans. We also considered recent communications with customers and traced amounts to subsequent cash receipt where possible. We also considered whether payments received in advance were recognised where the related work had not yet been done. No material issues were identified in our testing. We considered the appropriateness and completeness of judgemental contract provisions and obtained and challenged the evidence provided in support of these, which included reading correspondence with third parties. No material issues were identified in our testing. We also tested manual journal entries with a material impact on revenue and found that all manual journal entries tested relating to contract accounting were properly supported.

Key audit matter	How our audit addressed the key audit matter
Recoverability of capitalised development costs (Group) *Refer to page 78 ('Recoverability of capitalised development costs' within the Audit Committee Report), and Notes 1(c), 1(o) and 14 to the financial statements for the Directors' disclosures of the related accounting policies, judgements and estimates for further information.* The Group has continued to focus on research and development activities, targeted on areas that can maximise future benefit. During the year £5.1m of development spend was capitalised in respect of development projects, resulting in a total of £10.4m held in the Consolidated Statement of Financial Position at 30 June 2018. The capitalised costs must comply with the criteria set out in IAS 38 '*Intangible Assets*'. In particular, management must only capitalise costs that are directly attributable to the development projects and, until signed sales orders exist, there is a risk that such projects will not generate sufficient economic benefit in the future to support the current carrying value.	We obtained the position paper prepared by management and tested the development costs to ensure that they were capitalised in accordance with the requirements of the accounting framework and were properly attributable to the relevant projects by obtaining supporting documentation such as invoices and time records, and checking the nature of each cost incurred. We found that the costs on these projects had been capitalised in accordance with the criteria set out in IAS 38. We obtained project plans for a sample of the larger projects and met with the Project Directors to understand progress to date, the potential opportunity and management's assessment of the future returns that will be generated. We challenged management on the specific opportunities identified and found that a number of these have started to realise future economic benefit. In other cases, we were able to obtain appropriate evidence and explanations for the future value.
Taxation (Group) *Refer to page 79 ('Taxation' within the Audit Committee Report), and Notes 1(c), 1(l), 9 and 26 to the financial statements for the Directors' disclosures of the related accounting policies, judgements and estimates for further information.* The Group claims significant R&D credits in the US and also has potential liabilities around the Group for permanent establishment risks and transfer pricing, for which it maintains provisions. The US tax group has £5.5m of recognised deferred tax assets in the Consolidated Statement of Financial Position, but the performance of these businesses in the past few years has been variable, leading to doubt over the likely realisation of the assets.	We obtained the tax calculations, including those for R&D credits, and the position papers prepared by management to understand and test the tax charge and deferred tax position for the Group. We considered the processes and procedures undertaken by management to understand their risks arising from permanent establishments and transfer pricing. We formed our own view on these judgements and concluded that the judgements taken by management in establishing provisions for these risks were reasonable. We evaluated the Group's forecasts for the US tax group and the process by which they were prepared in considering the forecast utilisation of the relevant deferred tax assets. We noted that the profitability of the US tax group has improved in the current year and continues to utilise the deferred tax asset recognised.

We determined that there were no key audit matters applicable to the Parent Company to communicate in our report.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the Group and the Parent Company, the accounting processes and controls, and the industry in which they operate.

The Group is structured by division, with significant reporting units in the UK and Europe, and further smaller reporting units in locations across the US, Middle East, Asia and the rest of Europe. The Group financial statements are a consolidation of 49 reporting units, comprising the Group's operating businesses and centralised functions.

For each reporting unit, we determined whether we required an audit of the complete financial information or whether alternative procedures would be sufficient. Our principal measure for these scoping decisions was revenue, as in the Group this is a reasonable indicator of the scale of activities of an individual reporting unit. Based on this measure the full scope components were Automotive Europe and Performance Products, as each reporting unit made up more than 15% of the Group's revenue.

We included Energy & Environment, Rail UK and Rail Netherlands as full scope for Group reporting given the scale of the operations in these reporting units and the requirement for UK and Netherlands statutory audits to be performed for the related legal entities. Automotive US and Software are the other more significant trading businesses within the Group. As these have no local statutory requirement, we performed specified procedures for Group reporting and performed risk-focused testing over key contracts and the associated balances. In addition, we performed procedures over specific balances in Ricardo plc, Ricardo Investments Limited and Automotive China, along with higher level risk-focused procedures with respect to the remaining reporting units and procedures over consolidation entries.

The Group audit team was responsible for all the work carried out in the UK and the specified procedures work over Automotive US and Software. PwC Netherlands performed work over Rail Netherlands under our instruction. Discussions were held with the PwC Netherlands team at both planning and completion to discuss the scope of their procedures and their findings.

Taken together, our audit work in the UK and the US, along with work performed by PwC Netherlands, addressed 70% of the Group's profit before tax and specific adjusting items, and 77% of revenue. This gave us the evidence we needed for our opinion on the Group financial statements as a whole.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Group financial statements	Parent Company financial statements
Overall materiality	£1,950,000 (2017: £1,900,000).	£1,852,500 (2017: £1,805,000).
How we determined it	5% of profit before tax and specific adjusting items.	1% of total assets capped at a level below the overall Group financial statement materiality level.
Rationale for benchmark applied	We chose this because we consider this to be the principal measure used by shareholders to assess the Group's underlying performance.	We chose this because the Parent Company's primary purpose is that of a holding company for the Group.

For each component in the scope of our group audit, we allocated a materiality that is less than our overall group materiality. The range of materiality allocated across components was between £267,000 and £1,852,500. Certain components were audited to a local statutory audit materiality that was also less than our overall group materiality.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £100,000 (Group audit) (2017: £95,000) and £100,000 (Parent Company audit) (2017: £90,000) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Going concern

In accordance with ISAs (UK) we report as follows:

Reporting obligation	Outcome
We are required to report if we have anything material to add or draw attention to in respect of the Directors' statement in the financial statements about whether the Directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements and the Directors' identification of any material uncertainties to the Group's and the Parent Company's ability to continue as a going concern over a period of at least twelve months from the date of approval of the financial statements.	We have nothing material to add or to draw attention to. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's and Parent Company's ability to continue as a going concern.
We are required to report if the Directors' statement relating to going concern in accordance with Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit.	We have nothing to report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The Directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the Companies Act 2006 ('CA06'), ISAs (UK) and the Listing Rules of the Financial Conduct Authority ('FCA') require us also to report certain opinions and matters as described below (required by ISAs (UK) unless otherwise stated).

Strategic report and Directors' report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 30 June 2018 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements. *(CA06)*

In light of the knowledge and understanding of the Group and Parent Company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report. *(CA06)*

Corporate governance statement

In our opinion, based on the work undertaken in the course of the audit, the information given in the Corporate Governance Statement (pages 70 to 75 of the Annual Report) about internal controls and risk management systems in relation to financial reporting processes and about share capital structures in compliance with rules 7.2.5 and 7.2.6 of the Disclosure Guidance and Transparency Rules sourcebook of the FCA ('DTR') is consistent with the financial statements and has been prepared in accordance with applicable legal requirements. *(CA06)*

In light of the knowledge and understanding of the Group and Parent Company and their environment obtained in the course of the audit, we did not identify any material misstatements in this information. *(CA06)*

In our opinion, based on the work undertaken in the course of the audit, the information given in the Corporate Governance Statement (on pages 70 to 75) with respect to the Parent Company's corporate governance code and practices and about its administrative, management and supervisory bodies and their committees complies with rules 7.2.2, 7.2.3 and 7.2.7 of the DTR. *(CA06)*

We have nothing to report arising from our responsibility to report if a corporate governance statement has not been prepared by the Parent Company. *(CA06)*

The Directors' assessment of the prospects of the Group and of the principal risks that would threaten the solvency or liquidity of the Group

We have nothing material to add or draw attention to regarding:

- The Directors' confirmation on page 43 of the Annual Report that they have carried out a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity;
- The disclosures on pages 41 and 42 of the Annual Report that describe those risks and explain how they are being managed or mitigated; and
- The Directors' explanation on page 43 of the Annual Report as to how they have assessed the prospects of the Group, 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 Group 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.

We have nothing to report having performed a review of the Directors' statement that they have carried out a robust assessment of the principal risks facing the Group and statement in relation to the longer-term viability of the Group. Our review was substantially less in scope than an audit and only consisted of making inquiries and considering the Directors' process supporting their statements; checking that the statements are in alignment with the relevant provisions of the UK Corporate Governance Code (the 'Code'); and considering whether the statements are consistent with the knowledge and understanding of the Group and Parent Company and their environment obtained in the course of the audit. *(Listing Rules)*

Other Code provisions

We have nothing to report in respect of our responsibility to report when:

- The statement given by the Directors, on page 107, that they consider the Annual Report taken as a whole to be fair, balanced and understandable, and provides the information necessary for the members to assess the Group's and Parent Company's position and performance, business model and strategy is materially inconsistent with our knowledge of the Group and Parent Company obtained in the course of performing our audit;
- The section of the Annual Report on page 77 and 81 describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee; and
- The Directors' statement relating to the Parent Company's compliance with the Code does not properly disclose a departure from a relevant provision of the Code specified, under the Listing Rules, for review by the auditors.

Directors' remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006. *(CA06)*

Responsibilities for the financial statements and the audit

Responsibilities of the Directors for the financial statements

As explained more fully in the Statement of Directors' Responsibilities set out on page 107, the Directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The Directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Directors are responsible for assessing the Group's and the 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.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the Parent Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

OTHER REQUIRED REPORTING

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- 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
- certain disclosures of Directors' remuneration specified by law are not made; 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.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the audit committee, we were appointed by the members on 24 September 1990 to audit the financial statements for the year ended 30 June 1991 and subsequent financial periods. The period of total uninterrupted engagement is 28 years, covering the years ended 30 June 1991 to 30 June 2018.

Andrew Paynter (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
Gatwick
12 September 2018

Consolidated income statement

for the year ended 30 June 2018

		Year ended 30 June 2018			Year ended 30 June 2017		
		Underlying	**Specific adjusting items[1]**	**Total**	Underlying	Specific adjusting items[1]	Total
	Note	**£m**	**£m**	**£m**	£m	£m	£m
Revenue	*2 & 3*	**380.0**	**-**	**380.0**	352.1	-	352.1
Cost of sales		**(241.1)**	**-**	**(241.1)**	(219.2)	-	(219.2)
Gross profit		**138.9**	**-**	**138.9**	132.9	-	132.9
Administrative expenses		**(98.4)**	**(10.5)**	**(108.9)**	(92.6)	(6.1)	(98.7)
Other income		**0.7**	**-**	**0.7**	0.5	-	0.5
Operating profit	*5*	**41.2**	**(10.5)**	**30.7**	40.8	(6.1)	34.7
Finance income	*8*	**0.4**	**-**	**0.4**	0.2	-	0.2
Finance costs	*8*	**(2.6)**	**-**	**(2.6)**	(2.7)	-	(2.7)
Net finance costs	*8*	**(2.2)**	**-**	**(2.2)**	(2.5)	-	(2.5)
Profit before taxation		**39.0**	**(10.5)**	**28.5**	38.3	(6.1)	32.2
Taxation	*9*	**(8.3)**	**(1.3)**	**(9.6)**	(8.8)	1.4	(7.4)
Profit for the year		**30.7**	**(11.8)**	**18.9**	29.5	(4.7)	24.8
Profit attributable to:							
- Owners of the parent		**30.6**	**(11.8)**	**18.8**	29.5	(4.7)	24.8
- Non-controlling interests	*38*	**0.1**	**-**	**0.1**	-	-	-
		30.7	**(11.8)**	**18.9**	29.5	(4.7)	24.8
Earnings per ordinary share attributable to owners of the parent during the year							
Basic	*10*	**57.3p**	**(22.1)p**	**35.2p**	55.7p	(8.9)p	46.8p
Diluted	*10*	**57.1p**	**(22.0)p**	**35.1p**	55.2p	(8.8)p	46.4p

(1) Specific adjusting items comprise amortisation of acquired intangible assets, acquisition-related expenditure, reorganisation costs and derecognition of related net deferred tax assets. Further details are given in Note 4.

The Company has not presented its own Income Statement and Statement of Comprehensive Income as permitted by Section 408 of the Companies Act 2006.

Consolidated statement of comprehensive income

for the year ended 30 June 2018

	Note	**Year ended 30 June 2018 £m**	Year ended 30 June 2017 £m
Profit for the year		**18.9**	24.8
Items that will not be reclassified to profit or loss:			
Remeasurements of the defined benefit pension scheme	*25*	**13.8**	(4.4)
Deferred tax on remeasurements of the defined benefit scheme	*26*	**(2.7)**	0.8
Total items that will not be reclassified to profit or loss		**11.1**	(3.6)
Items that may be subsequently reclassified to profit or loss:			
Currency translation on foreign currency net investments	*31*	**0.1**	3.0
Total items that may be subsequently reclassified to profit or loss		**0.1**	3.0
Total other comprehensive income/(loss) for the year (net of tax)		**11.2**	(0.6)
Total comprehensive income for the year		**30.1**	24.2
Attributable to:			
- Owners of the parent		**30.0**	24.2
- Non-controlling interests		**0.1**	-
		30.1	24.2

Consolidated and parent company statements of financial position

as at 30 June 2018

		Group		Company	
		30 June 2018	30 June 2017	**30 June 2018**	30 June 2017
	Note	**£m**	£m	**£m**	£m
Assets					
Non-current assets					
Goodwill	*13*	**65.5**	62.0	**-**	-
Other intangible assets	*14*	**31.7**	32.4	**1.6**	2.7
Property, plant and equipment	*15*	**45.3**	48.0	**4.5**	4.7
Investments	*16*	**-**	-	**103.1**	103.1
Deferred tax assets	*26*	**7.6**	14.3	**1.7**	4.8
		150.1	156.7	**110.9**	115.3
Current assets					
Inventories	*17*	**13.3**	13.9	**-**	-
Trade and other receivables	*18*	**141.8**	137.6	**89.6**	105.2
Derivative financial assets	*23*	**0.1**	0.9	**0.1**	0.9
Current tax assets		**1.3**	0.6	**0.2**	0.4
Cash and cash equivalents	*34*	**33.1**	27.9	**0.3**	0.9
		189.6	180.9	**90.2**	107.4
Non-current assets held for sale	*19*	**-**	2.8	**-**	-
		189.6	183.7	**90.2**	107.4
Total assets		**339.7**	340.4	**201.1**	222.7
Liabilities					
Current liabilities					
Borrowings	*22*	**(9.4)**	(6.0)	**(8.6)**	(6.0)
Trade and other payables	*21*	**(82.5)**	(82.1)	**(70.3)**	(66.7)
Current tax liabilities		**(6.3)**	(6.3)	**-**	-
Derivative financial liabilities	*23*	**(1.0)**	(0.7)	**(1.0)**	(0.7)
Provisions	*27*	**(2.8)**	(1.3)	**-**	-
		(102.0)	(96.4)	**(79.9)**	(73.4)
Net current assets		**87.6**	87.3	**10.3**	34.0
Non-current liabilities					
Borrowings	*22*	**(49.8)**	(59.8)	**(6.8)**	(19.8)
Retirement benefit obligations	*25*	**(4.6)**	(22.2)	**(4.6)**	(22.2)
Deferred tax liabilities	*26*	**(3.9)**	(5.0)	**(0.6)**	(0.1)
Provisions	*27*	**(2.9)**	(1.3)	**-**	-
		(61.2)	(88.3)	**(12.0)**	(42.1)
Total liabilities		**(163.2)**	(184.7)	**(91.9)**	(115.5)
Net assets		**176.5**	155.7	**109.2**	107.2
Equity					
Share capital	*28*	**13.4**	13.3	**13.4**	13.3
Share premium	*29*	**14.3**	14.3	**14.3**	14.3
Other reserves	*31*	**15.7**	15.6	**-**	-
Retained earnings	*32*				
At 1 July		**112.2**	99.4	**79.6**	89.4
Profit for the year attributable to owners of the parent		**18.8**	24.8	**0.2**	1.9
Other changes in retained earnings		**1.7**	(12.0)	**1.7**	(11.7)
		132.7	112.2	**81.5**	79.6
Equity attributable to owners of the parent		**176.1**	155.4	**109.2**	107.2
Non-controlling interests	*38*	**0.4**	0.3	**-**	-
Total equity		**176.5**	155.7	**109.2**	107.2

The notes on pages 120 to 159 form an integral part of these financial statements.

The financial statements of Ricardo plc (registered number 222915) on pages 116 to 159 were approved by the Board of Directors on 12 September 2018 and signed on its behalf by:

Dave Shemmans
Chief Executive Officer

Ian Gibson
Chief Financial Officer

Consolidated and parent company statements of changes in equity

for the year ended 30 June 2018

Group	Note	Attributable to owners of the parent: Share capital £m	Share premium £m	Other reserves £m	Retained earnings £m	Total £m	Non-controlling interests £m	Total equity £m
At 1 July 2017		13.3	14.3	15.6	112.2	155.4	0.3	155.7
Profit for the year		-	-	-	18.8	18.8	0.1	18.9
Other comprehensive income for the year		-	-	0.1	11.1	11.2	-	11.2
Total comprehensive income for the year		-	-	0.1	29.9	30.0	0.1	30.1
Equity-settled transactions	*30*	-	-	-	1.0	1.0	-	1.0
Tax credit relating to share option schemes	*32*	-	-	-	0.1	0.1	-	0.1
Proceeds from shares issued	*28*	0.1	-	-	-	0.1	-	0.1
Ordinary share dividends	*11*	-	-	-	(10.5)	(10.5)	-	(10.5)
At 30 June 2018		**13.4**	**14.3**	**15.7**	**132.7**	**176.1**	**0.4**	**176.5**
At 1 July 2016		13.2	14.3	12.6	99.4	139.5	-	139.5
Profit for the year		-	-	-	24.8	24.8	-	24.8
Other comprehensive income/(loss) for the year		-	-	3.0	(3.6)	(0.6)	-	(0.6)
Total comprehensive income for the year		-	-	3.0	21.2	24.2	-	24.2
Reclassification of non-controlling interests	*32*	-	-	-	(0.3)	(0.3)	0.3	-
Equity-settled transactions	*30*	-	-	-	1.6	1.6	-	1.6
Tax credit relating to share option schemes	*32*	-	-	-	0.1	0.1	-	0.1
Proceeds from shares issued	*28*	0.1	-	-	-	0.1	-	0.1
Ordinary share dividends	*11*	-	-	-	(9.8)	(9.8)	-	(9.8)
At 30 June 2017		13.3	14.3	15.6	112.2	155.4	0.3	155.7

Company	Note	Attributable to owners of the parent: Share capital £m	Share premium £m	Other reserves £m	Retained earnings £m	Total £m	Non-controlling interests £m	Total equity £m
At 1 July 2017		13.3	14.3	-	79.6	107.2	-	107.2
Profit for the year		-	-	-	0.2	0.2	-	0.2
Other comprehensive income for the year		-	-	-	11.1	11.1	-	11.1
Total comprehensive income for the year		-	-	-	11.3	11.3	-	11.3
Equity-settled transactions	*30*	-	-	-	1.0	1.0	-	1.0
Tax credit relating to share option schemes	*32*	-	-	-	0.1	0.1	-	0.1
Proceeds from shares issued	*28*	0.1	-	-	-	0.1	-	0.1
Ordinary share dividends	*11*	-	-	-	(10.5)	(10.5)	-	(10.5)
At 30 June 2018		**13.4**	**14.3**	**-**	**81.5**	**109.2**	**-**	**109.2**
At 1 July 2016		13.2	14.3	-	89.4	116.9	-	116.9
Profit for the year		-	-	-	1.9	1.9	-	1.9
Other comprehensive loss for the year		-	-	-	(3.6)	(3.6)	-	(3.6)
Total comprehensive loss for the year		-	-	-	(1.7)	(1.7)	-	(1.7)
Equity-settled transactions	*30*	-	-	-	1.6	1.6	-	1.6
Tax credit relating to share option schemes	*32*	-	-	-	0.1	0.1	-	0.1
Proceeds from shares issued	*28*	0.1	-	-	-	0.1	-	0.1
Ordinary share dividends	*11*	-	-	-	(9.8)	(9.8)	-	(9.8)
At 30 June 2017		13.3	14.3	-	79.6	107.2	-	107.2

Consolidated and parent company statements of cash flow

for the year ended 30 June 2018

	Note	Group		Company	
		Year ended 30 June 2018	Year ended 30 June 2017	**Year ended 30 June 2018**	Year ended 30 June 2017
		£m	£m	**£m**	£m
Cash flows from operating activities					
Cash generated from/(used in) operations	*33*	**44.2**	24.3	**19.6**	(1.7)
Net finance (costs)/income		**(2.1)**	(1.4)	**-**	0.7
Tax (paid)/received		**(7.7)**	(7.6)	**0.7**	-
Net cash generated from/(used in) operating activities		**34.4**	15.3	**20.3**	(1.0)
Cash flows from investing activities					
Acquisitions of subsidiaries, net of cash acquired	*12*	**(4.6)**	(1.9)	**-**	-
Purchases of property, plant and equipment		**(7.7)**	(6.3)	**(0.1)**	-
Proceeds from sale of property, plant and equipment		**6.4**	4.0	**-**	4.0
Purchases of intangible assets		**(6.5)**	(5.6)	**-**	(0.2)
Net cash (used in)/generated from investing activities		**(12.4)**	(9.8)	**(0.1)**	3.8
Cash flows from financing activities					
Proceeds from issuance of ordinary shares	*28*	**0.1**	0.1	**0.1**	0.1
Proceeds from borrowings	*34*	**15.0**	31.5	**10.0**	26.5
Repayments of borrowings	*34*	**(25.0)**	(26.4)	**(23.0)**	(21.4)
Dividends paid to shareholders	*11*	**(10.5)**	(9.8)	**(10.5)**	(9.8)
Net cash used in financing activities		**(20.4)**	(4.6)	**(23.4)**	(4.6)
Effect of exchange rate changes on cash and cash equivalents		**0.2**	0.7	**-**	-
Net increase/(decrease) in cash and cash equivalents	*34*	**1.8**	1.6	**(3.2)**	(1.8)
Net cash and cash equivalents at 1 July		**22.0**	20.4	**(5.0)**	(3.2)
Net cash and cash equivalents at 30 June	*34*	**23.8**	22.0	**(8.2)**	(5.0)
At 1 July					
Cash and cash equivalents		**27.9**	23.7	**0.9**	0.1
Bank overdrafts		**(5.9)**	(3.3)	**(5.9)**	(3.3)
		22.0	20.4	**(5.0)**	(3.2)
At 30 June					
Cash and cash equivalents		**33.1**	27.9	**0.3**	0.9
Bank overdrafts		**(9.3)**	(5.9)	**(8.5)**	(5.9)
Net cash and cash equivalents at 30 June		**23.8**	22.0	**(8.2)**	(5.0)

Notes to the financial statements

1 Accounting policies

Ricardo plc (the 'Company') and its subsidiaries (together, the 'Group') provide engineering, technical, environmental and strategic consultancy services, together with accreditation and independent assurance services. The Group also manufactures and assembles high-quality prototypes and niche volumes of complex engine, transmission and vehicle products, together with advanced virtual engineering tools, such as computer-aided engineering and simulation software for conventional and electrified powertrains, as well as complex physical systems such as water networks. The Group sells its products and services to customers in the UK, the rest of Europe, the Middle East, Asia and North America.

Ricardo plc is a public limited company, limited by shares, which is listed on the London Stock Exchange and incorporated and domiciled in the United Kingdom. The address of its registered office is Shoreham Technical Centre, Shoreham-by-Sea, West Sussex, BN43 5FG, England, United Kingdom and its registered number is 222915.

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to the years ended 30 June 2017 and 30 June 2018.

(a) Basis of preparation

These financial statements of Ricardo plc have been prepared in accordance with International Financial Reporting Standards ('IFRS'), IFRS Interpretations Committee ('IFRS IC') interpretations adopted by the European Union ('EU') and the Companies Act 2006 applicable to companies reporting under IFRS.

The financial statements have been prepared on a going concern basis under the historical cost convention, as modified by financial assets and financial liabilities (including derivative instruments) which are measured at fair value through profit or loss.

Having assessed the principal risks and the other matters discussed in connection with the Viability Statement on page 43, the Directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements.

The preparation of financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in Note 1(c).

Changes in accounting policies

The following amendments and interpretations to published standards have been adopted by the Group, where relevant, for the first time for the financial year ended 30 June 2018:

Issued standards and amendments effective for this financial year	Effective date (periods commencing)	Endorsed by EU
Amendments to International Financial Reporting Standards		
IAS 7 '*Statement of Cash Flows*': Disclosure Initiative	1 Jan 2017	Yes
IAS 12 '*Income Taxes*': Recognition of Deferred Tax Assets for Unrealised Losses	1 Jan 2017	Yes
Annual Improvements to IFRS Standards 2014-2016 Cycle: IFRS 12 '*Disclosure of Interests in Other Entities*'	1 Jan 2017	Yes

None of these amendments to published standards have had, or are expected to have, any significant impact on these financial statements.

New, revised or amended standards and interpretations that are not yet effective have not been early adopted. Where these standards and interpretations are expected to have a material impact on the financial statements, this is disclosed in Note 1(x).

(b) Basis of consolidation

The consolidated financial statements comprise the financial statements of the Company and all of its subsidiaries (together the 'Group') prepared to the end of the financial year. Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group 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. Subsidiaries are fully consolidated from the date on which control is transferred to the Group and are deconsolidated from the date that control ceases. Intercompany transactions and balances are eliminated on consolidation.

The Group applies the acquisition method of accounting to account for business combinations. The consideration transferred for an acquisition is the fair value of the assets acquired and the liabilities assumed. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Contingent consideration dependent upon the employment or retention of specific individuals is expensed over the specified period and included within specific adjusting items. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. Acquisition-related expenditure is expensed as incurred.

(c) Management judgements and key accounting estimates

The preparation of financial statements under IFRS requires the Group's management to make judgments, assumptions and estimates that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expense.

These judgements and estimates are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Critical judgements in applying the Group's accounting policies

The following are the critical judgements, apart from those involving estimations (which are dealt with separately on the following page), that the Directors have made in the process of applying the Group's accounting policies and that have the most significant effect on the amounts recognised in the financial statements:

Recoverability of capitalised development costs

The Group is required to make judgements as to when development costs meet the criteria to be recognised as intangible assets. The majority of capitalised development costs relate to product development projects, benchmarking projects and software products. These costs are recognised as an asset once the Group has determined that the attributable expenditure can be measured reliably, that it has the intention and the necessary resources to complete the relevant project and that it is considered probable that the resulting asset will generate future economic benefits for the Group. Determining whether it is probable that the resulting asset will generate sufficient economic benefits in the future requires management judgement. Further details are given in Note 14.

1 Accounting policies (continued)

(c) Management judgements and key accounting estimates (continued)

Critical judgements in applying the Group's accounting policies (continued)

Current taxation

Legislation related to taxation is complex and elements of the Group's taxation charge, as set out in Note 9, may be uncertain. In preparing the Group's financial statements management makes judgements on the existence of risks, primarily in respect of permanent establishment and transfer pricing, having taken appropriate professional advice. Although uncertainty of estimates made on individual risks is not considered to be significant, determination of an agreed amount of taxation payable may take several years, and the final amount paid may differ from the liabilities recorded in these financial statements.

Deferred taxation

The recognition of assets and liabilities related to deferred taxation requires management to exercise judgement, in particular the extent to which assets should be recognised. Further details are given in Note 26.

Sources of estimation uncertainty

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods. The areas involving significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year are as follows:

Revenue recognition on fixed price contracts

A significant proportion of revenue recognised within the Technical Consulting operating segment relates to the supply of professional services under fixed price contracts, where revenue is measured on a percentage of completion basis.

Percentage of completion is determined by actual costs incurred as a proportion of total forecast contract costs to complete. This method places importance on accurate estimation of total costs to complete, contract risks, including technical risks, and other assumptions in order to estimate revenue. Changes in these estimates and assumptions may lead to an increase or decrease in revenue recognised at the reporting date with the in-year revenue recognition appropriately adjusted as required.

Where contracts extend beyond the timetable originally agreed with the client, or where costs to complete are forecast to increase over and above the original budget, judgement is required to determine the extent to which revenue should be recognised.

The actual outcome of contracts which are not complete at year-end will differ to the estimate made at that point in time and it is reasonably possible that outcomes on these contracts within the next financial year could be different (adversely or favourably) in aggregate to those estimated. It is not possible to fully quantify the expected impact of this, but the estimated costs to complete reflect management's best estimate at that point in time and no individual estimate or judgement is expected to have a materially different outcome.

As set out further on pages 41 and 78, management undertakes a process to assess, monitor and review the risk and performance of all contracts within the Technical Consulting operating segment on inception and as they progress to completion. The highest risk and most technically complex and challenging contracts to deliver, as measured against a number of quantitative and qualitative factors, are categorised as 'Red Category 4 and 5' contracts.

As at 30 June 2018, the number of live contracts within the Technical Consulting portfolio was in excess of 3,000, with a total value in excess of £750m. Of this portfolio of contracts, 11 contracts were categorised as Red Category 4 and 5. At 30 June 2018, £3.9m of recoveries against additional costs incurred on these contracts were under negotiation with the client and had been recognised within revenue and amounts recoverable on contracts. Provisions of £1.0m were recognised against these recoveries, resulting in a net exposure of £2.9m.

Retirement benefit obligations

The Group operates a defined benefit pension scheme that provides benefits to a number of current and former employees. This scheme is closed to new entrants and the accrual of future benefits for active members ceased at the end of February 2010. The value of the deficit is particularly sensitive to the market value of the scheme's assets, discount rates and actuarial assumptions related to mortality. The sensitivity of the defined benefit obligation to changes in the principle assumptions is set out in Note 25.

Impairment testing of goodwill

Goodwill is assessed annually for impairment, usually at the year-end, or more frequently if indicators of impairment exist. The assessments require estimates to be made of the value in use of its cash generating units ('CGUs') or groups of CGUs. These value in use calculations are dependent on estimates of future cash flows, long-term growth rates and appropriate discount rates to be applied to future cash flows. Further details on these estimates and sensitivities of the carrying value of goodwill to these estimates are provided in Note 13.

(d) Segmental reporting

Operating segments are reported in a manner consistent with the discrete financial information that is internally reported and provided to the Chief Operating Decision Maker, who is responsible for allocating resources and assessing performance of the operating segments. Further details are given in Note 2.

(e) Revenue

The Group principally earns revenue through the supply of professional services and products to customers. Revenue is stated net of value added and other sales taxes.

Technical Consulting

The majority of the Group's revenue is earned from Technical Consulting contracts for professional services.

Technical Consulting contracts are typically awarded on a fixed price basis. Where the outcome can be estimated reliably, contract revenue is recognised to the extent that the services have been performed. Performance is measured based on costs incurred to date as a percentage of total expected costs.

Profit is not recognised on a contract, and revenue is not recognised in excess of recoverable costs, unless its outcome can be estimated reliably. It is deemed possible to reliably estimate the outcome of a contract when the Group is in possession of documentation from a customer that is on terms and conditions acceptable to the Group and, subject to the successful execution of the contract, can be invoiced against and paid for. A loss on a fixed price contract is recognised immediately when it becomes probable that the contract cost will exceed the total contract revenue. Monthly reviews of contracts by local management, in conjunction with reviews by senior management of contracts deemed to be of higher risk, ensure that the Group identifies and recognises expected losses on fixed price contracts immediately.

1 Accounting policies (continued)

(e) Revenue (continued)

Revenue from contract variations closely linked to underlying fixed price contracts is recognised based on performance under the contract as a whole, but only to the extent that it can be reliably measured and it is probable that the customer will approve both the variation and the amount of additional revenue. Contract variations not closely linked to underlying fixed price contracts are treated as separate contracts. Groups of separate legal contracts or supplementary contracts received in addition to pre-existing contracts are combined and accounted for as a single contract to the extent that they are negotiated as a single package, performed concurrently or in a continuous sequence and are so closely interrelated that they are, in substance, part of a single project with an overall profit margin.

Assets arising from the recognition of revenue are recorded in trade and other receivables, initially as amounts recoverable on contracts and transferred to trade receivables when invoiced. Amounts received from customers for services not yet recognised as revenue are initially classified as payments received in advance on contracts within trade and other payables.

Certain contracts may be awarded on a time and materials basis. For these contracts, revenue recognition is based on the expected sales value of the time worked and costs incurred to date.

Other contracts relate to the supply of annual subscription services, for which revenue from renewals is recognised on a straight-line basis over the period of subscription. Where significant administrative effort is required for new and upgrading customers to set up the services to be provided, revenue is recognised based on the fair value of the initial work performed. The remainder is recognised on a straight-line basis over the period of subscription.

Royalty income is recognised on an accruals basis in accordance with the substance of the relevant agreements.

Performance Products

Within Performance Products, Group revenue is principally derived from the sale of high-performance products produced from assembly operations.

Revenue from the sale of goods is measured at the fair value of the consideration and is recognised when the Group has transferred the significant risks and rewards of ownership of the goods to the buyer, when the amount of revenue can be measured reliably and when it is probable that the economic benefits associated with the transaction will flow to the Group. This is typically on delivery of goods to the customer.

Bill-and-hold sales occur where all performance obligations have been satisfied but the customer requests that the goods are held by the Group until such times as delivery or collection of the goods is required by the customer. Revenue is recognised and billed under usual payment terms when the customer formally agrees to accept the risks of legal title and specifically acknowledges their deferred delivery instructions, provided that the goods have been identified, set aside and made available for delivery to the customer at the time the sale is recognised and it is considered probable that delivery will be made.

Performance Products also includes revenues derived from the sale of software licences. The Group's software products are standard version controlled products available for general sale. Normally there are no substantive obligations to fulfil following sale and revenue is recognised on delivery. Revenue derived from the supply of software-related services is recognised on a straight-line basis over the period during which the service is supplied.

(f) Research and development expenditure

Research and development expenditure is recognised as an expense in the Consolidated Income Statement in the year in which it is incurred as disclosed in Note 5, other than where the activity is performed for customers, in which case it is included within the contract accounting, or when development expenditure meets the criteria for recognition as an intangible asset as described in Note 1(o), and includes all directly attributable costs.

(g) Government grants

The Group receives income-related grants from various national and supranational government agencies, principally for credits in respect of qualifying research and development expenditure, together with funding of research and development and capital projects. A grant is not recognised in the Consolidated Income Statement until there is reasonable assurance that the Group will comply with its conditions and that the grant will be received. Grants are presented in the Consolidated Income Statement as a deduction from the related expenses. Grants contributing to the cost of an asset are deducted from the asset's cost and reflected in the depreciation throughout the useful life of the asset.

Grants are not normally received until after qualification conditions have been met and the related expenditure has been incurred. Where this is not the case, they are recorded within trade and other payables either as a payment received in advance on contracts or as accruals and deferred income.

(h) Retirement benefit costs

The Group operates one defined benefit and several defined contribution retirement benefit schemes. The defined retirement benefit scheme is closed to new entrants and the accrual of future benefits for active members ceased at the end of February 2010. Payments to defined contribution schemes are charged as an expense as they fall due. Differences between contributions payable in the year and contributions actually paid are shown as either accruals or prepayments in the Statement of Financial Position. Payments to state-managed schemes are dealt with as payments to defined contribution schemes as the Group's obligations under the schemes are similar in nature.

For the defined benefit retirement scheme, the cost of providing benefits is determined using the projected unit credit method, with actuarial valuations being carried out at each reporting date. Remeasurements are recognised in the Consolidated Statement of Comprehensive Income except where they result from settlements or curtailments, in which case they are reported in the Consolidated Income Statement.

Where necessary, past service costs are recognised immediately in the Consolidated Income Statement at the earlier of when the plan amendment or curtailment occurs and when the related restructuring costs or termination benefits are recognised. The retirement benefit obligation recognised in the Statement of Financial Position represents the present value of the defined benefit obligation, and is reduced by the fair value of scheme assets. Any asset resulting from this calculation is limited to past service cost, plus the present value of available refunds and reductions in future contributions to the plan.

The net interest cost on the net defined benefit liability for the year is determined by applying the discount rate used to measure the defined benefit obligation at the beginning of the year to the net defined benefit liability and is included in finance costs.

1 Accounting policies (continued)

(i) Share-based payments

Equity-settled share-based payments are measured at fair value at the date of grant. The fair value determined at the grant date is expensed on a straight-line basis over the vesting period. The amount expensed is adjusted over the vesting period for changes in the estimate of the number of shares that will eventually vest, save for changes resulting from any market-related performance conditions.

Cash-settled share-based payments are measured at fair value at the date of grant and expensed over the vesting period until the vesting date with the recognition of a corresponding liability. The liability is remeasured to fair value at each reporting date up to and including the settlement date, with changes in fair value recognised in the Consolidated Income Statement for the year. The amount expensed is adjusted over the vesting period for changes in the estimate of the number of shares that will eventually vest.

Fair value is measured by using the Monte Carlo and Black Scholes models as explained in Note 30. The expected life used in the models are adjusted for the effects of exercise restrictions and behavioural considerations.

(j) Leases

The costs of operating leases and amortisation of operating lease incentives are charged to the Consolidated Income Statement on a straight-line basis over the period of the lease.

(k) Foreign currency

Transactions

The functional currency of the Company and the presentation currency of the Group is Pounds Sterling. The functional currency of each subsidiary is the currency of the primary economic environment in which the entity operates. Transactions in currencies other than the functional currency are recorded at prevailing exchange rates. At each reporting date, monetary assets and liabilities denominated in foreign currencies are retranslated at the rates prevailing on the reporting date. Non-monetary assets and liabilities denominated in foreign currencies are translated at the rates prevailing at the date when the transaction occurred. Gains and losses arising on retranslation and settlements are included in the Consolidated Income Statement for the year.

Consolidation

On consolidation, the assets and liabilities of foreign operations, including goodwill and fair value adjustments are translated into the presentation currency at exchange rates prevailing on the reporting date. Income and expense items are translated at the average exchange rates of the year unless exchange rates fluctuate significantly. All resulting exchange differences are recognised in the Consolidated Statement of Comprehensive Income. Exchange differences arising from 1 July 2004, the date of transition to IFRS, are classified as equity and recognised in the translation reserve. Exchange differences arising before that date are not separately reported. On disposal of an operation, or part thereof, the related cumulative translation differences are recognised in the Consolidated Income Statement as a component of the gain or loss arising on disposal.

(l) Taxation

The tax expense 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 in the Consolidated Statement of Comprehensive Income or directly in equity. In this case, the tax is also recognised in the Consolidated Statement of Comprehensive Income or directly in equity, respectively.

The current tax charge is the expected tax payable on taxable income for the year, calculated using the average rate applicable for the year on the basis of the tax laws enacted or substantively enacted at the reporting date in the countries where the Group operates and generates taxable income. The current tax charge also includes any adjustment to tax payable in respect of previous years. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation and is therefore inherently uncertain. It establishes provisions where appropriate on the basis of amounts expected to be paid to the relevant tax authorities.

The Group submits annual claims in respect of the UK Government's Research and Development Expenditure Credit ('RDEC') scheme. RDEC is taxable income and is a form of government grant that effectively gives corporation tax relief on qualifying research and development ('R&D') expenditure. In accordance with IAS 20 '*Accounting for Government Grants and Disclosure of Government Assistance*', credits receivable under the RDEC scheme are offset against the associated qualifying R&D expenditure incurred, both of which are included within underlying profit before tax.

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. However, deferred tax liabilities are not recognised if they arise from the initial recognition of goodwill; deferred tax is not accounted for if it arises from the initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit and differences relating to investments in subsidiaries to the extent that it is not probable that they will 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 reporting date.

Deferred tax assets are recognised only to the extent that it is probable that taxable profits will be available in the foreseeable future against which the asset can be utilised. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realised within the foreseeable future.

(m) Dividends

Dividends are recognised as a liability in the year in which they are fully authorised. Interim dividends are recognised when paid.

1 Accounting policies (continued)

(n) Goodwill

Goodwill arises on the acquisition of subsidiaries and represents the excess of the consideration transferred over the fair value of the identifiable assets acquired and liabilities assumed. As permitted by IFRS, goodwill arising on acquisitions prior to the date of transition to IFRS of 1 July 2004 has not been restated, but is retranslated using exchange rates prevailing at each reporting date.

Goodwill is recognised as an asset and is carried at cost less accumulated impairment losses. It is not subject to amortisation, but is reviewed for impairment annually, or more frequently if events or changes in circumstances indicate a potential impairment. For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the cash-generating units ('CGUs'), or groups of CGUs, that is expected to benefit from that business combination. Each CGU or group of CGUs to which goodwill is allocated represents the lowest level at which goodwill is monitored for internal management purposes.

The Group's impairment review compares the carrying value of the goodwill to the recoverable amount of the CGU to which the goodwill has been allocated. The recoverable amount is the higher of the value in use or the fair value less costs of disposal. Estimating the value in use requires the Directors to perform an assessment of the discounted future cash flows that the CGU is able to generate. An impairment is deemed to have occurred where the recoverable amount of a CGU is less than the carrying value of the allocated goodwill. Any impairment is recognised immediately in the Consolidated Income Statement and is not subsequently reversed. On disposal of an operation, the attributable amount of goodwill is included in the determination of the gain or loss on disposal.

(o) Other intangible assets

Acquisition-related intangible assets

Acquisition-related intangible assets that are either separable or arising from contractual rights are recognised at fair value at the date of acquisition, and subsequently at amortised cost. Such intangible assets include customer contracts and relationships, trademarks, technology and acquired software. The fair value of acquired intangible assets is determined by use of appropriate valuation techniques, including the excess earnings and royalty relief method.

Software

Purchased software is capitalised on the basis of the purchase price of the software product plus any external and internal costs subsequently incurred that are directly attributable to bring the software product to the condition necessary for it to be capable of operating in the manner intended.

Development costs

Certain directly attributable costs which are incurred in the development of certain products are capitalised. These costs are recognised as an asset once the Group has determined that it has the intention and the necessary resources to complete the relevant project, it is probable that the resulting asset will generate economic benefits for the Group and the attributable expenditure can be measured reliably. Development costs are capitalised where these criteria have been met and amortised over their finite useful lives.

Amortisation

Amortisation is calculated using the straight-line method to allocate the cost of intangible assets over their estimated useful lives, as follows:

• Acquisition-related intangible assets:	
- Customer contracts and relationships	Between 3 and 9 years
- Software and technology	Between 5 and 7 years
• Software	Between 2 and 10 years
• Development costs	Between 3 and 5 years

(p) Property, plant and equipment

Property, plant and equipment is stated at historical cost less depreciation. The gross cost of an item of property, plant and equipment is the purchase price and any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended. Grants contributing to the cost of an asset are deducted from the asset's cost and reflected in the depreciation throughout the useful life of the asset.

Depreciation is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

• Freehold land	Not depreciated
• Freehold buildings including fixed plant	Between 25 and 50 years
• Leasehold property including fixed plant	Over the term of the lease
• Plant and machinery	Between 4 and 10 years
• Fixtures, fittings and equipment	Between 2 and 10 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

Assets under construction are carried at cost, less any impairment in value, and are included in the relevant asset category. Depreciation of these assets commences when they are available for their intended use.

(q) Non-current assets held for sale

Non-current assets are classified as held for sale when their carrying amount is to be recovered principally through a sale transaction, rather than through continuing use, and a sale is considered highly probable. They are stated at the lower of their carrying amount and fair value less costs to sell. An impairment loss is recognised in the Consolidated Income Statement for any initial or subsequent write-down of the asset to fair value less costs to sell. A gain is recognised in the Consolidated Income Statement for any subsequent increases in fair value less costs to sell of an asset, but not in excess of any cumulative impairment loss previously recognised.

A gain or loss not previously recognised by the date of the sale of the non-current asset is recognised in the Consolidated Income Statement at the date of derecognition. Non-current assets are not depreciated or amortised while they are classified as held for sale and are presented separately from the other assets in the Consolidated Statement of Financial Position.

(r) Investments

Investments in subsidiaries are stated at cost less any impairment in value.

1 Accounting policies (continued)

(s) Impairment of non-financial assets

Intangible assets that have an indefinite useful life or intangible assets that are not available for use are not subject to amortisation and are tested annually for impairment. Other intangible assets and items of property, plant and equipment with finite useful lives are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable.

An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted. Where assets do not generate cash flows independently from other assets, the Group estimates the recoverable amount of the cash-generating unit to which the asset belongs.

If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. Prior impairments of non-financial assets (other than goodwill) are reviewed for possible reversal at each reporting date.

(t) Inventories

Inventories are stated at the lower of cost, including attributable overheads, and net realisable value. Cost is calculated using the weighted average method in Technical Consulting and using the first-in, first-out method in Performance Products. Work in progress is stated at cost, including attributable overheads, less any foreseeable losses and progress payments received and receivable.

(u) Financial instruments

Non-derivative financial instruments

The Group's non-derivative financial instruments comprise trade receivables, trade payables, cash and cash equivalents and borrowings. In the Statements of Cash Flow, cash and cash equivalents comprise cash balances and bank overdrafts repayable on demand. In the Statements of Financial Position, bank overdrafts are shown within borrowings in current liabilities and bank loans are shown within borrowings in either current liabilities or non-current liabilities depending on the repayment date.

Trade receivables and payables are measured initially at fair value, and subsequently at amortised cost. Trade receivables are stated net of allowances for irrecoverable amounts. Evidence of impairment of trade receivables include indications that customers are experiencing significant financial difficulty or have significantly overdue balances.

Borrowings are recognised initially at fair value net of direct issue costs and subsequently at amortised cost. Differences between initial value and redemption value are recorded in the Consolidated Income Statement over the period of the loan.

The fair values of all non-derivative financial instruments including borrowings due for repayment after more than one year are approximately equal to their carrying values in the Statement of Financial Position. The fair value of borrowings due for repayment after more than one year approximates to the carrying value as they are primarily floating rate loans where payments are reset to market rates at regular short-term intervals.

Derivative financial instruments

Derivative financial instruments are initially recognised and measured at fair value on the date a derivative contract is entered into and subsequently measured at fair value and the gain or loss on remeasurement is taken to the Consolidated Income Statement.

The Group employs derivative financial instruments, including foreign exchange contracts, to mitigate currency exposures on trading transactions. The Group does not hedge forecast transactions that will result in the recognition of a non-financial asset or liability. Fair values of derivative financial instruments are based on the market values of similar instruments at the reporting date.

(v) Provisions

A provision is required for restructuring costs and employee-related benefits when the Group has a present legal or constructive obligation at the reporting date as a result of a past event and it is probable that settlement will be required of an amount that can be reliably estimated. Provisions for warranty costs are recognised at the date of sale of the relevant products, at the Directors' best estimate of the expenditure required to settle the Group's liability.

Provisions for dilapidations reflects the Directors' best estimate of future obligations relating to the maintenance of leasehold properties arising from past events such as lease renewals or terminations.

These estimates are reviewed each year and updated as necessary.

(w) Specific adjusting items

Specific adjusting items are disclosed separately in the financial statements where it is necessary to do so to provide further understanding of the financial performance of the Group and due to the significance of their nature or amount. These items comprise amortisation of acquired intangible assets, acquisition-related expenditure, reorganisation costs and derecognition of net deferred tax assets. Acquisition-related expenditure is incurred by the Group to effect a business combination, including the costs associated with the integration of acquired businesses, together with any dual-running costs incurred during a transitional services period. Reorganisation costs relate to non-recurring expenditure incurred as part of fundamental restructuring activities. The derecognition of net deferred tax assets is as a direct consequence of these restructuring activities. Further information is provided in Note 4.

1 Accounting policies (continued)

(x) New standards and interpretations

At 30 June 2018, the International Accounting Standards Board ('IASB') and IFRS IC had issued the standards and amendments, shown below, that subject to adoption by the EU, are effective after the current year-end and have not been early adopted by the Group.

Issued standards and amendments not yet effective	Effective date (periods commencing)	Endorsed by EU
International Financial Reporting Standards		
IFRS 9 *'Financial Instruments'*	1 Jan 2018	Yes
IFRS 15 *'Revenue from Contracts with Customers'* including amendments and clarifications	1 Jan 2018	Yes
IFRS 16 *'Leases'*	1 Jan 2019	Yes
IFRS 17 *'Insurance Contracts'*	1 Jan 2021	No
IFRIC 23 *'Uncertainty over Income Tax Treatments'*	1 Jan 2019	No
Amendments to International Financial Reporting Standards		
IAS 19 *'Employee Benefits'*: Plan Amendment, Curtailment or Settlement	1 Jan 2019	No
IAS 28 *'Investments in Associates and Joint Ventures'*: Long-term Interests in Associates and Joint Ventures	1 Jan 2019	No
IAS 40 *'Investment Property'*: Transfers of Investment Property	1 Jan 2018	Yes
IFRS 2 *'Share-based Payment'*: Classification and Measurement of Share-based Payment Transactions	1 Jan 2018	Yes
IFRS 9 'Financial Instruments': Prepayment Features with Negative Compensation	1 Jan 2019	Yes
IFRS 4 *'Insurance Contracts'*: Applying IFRS 9 *'Financial Instruments'* with IFRS 4 *'Insurance Contracts'*	1 Jan 2018	Yes
IFRIC 22 *'Foreign Currency Transactions and Advance Consideration'*	1 Jan 2018	Yes
Amendments to References to the Conceptual Framework in IFRS Standards	1 Jan 2020	No
Annual Improvements to IFRS Standards 2014-2016 Cycle: IFRS 1 *'First-time Adoption of International Financial Reporting Standards'* and IAS 28 *'Investments in Associates and Joint Ventures'*	1 Jan 2018	Yes
Annual Improvements to IFRS Standards 2015-2017 Cycle	1 Jan 2019	No

It is not expected that the adoption of the standards and amendments listed above will have a significant impact on the financial statements of the Group in future periods, with the exception of the following standards as set out in further detail below. In addition, the impact of IFRIC 23 '*Uncertainty over Income Tax Treatments*' has not yet been assessed in order to provide a reasonable estimate as to its potential impact.

IFRS 9 *'Financial Instruments'*

IFRS 9 *'Financial Instruments'* replaces IAS 39 '*Financial Instruments: Recognition and Measurement*'. The Standard includes requirements for the recognition and measurement, impairment and derecognition of financial assets and liabilities, together with general hedge accounting.

The primary area of change is the way in which financial assets are assessed for impairment using the 'expected credit loss' model, which assumes that every receivable at the point of origination carries with it some risk of default, which increases over time until the receivable is paid. This model is based upon the application of 'default rates', which consider both our limited past experience with customers of credit losses, together with the scenarios and probability that credit losses might be incurred in the future. IFRS 9 establishes several approaches for measuring and recognising expected credit losses. The Group will use the 'simplified approach' of IFRS 9 to provide for losses on trade receivables. The 'general approach' of IFRS 9 will be used for other financial assets.

The Standard becomes effective for the Group for the financial year ending 30 June 2019. The hedge accounting component of IFRS 9 will be applied prospectively. The remaining requirements of IFRS 9 will be applied retrospectively, but the Group will not restate comparative information in the year ending 30 June 2019. Instead, an adjustment for the transitional impact will be made to opening retained earnings for the year ending 30 June 2019.

The expected impact to the Group on transition to IFRS 9 as at 1 July 2018 is as follows:

Provision for impairment of trade receivables as at 1 July 2018	£m
As reported	1.1
Expected impact	1.8
Restated under IFRS 9 (estimate)	**2.9**

Hedge accounting

The Group is currently not applying hedge accounting under IAS 39 and therefore no impact on transition will be experienced in this respect. From 1 July 2018, the Group has elected to follow IFRS 9 hedge accounting requirements for any new derivative contracts entered into on or after this date. As a result, the Group expects to see a lower degree of volatility arising from foreign exchange movements in its Consolidated Income Statement, as such movements on effective hedges will instead recognised in the Consolidated Statement of Comprehensive Income.

1 Accounting policies (continued)

(x) New standards and interpretations (continued)

IFRS 15 *'Revenue from contracts with customers'*

IFRS 15 *'Revenue from contracts with customers'* establishes principles for reporting the nature, amount and timing of revenue arising from an entity's contracts with customers. The Standard becomes effective for the Group for the financial year ending 30 June 2019 and the Group's intention is to apply the full retrospective approach upon adoption of IFRS 15. This approach requires all open contracts with customers that are presented in the financial statements for the year ending 30 June 2019 to be transitioned under the new Standard. Comparative financial information for the financial year ending 30 June 2018 will be restated, together with a cumulative adjustment to equity as at 1 July 2017. The Group has performed a detailed analysis in order to quantify the impact of IFRS 15. The principal areas impacted include:

Separation of distinct performance obligations:

Under IAS 11, the Group recognised revenue over time on individual contracts for a programme of services to be performed over a number of years. The programme of services were proposed as a package and were not subject to separate negotiation. Under IFRS 15, these services are deemed to be separate performance obligations that are distinct from one another within the context of the contract. Revenue will continue to be recognised on a percentage of completion basis, but based upon these separate and distinct performance obligations.

Combination of indistinct performance obligations:

On a number of Technical Consulting contracts, revenue was recognised separately for services such as sales commission and up-front fees to compensate for costs incurred in obtaining and setting up a contract or other administrative costs. Under IFRS 15, these activities are not deemed to represent the transfer of services to a customer and therefore do not satisfy distinct performance obligations in the context of the overall contract upon which revenue can be recognised separately. Under IFRS 15, revenue is recognised over time as distinct performance obligations are satisfied. Revenue is measured through the consistent use of reliable input methods as a measure of progress towards completion and which depict performance in transferring control of the service to the customer.

An assessment of the expected impact of IFRS 15 is shown below:

Retained earnings as at 1 July 2017	£m
As reported	112.2
Expected impact:	
Separation of distinct performance obligations	(2.3)
Combination of indistinct performance obligations	(3.2)
Restated under IFRS 15 (estimate)	**106.7**

Revenue for the year ended 30 June 2018	£m
As reported	380.0
Expected impact:	
Separation of distinct performance obligations	(0.3)
Combination of indistinct performance obligations	(0.8)
Restated under IFRS 15 (estimate)	**378.9**

Operating profit for the year ended 30 June 2018	£m
As reported	30.7
Expected impact:	
Separation of distinct performance obligations	(0.3)
Combination of indistinct performance obligations	(0.8)
Restated under IFRS 15 (estimate)	**29.6**

The estimated impact on reported net assets at 30 June 2018 under IFRS 15 is a reduction of £1.1m.

IFRS 16 *'Leases'*

IFRS 16 *'Leases'* provides a single model for lessees which recognises a right of use asset and associated lease liability for all leased assets for periods longer than one year or which are not classified as low value. The most significant impact of IFRS 16 will be that the Group's relatively low number of leased properties, which are currently classified as operating leases, will be recognised as a lease liability, with a corresponding asset in the Statement of Financial Position. The Group will adopt the modified retrospective approach to transition, with the option being taken to recalculate the value of certain assets while recognising the majority of assets at an amount equal to the liability on transition.

This Standard becomes effective to the Group for the financial year ending 30 June 2020. As a result of our initial assessment of the potential impact, based on a sample including all of the Group's property leases, we expect the impact on non-current assets to be an increase of approximately £50m with the associated liabilities increasing by an amount which is immaterially higher than this. Given the profile of our property leases, we would also expect the impact on earnings in the year of transition to be insignificant.

2 Operating segments

The Group's operating segments are being reported based on the financial information provided to the Chief Operating Decision Maker who is the Chief Executive Officer. The reportable segments are Technical Consulting and Performance Products. These were identified by evaluating the Group's products and services, processes, types of customers and delivery methods.

Technical Consulting

Technical Consulting generates income from the delivery of engineering programmes and technology projects, together with environmental and management consultancy services. This segment comprises consulting businesses in Automotive, Rail, Environmental, Strategy and Defence.

These businesses have similar economic characteristics, as they each:

- provide a similar nature of services, with each segment providing professional and engineering consultancy services, with their respective cost bases being predominantly direct and indirect staff costs;
- provide their services across a number of different geographies and market sectors;
- have diverse client bases, from small to large companies, as well as a mixture of private and government-backed organisations; and
- have similar distribution channels and operate across markets requiring adherence to similar-in-nature regulatory frameworks.

We have therefore deemed it appropriate to aggregate the results of these consulting businesses into one Technical Consulting operating segment.

Performance Products

Performance Products generates income from the production of low volume high-performance products and services, including bespoke engines, transmissions, and niche software products. This segment comprises the Performance Products and Software businesses.

These businesses have been aggregated on the basis that they involve the manufacture and development of specific products and opposed to technical consulting services. Both face similar financial and competitive risks. We manage the complete supply chain for our clients and earn revenue for either the products that we supply or for the manufacturing or assembly services that we provide.

Measurement of performance

Management monitors the results of its operating segments separately for the purpose of making decisions about allocating resources and assessing performance. Segment performance is measured based on operating profit, as this measure provides management with an overall view of how the different operating segments are managing their total cost base (primarily direct and indirect staff costs) against the revenue generated from their portfolio of contracts. Included within the Head Office column in the following tables are functions managed by a central division, including the costs of running the public limited company, which are recharged to the other operating segments.

Inter-segment revenue is eliminated on consolidation. Transactions are entered into on an arm's length basis in a manner similar to transactions with third parties.

Year ended 30 June 2018

	Technical Consulting £m	Performance Products £m	Head Office £m	Total £m
Total segment revenue	288.6	95.8	-	384.4
Inter-segment revenue	(0.3)	(4.1)	-	(4.4)
Revenue from external customers	288.3	91.7	-	380.0
Underlying operating profit	31.9	9.3	-	41.2
Specific adjusting items	(9.9)	-	(0.6)	(10.5)
Operating profit	22.0	9.3	(0.6)	30.7
Net finance costs	-	-	(2.2)	(2.2)
Profit before taxation	22.0	9.3	(2.8)	28.5
Total assets per financial statements	285.2	41.8	12.7	339.7
Total liabilities per financial statements	(80.5)	(14.4)	(68.3)	(163.2)
Depreciation and amortisation	12.2	2.1	1.6	15.9
Capital expenditure - other intangible assets	3.9	2.2	0.4	6.5
Capital expenditure - property, plant and equipment	7.5	0.6	0.1	8.2

Revenues from one customer represent approximately £61.4m of the Group's external revenue, of which £57.8m is reported in the Performance Products segment and £3.6m is reported in the Technical Consulting segment.

Underlying operating profit for the year ended 30 June 2018 includes £8.0m of income in respect of RDEC, which has been allocated between Technical Consulting for £7.1m and Performance Products for £0.9m on a basis that is consistent with the segment in which the qualifying expenditure is incurred.

2 Operating segments (continued)

Year ended 30 June 2017

	Technical Consulting £m	Performance Products £m	Head Office £m	Total £m
Total segment revenue	280.6	73.3	-	353.9
Inter-segment revenue	(0.1)	(1.7)	-	(1.8)
Revenue from external customers	280.5	71.6	-	352.1
Underlying operating profit	32.8	8.0	-	40.8
Specific adjusting items	(5.0)	-	(1.1)	(6.1)
Operating profit	27.8	8.0	(1.1)	34.7
Net finance costs	-	-	(2.5)	(2.5)
Profit before taxation	27.8	8.0	(3.6)	32.2
Total assets per financial statements	280.6	42.7	17.1	340.4
Total liabilities per financial statements	68.9	18.5	97.3	184.7
Depreciation and amortisation	12.2	2.2	1.9	16.3
Capital expenditure - other intangible assets	2.9	1.6	1.1	5.6
Capital expenditure - property, plant and equipment	5.9	0.2	0.2	6.3

Revenues from one customer represent approximately £48.2m of the Group's external revenue, of which £43.9m is reported in the Performance Products segment and £4.3m is reported in the Technical Consulting segment.

Underlying operating profit for the year ended 30 June 2017 includes £6.6m of income in respect of RDEC, which has been allocated between Technical Consulting for £5.9m and Performance Products for £0.7m on a basis that is consistent with the segment in which the qualifying expenditure is incurred.

Non-current assets by geographical location (excluding deferred tax assets)

Asset location	**2018 £m**	2017 £m
United Kingdom	**83.3**	80.7
Netherlands	**21.0**	22.0
Germany	**14.1**	18.8
North America	**16.2**	9.6
Rest of the World	**7.9**	11.3
Total	**142.5**	142.4

3 Revenue

(a) Revenue by category

	2018 £m	2017 £m
Rendering of services	**299.1**	294.9
Sale of goods	**80.9**	57.2
Total	**380.0**	352.1

(b) Revenue by customer location

	2018 £m	2017 £m
United Kingdom	**144.9**	144.5
Germany	**23.5**	27.6
Netherlands	**21.0**	21.8
Rest of Europe	**54.8**	43.9
Europe total	**244.2**	237.8
North America	**47.6**	38.6
China	**39.3**	32.7
Japan	**25.7**	16.3
Rest of Asia	**15.9**	17.9
Asia total	**80.9**	66.9
Rest of the World	**7.3**	8.8
Total	**380.0**	352.1

4 Specific adjusting items

	2018 £m	2017 £m
Amortisation of acquisition-related intangible assets (Note 14)	**4.3**	4.0
Acquisition-related expenditure(1)	**1.4**	1.7
Reorganisation costs(2)	**4.8**	0.4
Total before tax	**10.5**	6.1
Derecognition of net deferred tax assets(3)	**2.2**	-
Tax impact of specific adjusting items(4)	**(0.9)**	(1.4)
Total after tax	**11.8**	4.7

(1) Acquisition-related expenditure in the current year comprised £0.1m (2017: £0.3m) of costs incurred for services rendered to, and consumed by, the Group to effect the Control Point Corporation acquisition (see Note 12), together with £0.2m on its subsequent integration into the Ricardo Group and £0.5m of associated employee retention arrangements. Costs of £0.4m (2017: £0.5m) were also incurred to finalise the integration of the LR Rail and Motorcycle Engineering Italia (Exnovo) businesses into the Ricardo Group, together with £0.2m of professional fees incurred in relation to due diligence of a subsequently aborted acquisition process. The prior year also included £0.2m of professional fees and £0.7m of employee retention costs in relation to acquisitions completed previously.

(2) Reorganisation costs relate to non-recurring expenditure incurred as part of a fundamental restructuring of the Group's Automotive businesses across Europe and North America. These costs included:

- The sale of the test assets at the Chicago Technical Center ('CTC') in the US was completed on 2 April 2018 for cash consideration of £4.1m ($5.5m), which generated a profit on disposal of £1.4m ($1.9m). In addition, £0.7m ($0.9m) (2017: £0.2m ($0.2m)) of professional fees, contractor costs, and redundancy costs were incurred as a result of the asset sale and wider restructuring process;
- The sale of the Schechingen Technical Centre ('SchTC') in Germany was completed on 30 June 2018 for cash consideration of £4.4m (€5.0m), which generated a profit on disposal of £0.2m (€0.2m). Redundancy costs of £0.3m were also incurred;
- Redundancy costs of £2.7m (€3.0m) in relation to the downsizing of our footprint in Schwäbisch Gmünd, Germany;
- Additional costs of £1.8m (€2.0m) were incurred as a result of our downsizing activities in Germany, including professional fees, contractors, and the recognition of an onerous lease provision for the Schwäbisch Gmünd premises;
- Costs incurred of £0.5m (2017: £0.2m) in relation to the set-up of our new Shared Service Centre in Prague, Czech Republic, including dual-running costs for the transition of the transactional finance team from our Shoreham Technical Centre, together with associated costs for travel, and severance payments for staff made redundant following the transition, and contractor costs to backfill the roles of employees that managed the transition; and
- UK senior management redundancy payments of £0.4m, as a result of the restructuring activities.

(3) A net deferred tax asset of £2.2m (€2.5m) which primarily comprised £2.4m (€2.7m) of historical losses incurred in the consolidated tax group controlled by Ricardo GmbH, partially offset by £0.2m (€0.2m) of deferred tax liabilities, was brought forward from the prior year. Due to the various restructuring actions taken in Germany during the year, the Directors now consider it unlikely that sufficient relevant future taxable profits will be available in the foreseeable future, against which the carrying value of the brought forward deferred tax asset can be utilised. Consequently, this brought forward deferred tax asset was derecognised during the year.

(4) The tax impact on amortisation of acquisition-related intangible assets, acquisition-related expenditure and reorganisation costs.

5 Operating profit

	2018 £m	2017 £m
The following items have been charged/(credited) in arriving at operating profit:		
Amortisation of other intangible assets (Note 14)	**9.5**	9.1
Depreciation of property, plant and equipment (Note 15)	**6.4**	7.2
Cost of inventories recognised as expense	**50.4**	34.6
Research and Development Expenditure Credits ('RDEC')	**(8.0)**	(6.6)
Operating lease rentals payable	**8.7**	8.0
Repairs and maintenance on property, plant and equipment	**4.9**	4.1
Redundancy and termination costs	**4.0**	0.6
Profit on disposal of non-current assets held for sale (Note 19)	**(1.6)**	-
Profit on sale and leaseback of property (Note 15)	**-**	(0.7)
Net impairment (reversals)/losses on trade receivables (Note 18)	**(0.6)**	0.2

	2018 £m	2017 £m
With respect to the Group's research and development activities, the following items have been charged/(credited) in arriving at operating profit:		
Research and development expenditure in the year	**4.4**	6.4
Government grant income received in respect of part of this expenditure	**(1.6)**	(2.4)
Total	**2.8**	4.0

6 Auditors' remuneration

During the year the Group obtained the following services from the Parent Company's auditors and its associates:	2018 £m	2017 £m
Fees payable for the statutory audit of the Parent Company and consolidated financial statements(1)	**0.3**	0.2
Fees payable for the statutory audit of the Parent Company's subsidiaries and financial statements(2)	**0.2**	0.2
Total audit fees	**0.5**	0.4
Fees payable for audit-related assurance services(3)	**0.1**	0.1
Fees payable for other non-audit services(4)	**0.1**	0.2
Total non-audit fees	**0.2**	0.3

(1) Fees payable during the year to the Parent Company's auditors and its associates for the statutory audit of the Parent Company and consolidated financial statements were £274,000 (2017: £246,000).

(2) Fees payable during the year to the Parent Company's auditors and its associates for the statutory audit of the Parent Company's subsidiaries and financial statements were £212,000 (2017: £204,000).

(3) Fees payable during the year to the Parent Company's auditors and its associates for audit-related assurance services were £59,000 (2017: £78,000) and comprised of £44,000 (2017: £43,000) pursuant to the interim review and £15,000 (2017: £35,000) to support the Group with its project to assess the impact from the implementation of IFRS 15 '*Revenue from contracts with customers*'. Our conclusion arising from this assessment is described in Note 1(x).

(4) Fees payable during the year to the Parent Company's auditors and its associates for other non-audit services were £80,000 (2017: £217,000) and comprised of £75,000 (2017: £212,000) for services in respect of completed and proposed acquisitions and disposals, together with £5,000 (2017: £5,000) for other services.

Total non-audit fees payable to the external auditors for audit-related assurance services and other non-audit services for the financial year were 29% (2017: 66%) of total audit fees. These non-audit fees primarily comprised of the Group's interim review, together with services provided in respect of due diligence on targets for acquisition and assistance with disposals of assets. It was considered to be in the interests of the Group to purchase these services from the external auditors due to their in-depth knowledge of the Group.

7 Employees

Staff costs	2018 £m	2017 £m
Wages and salaries (including redundancy and termination costs)	**147.3**	140.1
Social security costs	**17.1**	15.7
Pension costs – defined contribution schemes (Note 25)	**9.6**	9.1
Share-based payments (Note 30)	**1.0**	1.6
Total employee benefit expense	**175.0**	166.5

Average monthly number of employees (including executive directors) during the year	2018 Number	2017 Number
Technical Consulting	**2,525**	2,343
Performance Products	**323**	316
Head Office	**48**	51
Total average headcount	**2,896**	2,710

Key management compensation	2018 £m	2017 £m
Short-term employee benefits	**4.4**	3.7
Share-based payments	**0.8**	1.2
Post-employment benefits	**0.1**	0.2
Termination benefits	**0.1**	-
Total key management compensation	**5.4**	5.1

The key management personnel are the Board of Directors, together with the Managing Directors who have the authority and responsibility for planning, directing and controlling the Group's activities and resources within the market sectors in which the Group operates.

The remuneration received by all Executive and Non-Executive Directors during the year is disclosed in the Directors' Remuneration Report on page 86.

8 Net finance costs

	2018 £m	2017 £m
Finance income:		
Bank interest receivable	**0.4**	0.2
Total finance income	**0.4**	0.2
Finance costs:		
Interest payable on bank borrowings	**(2.1)**	(2.1)
Defined benefit pension financing costs (Note 25)	**(0.5)**	(0.6)
Total finance costs	**(2.6)**	(2.7)
Net finance costs	**(2.2)**	(2.5)

9 Taxation

	2018 £m	2017 £m
Current income tax:		
UK corporation tax	**3.6**	5.2
Adjustments in respect of prior years	**0.2**	(0.2)
Total UK tax	**3.8**	5.0
Foreign corporation tax	**2.7**	1.1
Adjustments in respect of prior years	**0.5**	0.1
Total foreign tax	**3.2**	1.2
Total current tax	**7.0**	6.2
Deferred tax:		
Charge for year relating to temporary differences(1)	**3.1**	1.8
Adjustments in respect of prior years	**(0.5)**	(0.6)
Total deferred tax	**2.6**	1.2
Total taxation	**9.6**	7.4
Tax on items recognised in other comprehensive income	**2.7**	(0.8)
Tax on items recognised directly in equity	**(0.1)**	(0.1)

(1) Included within the Group's deferred tax charge for the year of £3.1m, is the derecognition of a net deferred tax asset brought forward of £2.2m, as set out in further detail in Footnote 3 of Note 4.

Tax on items recognised in other comprehensive income relate to the tax impact of remeasurements of the defined benefit scheme. Tax on items recognised directly in equity relate to equity-settled share-based payment transactions.

Changes to the UK corporation tax rates were enacted on 15 September 2016 as part of the Finance Act 2016. These include reductions to the main rate to 19% from 1 April 2017 and to 17% from 1 April 2020. Deferred taxes at the reporting date have been measured and reflected in these financial statements by using the enacted rate within each jurisdiction. For UK entities, the tax rate of 17% has been used (2017: 17% and 19% according to the rate at which the relevant assets or liabilities were expected to unwind).

The tax charge for the year is higher (2017: higher) than the standard rate of corporation tax in the UK. The differences are set out below:

	2018 £m	2017 £m
Profit for the year before tax	**28.5**	32.2
Profit for the year multiplied by the average enacted rate of corporation tax in the UK of 19.00% (2017: 19.75%)	**5.4**	6.4
Effects of:		
Losses not recognised	**0.8**	0.8
Expenses not deductible for tax purposes/(non-taxable income)	**0.7**	(0.7)
Government tax incentives(2)	**(0.2)**	(0.1)
Other overseas taxes(3)	**0.3**	0.2
Adjustments in respect of prior years	**0.2**	(0.7)
Changes in corporation tax rates	**0.2**	-
Derecognition of deferred taxes	**2.2**	1.5
Total taxation	**9.6**	7.4

(2) Primarily relates to R&D tax credits.
(3) Primarily relates to withholding taxes.

10 Earnings per share

Basic earnings per share is calculated by dividing the earnings attributable to ordinary shareholders by the weighted average number of shares outstanding during the year, excluding those held by an employee benefit trust for the Long-Term Incentive Plan ('LTIP') and by the Share Incentive Plan ('SIP') for the free share scheme which are treated as cancelled for the purposes of the calculation.

For diluted earnings per share, the weighted average number of ordinary shares in issue is adjusted to assume conversion of all dilutive potential ordinary shares. These include potential awards of LTIP shares and options granted to employees. The assumed proceeds from these is regarded as having been received at the average market price of ordinary shares during the year.

Reconciliations of the earnings and the weighted average number of shares used in the calculations are set out below. Underlying earnings per share is also shown because the Directors consider that this provides a more useful indication of underlying performance and trends over time.

	2018 £m	2017 £m
Earnings attributable to owners of the parent	**18.8**	24.8
Add back amortisation of acquisition-related intangible assets (net of tax)	**3.5**	3.1
Add back acquisition-related expenditure (net of tax)	**1.4**	1.3
Add back reorganisation costs (net of tax)	**4.7**	0.3
Add back derecognition of net deferred tax assets	**2.2**	-
Underlying earnings attributable to owners of the parent	**30.6**	29.5

	2018 Number of shares millions	2017 Number of shares millions
Basic weighted average number of shares in issue	**53.4**	53.0
Effect of dilutive potential shares	**0.2**	0.4
Diluted weighted average number of shares in issue	**53.6**	53.4

Earnings per share	**2018 pence**	2017 pence
Basic	**35.2**	46.8
Diluted	**35.1**	46.4

Underlying earnings per share	**2018 pence**	2017 pence
Basic	**57.3**	55.7
Diluted	**57.1**	55.2

11 Dividends

	2018 £m	2017 £m
Final dividend for the year ended 30 June 2017 of 13.88p (2016: 13.03p) per share	**7.4**	6.9
Interim dividend for the year ended 30 June 2018 of 5.75p (2017: 5.42p) per share	**3.1**	2.9
Equity dividends paid	**10.5**	9.8

The Directors are proposing a final dividend in respect of the financial year ended 30 June 2018 of 14.71p per share which will utilise £7.8m of retained earnings. It will be paid on 23 November 2018 to shareholders who are on the register of members at the close of business on 9 November 2018, subject to approval at the Annual General Meeting on 15 November 2018.

12 Acquisitions

Control Point Corporation

The Group acquired the entire issued share capital of Control Point Corporation ('CPC'), which was subsequently renamed Ricardo Defense, Inc. on 8 September 2017 for initial cash consideration of £6.3m ($8.3m) and contingent cash consideration of £1.7m ($2.2m), based upon CPC achieving certain financial performance targets. The acquisition of CPC expands upon the Group's vehicle engineering capabilities in the US defense sector and adds expertise in distributed software-based systems and fleet management technologies.

The following table sets out the cash consideration payable to acquire CPC, together with the fair value of the assets acquired and liabilities assumed:

	£m
Initial cash consideration	6.3
Contingent cash consideration	1.7
Total cash consideration	**8.0**
Fair value of identifiable assets acquired and liabilities assumed	
Customer contracts and relationships	2.0
Software and technology	0.3
Property, plant and equipment	0.1
Trade and other receivables	2.1
Cash and cash equivalents	1.7
Trade and other payables	(0.8)
Provisions	(0.4)
Deferred tax liabilities	(0.4)
Total fair value of identifiable net assets	**4.6**
Goodwill	3.4
Total	**8.0**

All of the initial cash consideration of £6.3m ($8.3m) was paid in the year, net of cash acquired of £1.7m ($2.2m).

Adjustments have been made to identifiable assets and liabilities on acquisition to reflect their fair value. These include the recognition of customer-related intangible assets amounting to £2.0m ($2.6m) and software and technology assets of £0.3m ($0.4m). The fair values of net assets acquired were identified following a valuation exercise in accordance with the requirements of IFRS 3 '*Business Combinations*'.

The goodwill arising on acquisition can be ascribed to the existence of a skilled, active workforce, developed expertise and processes and the opportunities to obtain new contracts and develop the business. None of these meet the criteria for recognition as intangible assets separable from goodwill. The goodwill recognised is expected to be deductible for tax purposes.

The fair value of trade and other receivables of £2.1m ($2.8m) includes net trade receivables of £2.0m ($2.6m) and amounts recoverable on contracts of £0.1m ($0.1m), all of which is expected to be collectible.

Acquisition-related expenditure of £0.8m has been charged to the Consolidated Income Statement for the year ended 30 June 2018 and is included as a specific adjusting item in Note 4.

The revenue included in the Consolidated Income Statement in relation to the acquired business was £10.3m. The underlying operating profit over the same period was £1.0m. This is reported in the Technical Consulting segment in Note 2.

Had CPC been acquired and consolidated from 1 July 2017, revenue and underlying operating profit in the Consolidated Income Statement would be £2.2m and £0.2m higher, respectively, based on available information for the period from 1 July 2017 to the acquisition date.

13 Goodwill

Group	£m
At 1 July 2016	57.0
Acquisition of business	3.2
Completion of fair value exercise(1)	0.2
Exchange adjustments	1.6
At 30 June 2017	62.0
Acquisition of business (Note 12)	3.4
Exchange adjustments	0.1
At 30 June 2018	**65.5**

(1) The fair value assessment of the Chinese Rail operations that were acquired from Lloyd's Register on 1 March 2016 was completed in the prior year and resulted in an addition of £0.2m to the Ricardo Rail cash generating unit.

The recoverable amount of each cash-generating unit ('CGU') is calculated by assessing its value in use, which is determined by performing discounted future pre-tax cash flow calculations for a five-year period and projected into perpetuity. The five-year cash flow forecasts are based on the budget for the following year (year one), the business plans for years two and three (the three-year plan), and operating profit projections for years four and five, with a 70% operating cash flow conversion rate.

The three-year plan is prepared by management, and is reviewed and approved by the Board. The three-year plan reflects past experience, management's assessment of the current contract portfolio, contract wins, contract retention, price increases, gross margin, as well as future expected market trends. Operating profit projections for years four and five, and cash flows beyond year five are projected into perpetuity using a long-term growth rate, which is determined as being the lower of the planned compound annual growth rate in the CGU's three-year plan and external third party forecasts of the prevailing inflation and economic growth rates for each of the territories in which the CGU primarily operates.

Apart from operating cash flows and long-term growth rates, the other key assumption is the pre-tax discount rate, which is derived from externally sourced data and reflects the current market assessment of the Group's time value of money and risks specific to each CGU.

The carrying value of goodwill and key assumptions used in determining the recoverable amount of each CGU are as follows:

	Carrying value		Pre-tax discount rate		Long-term growth rate	
	2018	2017	**2018**	2017	**2018**	2017
Group	**£m**	£m	**%**	%	**%**	%
Technical Consulting:						
Ricardo Rail	**27.6**	27.6	**8.1**	10.1	**4.8**	4.9
Ricardo Automotive Europe	**20.1**	20.0	**7.6**	8.6	**4.1**	4.2
Ricardo Energy & Environment	**13.3**	13.3	**7.6**	8.7	**4.1**	4.2
Ricardo Defense(2)	**3.4**	-	**9.2**	n/a	**3.7**	n/a
Technical Consulting total	**64.4**	60.9				
Performance Products:						
Ricardo Performance Products	**1.1**	1.1	**7.6**	8.7	**4.1**	4.2
At 30 June	**65.5**	62.0				

(2) As set out in further detail in Note 12, the Group acquired Control Point Corporation ('CPC') on 8 September 2017, adding goodwill of £3.4m to a new Ricardo Defense CGU. The acquisition of CPC expands upon the Group's vehicle engineering capabilities in the US defense sector and adds expertise in distributed software-based systems and fleet management technologies.

The three-year plan and discounted cash flow calculations thereon provide a value in use which supports the carrying value of the goodwill allocated to each CGU at 30 June 2018, resulting in no impairment for the year (2017: £Nil). In considering sensitivities, no reasonable change in any of the above key assumptions would cause the value in use of the CGUs to fall below the carrying value of the allocated goodwill. The sensitivities assessed include a 10% reduction in planned operating profit, a 20% reduction in the planned operating cash flow conversion rate, and a 1% increase in both the pre-tax discount rate and long-term growth rate, together with a further scenario whereby all sensitivities were combined together.

14 Other intangible assets

Group	Acquisition-related intangible assets: Customer contracts and relationships £m	Acquisition-related intangible assets: Software and technology £m	Software £m	Development costs £m	Total £m
Cost					
At 1 July 2016	24.9	1.8	22.5	12.5	61.7
Acquisition of business	0.2	-	0.1	-	0.3
Additions	-	-	2.5	3.1	5.6
Reclassifications	-	-	0.1	(0.1)	-
Exchange rate adjustments	0.4	0.1	0.2	-	0.7
At 30 June 2017	25.5	1.9	24.7	15.5	67.6
Acquisition of business (Note 12)	2.0	0.3	-	-	2.3
Additions	-	-	1.4	5.1	6.5
Assets classified as held for sale (Note 19)	-	-	(1.4)	-	(1.4)
Reclassifications	-	-	0.2	(0.2)	-
Exchange rate adjustments	0.1	-	(0.1)	(0.1)	(0.1)
At 30 June 2018	**27.6**	**2.2**	**24.8**	**20.3**	**74.9**
Accumulated amortisation					
At 1 July 2016	6.5	0.2	15.6	4.1	26.4
Charge for the year	3.7	0.3	2.1	3.0	9.1
Reclassifications	(0.2)	0.2	-	-	-
Exchange rate adjustments	0.2	0.1	0.1	-	0.4
At 30 June 2017	10.2	0.8	17.1	7.1	35.2
Charge for the year	3.9	0.4	2.3	2.9	9.5
Assets classified as held for sale (Note 19)	-	-	(1.4)	-	(1.4)
Reclassifications	-	-	0.1	(0.1)	-
Exchange rate adjustments	(0.1)	-	-	-	(0.1)
At 30 June 2018	**14.0**	**1.2**	**18.1**	**9.9**	**43.2**
Net book value					
At 30 June 2018	**13.6**	**1.0**	**6.7**	**10.4**	**31.7**
At 30 June 2017	15.3	1.1	7.6	8.4	32.4
At 30 June 2016	18.4	1.6	6.9	8.4	35.3

Customer contracts and relationships were primarily identified as part of the previous acquisitions of AEA and LR Rail. The assets specific to these acquisitions have carrying values of £2.6m (2017: £3.7m) and £9.3m (2017: £11.3m) and have remaining amortisation periods of two and five years, respectively.

Software which is not acquisition-related primarily comprises costs that have been capitalised in respect of an internally developed ERP system. The ERP system has a carrying value of £2.8m (2017: £3.9m) and has a remaining amortisation period of five years. Software includes £0.9m (2017: £0.4m) in respect of assets under construction which are not being amortised until the assets are made available for use.

Development costs include costs incurred to develop and regularly update a suite of simulation and analysis software tools used in the Automotive sector but also with applications in other sectors. The suite of assets have a carrying value of £3.6m (2017: £2.7m) and a remaining amortisation period of three years, which is also applied to each update when released. Development costs also include £5.8m (2017: £3.1m) in respect of assets under construction which are not being amortised until the assets are made available for use. Development costs under construction include costs incurred to develop a patented system that combines anti-lock braking and electronic stability control to mitigate rollover fatalities commonly associated with specific military vehicles, such as the High Mobility Multipurpose Wheeled Vehicle ('HMMWV' or 'Humvee'). The asset has a carrying value of £2.0m (2017: £1.8m) and will commence amortisation in July 2018.

The amortisation charge of £9.5m (2017: £9.1m) is comprised of £1.8m (2017: £1.4m) included within cost of sales and £7.7m (2017: £7.7m) included within administrative expenses in the Consolidated Income Statement, of which £4.3m (2017: £4.0m) is acquisition-related and presented within specific adjusting items. Further details are given in Note 4.

14 Other intangible assets (continued)

Company	Software £m
Cost	
At 1 July 2016	8.6
Additions	0.2
At 30 June 2017 and 30 June 2018	**8.8**
Accumulated amortisation	
At 1 July 2016	4.8
Charge for the year	1.3
At 30 June 2017	6.1
Charge for the year	1.1
At 30 June 2018	**7.2**
Net book value	
At 30 June 2018	**1.6**
At 30 June 2017	2.7
At 30 June 2016	3.8

Software primarily comprises costs that have been capitalised in respect of an internally developed ERP system. The ERP system has a carrying value of £0.9m (2017: £1.6m) and a remaining amortisation period of two years. Software includes £0.3m (2017: £0.3m) in respect of assets under construction which are not being amortised until the assets are made available for use.

15 Property, plant and equipment

Group	Freehold land and buildings £m	Leasehold property £m	Plant and machinery £m	Fixtures, fittings and equipment £m	Total £m
Cost					
At 1 July 2016	22.9	9.4	117.2	22.8	172.3
Additions	1.0	0.4	2.4	2.5	6.3
Disposals	-	(5.0)	(0.9)	(0.5)	(6.4)
Assets classified as held for sale (Note 19)	-	(0.8)	(11.3)	(0.2)	(12.3)
Reclassifications	-	-	0.8	(0.8)	-
Exchange rate adjustments	0.2	-	1.6	0.4	2.2
At 30 June 2017	24.1	4.0	109.8	24.2	162.1
Acquisition of business (Note 12)	-	-	0.1	-	0.1
Additions	0.5	0.6	4.4	2.7	8.2
Disposals	(0.3)	-	(0.5)	(0.5)	(1.3)
Assets classified as held for sale (Note 19)	(3.8)	-	(13.8)	(2.7)	(20.3)
Exchange rate adjustments	-	(0.1)	(0.7)	-	(0.8)
At 30 June 2018	**20.5**	**4.5**	**99.3**	**23.7**	**148.0**
Accumulated depreciation					
At 1 July 2016	4.8	5.1	91.2	17.6	118.7
Charge for the year	0.5	0.5	4.0	2.2	7.2
Disposals	-	(2.8)	(0.9)	(0.5)	(4.2)
Assets classified as held for sale (Note 19)	-	(0.6)	(8.7)	(0.2)	(9.5)
Reclassifications	-	-	0.4	(0.4)	-
Exchange rate adjustments	0.1	-	1.4	0.4	1.9
At 30 June 2017	5.4	2.2	87.4	19.1	114.1
Charge for the year	0.6	0.3	3.4	2.1	6.4
Disposals	(0.1)	-	(0.5)	(0.5)	(1.1)
Assets classified as held for sale (Note 19)	(1.5)	-	(12.0)	(2.6)	(16.1)
Exchange rate adjustments	0.1	(0.1)	(0.5)	(0.1)	(0.6)
At 30 June 2018	**4.5**	**2.4**	**77.8**	**18.0**	**102.7**
Net book value					
At 30 June 2018	**16.0**	**2.1**	**21.5**	**5.7**	**45.3**
At 30 June 2017	18.7	1.8	22.4	5.1	48.0
At 30 June 2016	18.1	4.3	26.0	5.2	53.6

The carrying value of assets under construction included in property, plant and equipment amounts to £4.4m (2017: £1.0m).

At 30 June 2018, contracts had been placed for future capital expenditure, which have not been provided for in the financial statements, amounting to £1.3m (2017: £1.5m).

15 Property, plant and equipment (continued)

Company	Freehold Land and buildings £m	Leasehold property £m	Fixtures, fittings and equipment £m	Total £m
Cost				
At 1 July 2016	5.7	6.0	1.0	12.7
Disposals	-	(4.9)	-	(4.9)
At 30 June 2017	5.7	1.1	1.0	7.8
Additions	-	-	0.1	0.1
At 30 June 2018	**5.7**	**1.1**	**1.1**	**7.9**
Accumulated depreciation				
At 1 July 2016	1.9	3.1	0.4	5.4
Charge for the year	0.1	0.2	0.2	0.5
Disposals	-	(2.8)	-	(2.8)
At 30 June 2017	2.0	0.5	0.6	3.1
Charge for the year	0.1	-	0.2	0.3
At 30 June 2018	**2.1**	**0.5**	**0.8**	**3.4**
Net book value				
At 30 June 2018	**3.6**	**0.6**	**0.3**	**4.5**
At 30 June 2017	3.7	0.6	0.4	4.7
At 30 June 2016	3.8	2.9	0.6	7.3

In the prior year, an agreement was reached to sell a property for £4.0m that had been built on rented premises under an operating lease agreement in exchange for committing to a £0.3m increase in the annual rent charges over an extended lease term. The profit on disposal of the property after £0.1m of transaction costs was £1.8m. The depreciation charged on the property until the point of sale was included within administrative expenses in the Consolidated Income Statement.

In accordance with IAS 17 '*Leases*', management's view was that the sale price was not at fair value, as the transaction bundled together an unspecified profit on disposal from both the sale and leaseback of the building on existing lease terms, together with an incentive for extending the lease term. A discounted cash flow was used to ascertain a fair value of both elements to the bundled transaction and the proceeds received were allocated accordingly.

As a result, £1.1m of the £1.8m profit on disposal after transaction costs was allocated to the extended lease term element of the transaction and deferred onto the Statement of Financial Position. The release of this amount to offset the increase in annual rent charges over the remaining term of the extended lease has commenced in the current year. The remaining £0.7m was allocated to the sale and leaseback of the building on existing terms and recognised within underlying profit before tax in the prior year Consolidated Income Statement. Consistent with the definition of specific adjusting items in Note 1(w), this transaction was not considered to be significant in nature or amount and was therefore not included within prior year specific adjusting items as set out in Note 4.

A contingent liability of up to £2.8m which is associated with a guarantee provided to the Ricardo Group Pension Fund in July 2013 is secured on specific land and buildings. Further detail is given in Note 36.

16 Investments

Company	Shares in subsidiaries £m
At 1 July 2016	73.9
Additions	29.3
Disposals	(0.1)
At 30 June 2017 and 30 June 2018	**103.1**

The addition in the prior year related to an intercompany receivable held with an indirectly owned subsidiary, which was novated to a directly owned subsidiary as a contribution to its capital. The disposal in the prior year related to the investments held in dormant entities which were liquidated during the prior year.

Details of the Company's subsidiaries are disclosed in Note 38.

The Directors consider that the fair value of investments is not less than the carrying value.

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17 Inventories

Group	2018 £m	2017 £m
Raw materials and consumables	**8.4**	9.2
Work in progress	**3.9**	3.8
Finished goods	**1.0**	0.9
At 30 June	**13.3**	13.9

During the year £0.5m (2017: £0.2m) of inventory was written down and included in cost of sales in the Consolidated Income Statement.

18 Trade and other receivables

	Group		Company	
	2018 £m	2017 £m	**2018 £m**	2017 £m
Trade receivables	**65.5**	60.6	**-**	-
Less provision for impairment of trade receivables	**(1.1)**	(1.8)	**-**	-
Trade receivables - net	**64.4**	58.8	**-**	-
Amounts recoverable on contracts (Note 20)	**52.6**	59.0	**-**	-
Amounts owed by Group undertakings	**-**	-	**88.5**	104.1
Prepayments and accrued income	**11.4**	9.7	**1.1**	1.0
Other receivables	**13.4**	10.1	**-**	0.1
At 30 June	**141.8**	137.6	**89.6**	105.2

All trade and other receivables are due within the next 12 months.

In respect of the Company, £8.8m (2017: £10.4m) of the amounts owed by Group undertakings are due for repayment within the next 12 months and the remaining £79.7m (2017: £93.7m) has no fixed repayment date. £67.6m (2017: £82.7m) of the amounts owed by Group undertakings carry interest at rates between 2.4% and 5.0% (2017: 2.3% and 5.0%) with the remaining £20.9m (2017: £21.4m) being interest-free. All amounts owed by Group undertakings are unsecured.

Group provision for impairment of trade receivables	2018 £m	2017 £m
At 1 July	**(1.8)**	(2.1)
Income statement credit/(charge)	**0.6**	(0.2)
Amounts utilised	**0.1**	0.5
At 30 June	**(1.1)**	(1.8)

The provision for impairment of trade receivables has been calculated based on past experience and is in relation to specific customers.

19 Non-current assets held for sale

Group	2018 £m	2017 £m
Property, plant and equipment (Note 15)	-	2.8
At 30 June	-	2.8

In order to reduce the Group's fixed cost base and improve efficiency of international test operations, the Group sold its test assets situated at the Chicago Technical Center and Schechingen Technical Centre during the financial year. The assets situated at the Chicago Technical Center were held for sale as at 30 June 2017. The profit on disposal of these assets held for sale are set out below:

Chicago Technical Center disposal

	£m
Cash consideration	4.1
Carrying value of leasehold property	(0.2)
Carrying value of plant and machinery	(2.6)
Exchange rate adjustments	0.1
Profit on disposal before income tax	**1.4**

On 2 April 2018, the Group completed the sale of its test assets situated at its Chicago Technical Center for £4.1m ($5.5m) to Power Solutions International ('PSI'), a US manufacturer of engines and power systems. The proceeds were received during the year. The profit on disposal has been included within specific adjusting items. Further details are given in Note 4.

Schechingen Technical Centre disposal

	£m
Cash consideration	4.4
Carrying value of freehold land and buildings	(2.3)
Carrying value of plant and machinery	(1.8)
Carrying value of fixtures, fittings and equipment	(0.1)
Profit on disposal before income tax	**0.2**

On 30 June 2018, the Group completed the sale of its test assets and its Schechingen Technical Centre for £4.4m (€5.0m) to a subsidiary of IAVF Antriebstechnik GmbH ('IAVF'), a German developer and test operator of engines. The first tranche of sales proceeds of £1.9m (€2.2m) was received in June 2018 and the remaining £2.5m (€2.8m) was received in July 2018. The profit on disposal has been included within specific adjusting items. Further details are given in Note 4.

20 Contracts in progress

Group	2018 £m	2017 £m
Amounts due from contract customers:		
Amounts expected to be recovered within 12 months (Note 18)	**52.6**	59.0
Amounts due to contract customers:		
Amounts expected to be settled within 12 months (Note 21)	**(25.3)**	(24.1)
Net amounts due from contract customers at 30 June	**27.3**	34.9
Analysed as:		
Contract costs incurred plus recognised profits less recognised losses to date	**485.0**	529.4
Less progress billings	**(457.7)**	(494.5)
Contracts in progress at 30 June	**27.3**	34.9
IAS 11 contract revenue	**285.2**	262.2

Retentions related to contracts in progress included within trade and other receivables (Note 18) or trade and other payables (Note 21) are considered to be immaterial.

21 Trade and other payables

	Group		Company	
	2018	2017	**2018**	2017
	£m	£m	**£m**	£m
Trade payables	**15.0**	18.3	**0.6**	0.7
Tax and social security payable	**7.5**	9.1	**0.1**	1.6
Amounts owed to Group undertakings	**-**	-	**64.4**	60.8
Accruals and deferred income	**30.0**	25.8	**4.0**	2.3
Payments received in advance on contracts (Note 20)	**25.3**	24.1	**-**	-
Other payables	**4.7**	4.8	**1.2**	1.3
At 30 June	**82.5**	82.1	**70.3**	66.7

In respect of the Company, £8.1m (2017: £7.7m) of the amounts owed to Group undertakings are due for repayment within the next 12 months and the remaining £56.3m (2017: £53.1m) has no fixed repayment date. £51.3m (2017: £53.1m) of the amounts owed to Group undertakings carry interest at rates between 2.4% and 3.1% (2017: 2.4% and 3.1%) with the remaining £13.1m (2017: £7.7m) being interest-free. All amounts owed to Group undertakings are unsecured.

22 Borrowings

	Group		Company	
	2018	2017	**2018**	2017
	£m	£m	**£m**	£m
Current borrowings:				
Bank overdrafts	**9.3**	5.9	**8.5**	5.9
Other loans	**0.1**	0.1	**0.1**	0.1
Total current borrowings	**9.4**	6.0	**8.6**	6.0
Non-current borrowings:*				
Bank loans	**49.8**	59.7	**6.8**	19.7
Other loans	**-**	0.1	**-**	0.1
Total non-current borrowings	**49.8**	59.8	**6.8**	19.8
At 30 June	**59.2**	65.8	**15.4**	25.8

(*) Non-current borrowings in the prior year have been restated to present other loans separately from bank loans.

The non-current bank loans are repayable in the year ending 30 June 2020 and are denominated in Pounds Sterling. The non-current bank loans have variable rates of interest which are dependent upon the leverage of the Group and range from 1.6% to 2.6% above LIBOR. Leverage is defined as being net debt as a proportion of EBITDA. EBITDA is defined as being operating profit before interest, tax, depreciation and amortisation. At the reporting date, the Group was paying interest at the lowest rate of LIBOR + 1.6%.

The Group has banking facilities for its UK companies which together have a net overdraft limit. The balances are shown gross in the financial statements as cash and cash equivalents and borrowings.

After the reporting date, the Group completed a refinance of its banking facilities. Further detail is given in Note 39.

23 Fair value of financial assets and liabilities

Assets as per Statements of Financial Position	Group 2018 £m	Group 2017 £m	Company 2018 £m	Company 2017 £m
Loans and receivables:				
Trade and other receivables*(1) (Note 18)	**77.8**	68.9	**-**	0.1
Amounts owed by Group undertakings (Note 18)	**-**	-	**88.5**	104.1
Cash and cash equivalents (Note 34)	**33.1**	27.9	**0.3**	0.9
Assets at fair value through profit and loss:				
Derivative financial assets	**0.1**	0.9	**0.1**	0.9
At 30 June	**111.0**	97.7	**88.9**	106.0
Liabilities as per Statements of Financial Position				
Other financial liabilities at amortised cost:				
Borrowings (Note 22)	**59.2**	65.8	**15.4**	25.8
Trade and other payables*(2) (Note 21)	**19.7**	23.1	**1.8**	2.0
Amounts owed to Group undertakings (Note 21)	**-**	-	**64.4**	60.8
Liabilities at fair value through profit and loss:				
Derivative financial liabilities	**1.0**	0.7	**1.0**	0.7
At 30 June	**79.9**	89.6	**82.6**	89.3

(*) Loans and receivables in the prior year have been restated to exclude amounts recoverable on contracts for the Group from trade and other receivables as these are non-financial assets. Other financial liabilities at amortised cost in the prior year have also been restated to exclude accruals and deferred income for both the Group and Company, and payments received in advance on contracts for the Group from trade and other payables as these are non-financial liabilities.

(1) Excludes non-financial assets of amounts recoverable on contracts of £52.6m (2017: £59.0m) for the Group, and prepayments and accrued income of £11.4m (2017: £9.7m) for the Group and £1.1m (2017: £1.0m) for the Company.

(2) Excludes non-financial liabilities of tax and social security payable of £7.5m (2017: £9.1m) for the Group and £0.1m (2017: £1.6m) for the Company, accruals and deferred income of £30.0m (2017: £25.8m) for the Group and £4.0m (2017: £2.3m) for the Company, and payments received in advance on contracts of £25.3m (2017: £24.1m) for the Group.

Net derivative financial liabilities of £0.9m (2017: net derivative financial assets of £0.2m) relate to foreign exchange contracts.

Summary of methods and assumptions

Short-term borrowings and deposits:

The fair value of short-term deposits, loans and overdrafts approximates to the carrying amount because of the short maturity of these instruments.

Long-term borrowings:

The fair value of borrowings approximates to the carrying value in the Statement of Financial Position as they are primarily floating rate loans where payments are reset to market rates at regular intervals.

Derivatives:

Derivative financial instruments are initially recognised and measured at fair value on the date a derivative contract is entered into and subsequently measured at fair value. Fair value is estimated by discounting expected future contractual cash flows using prevailing interest rate curves. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the reporting date (Level 2 under the IFRS 13 fair value hierarchy).

During the year the following foreign exchange differences arising from financial assets and liabilities measured at fair value through profit or loss ('FVTPL') were (charged)/credited to the Consolidated Income Statement:

Group	2018 £m	2017 £m
Financial assets at FVTPL:		
Fair value losses	**(0.9)**	(0.7)
Fair value gains	**0.7**	2.3
Financial liabilities at FVTPL:		
Fair value losses	**(0.8)**	(0.4)
Fair value gains	**0.1**	0.8
Foreign exchange forward contracts:		
Net foreign exchange (losses)/gains	**(0.1)**	0.2
At 30 June	**(1.0)**	2.2

Group	2018 £m	2017 £m
On loans and receivables	**1.1**	(0.3)
On other financial assets and liabilities	**-**	2.2
At 30 June	**1.1**	1.9

24 Financial risks

(a) Objectives, policies and strategies

The financial risks faced by the Group and the Company comprise capital risk, liquidity risk, credit risk and market risk (comprising interest rate risk and foreign exchange risk). The Board reviews and agrees policies for managing each of these risks. The Group and the Company have no material exposure to commodity price fluctuations and this situation is not expected to change in the foreseeable future.

The Group's financial instruments comprise floating rate borrowings, the main purpose of which is to raise finance for the Group's operations, and foreign exchange contracts used to manage currency risks. The Company's financial instruments comprise floating rate borrowings.

(b) Capital risk

The objectives when managing capital are to safeguard the ability to continue as a going concern in order to provide returns for shareholders, benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

Capital is monitored on the basis of the gearing ratio. This ratio is calculated as net debt divided by total capital. Net debt is calculated as borrowings less cash and cash equivalents. Total capital is calculated as equity, as shown in the Statement of Financial Position, plus net debt.

	Group		Company	
	2018	2017	**2018**	2017
Gearing ratio	**£m**	£m	**£m**	£m
Net debt (Note 34)	**26.1**	37.9	**15.1**	24.9
Total equity	**176.5**	155.7	**109.2**	107.2
Total capital	**202.6**	193.6	**124.3**	132.1
At 30 June	**12.9%**	19.6%	**12.1%**	18.8%

(c) Liquidity risk

The Group's policy towards managing its liquidity risks is to maintain a mix of short- and medium-term borrowing facilities with its bankers. Short-term flexibility is provided by bank overdraft facilities. In addition, the Group maintains medium-term borrowing facilities in order to provide the appropriate level of finance to support current and future working capital requirements. As the cash profile on large contracts can vary significantly, the Group seeks committed facilities that provide substantial headroom against forecast requirements to mitigate its exposure.

At the year-end, the Group held total facilities of £90.9m (2017: £91.1m). This included committed facilities of £75.0m (2017: £75.0m), of which £49.8m (2017: £59.7m) was drawn, net of direct issue costs. Committed facilities were primarily drawn to fund acquisitions. Of the committed facilities available at year-end, a £35.0m facility was available for the period to September 2019 and a £40.0m facility was available until April 2020. In addition, the Group had uncommitted facilities including overdrafts of £15.9m (2017: £16.1m), which mature throughout the next financial year and are renewable annually. After the reporting date, the Group completed a refinance of its banking facilities. Further detail is given in Note 39.

The table below analyses the Group's external non-derivative financial liabilities into relevant maturity groupings, based on the remaining period at the reporting date to the contractual maturity date. All amounts disclosed in the tables below are the contractual undiscounted cash flows. These amounts approximate to their carrying values in the Statement of Financial Position as the impact of discounting on trade payables that mature after more than one year is insignificant and borrowings that mature after more than one year are primarily floating rate bank loans where payments are reset to market rates at regular short-term intervals.

Not included within the tables below are the following financial liabilities:

- Derivative financial liabilities as their contractual maturities are not considered to be essential for an understanding of the timing of the cash flows;
- Other payables as these amounts primarily relate to the obligation to perform pre-paid services for customers, the phasing of which is not contractually defined; and
- Amounts owed to Group undertakings by the Company as the maturity of these liabilities is provided in Note 21.

	Group		Company	
	2018	2017	**2018**	2017
Maturity of trade payables	**£m**	£m	**£m**	£m
Maturing:				
Within 1 month	**12.2**	8.7	**0.6**	0.5
After 1 month and within 3 months	**2.7**	9.0	**-**	-
After 3 months and within 12 months	**0.1**	0.5	**-**	0.2
After more than 12 months	**-**	0.1	**-**	-
At 30 June	**15.0**	18.3	**0.6**	0.7

	Group		Company	
	2018	2017	**2018**	2017
Maturity of borrowings	**£m**	£m	**£m**	£m
Overdrafts repayable on demand	**9.3**	5.9	**8.5**	5.9
Maturing:				
After 1 month and within 3 months	**0.1**	0.1	**0.1**	0.1
After 12 months and within 5 years	**49.8**	59.8	**6.8**	19.8
At 30 June	**59.2**	65.8	**15.4**	25.8

24 Financial risks (continued)

(d) Credit risk

The Group is exposed to credit risk in respect of its trade receivables, which are stated net of provision for impairment. Exposure to this risk is mitigated by careful evaluation of the granting of credit and the use of credit insurance where practicable.

Concentrations of credit risk with respect to trade receivables are limited due to the Group's customer base being large and unrelated.

Ageing of net trade receivables	2018 £m	2017 £m
Not overdue	**51.9**	44.0
Overdue:		
0 - 90 days overdue	**8.9**	11.6
91 - 180 days overdue	**2.0**	0.6
Over 180 days overdue	**1.6**	2.6
At 30 June	**64.4**	58.8

The Group's customers include the world's major transportation original equipment manufacturers, energy companies, financial institutions and government agencies. Revenue by customer location is disclosed within Note 3(b) and trade receivables are derived from these customer groups and locations.

We have limited experience of bad debts with any of these customers. Of the total net trade receivables balance of £64.4m as at 30 June 2018, £30.2m was received in July 2018. Due to these factors, the Directors are of the opinion that there is no further credit risk provision required in excess of any existing provision for impairment.

An analysis of net trade receivables by currency is as follows:

Net trade receivables by currency	2018 £m	2017 £m
Pounds Sterling	**34.2**	32.8
Euros	**8.5**	11.5
US Dollars	**7.9**	5.9
Chinese Renminbi	**7.7**	3.2
Other currencies	**6.1**	5.4
At 30 June	**64.4**	58.8

The geographic analysis of the location of trade receivables before provision for impairment across the Group is as follows:

Trade receivables that are neither past due nor impaired	2018 £m	2017 £m
United Kingdom	**34.2**	33.7
Rest of Europe	**3.3**	1.9
North America	**4.8**	4.0
Asia	**6.4**	2.9
Rest of the World	**2.0**	1.5
At 30 June	**50.7**	44.0

Trade receivables that are not past due but impaired	2018 £m	2017 £m
United Kingdom	**1.2**	-
At 30 June	**1.2**	-

Trade receivables that are overdue but not impaired	2018 £m	2017 £m
United Kingdom	**4.1**	6.3
Rest of Europe	**0.9**	1.1
North America	**2.1**	3.8
Asia	**3.8**	1.5
Rest of the World	**0.5**	1.8
At 30 June	**11.4**	14.5

Trade receivables that are overdue and impaired	2018 £m	2017 £m
United Kingdom	**0.6**	0.8
Rest of Europe	**0.1**	0.1
North America	**1.4**	0.6
Asia	**0.1**	0.6
At 30 June	**2.2**	2.1

24 Financial risks (continued)

(d) Credit risk (continued)

The individually impaired trade receivables primarily relate to customers which are in unexpectedly difficult economic situations. It was assessed that a portion of these trade receivables are expected to be recovered.

Impaired financial assets	2018 £m	2017 £m
Trade receivables	**3.4**	2.1
Provision for impairment	**(1.1)**	(1.8)
At 30 June	**2.3**	0.3

Trade receivables that are overdue but not impaired relate to customers for whom there is no recent history of default. The ageing analysis of overdue trade receivables is as follows:

Trade receivables that are overdue but not impaired	2018 £m	2017 £m
0 - 90 days overdue	**8.9**	11.6
91 - 180 days overdue	**2.0**	0.7
Over 180 days overdue	**0.5**	2.2
At 30 June	**11.4**	14.5

Trade receivables that are overdue and impaired	2018 £m	2017 £m
Over 180 days overdue	**2.2**	2.1
At 30 June	**2.2**	2.1

The Group and Company is exposed to bank credit risk in respect of money held on deposit and certain derivative transactions entered into with banks. Exposure to this form of risk is mitigated as material transactions are only undertaken with bank counterparties that have high credit ratings assigned by international credit-rating agencies. The Group and Company further limits risk in this area by setting an overall credit limit for all transactions with each bank counterparty in accordance with the institution's credit standing.

	Group		Company	
Maximum exposure to bank counterparty risk	2018 £m	2017 £m	2018 £m	2017 £m
Cash and cash equivalents	**33.1**	27.9	**0.3**	0.9
Derivative financial assets	**0.1**	0.9	**0.1**	0.9
At 30 June	**33.2**	28.8	**0.4**	1.8

Analysis of the Group's cash and cash equivalents by geographic location	2018 £m	2017 £m
United Kingdom	**8.0**	9.0
Rest of Europe	**4.0**	4.3
North America	**1.7**	1.2
Asia	**17.7**	12.9
Rest of the World	**1.7**	0.5
At 30 June	**33.1**	27.9

24 Financial risks (continued)

(e) Market risk

Interest rate risk

The Group and Company borrowings and cash balances held at floating interest rates are exposed to cash flow interest rate risk. As set out in further detail in Note 22, the exposure to interest rate movements is not currently hedged as the variable rates of interest are largely dependent upon the leverage of the Group, which is currently attracting the lowest possible rate of interest. The effect of any foreseen changes in the LIBOR remain unhedged, although the policy is reviewed on an ongoing basis.

	Group		Company	
	2018	*2017	**2018**	*2017
Financial assets and liabilities by interest type	**£m**	£m	**£m**	£m
Fixed rate financial assets	**-**	-	**67.6**	82.7
Floating rate financial assets	**28.4**	23.2	**-**	0.9
No interest financial assets	**82.6**	74.5	**21.3**	22.4
Fixed rate financial liabilities	**-**	-	**(51.3)**	(53.1)
Floating rate financial liabilities	**(59.1)**	(65.6)	**(15.3)**	(25.6)
No interest financial liabilities	**(20.8)**	(24.0)	**(16.0)**	(10.6)
Net financial assets at 30 June	**31.1**	8.1	**6.3**	16.7

(*) The comparative information for the prior year has been represented for the following reasons:

- As set out in further detail in Note 23, certain assets within trade and other receivables and certain liabilities within trade and other payables are non-financial in nature and are no longer included;
- Cash and cash equivalents for the Group of £10.3m and for the Company of £0.9m have now been presented as floating rate financial assets, having previously been presented as no interest financial assets;
- Overdraft balances for the Group and Company of £5.9m have now been presented as floating rate financial liabilities, having previously been presented as no interest financial liabilities;
- Other loans for the Group and Company of £0.1m have now been presented as no interest financial liabilities, having previously been presented as floating rate financial liabilities;
- Amounts for the Company owed to and from fellow Group undertakings of £53.1m and £82.7m, respectively, have now been presented as fixed rate financial assets or liabilities, having previously been presented as floating rate financial assets or liabilities, to more fairly reflect the terms of the loan agreements with counterparties;
- No interest financial liabilities for the Company of £3.6m have also been reclassified to offset against related no interest financial assets.

Foreign exchange risk

The Group faces currency exposures on trading transactions undertaken by its subsidiaries in foreign currencies and balances arising therefrom, and on the translation of profits earned in, and net assets of, overseas subsidiaries primarily in the US, Europe and China.

The carrying amounts of the Group's foreign currency denominated monetary assets and liabilities are:

	Assets		Liabilities	
	2018	2017	**2018**	2017
	£m	£m	**£m**	£m
US Dollar	**10.7**	13.3	**(2.4)**	(1.3)
Euro	**15.6**	13.2	**(6.6)**	(11.6)
Chinese Renminbi	**22.3**	13.3	**(0.3)**	(0.4)

It is the Group's policy not to undertake any speculative currency transactions.

The Group uses derivatives to manage transactional exposures relating to its foreign currency exposures on contracts by taking out foreign exchange contracts or other derivative financial instruments.

The Company uses derivatives to manage currency risk on its US Dollar, Euro, Chinese Renminbi, Japanese Yen and Hong Kong Dollar denominated receivables from related parties.

24 Financial risks (continued)

(f) Analysis of sensitivity of financial instruments to market risk

Exchange rate sensitivity

The Group has financial instruments in assets and liabilities in foreign currencies, principally in US Dollars, Euros and Chinese Renminbi, where the financial instruments are not in the functional currency of the entity that holds them. A 20% change in the value of the US Dollar, Euro or Chinese Renminbi would have an immaterial impact on the value of financial instruments at the year-end. Given the relative strengthening of the Group's principal foreign currencies against the Pound Sterling since the UK referendum vote to leave the EU, a 20% sensitivity in these exchange rates is deemed to be appropriate.

Interest rate sensitivity

A 1% change in either the US Dollar, Euro, Chinese Renminbi or Sterling interest rates would have an insignificant impact on the value of the Group's floating rate financial instruments at the year-end. A 1% sensitivity is deemed to be appropriate as loans are based on LIBOR and so are unlikely to be subjected to significant fluctuations in interest rates in the foreseeable future.

(g) Cash flow derivatives

The Group uses foreign currency contracts designated as cash flow derivatives to manage the exposure arising from orders in foreign currencies that could affect the Consolidated Income Statement. The principal risk being hedged is the Euro/Sterling, US Dollar/Sterling and Chinese Renminbi/Sterling spot and interest rate differential exchange rate risk arising from orders in foreign currencies. The spot and interest rate differential component of the contracts taken out is designed to manage the change in fair value of the cash flows on the firm orders in foreign currencies that are attributable to movements in the Euro/Sterling, US Dollar/Sterling and Chinese Renminbi/Sterling spot and interest rates. Since the Group does not hedge account, any change in the fair value of the instrument is recognised directly in the Consolidated Income Statement.

Cash flows expected to occur and affect the Consolidated Income Statement	**2018** **£m**	2017 £m
Within 3 months	**54.3**	47.9
After 3 months and within 12 months	**2.3**	0.1
After 12 months and within 3 years	**2.2**	-
Total	**58.8**	48.0

25 Retirement benefit obligations

Group and Company

Defined contribution and defined benefit schemes

The Group operates various defined contribution pension schemes, the assets of which are held in separately administered funds. The Group also operates a defined benefit pension scheme, the Ricardo Group Pension Fund ('RGPF'), which closed to future accrual on 28 February 2010. Responsibility for the governance of the RGPF lies with the Board of Trustees. The Board of Trustees must be comprised of representatives of the Group and RGPF participants in accordance with the RGPF's regulations.

The last triennial valuation of the RGPF was completed with an effective date of 5 April 2017 and is awaiting imminent final approval. At that date, the assets of the RGPF had a market value of £134.0m and were sufficient to cover 86% of the benefits that had accrued to members when assessed on the Trustees' prudent funding basis. Annual contributions due to the RGPF during the year ending 30 June 2019 will be £4.3m. The Company has agreed with the Trustees that annual contributions will increase to £4.6m from 1 July 2019 and will continue until 31 July 2022, in order to eliminate the Trustees' funding deficit revealed at the 5 April 2017 valuation. The next triennial valuation will be on 5 April 2020, and this process is expected to complete in the year ending 30 June 2021. The results of the 2020 triennial valuation will determine whether the Group's current contribution commitment remains appropriate.

The IAS 19 '*Employee Benefits*' valuation was completed as at 30 June 2018. The pension costs relating to the RGPF were assessed using the projected unit credit method and the model used to determine pension increase assumptions has been changed from the Black Scholes model to the Jarrow-Yildrim model, in accordance with the advice of Mercer, qualified actuaries.

From June 2016, the Company and Trustees decided to introduce a 'retirement flexibility' option to the RGPF, which allows members to transfer out their benefits at retirement. No allowance continues to have been made within the defined benefit obligation as at 30 June 2018 for members who may elect to transfer out their benefits at retirement. This assumption will be reviewed on an ongoing basis and may change in future as experience emerges as to the level of members who elect to transfer out their benefits at retirement.

The post-retirement mortality assumptions for the current year have been reviewed and use morality tables known as the SAPS 'Series 2' tables, with an 85% (2017: 98%) multiplier for males, applicable to the 'light' version of the table, and a 93% (2017: 95%) multiplier for females, applicable to the 'standard' version of the table. The future improvements component has been updated to be in line with the Continuous Mortality Investigation ('CMI') 2017 projection model (2017: CMI 2016). The latest available CMI model will be used at each year-end to provide the most accurate representation of the defined benefit obligation. The use of a 1.25% long-term trend is consistent with the prior year.

25 Retirement benefit obligations (continued)

Under these mortality assumptions the expected future life expectancy from age 65 is as follows:

	2018		2017	
Age	**Males**	**Females**	Males	Females
65 now	**24.3**	**24.4**	23.4	24.6
65 in 20 years	**25.6**	**25.9**	24.7	26.1

The other significant assumptions made were:

	2018	2017
	%	%
Discount rate	**2.85**	2.60
Rate of RPI inflation	**3.10**	3.20
Rate of increase in pensions in payment:		
Pre 1 July 2002 accrual	**3.60**	3.60
Post 1 July 2002 accrual	**2.95**	3.15
Rate of increase in pension in deferment	**2.10**	2.20
Percentage of pension to be commuted for a lump sum at retirement	**25.00**	25.00

Scheme assets are comprised as follows:

	2018			2017		
	Quoted	**Unquoted**	**Total**	Quoted	Unquoted	Total
	£m	**£m**	**£m**	£m	£m	£m
Equities	**34.4**	**-**	**34.4**	33.6	-	33.6
Bonds	**66.8**	**-**	**66.8**	56.9	-	56.9
Cash and other	**-**	**1.0**	**1.0**	-	13.3	13.3
Property	**-**	**7.7**	**7.7**	-	7.0	7.0
Diversified growth funds	**21.1**	**-**	**21.1**	20.2	-	20.2
At 30 June	**122.3**	**8.7**	**131.0**	110.7	20.3	131.0

Movements in the fair value of scheme assets and present value of defined benefit obligations were as follows:

	2018			2017		
	Fair value of plan assets	**Present value of obligation**	**Net total**	Fair value of plan assets	Present value of obligation	Net total
	£m	**£m**	**£m**	£m	£m	£m
At 1 July	**131.0**	**(153.2)**	**(22.2)**	122.8	(144.3)	(21.5)
Interest income/(expense) in the income statement	**3.4**	**(3.9)**	**(0.5)**	3.6	(4.2)	(0.6)
Return on plan assets, excluding amounts included in interest income	**2.1**	**-**	**2.1**	6.9	-	6.9
(Loss)/gain from change in demographic assumptions	**-**	**(3.0)**	**(3.0)**	-	4.5	4.5
Gain/(loss) from change in financial assumptions	**-**	**7.7**	**7.7**	-	(15.8)	(15.8)
Experience gains	**-**	**7.0**	**7.0**	-	-	-
Total remeasurements in other comprehensive income	**2.1**	**11.7**	**13.8**	6.9	(11.3)	(4.4)
Contributions from sponsoring companies	**4.3**	**-**	**4.3**	4.3	-	4.3
Benefits paid	**(9.8)**	**9.8**	**-**	(6.6)	6.6	-
Total movements	**-**	**17.6**	**17.6**	8.2	(8.9)	(0.7)
At 30 June	**131.0**	**(135.6)**	**(4.6)**	131.0	(153.2)	(22.2)

The sensitivity of the defined benefit obligation to changes in the principal assumptions is:	Change in assumption	Impact on defined benefit obligation
Decrease in discount rate	0.25%	Increase by £5.9m
Increase in inflation rate	0.25%	Increase by £2.6m
Increase in life expectancy	1 year	Increase by £4.6m

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice this is unlikely to occur and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions, the same method has been applied as when calculating the pension liability recognised within the Statement of Financial Position. The methods and types of assumptions used in preparing the sensitivity analysis did not change when compared to the previous year.

25 Retirement benefit obligations (continued)

The Group is exposed to a number of risks from the RGPF, the most significant of which are described below:

Asset volatility:	The RGPF liabilities are calculated using a discount rate set with reference to corporate bond yields. If the RGPF assets underperform this yield, the deficit will increase. The RGPF holds a significant proportion of equities and diversified growth funds, which are expected to outperform corporate bonds in the long-term while providing volatility and risk in the short-term. The Directors are of the view that due to the long-term nature of the RGPF liabilities and the strength of the supporting Group, this is an appropriate strategy to manage the RGPF efficiently.
Changes in corporate bond yields:	A decrease in corporate bond yields will increase RGPF liabilities, although this will be partially offset by an increase in the value of the RGPF's bond holdings. The UK referendum vote to leave the EU in 2016 has caused volatility in the market which has, and may continue to adversely affect corporate bond yields, with a corresponding impact on discount rates as described above.
Inflation risk:	Although there are some caps in place to protect the RGPF against extreme inflation, increases in the level of inflation will lead to higher liabilities.
Life expectancy:	The RGPF provides benefits for the life of the members, therefore increases in the life expectancy will result in an increase in the RGPF's liabilities.

The weighted average duration of the defined benefit obligation is 16.9 years (2017: 18.1).

Expected maturity analysis of undiscounted pension benefits:	**2018** **£m**	2017 £m
Less than a year	**4.1**	4.0
Between 1-2 years	**4.2**	4.2
Between 2-5 years	**13.5**	13.4
Next 5 years	**25.5**	25.4

Amounts charged in the income statement in respect of pensions	**2018** **£m**	2017 £m
In respect of defined contribution schemes (Note 7)	**9.6**	9.1
In respect of defined benefit schemes (Note 8)	**0.5**	0.6
Total	**10.1**	9.7

26 Deferred tax

(a) Deferred tax analysis by category

	Group		Company	
	2018	2017	**2018**	2017
	£m	£m	**£m**	£m
Non-current deferred tax assets	**7.6**	14.3	**1.7**	4.8
Non-current deferred tax liabilities	**(3.9)**	(5.0)	**(0.6)**	(0.1)
Net deferred tax asset at 30 June	**3.7**	9.3	**1.1**	4.7

(b) Movements in net deferred tax assets and liabilities

Group	Accelerated capital allowances £m	Retirement benefit obligations £m	Tax losses and credits £m	Unrealised capital gains £m	Other £m	Total £m
At 1 July 2016	(4.7)	4.0	10.4	(0.5)	0.2	9.4
Arising on acquisition	-	-	-	-	(0.1)	(0.1)
Credited/(charged) to the income statement	0.2	(0.7)	(1.5)	0.1	0.7	(1.2)
Credited to statement of comprehensive income	-	0.8	-	-	-	0.8
Credited directly to equity	-	-	-	-	0.1	0.1
Exchange rate adjustments	(0.1)	-	0.4	-	-	0.3
At 30 June 2017	(4.6)	4.1	9.3	(0.4)	0.9	9.3
Arising on acquisition	-	-	-	-	(0.4)	(0.4)
Credited/(charged) to the income statement	1.1	(0.7)	(3.5)	-	0.5	(2.6)
Charged to statement of comprehensive income	-	(2.7)	-	-	-	(2.7)
Credited directly to equity	-	-	-	-	0.1	0.1
At 30 June 2018	**(3.5)**	**0.7**	**5.8**	**(0.4)**	**1.1**	**3.7**

At 30 June 2018 and 30 June 2017 there were no temporary differences associated with undistributed earnings of subsidiaries for which deferred tax liabilities have been recognised. No liability would be recognised in respect of these differences because the Group is in a position to control the timing of the reversal of the temporary differences and it is probable that such differences will not reverse in the foreseeable future.

A net deferred tax asset of £2.2m (€2.5m) which primarily comprised £2.4m (€2.7m) of historical losses incurred in the consolidated tax group controlled by Ricardo GmbH, partially offset by £0.2m (€0.2m) of deferred tax liabilities, was brought forward from the prior year. As set out in Footnote 3 of Note 4, this net deferred tax asset was derecognised during the year. A deferred tax asset has not been recognised for tax losses arising in the current year of £2.9m (€3.3m), which includes £4.0m (€4.5m) of the specific adjusting items described in Footnote 2 of Note 4. The deferred tax asset not recognised in respect of losses incurred in the consolidated tax group controlled by Ricardo GmbH at 30 June 2018 amounts to £10.7m (€12.2m) (2017: £7.6m (€8.7m)).

A deferred tax asset continues to be recognised within the consolidated tax group controlled by Ricardo, Inc. in respect of historic research and development claims ('R&D credits') that can be utilised against future taxable profits. These R&D credits carry a 20-year statute of limitation and must be utilised within that period. The carrying value of the R&D credits recognised at 30 June 2018 is £5.5m ($7.2m) (2017: £5.9m ($7.7m)).

The Directors have performed an assessment and consider that it is probable that future taxable profits will be available within the consolidated tax group controlled by Ricardo, Inc. against which the carrying value of the recognised deferred tax asset can be utilised in the foreseeable future. This assessment was based on a review of the projected annual profit before tax of the individual components of the Ricardo, Inc. tax group, based upon the latest Board-approved budgets and business plans for the next three years, together with long-term growth assumptions based on prevailing inflation and economic growth rates. Based on the 'base case' assumptions, the entire deferred tax asset is forecast to be utilised by 30 June 2022, with each individual R&D credit being utilised in no less than four years before the expiry of its 20-year statute of limitation period. The assessment was subject to stress testing, the results of which did not change management's view of the recoverability of the asset.

Company	Accelerated capital allowances £m	Retirement benefit obligations £m	Tax losses and credits £m	Unrealised capital gains £m	Other £m	Total £m
At 1 July 2016	-	4.0	0.2	(0.5)	1.5	5.2
Charged to the income statement	-	(0.7)	-	-	(0.7)	(1.4)
Credited to statement of comprehensive income	-	0.8	-	-	-	0.8
Credited directly to equity	-	-	-	-	0.1	0.1
At 30 June 2017	-	4.1	0.2	(0.5)	0.9	4.7
Charged to the income statement	(0.1)	(0.7)	-	-	(0.2)	(1.0)
Charged to statement of comprehensive income	-	(2.7)	-	-	-	(2.7)
Credited directly to equity	-	-	-	-	0.1	0.1
At 30 June 2018	**(0.1)**	**0.7**	**0.2**	**(0.5)**	**0.8**	**1.1**

27 Provisions

Group	Warranty £m	Restructuring costs £m	Employment-related benefits £m	Other £m	Total £m
At 1 July 2016	1.3	0.2	0.6	0.7	2.8
Arising on acquisition	-	-	0.1	-	0.1
Charged to income statement	1.0	-	0.1	0.2	1.3
Utilised in year	(0.6)	-	-	(0.2)	(0.8)
Released in year	(0.1)	(0.1)	(0.3)	(0.3)	(0.8)
At 30 June 2017	1.6	0.1	0.5	0.4	2.6
Arising on acquisition	-	-	-	0.4	0.4
Charged to income statement	1.5	2.4	0.6	-	4.5
Utilised in year	(0.8)	(0.1)	-	(0.4)	(1.3)
Released in year	(0.3)	-	(0.1)	(0.1)	(0.5)
At 30 June 2018	**2.0**	**2.4**	**1.0**	**0.3**	**5.7**

The warranty provision reflects the Directors' best estimate of the cost needed to fulfil the Group's warranty obligations within a number of contracts. Subsequent to their initial recognition, warranty provisions unwind over the periods of the warranty obligations, which are expected to be less than five years.

The provision for restructuring costs includes amounts payable to staff who have been made redundant as part of the reorganisation of our global Automotive businesses within Technical Consulting, as set out in further detail in Note 4. The provision also includes associated onerous lease obligations. The element of the provision relating to redundancy costs is expected to be utilised in less than one year and the onerous lease obligations will unwind over the duration of the lease, which is predominantly expected to be less than five years.

Employment-related benefits are statutory provisions which include long-service awards and termination indemnity schemes. The timing of the cash outflows is dependent upon the retirement or attrition of staff, but is predominantly expected to be more than five years.

Other provisions comprise expected costs of legal claims, litigation and dilapidation. The associated cash outflows for legal claims and litigation are predominantly expected to be less than one year. Dilapidation costs reflects the Directors' best estimate of future obligations relating to the maintenance of leasehold properties arising from past events such as entering into new lease agreements, extensions or terminations. The timing of the cash outflows is dependent upon the remaining term of the associated lease.

Analysis of total Group provisions	**2018 £m**	2017 £m
Current	**2.8**	1.3
Non-current	**2.9**	1.3
At 30 June	**5.7**	2.6

28 Share capital

Group and Company	**2018 Number**	2017 Number	**2018 £m**	2017 £m
Allotted, called-up and fully paid ordinary shares of 25p each				
At 1 July	**53,163,423**	52,854,823	**13.3**	13.2
Allotted under share option schemes	**2,827**	-	**-**	-
Allotted under the LTIP scheme	**136,140**	186,779	**0.1**	0.1
Allotted under the DBP scheme	**69,834**	121,788	**-**	-
Unallocated shares remaining in EBT	**34,026**	33	**-**	-
At 30 June	**53,406,250**	53,163,423	**13.4**	13.3

The consideration received for shares allotted under the share option schemes, Long-Term Incentive Plan ('LTIP') and Deferred Share Bonus Plan ('DBP') during the year ended 30 June 2018 was £0.1m (2017: £0.1m).

Dividends were paid at the reduced rate of nil pence per share (2017: 0.01p) for interim and final dividends in respect of shares held by an Employee Benefit Trust ('EBT') in relation to the LTIP. There were 36,839 such shares at 30 June 2018 (2017: 2,813 shares).

29 Share premium

Group and Company	£m
At 1 July 2016, 30 June 2017 and 30 June 2018	**14.3**

30 Share-based payments

The Group operates the following share-based payment schemes: 2004 Ricardo plc Executive Share Option Plan (the '2004 Plan'); equity-settled and cash-settled Long-Term Incentive Plan ('LTIP'); Deferred Share Bonus Plan ('DBP') and equity-settled all-employee Share Incentive Plan ('SIP').

The general terms and conditions, including vesting requirements and performance conditions for the 2004 Plan, equity-settled LTIP, DBP and equity-settled SIP are described in the Directors' Remuneration Report.

The 2004 Plan, LTIP, DBP and SIP require shareholder approval for the issue of shares. There were no awards outstanding in relation to the SIP at the year-end.

50% of awards granted under the LTIP and DBP Matching Awards are dependent on a Total Shareholder Return ('TSR') performance condition. As relative TSR is defined as a market condition under IFRS 2 '*Share-based Payment*', this requires that the valuation model used takes into account the anticipated performance outcome. The TSR element of the charge to the Consolidated Income Statement has been calculated using the Monte Carlo model and the earnings per share ('EPS') element has been calculated using the Black Scholes model. The following assumptions are used for the plan cycles commencing in these years:

	2018	2017
Weighted average share price at date of award	**860p**	929p
Expected volatility	**24.4%**	25.4%
Expected life	**3 yrs**	3 yrs
Risk-free rate	**0.5%**	0.2%
Dividend yield	**2.2%**	2.0%
Possibility of ceasing employment before vesting	**10%**	10%
Weighted average fair value per LTIP as a percentage of a share at date of award	**77.0%**	74.8%

Expected volatility was determined by calculating the historical volatility of the Company's share price over the three financial years preceding the date of award.

The share-based payments charge of £1.0m (2017: £1.6m) disclosed in Note 7 comprised £1.0m (2017: £1.6m) in respect of equity-settled schemes and £Nil (2017: £Nil) in respect of cash-settled schemes.

Equity-settled Executive Share Option Plan

	2018		2017	
	Number	**Weighted average share price**	Number	Weighted average share price
Outstanding at 1 July	**2,827**	**305p**	2,827	305p
Exercised	**(2,827)**	**305p**	-	305p
Outstanding at 30 June	**-**	**-**	2,827	305p
Exercisable at the end of the year	**-**	**-**	2,827	305p

The outstanding options had no contractual life remaining (2017: 1.3 years). The are no remaining options (2017: exercisable at 305p).

Equity-settled Long-Term Incentive Plan

The current LTIP is described in the Directors' Remuneration Report. Awards are forfeited if the employee leaves the Group before the awards vest, unless they are considered 'good leavers'.

	2018	2017
	Shares allocated(1)	Shares allocated(1)
Outstanding at 1 July	**595,759**	586,232
Awarded	**213,230**	226,591
Lapsed	**(104,247)**	(30,285)
Vested	**(136,140)**	(186,779)
Outstanding at 30 June	**568,602**	595,759

(1) Shares allocated excludes dividend roll-up.

The outstanding LTIP awards had a weighted average contractual life of 1.4 years (2017: 1.4 years). The weighted average exercise price in both 2018 and 2017 was £Nil.

30 Share-based payments (continued)

Cash-settled Long-Term Incentive Plan

The cash-settled LTIP has the same performance conditions as the equity-settled LTIP but the award is settled in cash rather than share issue.

	2018 **Shares allocated**(1)	2017 Shares allocated(1)
Outstanding at 1 July	**10,759**	4,759
Awarded	**-**	6,000
Outstanding at 30 June	**10,759**	10,759

(1) Shares allocated excludes dividend roll-up.

The outstanding LTIP awards had a weighted average contractual life of 0.9 years (2017: 1.9 years). The weighted average exercise price in both 2018 and 2017 was £Nil.

Deferred Share Bonus Plan

The Deferred Share Bonus Plan is described in the Directors' Remuneration Report.

	2018 **Number of deferred shares**	2017 Number of deferred shares
Outstanding at 1 July	**230,471**	260,116
Awarded	**-**	90,784
Forfeited	**(9,228)**	(1,134)
Dividend shares awarded in the year	**2,841**	2,493
Vested	**(69,834)**	(121,788)
Outstanding at 30 June	**154,250**	230,471

The outstanding DBP awards had a weighted average contractual life of 0.8 years (2017: 1.3 years). The weighted average exercise price in both 2018 and 2017 was £Nil.

31 Other reserves

Group	Merger reserve £m	Translation reserve £m	Total £m
At 1 July 2016	1.0	11.6	12.6
Exchange rate adjustments	-	3.0	3.0
At 30 June 2017	1.0	14.6	15.6
Exchange rate adjustments	-	0.1	0.1
At 30 June 2018	**1.0**	**14.7**	**15.7**

The merger reserve represents the amount by which the fair value of the shares issued as consideration for acquisitions exceeded their nominal value, offset by the goodwill on these acquisitions.

The translation reserve comprises cumulative foreign currency differences arising from the translation of financial statements of foreign operations.

32 Retained earnings

	Group £m	Company £m
At 1 July 2016	99.4	89.4
Profit for the year	24.8	1.9
Remeasurements of the defined benefit pension scheme	(4.4)	(4.4)
Tax on remeasurements of the defined benefit pension scheme	0.8	0.8
Dividends paid	(9.8)	(9.8)
Equity-settled transactions	1.6	1.6
Tax credit relating to share option schemes	0.1	0.1
Reclassification of non-controlling interests	(0.3)	-
At 30 June 2017	112.2	79.6
Profit for the year	18.8	0.2
Remeasurements of the defined benefit pension scheme	13.8	13.8
Tax on remeasurements of the defined benefit pension scheme	(2.7)	(2.7)
Dividends paid	(10.5)	(10.5)
Equity-settled transactions	1.0	1.0
Tax credit relating to share option schemes	0.1	0.1
At 30 June 2018	**132.7**	**81.5**

33 Cash generated from/(used in) operations

	Group		Company	
	2018 £m	2017 £m	**2018 £m**	2017 £m
Profit before taxation	**28.5**	32.2	**0.7**	2.7
Adjustments for:				
Share-based payments	**1.0**	1.6	**1.0**	1.6
Cash flow hedges	**1.1**	(3.2)	**1.1**	(3.2)
Profit on disposal of property, plant and equipment	**(1.6)**	(0.7)	**-**	(0.7)
Net finance costs	**2.2**	2.5	**0.5**	-
Depreciation and amortisation	**15.9**	16.3	**1.4**	1.8
Operating cash flows before movements in working capital	**47.1**	48.7	**4.7**	2.2
Decrease/(increase) in inventories	**0.6**	(2.9)	**-**	-
Decrease/(increase) in trade and other receivables	**2.9**	(15.5)	**(0.7)**	0.6
Decrease in intercompany balances	**-**	-	**22.5**	3.1
Decrease in trade and other payables	**(5.1)**	(1.1)	**(2.5)**	(3.2)
Increase/(decrease) in provisions	**3.1**	(0.5)	**-**	-
Defined benefit payments	**(4.4)**	(4.4)	**(4.4)**	(4.4)
Cash generated from/(used in) operations	**44.2**	24.3	**19.6**	(1.7)

34 Net debt

Net debt is defined by the Group as net cash and cash equivalents less borrowings.

	Group		Company	
	2018	2017	**2018**	2017
Analysis of net debt	**£m**	£m	**£m**	£m
Cash and cash equivalents (current assets)	**33.1**	27.9	**0.3**	0.9
Bank overdrafts (current liabilities – borrowings)(1)	**(9.3)**	(5.9)	**(8.5)**	(5.9)
Net cash and cash equivalents	**23.8**	22.0	**(8.2)**	(5.0)
Loans maturing maturing within one year (current liabilities – borrowings)(1)	**(0.1)**	(0.1)	**(0.1)**	(0.1)
Loans maturing after one year (non-current liabilities – borrowings)	**(49.8)**	(59.8)	**(6.8)**	(19.8)
At 30 June	**(26.1)**	(37.9)	**(15.1)**	(24.9)

(1) Bank overdrafts and loans maturing within one year are combined within the Statement of Financial Position and classified as borrowings within current liabilities.

	Group		Company	
	2018	2017	**2018**	2017
Movement in net debt	**£m**	£m	**£m**	£m
Net debt at start of year	**(37.9)**	(34.4)	**(24.9)**	(18.0)
Net increase/(decrease) in cash and cash equivalents	**1.8**	1.6	**(3.2)**	(1.8)
Proceeds from borrowings	**(15.0)**	(31.5)	**(10.0)**	(26.5)
Repayments of borrowings	**25.0**	26.4	**23.0**	21.4
At 30 June	**(26.1)**	(37.9)	**(15.1)**	(24.9)

35 Operating lease commitments

Future aggregate minimum lease payments under non-cancellable operating leases are as follows:

	Group		Company	
	2018	2017	**2018**	2017
By due date of commitments	**£m**	£m	**£m**	£m
Within one year	**8.7**	7.1	**0.8**	0.5
Between one and five years	**24.8**	21.7	**3.2**	2.0
After five years	**30.8**	27.1	**7.4**	5.1
At 30 June	**64.3**	55.9	**11.4**	7.6

	2018	2017	**2018**	2017
By nature of commitments	**£m**	£m	**£m**	£m
Land and buildings	**63.3**	54.7	**11.4**	7.6
Other	**1.0**	1.2	**-**	-
At 30 June	**64.3**	55.9	**11.4**	7.6

36 Contingent liabilities

In the ordinary course of business, the Group has £8.2m (2017: £7.8m) of guarantees and counter-indemnities in respect of bonds relating to performance under contracts. The Group is also involved in commercial disputes and litigation with some customers, which is also in the normal course of business. Whilst the result of such disputes cannot be predicted with certainty, the Directors of the Company believe that the ultimate resolution of these disputes will not have a material effect on the Group's financial position or results.

In July 2013, a guarantee was provided to the Ricardo Group Pension Fund of £2.8m in respect of certain contingent liabilities that may arise, which have been secured on specific land and buildings (see Note 15). In the Directors' opinion, after taking appropriate legal advice, the outcome of this matter is not expected to give rise to any material cost to the Group.

37 Related party transactions

Transactions between the Company and Group undertakings	2018 £m	2017 £m
Sale of services	**16.7**	15.7
Finance income	**2.4**	2.3
Finance costs	**(1.5)**	(0.8)

Year-end balances between the Company and Group undertakings	2018 £m	2017 £m
Amounts owed by Group undertakings	**88.5**	104.1
Amounts owed to Group undertakings	**(64.4)**	(60.8)

All of these transactions with Group undertakings, which are disclosed in Note 38, and with other related parties as disclosed below, occurred on an arm's length basis.

The Chairman of Ricardo plc, Sir Terry Morgan, is also a statutory director of Crossrail Limited, which is deemed to be a related party that is external to the Ricardo Group.

Transactions between the Group and Crossrail Limited	2018 £m	2017 £m
Sale of services	**2.3**	1.6

Year-end balances between the Group and Crossrail Limited	2018 £m	2017 £m
Trade receivables	**0.2**	0.1

The Group and Company transactions with the Ricardo Group Pension Fund are disclosed in Note 25.

38 Subsidiaries and related undertakings

The Company owns, directly(*) or indirectly, 100% of the issued share capital, unless otherwise noted, of the following subsidiaries and related undertakings at 30 June 2018. All subsidiaries and related undertakings are deemed to be controlled by the Group and are therefore consolidated within these financial statements:

Subsidiary or related undertaking	Registered office	Principal activities
Ricardo Investments Limited*	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Holding Company and Management Services
Ricardo UK Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Automotive Consulting, Strategic Consulting and Performance Products
Ricardo Asia Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Automotive Consulting, Rail Consulting and Business Development
Ricardo Japan K.K.	18th Floor, Shin Yokohama Square Building, 2-3-12 Shin Yokohama, Kohoku-ku, Yokohama-shi, Kanagawa, 222-0033, Japan	Automotive Consulting, Rail Consulting and Business Development
Ricardo Shanghai Company Limited*	Floor 17, Phoenix Building, No. 1515 Gumei Road, Xuhui District, Shanghai, 200233, PR China	Automotive Consulting, Rail Consulting and Business Development
Ricardo Prague s.r.o.	Palác Karlín, Thámova 11-13, 186 00 Praha 8, Czech Republic	Automotive Consulting and Software
Ricardo GmbH	Güglingstraße 66-70, 73529, Schwäbisch Gmünd, Germany	Automotive Consulting and Business Development
Ricardo Italia s.r.l.	Piazza Solferino 20, 10121, Torino, Italy	Automotive Consulting and Business Development
Ricardo Motorcycle Italia s.r.l.	Via Giovanni Pascoli 47, 47853, Cerasolo, Coriano, Rimini, Italy	Automotive Consulting
Ricardo, Inc.	Detroit Technical Center, 40000 Ricardo Drive, Van Buren Township, Detroit, Michigan, 48111-1641, United States	Automotive Consulting, Strategic Consulting and Software
Ricardo India Private Limited*(1)	6th Floor, M6 Plaza, Jasola District Centre, New Delhi 110076, India	Business Development
Ricardo Strategic Consulting GmbH	Lenbach Garten, Luisenstraße 14, 80333, München, Germany	Strategic Consulting
Ricardo Defense Systems LLC	Suite 200, Detroit Technical Center, 40000 Ricardo Drive, Van Buren Township, Detroit, Michigan, 48111-1641, United States	Defence Consulting and Performance Products
Ricardo Defense, Inc. (formerly Control Point Corporation)	110 Castilian Drive, Suite 200, Goleta, California 93117	Defence Consulting
C2D Joint Venture (33%)(2)	110 Castilian Drive, Suite 200, Goleta, California 93117	Defence Consulting
Ricardo-AEA Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Environmental Consulting
Cascade Consulting (Environment & Planning) Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Environmental Consulting
Power Planning Associates Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Environmental Consulting
PPA Energy (Pty) Limited	No 1 Eastgate Lane, Bedfordview, Johannesburg, Gauteng, 2007, South Africa	Environmental Consulting
Ricardo Rail Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Rail Consulting
Ricardo Nederland B.V.	Utrecht Technical Centre, Radboudtoren (5th and 6th floor), Catharijnesingel 33, 3511 GC, Utrecht, The Netherlands	Rail Consulting
Ricardo Singapore Pte Limited	141 Middle Road, 5 - 6 GSM Building, 188976, Singapore	Rail Consulting
Ricardo Australia Pty Ltd	Level 17, 383 Kent Street, Sydney, NSW, 2000, Australia	Rail Consulting
Ricardo (Thailand) Ltd(3)	140/36 ITF Tower, 17th Floor, Silom Road, Bangkra, Bangkok	Rail Consulting
Ricardo Hong Kong Limited	Units 3211-18, 32/F Shui On Centre, 6-8 Harbour Road, Wanchai, Hong Kong	Rail Consulting
Ricardo Beijing Company Limited	Suite 709-710, CCS Mansion, 9 Dongzhimen Nan Street, Beijing, 100007, PR China	Rail Consulting
Ricardo Technical Consultancy LLC (49%)(4)	Palm Tower, Block B, 15th Floor, P.O. Box 26600, West Bay, Doha, Qatar	Rail Consulting
Ricardo Gulf Technical Consultancy LLC (49%)(5)	11th Floor, Office 8, MSMAK Building, Corniche Street, Abu Dhabi, United Arab Emirates	Rail Consulting
Chongqing Transportation Railway Safety Assessment Center Limited (60%)(6)	No. 2 Yangliu Road, Huangshan Avenue, New North District, Chongqing, 401123, PR China	Rail Consulting
Ricardo Certification Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Independent Assurance
Ricardo Certification B.V.	Radboudkwartier 227, 3511 GJ, Utrecht, The Netherlands	Independent Assurance
Ricardo Certification Denmark ApS	Nørre Farimagsgade 11, 2th, 1364 Kobenhavn K, Copenhagen, Denmark	Independent Assurance
Ricardo Certification Iberia SL	Calle de Agustín de Foxá 29, 9ºB, 28036, Madrid, Spain	Independent Assurance

38 Subsidiaries and related undertakings (continued)

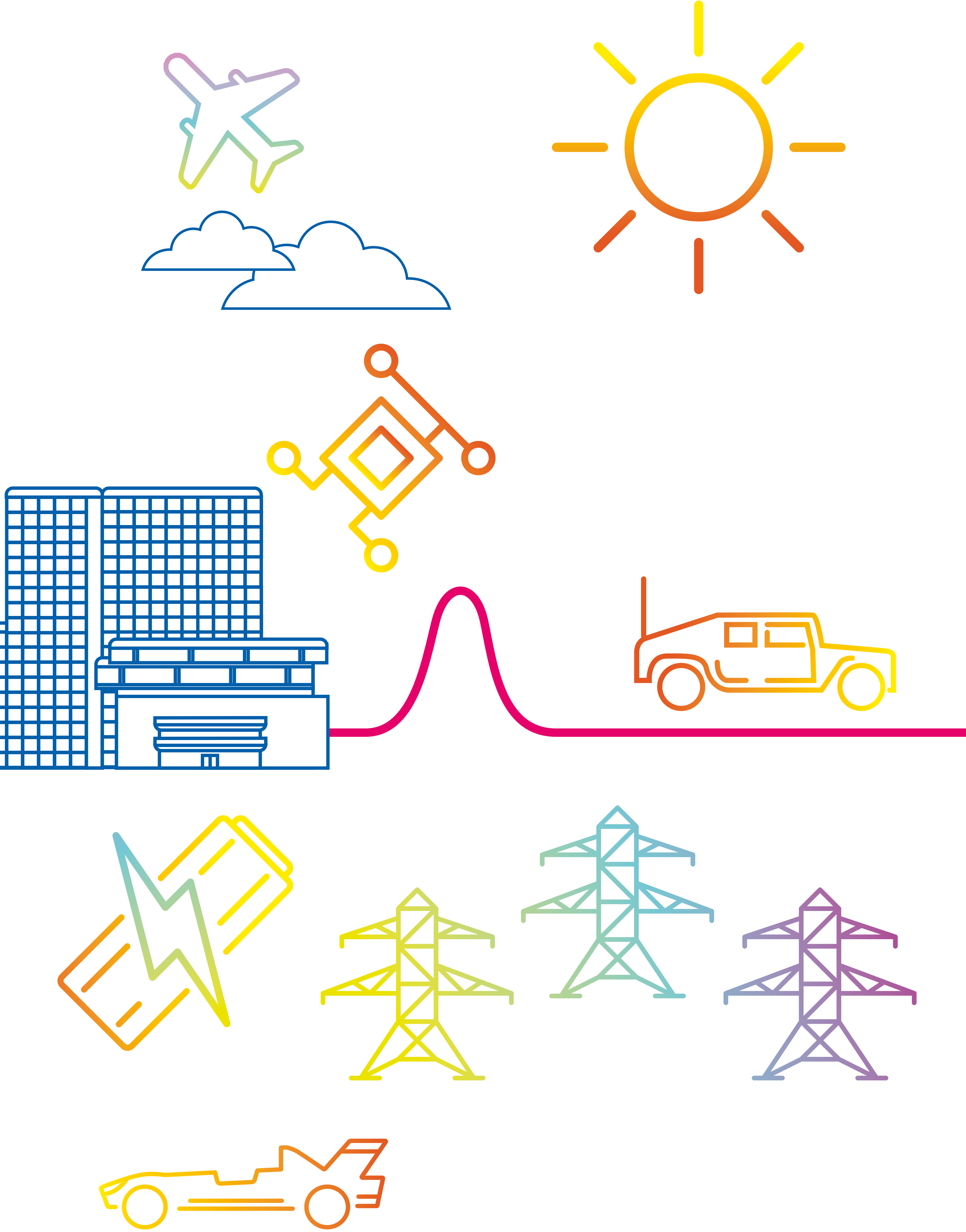
Subsidiary or related undertaking	Registered office	Principal activities
Cascade Consulting Holdings Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
CDQ Joint Venture (50%)(7)	110 Castilian Drive, Suite 200, Goleta, California 93117	Dormant
Ricardo Software Limited (formerly Ricardo Russia Limited)	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Certificacion SL	Calle de Agustín de Foxá 29, 9ºB, 28036, Madrid, Spain	Dormant
Ricardo Environment Arabia LLC(8)	C/O Clyde and Co, The Business Gate, Building 14, Office Level 1, Qurtubah District, Airport Road, PO Box 16743, Riyadh 11474, Kingdom of Saudi Arabia	Dormant
Ricardo EMEA Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Vepro Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Consulting Engineers Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Technology Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Transmissions Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Pension Scheme (Trustees) Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Mayfly Limited	Intertrust, 44 Esplanade, St Helier, JE4 9WG, Bailiwick of Jersey	Dormant
Ricardo Deutschland GmbH	Güglingstraße 66-70, 73529, Schwäbisch Gmünd, Germany	Liquidation
Nanjing Delta Win Transportation Technical Services Limited (65%)(9)	Room 1101, No. 301, Zhongmen Street, Gulou District, Nanjing, Jiangsu Province, PR China	Liquidation

† Registered in England and Wales.
(1) 99% owned by Ricardo plc and 1% owned by Ricardo UK Limited.
(2) 33% of share capital and 98% of retained earnings owned by Ricardo Defense, Inc., 33% of share capital and 1% of retained earnings owned by DG Technologies, and 3% of share capital and 1% of retained earnings owned by Claxton Logistics Services, LLC.
(3) 49% of share capital and 100% of retained earnings is owned by Ricardo Hong Kong Limited, with 51% of the share capital and 0% of retained earning owned by First Asia Industries Limited.
(4) 49% of share capital and 97% of retained earnings owned by Ricardo Rail Limited and 51% of share capital and 3% of retained earnings owned by Pro-Partnership LLC.
(5) 49% of share capital and 80% of retained earnings owned by Ricardo Rail Limited and 51% of share capital and 20% of retained earnings owned by SSD Commercial Investment
(6) 60% owned by Ricardo Beijing Company Limited and 40% owned by Chongqing Science & Technology Testing Center Limited.
(7) 50% of share capital and 50% of retained earnings owned by Ricardo Defense, Inc. and 50% of share capital and 50% of retained earnings owned by DG Technologies.
(8) 15% owned by Ricardo plc and 85% owned by Ricardo-AEA Limited.
(9) 40% owned by Ricardo Beijing Company Limited, 25% owned by Ricardo Hong Kong Limited and 35% owned by Jiangsu Urban Mass Transit Research & Design Institute Company Limited.

In the opinion of the Directors, the comprehensive income for the year and equity at the reporting date which is attributable to non-controlling interests is not considered to be material. Non-controlling interests are set out above in footnotes (2) to (7), and (9).

39 Events after the reporting date

On 20 July 2018, the Group completed a refinance of its banking facilities, entering into a new £150.0m committed multi-currency Revolving Credit Facility ('RCF'). The banking facilities were used to repay and cancel the previous bi-lateral committed RCFs provided by HSBC (£35.0m) and Lloyds (£40.0m). The refinanced banking facilities will provide the Group with sufficient funding for the next five years through to July 2023 to support future acquisitions, strategic investments and new projects, and will also be used for general corporate purposes. The interest rate of the facility ranges from 1.4% to 2.2% above LIBOR and is dependent upon the Group's adjusted leverage.



Additional information

Corporate information

Group General Counsel and Company Secretary
Patricia Ryan

Registered office
Ricardo plc
Shoreham Technical Centre
Shoreham-by-Sea
West Sussex
BN43 5FG

Ricardo plc registered company number
222915

Registrars
Link Asset Services
The Registry
34 Beckenham Road
Beckenham
Kent
BR3 4TU

Independent auditors
PricewaterhouseCoopers LLP
The Portland Building
25 High Street
Crawley
West Sussex
RH10 1BG

Stockbrokers
Investec Investment Banking
2 Gresham Street
London
EC2V 7QP
Tel: 020 7597 5000

Liberum Capital Limited
Ropemaker Place
25 Ropemaker Street
London
EC2Y 9LY
Tel: 020 3100 2000

Website: www.ricardo.com
A PDF version of this Annual Report & Accounts can be downloaded from the Investors page of our website.

Key dates

Final dividend record date	9 November 2018
Annual General Meeting	15 November 2018
Final dividend payment date	23 November 2018

Shareholder services
Link Asset Services provide a share portal service, which allows shareholders to access a variety of services online, including viewing shareholdings, buying and selling shares online, registering change of address details and bank mandates to have dividends paid directly into your bank account. Any shareholder who wishes to register with Link Asset Services to take advantage of this service should visit www.linkassetservices.com/shareholders.

Shareholder enquiries
Tel: 0870 162 3131 (from the UK)
Tel: +44 20 8639 3131 (for non-UK callers)

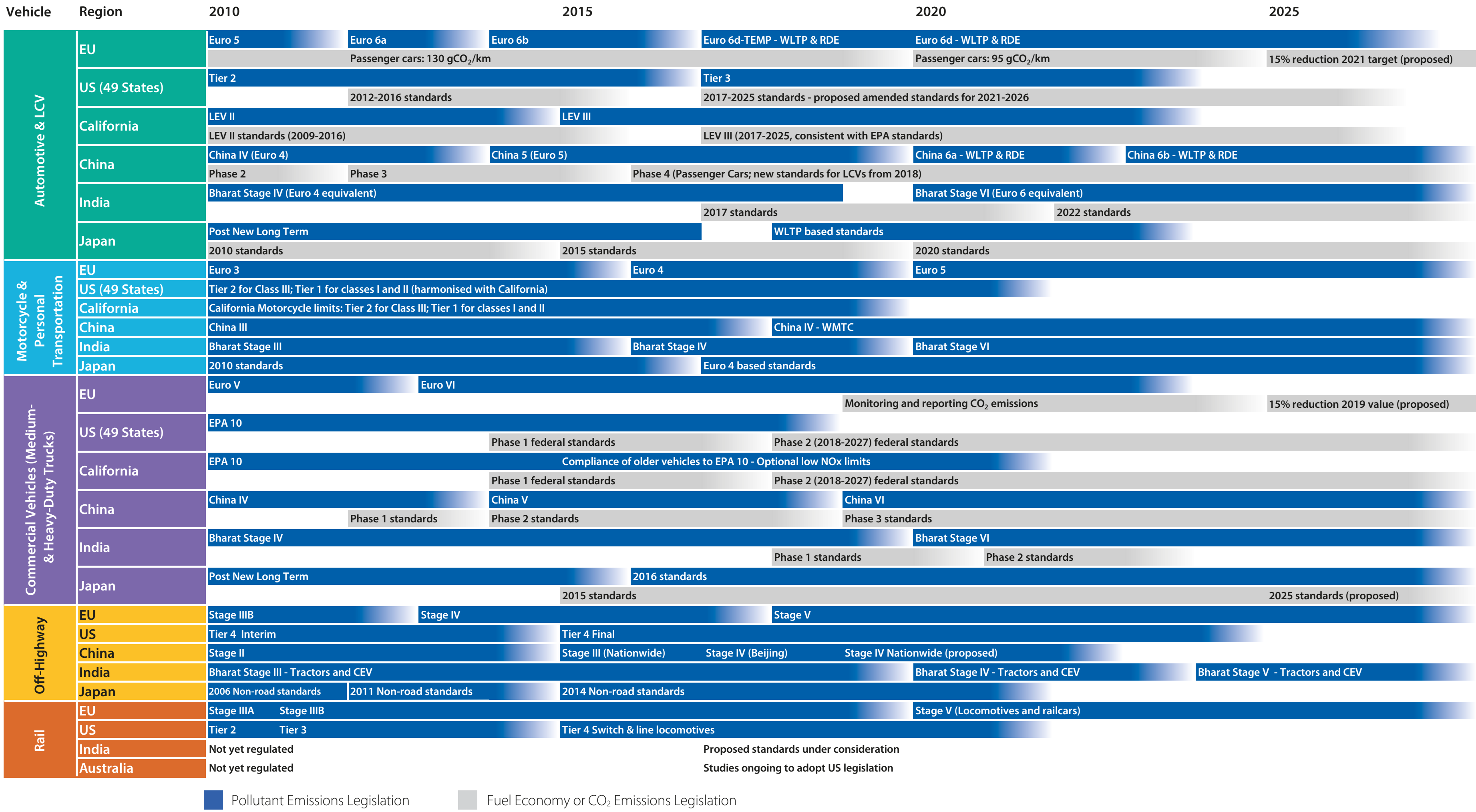
Principal bankers
Lloyds Bank plc
55 Corn Street
Bristol
BS99 7LE

HSBC Bank plc
Global House
High Street
Crawley
West Sussex
RH10 1DL

Financial advisors
NM Rothschild & Sons
New Court
St Swithin's Lane
London
EC4P 4DU

Global emissions legislation

Global tailpipe and CO_2 emissions legislation adherence are 'must haves' in the development budget of many of our clients



Glossary

CEV Construction Equipment Vehicles

CO_2 Carbon dioxide

EPA Environmental Protection Agency (United States)

LCV Light Commercial Vehicle

RDE Real Driving Emissions

WLTP Worldwide harmonized Light vehicles Test Procedure

WMTC Worldwide Motorcycle Test Cycle

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