



**RICARDO**

1915–2015

Ricardo plc  
**Annual Report & Accounts 2015**

Delivering Excellence Through Innovation & Technology



## Who we are

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Ricardo is a global engineering and strategic, technical and environmental consultancy business with a value chain that includes the niche manufacture and assembly of high-performance products. Our ambition is to be the world's pre-eminent brand in the development and application of solutions to meet the challenges in the transportation, energy and scarce resource sectors.

Our 100 years of commitment to research and development empowers Ricardo's team of over 2,700 professional engineers, consultants, scientists and support staff to deliver class-leading and innovative products and services for the benefit of our customers, which include the world's major transportation original equipment manufacturers and operators, supply chain organisations, energy companies, financial institutions and government agencies.

The delivery of our products and services is made possible through our people who are at the heart of our business, and the bedrock of our success. Ricardo cultivates the talent, innovation, and engineering and scientific excellence of its professionals in whom we invest and develop for the benefit of the individual, our organisation and its stakeholders. Ricardo's community is bound together and driven by our corporate values of Respect; Integrity; Creativity and Innovation; and Passion.



## Where we are



## What we do



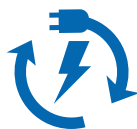
Engines



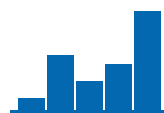
Vehicle Engineering



Driveline & Transmissions Systems



Hybrid & Electrical Systems



Strategic Consulting



Environmental Consulting



Niche Manufacturing



Software

# Group order intake at a glance

## Technical Consulting

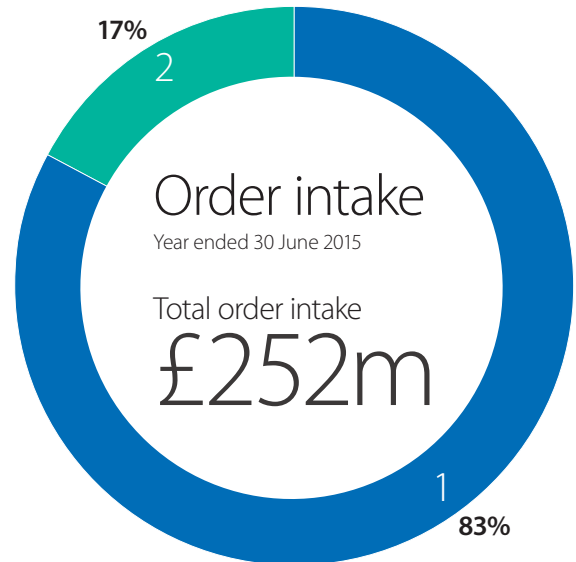
We provide engineering, design and consulting services to customers in our chosen market sectors. The services which we provide to these markets are co-ordinated through product groups which describe our fields of expertise and delivery streams.

[See pages 18 to 23 for more information](#)

## Performance Products

We manufacture and assemble low-volume, high-quality, high-performance products which have either been designed by our Technical Consulting segment, our motorsport products design team within the Performance Products segment or by our clients. Our physical products include transmissions, engines and components as well as the provision of vehicle assembly.

[See pages 24 and 25 for more information](#)

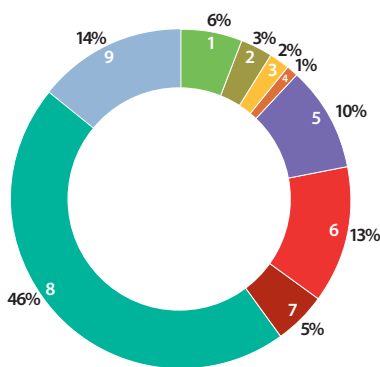


- 1. Technical Consulting
- 2. Performance Products

## Order intake by:

### Our market sectors

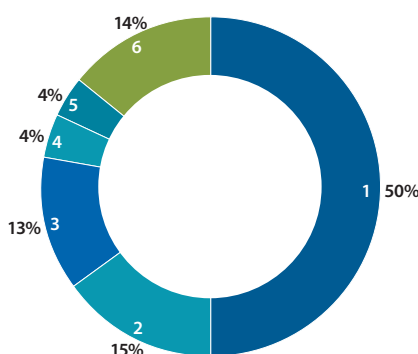
Our strategy of diversification into adjacent market sectors has improved the balance of our order intake.



- 1. Clean Energy & Power Generation and Marine
- 2. Defence
- 3. Agricultural & Industrial Vehicles
- 4. Rail
- 5. Commercial Vehicles
- 6. High-Performance Vehicles & Motorsport
- 7. Motorcycle & Personal Transportation
- 8. Passenger Car
- 9. Government & Environmental

### Our product groups

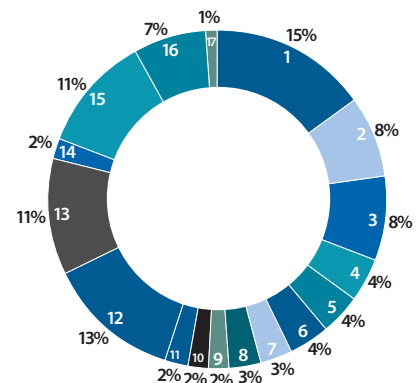
Engines remains our dominant product group. Elsewhere order intake has been diversified across our other activities.



- 1. Engines
- 2. Driveline and Transmission Systems
- 3. Vehicle Systems
- 4. Hybrid & Electric Systems
- 5. Strategic Consulting
- 6. Environmental Consulting

### Our customers

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



- 1-11. Key Clients
- 12. Rest of UK
- 13. Rest of Asia
- 14. Rest of Europe
- 15. Rest of North America
- 16. UK Government
- 17. US Defense

# Highlights

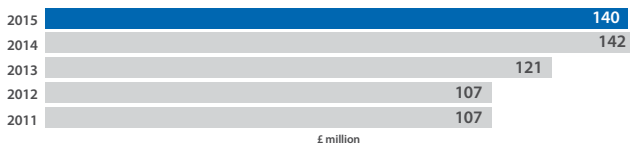
## Financial:

### Order book

**£140m**

(30 June 2014: £142m)

**-1%**

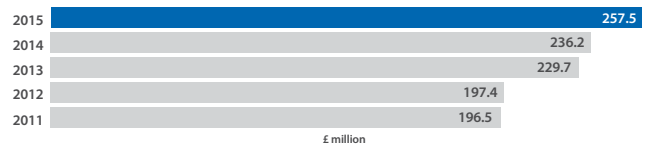


### Revenue

**£257.5m**

(year ended 30 June 2014: £236.2m)

**+9%**

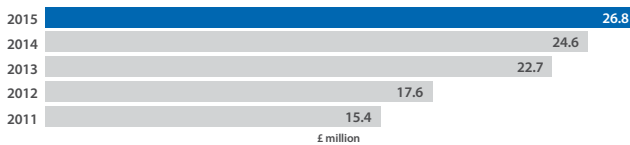


### Underlying<sup>1</sup> profit before tax

**£26.8m**

(year ended 30 June 2014: £24.6m)

**+9%**

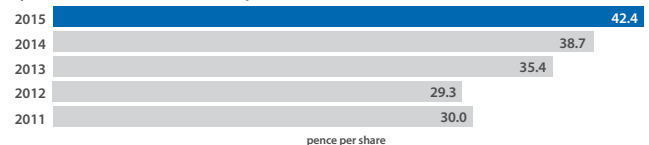


### Underlying<sup>1</sup> basic earnings per share

**42.4p**

(year ended 30 June 2014: 38.7p)

**+10%**

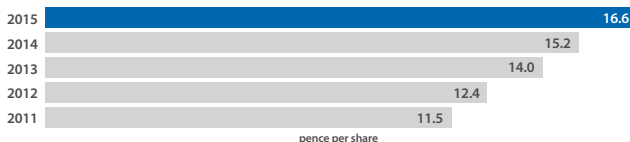


### Dividends per share (paid and proposed)

**16.6p**

(year ended 30 June 2014: 15.2p)

**+9%**

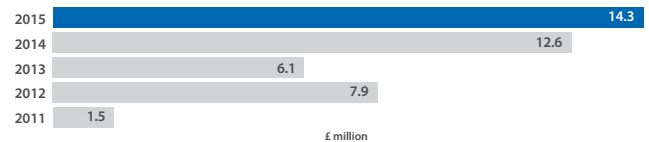


### Net funds<sup>2</sup>

**£14.3m**

(30 June 2014: £12.6m)

**+13%**



1. Excluding specific adjusting items, which comprise amortisation of acquired intangible assets and acquisition-related costs.

2. Net funds is stated after net borrowings of £45.4m (2014: £Nil), primarily required to materially complete the Lloyd's Register Rail acquisition on 1 July 2015.

## Operational:

- Acquisition activity with Vepro and PPA completed in the year; LR Rail and Cascade completed post year-end
- Vehicle Emissions Research Centre ('VERC') commissioned at the Shoreham Technical Centre
- Established the Ricardo Innovations and Ricardo Motorcycle divisions
- The engine assembly facility at the Shoreham Technical Centre expanded as part of the supply agreement with McLaren Automotive
- Ricardo-AEA rebranded as Ricardo Energy & Environment
- Ricardo Defense Systems LLC launched in the US



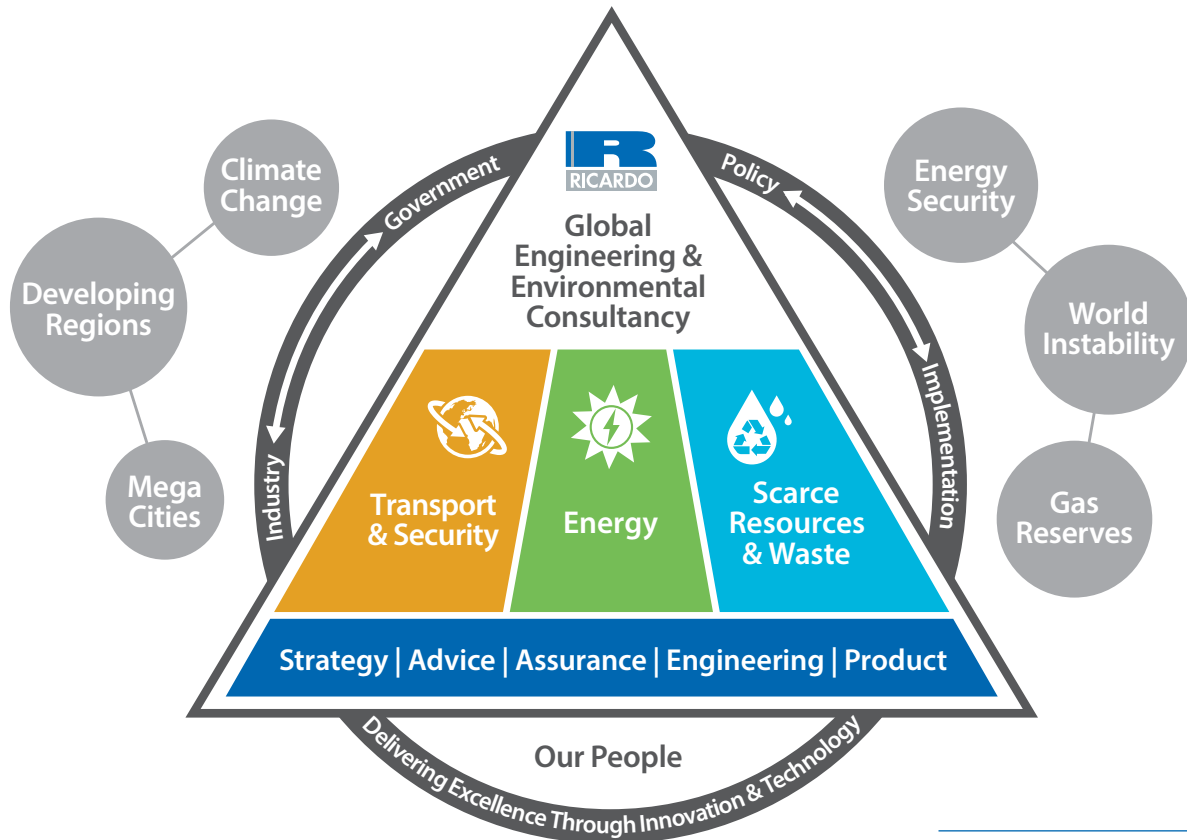
# Strategic report



6	Our strategy	24	Performance Products
7	Chairman's statement	26	Financial review
8	Chief Executive's statement	30	Research and Development
10	Key acquisitions towards strategic goals	32	Our people
14	Market overview	34	Corporate Social Responsibility
16	Strategic performance		
18	Technical Consulting		

## Our strategy

Ricardo is in the process of developing the world’s leading engineering and environmental consultancy brand, encompassing transport and security, energy, and scarce resources and waste.



See pages 8 and 9 for more information

## Our strategic objectives

### Performance growth

Performance growth delivered by focusing on future market demands driven by technology change, customer preferences and prevailing or impending policies and regulation

### Risk mitigation

Reducing risk through the avoidance of business cyclical and external dependency, whether geographic, technical, industry sector or customer related

### World-class talent

Ensuring an environment which attracts, develops and motivates our world-class team and continues to foster industry thought leadership

### Operational excellence

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

### Added value for clients

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

See pages 16 and 17 for more information





Terry Morgan – Chairman

## Chairman's statement

### Results

For the year ended 30 June 2015, the Group delivered a good operating result with 9% growth in both revenue and underlying profit before tax, to £257.5m and £26.8m, respectively, as well as a 10% increase in basic underlying earnings per share to 42.4 pence. We also ended the year with closing net funds of £14.3m (prior to the acquisition of Lloyd's Register Rail, which materially completed on 1 July 2015), up from £12.6m in the prior year.

The Group continues to pursue its strategic objectives through organic growth and carefully targeted acquisitions. The Group's performance against its strategic objectives are outlined on pages 16 and 17. Investment in research and development (described on pages 30 and 31), people and facilities has continued.

### People

As a result of the acquisitions made during the last 12 months, I would like to welcome our new employees in Ricardo Motorcycle, Ricardo Energy & Environment and Ricardo Rail.

I would like to thank all of our employees for their hard work and professionalism over the last year. Ricardo is a people business and our employees underpin everything that the Group achieves. It is the commitment of our employees that enables us to deliver these results and which underpins our reputation with clients.

### Centenary

2015 sees Ricardo celebrating its centenary year. Throughout the year, a number of events have been organised for our employees, customers and other stakeholders worldwide, to mark this achievement (described on pages 52 to 55). Ricardo is likely, in its second century, to focus its skills ever more closely on addressing the challenges of protecting, developing and controlling scarce resources.

### 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 68 to 80 of this Annual Report.

### The Board

I became Chairman of the Board at the close of the Annual General Meeting in October 2014.

On 30 June 2015 Hans-Joachim Schöpf retired from the Board after six years' service as a non-executive director not only to the plc Board but also to Ricardo's Technology Exploitation Board. I would like to thank Hans for his invaluable guidance and support and wish him well for the future.

In addition, on 30 June 2015 David Hall stepped down as Senior Independent Director and will remain with the

Board as non-executive director until the close of this year's Annual General Meeting in November 2015. Following recommendation from the Nomination Committee, Peter Gilchrist has been appointed Senior Independent Director.

Lastly, I am delighted to introduce and welcome Laurie Bowen who joined the Board on 1 July 2015. Laurie has extensive international experience and we look forward to the guidance she will bring.

### Dividend

The Board has declared a final dividend of 11.95 pence per share to give a total dividend of 16.6 pence, an increase of 9% on the prior year. This is in line with the Board's policy to pay progressive dividends and reflects its confidence in the prospects of the Group.

### Outlook

Global economic trends, including emissions legislation, air quality, climate change and resource scarcity, continue to underpin the Ricardo strategy. The Group has a good financial platform and a range of opportunities open to it as a diverse Technical Consulting and Performance Products business. Ricardo is well positioned for future growth.

**Terry Morgan, CBE**  
Chairman



Dave Shemmans – Chief Executive Officer

## Chief Executive's statement

As we celebrate our centenary year we have delivered a good set of financial results with revenue and profit growth, cash generation and a diverse portfolio of projects. Our strategy is focused on global engineering and environmental consulting and the development of longer-term, multi-year contracts and relationships, underpinned by global macro trends. This has been an important year for the business, highlighted by our acquisitions and reorganisation around key growth business units. In addition to the four completed acquisitions, we have established Ricardo Defense Systems in the US, which will enable us to access higher level security programmes from the US Defense Administration and we have also established Ricardo Innovations, which enables us to develop technology more quickly. Our vision is to become a world-leading global engineering and environmental consultancy business. Our order book and financial position provide a good platform for future growth and the delivery of this vision.

### Strategy

Our strategy is underpinned by the long-term drivers of air quality, emissions, fuel efficiency, urbanisation, energy security and resource scarcity. These drivers impact all elements of the Ricardo business and play a key role in shaping our strategic vision and the future for the business.

We continue to follow a consistent strategy for balanced growth and risk mitigation, with no undue dependence on any one sector, client or geography. Organic expansion of the business has seen growth in our Technical Consulting business, and with continued diversification into adjacent market sectors, the Performance Products business has delivered to expectations and has secured a number of high-value, long-term

programmes. Strategic expansion of the business has seen us successfully complete four acquisitions to date: Vepro, a UK consultancy with motorcycle, powersport and niche vehicle expertise; Power Planning Associates, a UK consultancy specialising in techno-economic and management consultancy services for the energy sector; on 1 July 2015 we launched Ricardo Rail following the acquisition of Lloyd's Register Rail, a global rail assurance and consultancy business; and on 18 August 2015 we acquired Cascade Consulting, a water consulting business.

Our strategy moving forward focuses on three core growth areas of Transport and Security, Energy, and Scarce Resources and Waste. All three areas are fundamental to successful urbanisation and all three are

targeted at addressing the challenges that urbanisation will create. In each of these areas, we will exploit our core competencies in Technical Consulting and Performance Products to further expand and diversify the business. We are also looking for additional expansion in the strategic partnerships we have established with clients and others to provide longer-term visibility of revenue and order book, and a platform for sustained growth. We continue to seek opportunities to grow both organically and through partnerships or acquisitions.

Our strategic priorities are:

- Continuing to focus the business around common competencies, both organically and by acquisition;
- Further expanding business opportunities in Asia, particularly in China;



Ricardo COO Mark Garrett (left) hands the Ricardo100 Global Challenge baton to Richard Cottrell (centre) and Ben Hassett (right) who led the relay start from the Shoreham Technical Centre in May

- Continuing to grow in Technical Consulting, and to ensure stability by balancing order intake across market sectors, product groups and customers;
- Exploiting our research and development programmes;
- Seeking opportunities to expand the geographic footprint of Performance Products; and
- Continuing to develop world-class capability through investment in our people.

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

## Highlights from the year

2015 was another good year in terms of our financial performance:

- Underlying profit before tax increased by 9% to £26.8m (2014: £24.6m);
- Revenue grew by 9% to £257.5m (2014: £236.2m);
- Market demand was variable across our geographical markets: UK and China markets grew strongly; North America remained subdued, largely due to the tight control on outsourced engineering from the large auto manufacturers; and Germany remained challenging for us as it represents the heartland of our prime competition; and
- The overall order intake in the year was £252m (2014: £259m) and this is analysed across clients, product groups and market sectors in the charts on page 2. Overall, there was a good balance of new business, with good performance in the passenger car, commercial vehicle, motorcycle and government and environmental sectors. The order book at the year-end was £140m (2014: £142m).

Research and development and the creation of further innovation remain core drivers of growth, and following the successful launch this year of the Ricardo Innovations division we have been focused on the faster development and exploitation of our IP portfolio.

Satisfying customers through excellent project delivery is at the heart of Ricardo's success, and during the year our global teams have delivered a range of successful projects. Some examples are discussed in the Case Studies section on pages 42 to 63 and illustrate some important and common Ricardo themes. On pages 30 and 31 we describe how through our own R&D investment we have developed MultiLife™, TorqLife™ and SensorLife™. The primary objective of all these conditioning monitoring innovations is to deliver through-life turbine reliability improvements for the wind energy sector.

Another case study describes how Ricardo has worked alongside DARPA and US industry and academic partners to enable crowd-sourced innovation to deliver a five-fold reduction in development timing for the FANG (Fast, Adaptable, Next-generation Ground) vehicle. On pages 48 to 51 the McLaren Automotive case study outlines how investment in the enhancement of our manufacturing operations will enable Ricardo to support the future requirements of McLaren Automotive's ambitious model range expansion.

Our role in assisting governments to meet future climate change targets is driven by our ability to provide advice on initiatives to reduce the man-made emissions that drive climate change and the measures required to adapt to its effects. The case study on pages 56 to 59

outlines the actions we are implementing to help countries prepare for climate change negotiations in Paris later this year. For readers wanting to find out more about other Ricardo programmes, our quarterly RQ magazine can be found on our website [www.ricardo.com](http://www.ricardo.com).

Our operational priorities are to continue to develop business within each of the regions as well as to balance workload across our global engineering facilities in the UK, US, Germany, Czech Republic and China. Balancing workload ensures the optimal use of resources and the lowest flexible cost. Moreover, it provides our highly skilled and motivated workforce the diversity of engineering challenges they relish. Further information on our people can be found on pages 32 and 33.

## Conclusion

Market conditions remain positive in the UK and Asia, with a good pipeline of defence vehicle activity in the US and recent secured wins in the motorcycle sector in Germany. We enter the new financial year with a good order book and pipeline across the Group, together with large, long-term assembly contracts and the addition of four new businesses, which all provide confidence in the further development of the Group.

As we celebrate our centenary year, our order book and financial position provide a good platform for future growth and we continue to actively look for opportunities to expand and enhance our business.

**Dave Shemmans**  
Chief Executive Officer



## Key acquisitions towards strategic goals

Acquisitions in the power industry, motorcycle, rail and water sectors help deliver key parts of the Ricardo strategic vision

Ricardo is in the process of building a world-leading brand in the development and application of solutions to meet the challenges in the transportation, energy and scarce resource sectors. These sectors are all influenced by very similar global megatrends, a fact that provides significant potential synergies for Ricardo's portfolio of services.

At the most fundamental level, industries in all parts of the world need to respond to the challenge of climate change, both in terms of endeavouring to limit its extent as well as in adapting to its effects. At a more local level, towns, cities and conurbations in all parts of the world are also tackling the other climatic imperative of improving the quality of the air that we breathe. Such challenges are compounded in a rapidly industrialising developing world, where sustainable infrastructure ranging from power networks, water supplies and sanitation to

transportation systems, is also urgently required. While all of these challenges are influenced by national and regional regulation, the drivers of increasing scarcity of essential resources – most obviously of energy supplies but also, increasingly, of water – are also universally present.

The four recent acquisitions to the date of this report demonstrate the manner in which Ricardo is building this strategic vision by acquiring complementary skills and capabilities, alongside organic growth.

### A new approach to urban personal mobility

October 2014 saw the formation of the new Ricardo Motorcycle division, targeted at developing vehicles for the urban environment. This move brings together in one business a critical mass of capability, expertise and global reach in independent motorcycle and scooter engineering. A key element of

this development was the acquisition of Vepro, based in Leicestershire, UK. With a long history of working with Ricardo on a range of motorcycle projects, Vepro brings specialist motorcycle chassis, powertrain integration and prototype build expertise to the new Ricardo Motorcycle business, not least in terms of complementary customer relationships with key accounts in India and the United States.

The combined Ricardo Motorcycle business is able to enjoy access to the resources and technologies of the wider Ricardo Group, yet at the same time provides its customers with an unparalleled level of commitment from a team of motorcycle specialists with expertise across all aspects of product engineering and for vehicles of all types, sizes, markets and applications. As such, the new Ricardo Motorcycle business is able to meet the increasing demand from urban mobility customers in all parts of the world.



## Leading the grid

The acquisition of Power Planning Associates ('PPA') in November 2014 brings power industry experience in over 100 countries, with projects ranging from conventional small-scale and distributed power systems to strategic advice on regulatory and pricing issues, renewable power projects and smart grid technologies. Forming the nucleus of a new Ricardo Energy & Environment practice, PPA is active in developing-nation markets where network operators struggle to keep pace with the demands imposed with the rapid pace of urbanisation. Similarly in more mature markets such as in the UK and Europe, Ricardo can now more effectively assist governments struggling to improve the efficiency of their networks and accommodate increasing levels of renewable power imposed by the adoption of telemetry and other smart grid technologies.

The addition of PPA to the Ricardo Group also provides a highly complementary fit with the Technical Consulting activities of other parts of the Group that are active in providing support to customers in the design, development, and operational maintenance of systems



ranging from on- and offshore wind to tidal stream power, energy storage and power generation.

## Rail vision

The international railway industry is in an era of significant growth. Across Europe and Asia, high-speed rail networks are being developed to offer an alternative to short-haul air travel, while towns and cities – ranging from communities as small as 100,000 people in Europe to the mega-cities of the developing nations –

are investing in tram, metro and monorail infrastructure as a means of providing the transportation life-blood of future growth. In America, in addition to many urban transportation schemes, long-haul rail freight is in something of a resurgence, taking significant truck movements away from the interstate road network.

The acquisition of Lloyd's Register Rail, which was completed on 1 July 2015, is thus central to Ricardo's strategy to deliver growth in the area of Transportation and Security, one of the Company's three





## Ricardo Rail

Formerly  
Lloyd's Register Rail



## Ricardo Motorcycle

strategic pillars alongside Energy and Scarce Resources and Waste. LR Rail is a successful rail consulting and assurance business employing 480 rail engineers, specialists and support staff located at offices across Europe, Asia and the Middle East. The acquisition, together with existing Ricardo employees engaged in railway industry consulting, now forms the nucleus of the new Ricardo Rail business.

Ricardo Rail now provides independent expert advice and services ranging from rolling stock design, signalling and train control, intelligent rail systems, operational efficiency improvement and training. In addition to its Technical Consulting functions, the new Ricardo Rail division includes assurance and certification as a new area of business for Ricardo. This

is helped considerably by the fact that Ricardo is fully independent of any major manufacturer of rail vehicles, locomotives, trackside systems or infrastructure, and of government and other regulatory interest.

### The water economy

On 18 August 2015 Ricardo acquired Cascade Consulting, adding capability in the areas of water resource management, catchment management, water quality, water treatment, flooding and control management, and environmental impact assessment to the Group. Cascade Consulting has become a new practice area within the Ricardo Energy & Environment business and will lead the growth into the UK and international water markets. It also enables the Group to

provide consulting services and engineering solutions focused on the increasingly important links between energy and water.

### A solid basis for future growth


Ricardo's recent acquisition activity, including the acquisition in 2012 of Ricardo-AEA (now branded as Ricardo Energy & Environment), demonstrates the ambitions of the Group and how it is evolving and building upon its core strengths to meet the very largest global challenges of climate change and the impact of urbanisation. The Group's primary focus is on these global imperatives and creating a global brand that can capitalise on these market trends, providing exciting careers for its employees and excellent returns for its investors.



# Market overview

MARKET TRENDS

### Emissions, waste and urban air quality




### Fuel efficiency and climate change



### Increasing resource scarcity



### Premium brands and products



KEY INDUSTRY DRIVERS

- The latest US Tier 4, Euro 6/VI regulations and increasingly strict emissions limits in emerging markets; GHG II driving lower emissions in commercial vehicle; California ZEV mandates;
- International Maritime Organisation action on marine grade fuels and emissions;
- Low Emission Zones initiatives such as that operating in London;
- Managing waste and reducing pollution.

- Fuel prices drive consumer behaviour and technology adoption (where prices remain high fuel economy is encouraged: however, in cheaper energy markets (e.g. USA) large-vehicle sales growth works against lowering CO<sub>2</sub>);
- Escalating fuel economy/CO<sub>2</sub> regulation in most developed countries (e.g. CAFE standard for 2025);
- Emissions regulations drive continued interest in natural gas as a transportation fuel (even with fluctuating oil prices) ;
- Decarbonisation of the Energy Sector, and active Carbon Capture System development;
- International obligations for countries to manage and report greenhouse gas emissions levels (COP21).

- Growing global populations and urbanisation placing increasing pressures on the supply of key resources;
- Water scarcity starting to be recognised as a major future issue in many nations;
- Continued focus on renewable energy options (wind, tidal, solar, geothermal);
- Fluctuating energy prices, driving different capital investment profiles;
- Nuclear new build starting to emerge again as an area of growth;
- 3D printing will remove need for inventory for some products.

- Growing demand for higher performance 'halo' variants of existing vehicles to deliver enhanced brand differentiation;
- Vehicle attribute refinement (NVH, ride and handling) is an increasingly important determinant of customer car purchasing decisions;
- Product differentiation and novel integrated technologies are also increasingly important in niche products;
- Connectivity is increasingly important;
- Growing attention to the impact of quality and recalls on brand value.

RICARDO PLC

- World leader in vehicle emissions monitoring and aftertreatment technology;
- Successful and experienced developer of clean technologies;
- Respected international authority on urban air quality;
- Expertise in transforming the way organisations manage resources, leading to considerable cost savings and minimised environmental impacts.

- Technology leadership in vehicle fuel economy – engine, driveline, whole vehicle; lightweight materials, powertrain electrification, battery electric vehicles, waste heat recovery; infrastructure; autonomous vehicle systems;
- Strategy, policy and technology road-mapping to support government and industry;
- Expertise in natural gas and alternative fuels, energy storage and management;
- Technology agnostic, objective, informed and commercially independent;
- World-leading expert on the measurement, reporting and verification of climate mitigation and adaption actions.

- Proven track record of delivering innovation into the renewables sector;
- Working with cities and utilities on policy, optimisation, validation and integration of city systems;
- Developing energy storage systems for utility-scale usage with technologies including batteries and compressed air;
- A contributor to the liquid air energy network;
- Engaging in end-of-life engineering and remanufacture of products;
- Developer of MultiLife™ bearing technology, with potential to make wind energy cheaper.

- A highly regarded and experienced technology leader in vehicle attribute development, especially in powertrain and vehicle NVH, thermal performance and vehicle dynamics;
- Leading-edge calibration skills, helping to ensure that the vehicle's control strategy and systems promote desired brand values;
- A proven track record in manufacturing high-performance niche products;
- Unique global skill set to quickly solve technical issues and protect customer brands.



## Growing global populations and urbanisation



- Urbanisation is predicted to grow dramatically as people migrate to cities and global populations continue to increase;
- Increased demand for distributed power systems;
- The need for mobility solutions will be met through an increasing mix of public and individual transport modes;
- Accident avoidance technologies driven by the need to dramatically reduce death rates will drive the widespread implementation of autonomous and intelligent transport technologies;
- Urban health air-quality monitoring and management.

## Economic growth focused on developing markets



- Emergence of new market entrants in automotive, motorcycle and off-highway sectors;
- Increasing demand for technology transfer and skills development;
- Established players requiring capacity support;
- National energy security concerns;
- GDP rising globally year-on-year;
- Consumers are looking for more choice;
- Growth in information and communication technology (mobile phones/computers/internet access);
- Cyber security concerns in a connected world;
- Rapid technology adoption leapfrogging legacy systems.

- Ricardo Rail was launched following the acquisition of Lloyd's Register Rail and is positioned to benefit from the expected growth in high-speed and metro-based rail systems;
- Ricardo Motorcycle was created following the acquisition of Vepro and is focused on the design and development of urban mobility and 2- and 3-wheeler solutions to meet future urban mobility needs. E-bike capability will also become increasingly important;
- The expansion of our California facility is driven by the demand for autonomous and intelligent transport technologies;
- Ricardo Energy & Environment – chemical response service and air quality monitoring for cities.

- Long-standing global orientation, combining wide-ranging capability with local delivery;
- Open attitude towards technology transfer across multiple sectors and geographies;
- Global reach, coupled with local delivery, provide a compelling customer proposition;
- Unique strategic and technical delivery capability;
- Long-range product planning and solution development.

# Competitive landscape

Ricardo's competitors differ significantly between the Performance Products and Technical Consulting segments of our business, which encompasses engineering services, environmental and strategic consulting.

On an annual basis as part of our strategic planning activities, we benchmark our position in the marketplace alongside our principal competitors in each sector and against the following measures:




- Commercial competitiveness;
- Quality of client engagement;
- Relevance of our research and development portfolio;
- Breadth and depth of product and service offering;
- Facility capability, location and availability; and
- Our thought leadership position.

We use the direct feedback that we receive from our clients and the competitor benchmarking activities to ensure that our performance continues to improve and that we remain in a strong competitive position. We also clearly highlight the improvement actions that need to be taken to address any perceived weaknesses.


## Strategic performance

The Board monitors performance indicators related to our strategic objectives

### Performance growth delivered by focusing on future market demands driven by technology change, customer preferences and prevailing or impending policies and regulation

	Commentary	Principal risks						
<b>Revenue</b> £m  <table border="1"> <tr><td>2015</td><td>257.5</td></tr> <tr><td>2014</td><td>236.2</td></tr> <tr><td>2013</td><td>229.7</td></tr> </table>	2015	257.5	2014	236.2	2013	229.7	Revenue increased due to improvements in Technical Consulting activity in the UK and Asia. More details of this are described in the Financial Review section on pages 26 to 29, and also in the Technical Consulting and Performance Products sections on pages 18 to 23 and 24 to 25, respectively.	Customers and Markets
2015	257.5							
2014	236.2							
2013	229.7							
<b>Order book</b> £m  <table border="1"> <tr><td>2015</td><td>140</td></tr> <tr><td>2014</td><td>142</td></tr> <tr><td>2013</td><td>121</td></tr> </table>	2015	140	2014	142	2013	121	The order book ended the year at a good level, with significant order intake from the UK and Asia, in particular.	Customers and Markets
2015	140							
2014	142							
2013	121							
<b>Net funds</b> £m  <table border="1"> <tr><td>2015</td><td>14.3</td></tr> <tr><td>2014</td><td>12.6</td></tr> <tr><td>2013</td><td>6.1</td></tr> </table>	2015	14.3	2014	12.6	2013	6.1	The Group continues to focus on working capital management and has generated £1.7m of cash in the year after £3.6m of acquisition-related payments. Net funds is stated after net borrowings of £45.4m, primarily required to materially complete the Lloyd's Register Rail acquisition on 1 July 2015.	Contract Performance, Financing & Defined Benefit Pension Scheme
2015	14.3							
2014	12.6							
2013	6.1							

### Reducing risk through the avoidance of business cyclicity and external dependency, whether geographic, technical, industry sector or customer related

	Commentary	Principal risks						
<b>Sector dependency</b> Number of sectors exceeding 10% of revenue  <table border="1"> <tr><td>2015</td><td>3</td></tr> <tr><td>2014</td><td>3</td></tr> <tr><td>2013</td><td>3</td></tr> </table>	2015	3	2014	3	2013	3	The number of sectors exceeding 10% of revenue is stable, showing good spread in our markets.	Customers and Markets & Technology
2015	3							
2014	3							
2013	3							
<b>Client dependency</b> Number of clients generating revenue for Ricardo exceeding 10% of Group revenue  <table border="1"> <tr><td>2015</td><td>1</td></tr> <tr><td>2014</td><td>1</td></tr> <tr><td>2013</td><td>2</td></tr> </table>	2015	1	2014	1	2013	2	The number of clients exceeding 10% of revenue was stable, which demonstrates that we continue to have a diverse client base.	Customers and Markets
2015	1							
2014	1							
2013	2							

More detail on these principal risks together with how they are mitigated is presented on pages 77 to 79

## Ensuring an environment which attracts, develops and motivates our world-class team and continues to foster industry thought leadership

	Commentary	Principal risks								
<p><b>Employee and knowledge retention</b> Voluntary employee turnover % per annum</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Voluntary employee turnover % per annum</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>15</td> </tr> <tr> <td>2014</td> <td>15</td> </tr> <tr> <td>2013</td> <td>15</td> </tr> </tbody> </table>	Year	Voluntary employee turnover % per annum	2015	15	2014	15	2013	15	<p>Employee turnover is stable in spite of increased activity in the labour market, as demand for engineers and scientists grows.</p>	<p>People</p>
Year	Voluntary employee turnover % per annum									
2015	15									
2014	15									
2013	15									

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

<p><b>Underlying* operating profit margin</b> %</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Underlying* operating profit margin %</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>10.8</td> </tr> <tr> <td>2014</td> <td>10.8</td> </tr> <tr> <td>2013</td> <td>10.4</td> </tr> </tbody> </table>	Year	Underlying* operating profit margin %	2015	10.8	2014	10.8	2013	10.4	<p>The underlying operating profit margin has remained good as a result of a diverse portfolio of projects, strong commercial delivery and robust cost control.</p> <p>*excluding specific adjusting items as described on page 3</p>	<p>Contract Performance</p>
Year	Underlying* operating profit margin %									
2015	10.8									
2014	10.8									
2013	10.4									
<p><b>Environment</b> CO<sub>2</sub>e tonnes per employee for scope 1 and scope 2 emissions according to the reporting regulations</p> <table border="1"> <thead> <tr> <th>Year</th> <th>CO<sub>2</sub>e tonnes per employee</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>8.8</td> </tr> <tr> <td>2014</td> <td>8.1</td> </tr> <tr> <td>2013</td> <td>7.5</td> </tr> </tbody> </table>	Year	CO <sub>2</sub> e tonnes per employee	2015	8.8	2014	8.1	2013	7.5	<p>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 increased as a result of high levels of testing which use fuel and electricity.</p>	<p>Compliance with laws and regulations</p>
Year	CO <sub>2</sub> e tonnes per employee									
2015	8.8									
2014	8.1									
2013	7.5									

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

	Commentary	Principal risks								
<p><b>Technology development</b> R&amp;D spend (£m)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>R&amp;D spend (£m)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>9.8</td> </tr> <tr> <td>2014</td> <td>8.5</td> </tr> <tr> <td>2013</td> <td>9.7</td> </tr> </tbody> </table>	Year	R&D spend (£m)	2015	9.8	2014	8.5	2013	9.7	<p>R&amp;D spend was in line with our plans. The reported spend includes amounts capitalised in respect of development costs around the Group. The Ricardo Innovations division was established during the year to drive rapid technology development.</p>	<p>Technology &amp; Customers and Markets</p>
Year	R&D spend (£m)									
2015	9.8									
2014	8.5									
2013	9.7									
<p><b>Customer satisfaction</b> Customer satisfaction ratings out of 10 across a range of measures</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Customer satisfaction ratings out of 10</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>8.6</td> </tr> <tr> <td>2014</td> <td>8.3</td> </tr> <tr> <td>2013</td> <td>8.2</td> </tr> </tbody> </table>	Year	Customer satisfaction ratings out of 10	2015	8.6	2014	8.3	2013	8.2	<p>Customer satisfaction has remained strong at over 8 out of 10 during the past 12 months.</p>	<p>Contract Performance</p>
Year	Customer satisfaction ratings out of 10									
2015	8.6									
2014	8.3									
2013	8.2									



## Technical Consulting

### Performance

At the centre of Ricardo's business model lies its Technical Consulting activity, which accounts for around three quarters of Group revenue and underlying operating profit. We deliver projects focused on class-leading innovation in our core product areas of engines, transmissions, vehicles, hybrid and electric vehicles, environmental and strategic consulting. Our activities range from detailed collaborations with customers on strategy, advanced engineering work, technology evaluations and market studies to large-scale turnkey commercial programmes, encompassing multiple products and international markets.

Revenue has grown at 9% to £196.6m (2014: £181.0m). The growth in revenue can be attributed to the record opening order book and the continued strength of order intake as we moved through the year. Underlying operating profit increased by 12% to £20.0m (2014: £17.8m). Underlying operating margins have increased to 10.2%, up from 9.8% in 2014. Order intake in the year stood at £209m (2014: £192m). There has been a good balance of Technical Consulting order intake across the regions and we have continued to see good levels of diversification across different market sectors. Highlights can be found on pages 20 to 23.

During the year, the UK and German Technical Consulting businesses have been integrated to form a European Technical Consulting division, along with a separate global Motorcycle division, which includes the recently acquired Vepro business. The European reorganisation will improve coordination and delivery to our clients, as well as achieving cost efficiencies, whilst the new Ricardo Motorcycle division creates a critical mass of capability, expertise and global reach in motorcycle, scooter and urban mobility engineering.

The European Technical Consulting ('EUTC') division has secured a range of large multi-year programmes in the passenger car, commercial vehicle and power generation sectors in particular. Activity levels have been particularly high in the engine and vehicle groups. The EUTC division continues to be the main business in terms of profit generation.



Commissioned in early 2015, the Ricardo Vehicle Emissions Research Centre is a world-class facility that will enable the development of next-generation, clean, low carbon vehicles

In Ricardo Motorcycle the focus has been on the delivery of existing large multi-year powertrain programmes and the global roll-out of an expanded product and service offering to existing and new clients. As a result we have secured a new multi-year vehicle programme from an international client in the motorcycle and scooter sector of the market.

In the US, the business has maintained its commercial performance in the passenger car and commercial vehicle sectors, whilst positioning the business for growth in other areas. Ricardo's US business mix has seen increasing engine testing activity across both light and heavy duty applications and increased interest in Rail and Energy sectors. Our defence activity continues to diversify and during the year we launched Ricardo Defense Systems to enable us to access higher-level

security programmes from the US Defense Administration. Our California business is growing and we will continue to see expansion of our activities in this area.

Asia, including China and Japan, remains a key region and our Shanghai-based business has secured and started to deliver a number of large locally won contracts. This has included a mixture of hybrid vehicle, engine, transmission and attribute development activities. In Japan we have seen good levels of performance in the passenger car and commercial vehicle sectors.

Ricardo Energy & Environment has had a good year and has seen growth in both international and private-sector clients. The five historic practice areas of Energy and Climate Change, Air Quality, Resource Efficiency and Waste Management, Sustainable Transport, and Chemical Emergency and Risk Management have performed to expectation, alongside PPA

which was acquired during the year and integrated as a sixth practice area.

Our strategic consulting activities continue to operate well across all geographies and performance has been good in all operating regions. The combination of management consulting skills and deep industry insight offers a unique proposition to our customers. These include companies in the passenger car, energy and commercial vehicle sectors, plus numerous government bodies and private equity firms.

### Business model

At the centre of our business, the Technical Consulting segment provides engineering, design and consulting services to customers in our chosen market sectors. These are Passenger Cars; Government and Environmental; High Performance Vehicles and Motorsport; Motorcycles and Personal Transportation;



Ricardo CEO Dave Shemmans (centre) accepts a Ford Gold World Excellence award in May 2015, from Ford Motor Company CEO Mark Fields (right) and group vice president of global purchasing Hau Thai-Tang (left)

Commercial Vehicles; Agricultural and Industrial Vehicles; Defence; Rail; and Clean Energy and Power Generation. The services which we provide to these markets are coordinated through the following fields of expertise and delivery streams:

- Engines;
- Driveline and Transmission Systems;
- Vehicle Systems;
- Hybrid and Electric Systems;
- Strategic Consulting;
- Environmental Consulting;
- Independent Assurance (new Ricardo Rail activity); and
- Critical Systems (new Ricardo Rail and Ricardo Energy & Environment activity).

We have a global infrastructure that helps us to meet the needs of our customers, and provides an exciting work environment for our employees. We have technical and engineering centres in the UK, US, Germany, China, the Netherlands and the Czech Republic. We also have sales offices where local presence is needed to support customers. The technical and engineering centres include specialists in, for example, mechanical and electrical design, test and development, prototype build, project management, independent

assurance, cost estimation, supply chain management and manufacturing. People are at the heart of our Technical Consulting business, and we have a balance of experienced professional engineers and scientists, and a thriving graduate and apprenticeship recruitment programme. Engineers from any of the engineering centres can be deployed on projects across the globe using common engineering processes; we often make use of short-term geographical secondments. Our environmental consulting services are delivered from a number of UK locations and are making increasing use of our global network. Our strategic consulting service already has a well-established global team operating out of a number of different locations.

Ricardo's projects range in size from a few thousand pounds to multiple millions over several years. Typically, Ricardo will be engaged on between 400 and 500 projects and assignments across the globe at any one time, increasing to around 800 with the projects inherited from the Lloyd's Register Rail acquisition. Each of these is specific to a client's needs and has defined deliverables. Ricardo will provide engineering, technical, scientific, policy and advice-based services where

required; accreditation and assurance may also be provided. In general, these are delivered on a fixed-price basis for a scope of work. Our value chain is based on the application of know-how, knowledge and experience, and benefits from a wide range of facilities and equipment selected from our global resources for each project. Project management, resource management and customer management are therefore key skills to enable efficient delivery.

Where the scope of a project is changed, Ricardo will negotiate appropriate changes to the commercial terms of the contract. The business process is normally the development of client relationships, developing unique value propositions, proposing or tendering to meet a need, negotiating a contract, delivery with clearly defined milestones and closing out the programme by capturing customer feedback.

### Market sector highlights Passenger Cars

The passenger car sector remains the most significant for Ricardo. Projects continue to be driven by emissions legislation, CO<sub>2</sub> reduction and global competition. During the year demand remained high, with large multi-year contract orders from automakers



and suppliers in the UK, EU and Asia. New orders were secured across the vehicle systems and core powertrain areas of our business, focused on both new products and upgrades to existing products.

One of the key drivers of the strong demand is the requirement to deliver lower CO<sub>2</sub> solutions at lower cost whilst still maintaining high levels of functional performance. This is driving increased interest in our vehicle lightweighting, advanced combustion and intelligent vehicle and driveline technologies. Autonomous vehicle technology in particular is attracting significant interest in North America. Interest in hybrid and electric vehicle architectures, battery pack and battery management system design and vehicle attribute development also feature strongly.

The Vehicle Emissions Research Centre ('VERC') was commissioned at the Shoreham Technical Centre during the year and we continue to invest in advanced combustion and other key technologies in areas related to improvements in overall vehicle efficiency, such as intelligent driveline, lightweight materials and electrification.

### Government & Environmental

Ricardo's activities in the government and environmental sector have been driven largely by the long-standing relationships that Ricardo Energy & Environment has with various government bodies in the UK, the EU and globally. Activity in the government sector continues to focus around issues such as urban air quality, flood prediction and prevention, sustainable transport solutions to overcome congestion, emissions compliance, waste and resource efficiency and future energy mix.

Despite UK Government pressure on budgets, Ricardo Energy & Environment has secured a number of major contract wins with departments such as the Department for Environment, Food & Rural Affairs ('Defra') and the Department for Business, Innovation & Skills ('BIS'). In the US, we continue to build relationships with the Department of Energy ('DoE'), the Environmental Protection Agency ('EPA'), the National Highway Traffic Safety Administration ('NHTSA') and the California Air Resources Board ('CARB'). In the EU, we are working with the EU Commission and international donor organisations on a range of new projects and initiatives. Future growth is focused on the private

sector and international expansion outside of the UK.

The acquisition of PPA to the Ricardo Energy & Environment business in November 2014 has enabled the business to strengthen its activities in the energy sector, especially in Africa and Asia.

### Motorcycles, High-Performance Vehicles & Motorsport

During the past year, we launched Ricardo Motorcycle as a global business unit and added UK-based consultancy Vepro into the Group. We are now able to offer a complete turnkey motorcycle/urban mobility solution covering powertrain and vehicle systems. We have also continued a partnership relationship with Exnovo, a motorcycle vehicle engineering business based in Italy.

Growth in this sector is being driven by the need for a reduction in CO<sub>2</sub> emissions, the increasing focus on urban mobility solutions and a growing interest in e-bikes together with the increased demand for high-quality motorcycles in developing markets. We also recognise the strong market differences between the value-driven brands of south-east Asia and the technology-focused luxury marques of Europe, North America and Japan.

During the year the team remained focused on the delivery of existing large multi-year powertrain programmes for clients in Japan, China and Germany. The business mix covers a number of major subsystems including engines and driveline and transmission systems. We have also secured a new multi-year vehicle programme from an international client in the motorcycle and scooter sector of the market.

The high-performance vehicles and motorsport team is pursuing a range of new opportunities.

### Commercial Vehicles

We have seen strong growth in the commercial vehicle sector, especially from the Asian markets. We have secured a number of large engine and transmission projects across the medium and heavy duty sectors. Activity levels are being driven by legislation and new product development for global applications.

Strong engagement in this sector has driven increasing engine test activity in this sector, especially in North America. We have also seen growing interest in our aftertreatment and fuel cell capabilities at our technical facility in California. Facilities include a catalyst hydrothermal ageing test lab, a synthetic gas reactor test lab for rapid evaluation and modelling of aftertreatment components and systems under both steady-state and transient conditions, and fuel cell testing capabilities for solid oxide and proton exchange membrane fuel cells. Ricardo is uniquely positioned to offer design, development and delivery of powertrain systems from fuel delivery to tailpipe.

In addition to our core powertrain offering we have also focused on developing our product offering in the areas of fuel economy improvement, system optimisation and hybridisation: we see all these as areas of significant future growth.

Ricardo carried out an extensive research project on the Brighton & Hove bus fleet in order to provide valuable insights and recommendations to the City Council and bus operators as to how to reduce NOx and NO<sub>2</sub> emissions at source in a known pollution hotspot in the city centre





## Agricultural & Industrial Vehicles

Activity in the off-highway sector continues to remain at a relatively low level following the recent implementation of Stage IV emissions standards in Europe. Our focus in the coming years will be in assisting clients with EU, US and China legislation for 2020.

Our product offering in this sector is focused on new powertrain and engine development, complete machine optimisation, cost-effective aftertreatment solutions and hybridisation options, all of which are attracting increasing levels of interest. We also continue to invest in energy recovery technology.

## Defence

Ricardo's defence-related activity has seen an important number of new customer wins. We have seen increasing activity in mainland European, Middle Eastern and Asian markets as a result of focused business growth activities outside of the UK market. In the UK we have seen increasing demand for our Total Systems Optimisation approach; a programme which is focused on optimising vehicle architecture selection to minimise lifecycle costs and maximise fuel economy.

In the US, we have launched Ricardo Defense Systems LLC as a platform for growth and expansion by enabling us to access higher level security programmes from the US Defense Administration.

Our focus remains in the land domain and we are actively engaged in a range of future opportunities in international markets.

## Rail

Ricardo's rail sector business has continued to grow, with a focus on Technical Consulting activities in the rolling stock area in both the EU and North America. We are also at an advanced stage with the DDFlyTrain research and development project conducted by Ricardo, Artemis Intelligent Power and Bombardier Transportation (see pages 30 and 31). This project has used Ricardo's innovative high-speed flywheel-based brake energy recovery system concept to deliver a projected fuel saving of around 10 per cent on Diesel Multiple Unit ('DMU') rolling stock.



In February, Cooper Corporation Pvt. Ltd – one of India's leading engine manufacturers – announced that it would build on the long-standing collaboration with Ricardo with a project to jointly develop a new line of cutting-edge Cooper generator products ranging from 3.5 KVA to 1000 KVA, with the entire range available in both Diesel and CNG versions

Our activity has continued to develop a broad geographic spread with a variety of programmes taking in Tier 1 equipment manufacturers, rail operators, rail equipment manufacturers and governments, with a focus on the imperatives of increasing fuel efficiency and reliability. In the US, Ricardo is developing a Maglev rail system for low-cost urban connection between Orlando Airport and the nearby convention centre.

On 1 July 2015, we launched Ricardo Rail following the completion of the acquisition of Lloyd's Register Rail. This new business, with its footprint in the UK, Europe, Asia and the Middle East will now enable us to benefit from the significant global growth in high-speed and metro-based railways. The business will have three core product offerings: Independent Assurance; Technical Consulting; and Performance Engineering. With major clients such as Network Rail, Dutch Railways, MTR, Crossrail, Etihad Rail and Qatar Rail, it will spearhead our future growth in the rail industry.

## Clean Energy & Power Generation and Marine

The clean energy and power generation sector has seen the majority of its activity in the large engine area for power generation. We are engaged in a number of large projects covering genset development, gas engine conversions,

heavy fuel oil engines and CHP (Combined Heat and Power) solutions. The customer base is broad and globally diverse.

We have seen proportionally less activity this year in the renewable energy sector, although we continue to deliver offshore and onshore wind energy projects. We have also seen good levels of activity in fracking applications for the oil and gas market and seen significant growth in our management consulting activities across the energy sector.

The marine sector is driven by increasing demands for high-speed diesel generator sets and main propulsion systems, and also for the conversion of engines for gas or dual fuel operation. The majority of our activities in this sector have been based around failure analysis, investigations, specialist design and development activities.

## Outlook

Technical Consulting orders have become increasingly balanced geographically and we end the financial year with a good order book. We have successfully grown our client base with a foundation built around quality of delivery and the experience of our people who deliver these projects to our customers. We continue to seek diversified opportunities that will drive growth into Transport and Security, Energy, and Scarce Resources and Waste and to exploit the breadth of our skill-set and global footprint.



## Performance Products

### Performance

The Performance Products segment accounts for around one quarter of Group revenue and underlying operating profit. Approximately half of the revenue generated by the segment is in respect of products and services provided to a single customer.

Performance Products continues to deliver to expectations. Revenue grew by 10% to £60.9m (2014: £55.2m), with underlying operating profit at £7.7m (2014: £7.9m). Order intake in the year stood at £43m (2014: £67m).

The Performance Products business continues to focus on the development of long-term strategic relationships, the development of its people, and using a growing track record of product quality and on-time delivery to win new, large contracts.

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

### Business model

We manufacture and assemble low-volume, high-quality niche performance products which have either been designed by Ricardo's Technical Consulting segment, our motorsport products design team within the Performance Products segment, or by our clients. These deliverables include transmissions, engines and components as well as the provision of vehicle assembly.

This activity is based in the UK, although we will expand geographically when profitable opportunities are identified. 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.

The key skills to deliver these services include product design and development, production and operations management, supply chain management as well as customer management. Our productive

resources are centered on a highly flexible transmissions manufacturing facility at our Midlands Technical Centre, in conjunction with the engine and vehicle assembly facilities based at our Shoreham Technical Centre. The products and services that we supply are critical for our customers, but thanks to Ricardo's manufacturing know-how and ability to manage low-volume production and assembly, customers prefer to use Ricardo rather than our competitors or their own in-house facilities. High customer satisfaction means that programmes can continue over many years. We often have downstream spares or other post-supply support arrangements for our larger programmes, which can extend relationships.

The Performance Products segment also includes the Ricardo software activities, which develop and commercialise a wide range of computer-aided engineering ('CAE') software products for virtual



engineering of powertrain and vehicle systems. Ricardo's CAE products are licensed and supported globally by staff in Asia, Europe and North America, and in select regions via channel partners.

### Market sector highlights

#### Defence

Activities in the defence sector have focused on the supply of ongoing post-design services for the UK Ministry of Defence. This has included the supply of infra-red lighting and axle upgrade kits.

#### High-Performance Vehicles & Motorsport

Demand for engines from McLaren for its supercars continues, and we now supply power units for the new 650S and the highly sophisticated P1 hybrid models. The McLaren engine assembly facility is currently being expanded to enable us to satisfy McLaren's product expansion plans.

Production of the Porsche Cup and advanced dual clutch transmissions to Bugatti continued in line with the long-term supply agreements.

In the area of motorsport, Ricardo has remained busy during the year with manufacturing orders from Formula 1 customers, and products such as the Ricardo-designed transmissions for the Japanese Super Formula, Indy Lights and World Series by Renault. Work has also been ongoing to design and manufacture a GT3 racing transmission for two new premium clients.

#### Rail

Rail activity continues to perform to plan through the continuing manufacture and supply of monorail transmissions for applications in both Malaysia and Brazil. We continue to seek out similar future opportunities which exploit the market presence developed through our

Technical Consulting activities and the newly created Ricardo Rail business.

### Outlook

We are looking for further growth opportunities in either existing or new market sectors and geographies as the basis for future expansion, all of our plans being underpinned by our advanced production and manufacturing techniques.

We are currently investing in a significant expansion of the McLaren engine assembly facility so that we are able to meet our obligations under this contract.



Ian Gibson - Chief Financial Officer

## Financial review

### Group results

The Group has delivered a good operating result for the year ended 30 June 2015, most notably within the Technical Consulting segment. Total Group revenue increased by 9% to £257.5m and excluding the results generated by acquisitions during the year, like-for-like revenues are at £256.0m.

Underlying profit before tax increased by 9% to £26.8m, up from £24.6m in the prior year. Reported profit before tax for the year is £22.9m compared to £23.5m in the prior year. The decrease is due to amortisation of acquired intangible assets and acquisition-related costs of £3.9m, of which £2.1m related to the materially completed acquisition of Lloyd's Register Rail on 1 July 2015. Accordingly, the trading results from the Rail acquisition have not been included within the results for the year ended 30 June 2015. Organic growth in profit before tax, which excludes £0.2m of underlying profit from completed acquisitions during the year ended 30 June 2015, increased by 8%. The Group's underlying profit before tax margin remained at 10.4%, consistent with the prior year.

The financial year ended with another good closing order book of £140m, compared to a record year-end order

book of £142m in the prior year, with a significant pipeline of further opportunities beyond that. The order book remains well diversified, with no single market sector, customer or geography being responsible for more than half of the closing order book. Our order book comprises the value of all unworked purchase orders received.

Segmental operating results for Technical Consulting and Performance Products are discussed on pages 18 to 19, and 24, respectively. Within Technical Consulting, the Group benefited from strong order intake from our business in Asia, along with the efficiencies gained during the year from the creation of our European Technical Consulting division. The Technical Consulting segment generated underlying operating profit

of £20.0m (2014: £17.8m). Performance Products has had a good year in terms of its top-line performance, with further growth in revenue of 10% to £60.9m (2014: £55.2m), but as expected operating profit and order intake have fallen to £7.7m (2014: £7.9m) and £43m (2014: £67m), respectively, as a successful contract came to a close. The prior year benefited from our strong engineering performance and rigorous process control, which resulted in lower warranty claims than expected and this has been factored into our experience-based provision assessment in the current year.

### Basis of preparation

The financial statements have been prepared in accordance with International

### Headline Group performance numbers are as follows:

	2015	2014
Revenue	<b>£257.5m</b>	£236.2m
Profit before tax <sup>(1)</sup>	<b>£26.8m</b>	£24.6m
Basic underlying EPS <sup>(1)</sup>	<b>42.4p</b>	38.7p
Net funds	<b>£14.3m</b>	£12.6m

(1) excluding specific adjusting items, which comprise amortisation of acquired intangible assets and acquisition-related costs.



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 115 to 120. 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 116 and 117.

### Acquisitions and acquisition-related intangible assets

On 8 October 2014 the Group acquired 100% of the issued share capital of Vepro

Limited ('Vepro'), and on 13 November 2014 the Group also acquired 100% of the issued share capital of Power Planning Associates Limited ('PPA') for a combined consideration of £3.6m. This investment generated goodwill of £2.3m and acquisition-related intangible assets of £0.7m.

Amortisation of acquisition-related intangible assets amounted to £1.3m (2014: £1.1m). The Group also incurred acquisition-related costs of £2.6m (2014: £Nil) during the year, which were primarily incurred in respect of the Lloyd's Register Rail acquisition which materially completed on 1 July 2015.

The acquisition costs and the amortisation of acquisition-related intangible assets have been charged to

the Consolidated Income Statement as specific adjusting items and disclosed in Note 4 to the financial statements on page 123.

The Group holds a further £23.7m of goodwill on the Consolidated Statement of Financial Position. As explained further in Note 13 to the financial statements on page 129, the Group's acquisition, integration and reorganisation activities have resulted in a change in the cash-generating units against which the carrying value of goodwill has been allocated. This comprises £1.1m in relation to a legacy Performance Products business, £12.7m in relation to the integrated European Technical Consulting business and £9.9m in relation to the Energy & Environment business (previously Ricardo-AEA) which has been integrated with the newly acquired PPA business and aggregated with its associated goodwill of £0.9m, totalling £10.8m. Total goodwill at 30 June 2015 is therefore £26.0m (2014: £25.1m). The Directors review goodwill for impairment annually, or more frequently if events or changes in circumstances indicate a potential impairment and following this year's review, we consider it appropriate that no impairment is required.

### Research and Development

The Group continues to invest in Research and Development ('R&D'), and spent £9.8m (2014: £8.5m) before government grant income of £1.1m (2014: £1.3m). This amount includes costs capitalised in accordance with IFRS of £4.2m (2013: £3.0m) in respect



Ricardo Energy & Environment Managing Director, Robert Bell (centre) and Finance Director, Ian Rogerson (right) discussing business matters with Ricardo Group Financial Controller, James Mills (left), at a recent global leadership event

of development expenditure on a range of product developments around the Group. The amounts capitalised reflect our continued focus on development activity and include a number of projects within the UK and US. An overview of current R&D activities is presented on pages 30 and 31.

### Net finance costs

Finance income was £0.2m and finance costs were £1.1m, giving a net finance cost of £0.9m which is similar to that of the prior year (2014: £1.0m). Included within the finance costs is £0.8m (2014: £1.0m) in respect of the net finance charge for the defined benefit pension scheme.

### Taxation

The total tax charge for the year was £4.3m (2014: £4.3m), representing an effective rate of 18.8% (2014: 18.3%). The Group continues to benefit from R&D tax credits in both the UK and US. The new Research and Development Expenditure Credit ('RDEC') becomes mandatory from 1 April 2016. Applications under the new RDEC regime will be made and accounted for from 1 July 2015. Under the new regime, the R&D credit will no longer be a tax incentive that benefits the corporation tax line in the Consolidated Income Statement, but will instead be treated as grant income to offset R&D expenditure within operating profit, increasing profit

before tax, its associated tax charge and the effective tax rate.

Consistent with prior year, a deferred tax asset has not been recognised for the current year tax losses within the Ricardo Deutschland GmbH statutory entity. The Directors remain of the view that it is probable that future taxable profits will be available within the Ricardo Deutschland GmbH statutory entity in the foreseeable future, against which the recognised asset of £3.1m can be utilised.

### Earnings per share

Basic earnings per share was 35.6p compared to 36.9p in 2014. An underlying basic earnings per share, which excludes the net-of-tax impact of the amortisation of acquired intangible assets and acquisition-related costs, is disclosed in Note 11 to the financial statements, on page 127. 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 increased to 42.4p, from 38.7p in the prior year.

### Dividend

The total (paid and proposed) dividend for the year has increased to 16.6p per ordinary share (2014: 15.2p) and amounts to £8.7m (2014: £8.0m). The proposed final dividend of 11.95p (2014: 10.9p) will be paid

on 13 November 2015 to shareholders who are on the register of members at the close of business on 23 October 2015, subject to approval at the Annual General Meeting on 4 November 2015.

### Capital investment

Capital expenditure on property, plant and equipment increased from £6.3m in the prior year, to £10.4m in the year ended 30 June 2015. The increase was largely a result of planned cash expenditure at our Shoreham Technical Centre in the UK on both the expansion of the engine assembly facility as part of the supply agreement with McLaren Automotive and on the Vehicle Emissions Research Centre ('VERC').

The VERC facility was completed and made available for use during this financial year and has provided the latest technology in vehicle emission measurement facilities, allowing a range of tests to be performed across all geographic regulatory requirements. The development of the VERC was selected for part-funding under the UK Government's Regional Growth Fund. Gross capital expenditure as at the year-end on the VERC was £8.5m, offset by total grant income of £3.2m. The net cost has been included within land and buildings in Note 15 to the financial statements on page 131.

### Net funds

The Group generated net cash of £1.7m (2014: £6.5m), after £3.6m of acquisition-related payments and excluding net proceeds from



borrowings of £45.4m, leading to closing net funds of £14.3m (2014: £12.6m). The composition of net funds is defined in Note 33 to the financial statements on page 145.

The Group's borrowings at the year-end were drawn down to fund the acquisition of Lloyd's Register Rail, which materially completed on 1 July 2015.

### Banking facilities

At the end of the financial year, the Group held total facilities of £89.4m (2014: £49.2m). This included committed facilities of £75.0m (2014: £35.0m). Of the committed facilities, a £35.0m facility is available for the period to September 2019 and £40.0m is available until April 2020. In addition, the Group has uncommitted facilities including overdrafts of £14.4m at 30 June 2015 (2014: £14.2m), which mature throughout the year to June 2016 and are renewable annually.

Committed facilities of £45.4m, net of direct issue costs, were drawn at

30 June 2015 (2014: £Nil), which are denominated in Pounds Sterling and have variable rates of interest dependent upon the Group's adjusted leverage, which range from 1.6% to 2.35% above LIBOR and are repayable in the year ending 30 June 2020.

### Exchange rates

On consolidation, income and expense items are translated at the average exchange rates of the year. 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. The average value of Pound Sterling was 9.6% higher against the Euro and 3.1% lower against the US Dollar and Chinese Renminbi during the year ended 30 June 2015 compared to the previous financial year. Had the current year results been stated at constant exchange rates, reported revenue and profit before tax for the year ended 30 June 2015 would have

been £0.2m and £0.3m lower, respectively. Significant resulting exposures are hedged through foreign currency contracts. The exchange loss for the year ended 30 June 2015 was £0.2m (2014: £0.5m).

### Pensions

The Group's defined benefit pension scheme operates within the UK. At 30 June 2015, the accounting deficit measured in accordance with IAS 19 'Employee Benefits' was £20.7m before tax, or £16.6m after tax (2014: £19.5m and £15.6m, respectively). The £1.2m increase in the net pension deficit was primarily due to a reduction in the discount rate assumption to 3.8% (2014: 4.35%) in addition to other changes to financial and demographic assumptions, partially offset by the return on plan assets and company contributions. The additional cash contributions of £4.3m per annum were agreed with the Pension Trustees following the last full actuarial valuation to 5 April 2014, which completed in the year ended 30 June 2015.



Mark Garrett - Chief Operating Officer

## Research and Development

Investment in research and development is now under one reporting structure at Ricardo. The delivery and adoption of Ricardo's research and development and the performance of the investments are key to achieve our business and shareholder objectives.

Three research and development streams align with our R&D investments: Technical Consulting R&D, New Business Growth, and Concept Development and Monetisation. To consolidate the streams, Ricardo has an established pipeline of opportunities and innovations supported by a long-range road map. The opportunities are prioritised and

funded based on our customer needs, strategic goals and shareholder value. Our programme is shaped around a balanced portfolio of self-funded and collaborative projects supported by our industry partners and government funding organisations.

This year Ricardo completed five major R&D programmes and was awarded five new R&D projects. Ricardo has actively engaged with the new European R&D framework programme 'Horizon 2020' through the European Green Vehicle Initiative. The five new programmes awarded are European Horizon 2020 projects and align well with our business

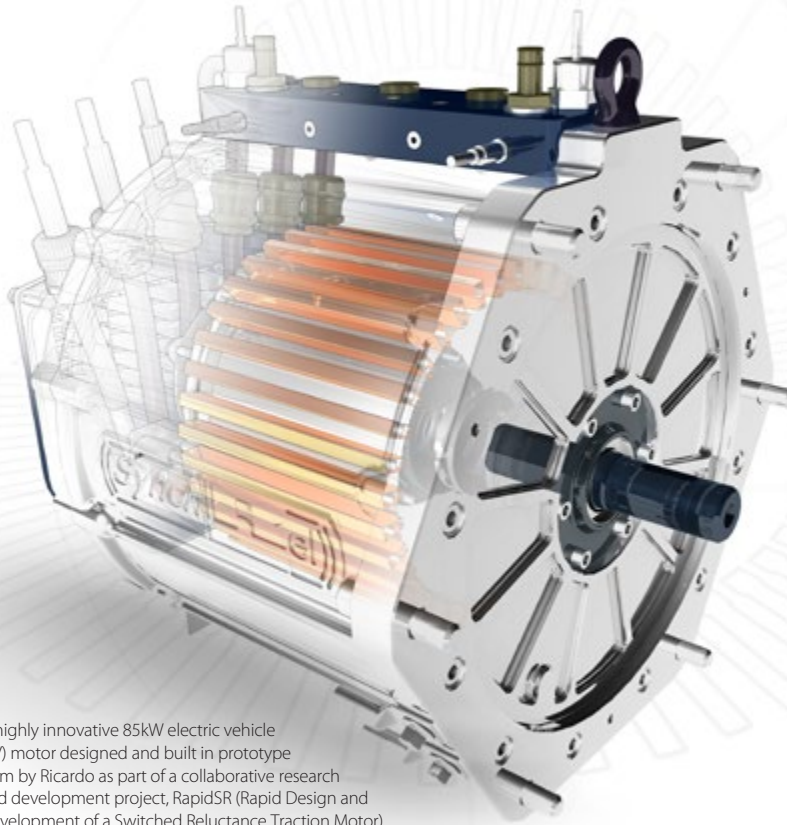
research targets. Key programmes under each of our three research and development streams are outlined below and on the following page.

### Technical Consulting R&D DDFlyTrain: flywheel bench demonstrator for Rail

The DDFlyTrain programme delivered a proof-of-concept flywheel demonstrator for the rail industry using the Ricardo TorqStor flywheel and test rig. Collaborative partners were Ricardo, Bombardier and Artemis. The research project was co-funded by Innovate UK and the Rail Safety and Standards Board and started in 2013. Bombardier's Turbostar







A highly innovative 85kW electric vehicle (EV) motor designed and built in prototype form by Ricardo as part of a collaborative research and development project, RapidSR (Rapid Design and Development of a Switched Reluctance Traction Motor)

Diesel Motor Unit ('DMU') was used to project fuel saving, based on high-speed flywheel brake recovery technology retrofitted to DMU rolling stock. Simulation and rig testing were used to demonstrate the practical feasibility, operational fuel and energy savings, and the economic investment case for high-speed flywheel energy storage technology on DMU trains. The DDFlyTrain project received the Rail Exec award in the safety and sustainability category. The Ricardo TorqStor flywheel technology also received the 2014 SAE Tech Award as one of the top five technologies on display at the SAE World Congress.

### Offshore wind drivetrain innovation

Ricardo has now delivered and commissioned the Ricardo MultiLife™ wind turbine bearing system on a 600 kW turbine. The location is the Barnesmore wind farm operated by ScottishPower Renewables in County Donegal, Ireland, and is known to experience aggressive wind conditions. The MultiLife™ system reduces the need to remove and repair the wind turbine gearbox, which increases the time that the turbine is generating revenue. This is achieved by rotating the race of standard bearings over time.

This ensures that the fatigue damage or wear never reaches a critical localised condition during the turbine's life. The Ricardo system has the potential to extend bearing life in excess of 500 per cent based on rig tests. The research project is partially funded by the UK Government's Department of Energy and Climate Change. Ricardo is collaborating with ScottishPower Renewables and the Universities of Sheffield and Strathclyde.

### Climate change challenges requires innovation

The need to improve air quality, particularly in urban areas, is a global challenge which Ricardo is meeting through investment in research and development programmes. Research into future emission systems and developing strategies to address real-world drive cycle regulations are priorities. A new engine research programme called Magma looks at optimised approaches for gasoline engines, including adoption of the Miller cycle. In the transmission area, the ULTRAN project is yielding impressive results with innovative lightweight transmission designs that reduce the weight of a rear-wheel drive unit by 25%. In the hybrid area, a project to investigate Switched

Reluctance Machines for future e-Machine applications is yielding industry-leading FEA tools for e-Machine design. The project delivered an innovative prototype high-speed synchronous reluctance machine. ECOCHAMPS, a new Horizon 2020 project, is targeting the next-generation light- and heavy-duty hybrid electric vehicles.

### New business growth Safety and stability systems for the defence sector

The US Department of Defense ('DoD') continues to emphasise rapid acquisition of proven innovations that can save soldiers' lives. Ricardo is investing in a collaborative programme with a Tier 1 supplier to provide a world-class stability system for a tactical vehicle. The Ricardo solution mitigates the problem of rollover for on- and off-road vehicle situations and provides improved vehicle performance and reliability whilst offering significant operational cost savings to the DoD. Development and testing are complete and the Ricardo product is well-aligned to DoD acquisition objectives targeted to save soldiers' lives.

### Concept development and monetisation

The identification and incubation of innovative products and the development of ways to support new disruptive ideas are small, but important attributes of research and development investment programmes. Ricardo collaborates with universities around the world to investigate and validate opportunities before significant investments are made. At the University of Brighton, the Sir Harry Ricardo Combustion Research Centre is expanding to provide a dedicated joint research facility where university staff will work alongside Ricardo engineers. The objective is to undertake fundamental research to assist with the design of the next generation of internal combustion engines while developing our staff to learn new skills and capabilities. This aligns well with the UK Automotive Council's strategic priority to support the development of the next generation of automotive design engineers.



## Our people

### Our people are our success

We rely on the innovation, talent, engineering and scientific excellence as well as customer care of our employees, in whom we invest and develop for the benefit of our organisation and its stakeholders. Therefore, recruiting the right people and retaining and developing our employees remains a key focus. The promotion of our Group Values as standards against which employees and new joiners can align their identity with Ricardo and what the Group stands for is a focus not only of our HR functions but of the whole leadership team.

The acquisitions made during the past 12 months in the areas of Ricardo Motorcycle, Ricardo Energy and Environmental and Ricardo Rail have added over 500 people to our headcount and we are currently in different stages of transition for each of these acquisitions. Though structures, systems and processes are important, an additional focus is on integration at a personal level through several employee



Rt Hon Matthew Hancock MP, then Minister for Small Business, Industry and Enterprise with Sue Dare of Northbrook College meeting Ricardo apprentices

communication and information initiatives.

People are respected for their contribution: integrity is demonstrated in all that we do; we provide exciting work which allows innovation and creativity to flourish, and where our passion is tangible. In line with this our divisions have instituted a variety of recognition programmes which embrace contributions across all levels of individuals. There are Group awards for young engineer of the year, a six monthly award for engineering excellence and a quarterly CEO award which recognises outstanding team performance. The European Technical Consulting division presents a quarterly exceptional performance award at either team or individual level. There are also

more localised recognition programmes which are common across the organisation, such as voucher schemes and on-the-spot awards for exceptional performance.

To improve our employees' understanding of the Company's vision, strategy and values, we have undertaken various measures to increase all employee communication through using a multi-media approach with new web-based channels, films, strategy brochures and face-to-face information sessions. An important part of this initiative was the release in January of a personalised copy of the Ricardo Strategy Review to every employee by Dave Shemmans, outlining the future vision of the Company.

Respecting both the status and diversity of our employees and clients, we aim for Ricardo to be a progressive employer in terms of our people practices. The Group maintains its belief that it will grow most successfully through the personal growth of its employees. As a responsible employer, we are therefore committed to providing a safe and healthy work environment as well as promoting equality of opportunity for all employees and job

	Males	Females
<b>Board/Company Secretary</b> At 30 June 2015 there were five non-executives and three executives all of whom were male, and a female company secretary.	8	1
<b>Senior leadership</b> There were 46 Divisional senior leaders in Ricardo at 30 June 2015 of whom 39 (85%) were male and 7 (15%) were female	39	7
<b>All employees</b> There were 2,105 employees in Ricardo at 30 June 2015, of whom 1,747 (82%) were male and 385 (18%) were female	1,747	385



Staff at the Ricardo Prague Technical Centre celebrate the company's centenary

applicants free from all discrimination and actively seek diversity in our recruitment. Ricardo is an inclusive employer and values broad representation in its employees and aims to recruit the best person for the role in all its positions across the Group. The gender mix continues to present a challenge at all levels of recruitment with the ratio of applicants broadly reflecting reduced percentages of females both studying engineering and remaining in the engineering sector following qualification. However, in our Energy and Environment business which consists of environmental scientists, economists and consultants, the gender mix is more balanced, with 40% of employees being female.

Ricardo is privileged to continue to attract new hires from prestigious organisations and has seen a number of returnees. Throughout the year the Group continued to bring in fresh talent in line with its business requirements, in order to refresh and enhance the skill sets through carefully targeted recruitment. Ricardo maintains its commitment to develop its employees through internal promotion.

We also believe very strongly in growing our own talent and have therefore intensified our graduate recruitment and development efforts and anticipate a 50% increase in numbers for the 2015/16 intake. Ricardo provides a great career opportunity for engineering, science and other

professional graduates. In 2014 Ricardo was invited to present a best practice paper on its graduate programme to the Institution of Engineering and Technology ('IET') Employers Networking Conference. This scheme has now been extended to and implemented in the Czech Republic. The programme includes a European graduate exchange where employees of all European Ricardo sites may have the opportunity to gain experience outside their home country.

This focus extends further to the taking on of apprentices and the offer of undergraduate placements which have increased by 50% to provide for an early introduction to the Company. In line with the idea of a tailored approach for Ricardo, the commitment to apprentice development remains strong with most apprentices achieving further educational qualification, such as in the UK with Higher National Diplomas ('HND') being achieved over and above National Vocational Qualifications ('NVQs'). Our apprentice programmes now encompass a broader range of functions and levels across our business, including HR, Marketing and Finance.

With a view to the next generations of engineers and scientists who will be the core of our future value chain, Ricardo employees are engaged as active members of the communities where most



Ricardo Bursary recipient Matt Van-Der-Kieft of Northbrook College after receiving his award from Dave Shemmans

of our larger sites operate, with a strong focus on working to promote Science, Technology, Engineering and Maths ('STEM' subjects) in schools and colleges. Ricardo continues to provide work experience placements to pupils from local schools and colleges.

At the same time, strong knowledge retention within the business is always key. The change to the European Technical Consulting organisation has created many teams which are managed across countries resulting in improved collaboration and flexibility which has positively impacted customers and employees alike. It has also provided increased opportunities to develop senior general management and commercial awareness skills in the leaders of business units and their direct reports. Ricardo offers support to these business leaders, with our ongoing international leadership and project management development programmes as well as a new core framework to enhance commercial skills at all levels within the global organisation. Our improved talent management process continues to identify up-and-coming business and technical leaders, top talent and high-potential employees. This enables us to more accurately focus on our developmental priorities and to prepare those talents to take up their next career challenge.

We would like to thank all of our employees for their hard work and professionalism over the past year. Ricardo is a people business and our employees continue to underpin everything that the Group achieves.



## Corporate Social Responsibility

### Why CSR matters to Ricardo

Ricardo has a proactive and engaged approach to Corporate Social Responsibility ('CSR'). The environment is a key driver for our strategy and is seen in many of our delivery streams, where excellence through innovation and technology provides the central focus for all of our teams. It is embedded in what we do and the solutions we deliver:

- Developing new combustion systems and engineering solutions to meet the next sets of emission regulations;
- Improving vehicle fuel economy via engine developments, lightweight vehicle structures and transmissions, and hybrid vehicle systems;
- Helping governments and cities address climate change, energy and waste challenges; and
- Providing policy and technical advice across the public and private sector to improve the environmental, social and economic performance of the transport sector.

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, 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 6:

- **Transport & Security** work is driven by the worldwide trends in climate change, emissions and fuel consumption legislation;

- **Energy** is similarly driven by the need to provide more sustainable and efficient solutions in the areas of power generation and renewable and clean energy; and
- **Scarce Resources & Waste** provide solutions to improve air quality, reduce environmental risk and improve the efficiency of resources use and waste management.

We support all these areas with R&D to enhance our capabilities. This is described on pages 30 and 31.

### Environmental thought leadership

Ricardo Energy & Environment regularly leads on policy development and for key groups of stakeholders. Selected examples of these in the year include:

- Preparing a guide, published in webinars and at international conferences, for developing countries preparing their Intended Nationally Determined Contributions ('INDCs'), which are their 'offers' for the international climate negotiations in Paris in December 2015;



- Developing a methodology for developing countries, building their systems for 'Monitoring, Reporting, and Verification' of their Greenhouse Gas Emissions and related actions, presented via webinars and videos;
- Presenting at the SAE World Congress in Detroit on 'Future Cities and Transport', explaining why cities should now be radically rethinking their transportation systems;
- Presenting at the high-profile EC Conference 'Driving Road Decarbonisation Forwards', explaining the need for post-2020 regulatory targets for car and van emissions to account for life-cycle emissions, if they are to be effective;
- Sponsoring and led the 'OpenAir' Natural Environment Research Council knowledge exchange project, which developed an innovative suite of open source air pollution analysis tools. This has attracted a following of users on all continents; and
- Speaking at numerous international conferences and UK trade missions on how 'energy from waste' recovery solutions should be considered as a significant cornerstone of urban development in transition economies, urbanising regions, and mega cities.

### Environmental benefits

Ricardo delivers many positive environmental outcomes which are the result of the work we undertake in the Technical Consulting segment. This broadly comes from two themes: firstly, lower carbon use from the results of engineering projects which lead to more efficient consumer products manufactured by our clients and, secondly, from the results of environmental consulting work which is largely undertaken by Ricardo Energy & Environment. These products and services will have an impact on the future levels of emissions, waste, energy and water consumption and noise across the sectors we serve. This includes Ricardo-funded and client-funded engineering projects where technology is developed to provide low-emissions and high-efficiency technologies for incorporation in products in all parts of the world.

The very nature of Ricardo Energy & Environment's environmental 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, resource scarcity and sustainability agendas;
- Deep understanding of policy drivers, providing insight and project delivery for business and industry; and
- Economic modelling and data management to identify and realise value for business and industry.

The scale at which we work is wide ranging, from global corporations and international donors and funders, down to country, city, or individual site level.

Working with the UK Government's Department for Food & Rural Affairs ('Defra') on its online greenhouse gas conversion factor repository website is a good example: here, Ricardo Energy & Environment has been responsible for providing the emissions factors – a crucial element of the UK mandatory reporting requirement. This is of use to companies based in the UK as well as international organisations fulfilling their requirement for environmental reporting of carbon emissions.

We are also helping many governments prepare for the Paris climate change negotiations in December 2015. This is described in the feature on pages 56 to 59.

Ricardo Energy & Environment is providing support to cities across the EU to help them develop urban transport road maps that will help them halve the use of conventionally fuelled cars, and achieve near-zero CO<sub>2</sub> city logistics by 2030.

We undertake Energy Saving Opportunities Scheme ('ESOS') audits so that larger companies are able to comply with the requirements by December 2015.

### Delivering environmental benefits

Many of the projects which Ricardo undertakes for clients deliver long-term and short-term tangible environmental benefits which far exceed our own corporate energy use. We have a wide range of examples of these. Some of those that we can discuss are set out on the following pages:



Team members of the Ford Ranger project (described below) outside the Ricardo Vehicle Emissions Research Centre

## Product development

### Ford Ranger

Our engines team completed a project on Ford Ranger light-duty diesel applications and had a prime focus on CO<sub>2</sub> reduction. Ricardo was involved in engine hardware selection and all base engine performance and emissions calibration for global variants for markets from Euro 2 to Euro 5 and Brazil's PROCONVE L6. Development and sign off for markets included Europe, South America, China, India, Australia and Asia. This was the largest and most complex power and emissions certification programme in Ricardo's history, successfully completed with over 80 unique calibration variants leading to an estimated total CO<sub>2</sub> saving of 3.8 MtCO<sub>2</sub> over the product life.

### Military truck

Ricardo's specialists utilised their automotive market experience, technical knowledge and supplier contacts to apply fuel-efficient technologies to an active military logistic fleet, while ensuring no degradation in performance, reliability or safety. Ricardo developed detailed and correlated models to assess the benefits of various technology packages (over 500 technical solutions were reviewed, with the interaction between technologies defined and modelled, resulting in millions of technology combinations). The goal of the programme was a 15% fuel economy improvement and is expected to yield a total CO<sub>2</sub> saving of 12 MtCO<sub>2</sub> annually.

## Premium car engine programme

Our engines business carried out a project for a large multinational automotive corporation that required improved performance and fuel economy from one of its shared engines. Ricardo's role was to conduct the programme management, base engine design, analysis and release, as well as to plan and validate the engine development tasks including sub-supplier management, and to undertake key test activities. It is expected that this engine upgrade will yield an estimated CO<sub>2</sub> saving of up to 1.2 MtCO<sub>2</sub> over the product life.

## Environmental Consulting

### Business resource efficiency

At the end of March 2015, Ricardo Energy & Environment completed twenty years of work providing support services to businesses across the UK to help them use resources (including water) more efficiently. As well as saving them money and improving their environmental performance for much of the time, the project operated under the highly successful Envirowise banner, funded by Defra, before finally becoming the Waste and Resources Action Programme's ('WRAP') Business Resource Efficiency programme. With a strong focus on assisting small- and medium-sized businesses by training them and providing them with knowledge, materials and tools, the impact assessments carried out have indicated that the programme helped businesses to reap financial benefits of up to £3bn cumulatively over its lifetime.



## Resource Efficient Scotland

Ricardo Energy & Environment has been delivering the Resource Efficient Scotland advice and support service since 2013, providing energy, water and waste efficiency advice to Scottish businesses. In its second year, the service has engaged with over 45,000 Scottish businesses and delivered over 850 site audits across Scotland. This programme identified over £36m of savings but with its intensive one-to-one support helped businesses implement an impressive £20.4m of savings for the individual businesses and also achieved a reduction of 55,000 tCO<sub>2</sub>. As a result of this success we have been awarded a year's extension to the programme.

## Water Technology List

Since the inception of the Water Technology List ('WTL') more than a decade ago, Ricardo Energy & Environment has delivered and managed the scheme on behalf of Defra and HM Revenue & Customs. The WTL is part of the Enhanced Capital Allowance ('ECA')



scheme for water and lists all the water-efficient products and technologies that are eligible for the scheme. The WTL has grown significantly over time, supporting over 4,000 water-saving products across 14 product areas and with over 200 manufacturers and product suppliers with products listed. In addition, the water reuse category, which encourages investment in plant and machinery to enable water to be treated and reused on site, was added in 2005 to help further the business case for water reuse. Since then, over £39.5m of investment has been approved, saving UK businesses 6.2m<sup>3</sup> of water per year, and resulting in £5.97m in related savings.

### Air quality strategy

The World Health Organisation has costed air pollution at \$1.6tn across Europe, the equivalent to one tenth of European GDP in 2013. Long-term exposure to outdoor air pollution poses major public health risks; in the UK alone air pollution is estimated to cause 29,000 deaths per year, with an annual economic cost estimated at

£9-19bn. Global impacts are increasing, driven by urbanisation and population growth. Our EU expertise is now being rolled out internationally to cities such as Riyadh, where we are developing the air quality strategy for a city of over 8 million people.

### Farming Advice Service

Ricardo Energy & Environment delivers the Farming Advice Service on behalf of Defra. To date our team has provided face-to-face technical advice to over 20,000 farmers (almost 20% of the UK total) and has produced guidance documents for many more, helping to reduce greenhouse gas emissions and other environmental impacts and to improve compliance in the agriculture sector.

### Climate Leadership

Ricardo Energy & Environment is working with the Climate Leadership Group (C40 Cities), a network of the global megacities committed to addressing climate change. We are supporting 12 of the world's largest cities in the run-up to the Paris Conference

of the Parties in December 2015, on the development of their greenhouse gas emission inventories. Described on pages 56 to 59, the work will help to ensure the cities meet the requirements of the new 'Compact of Mayors' initiative – a pledge to address climate change through reducing city greenhouse gas emissions, tracking progress and preparing cities for the impacts of climate change.

We are supporting the Country Level Impacts of Climate Change ('CLICC') project for the Department of Energy & Climate Change ('DECC'), which culminated in a workshop attended by 16 countries. Work on climate finance readiness for countries including Vietnam, Bangladesh and Tanzania is also being supported.

### Measuring and verification

We supported Information Matters in their MRV (measuring, reporting and verifying greenhouse gas emissions) project, supporting Ghana, the Philippines, Dominican Republic and Chile to develop their capacity and skills in this subject.

### 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 our services have positive impacts on society. The Board’s commitment is embodied in the Ricardo Environmental Policy. It is widely available via the intranet and to the public via the website [www.ricardo.com](http://www.ricardo.com). The drivers for the policy are:

- Delivering services that enable strategic improvements for our clients and the end users of their products;
- 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 mainly uses fuels and electrical energy in addition to heating some of our buildings and gas usage of process plant. Our manufacturing energy use is mainly power for machine tools and assembly facilities and gas used in our heat treatment plant. Other Scope 1 (direct) emissions include fire suppression gases such as FM200 and the more usual fuels for business travel. Immaterial sources include gases used for emissions measuring equipment and air conditioning top-ups. Our Scope 2 use is all electricity. We do not measure our Scope 3 emissions.

We comply with the Companies Act 2006 (Strategic and Directors' Report) Regulations 2013 on GHG Emissions and



Solar photovoltaic roof panels and sun pipes installed at the Shoreham Technical Centre generate 4752 kWh of extra electricity and save 2.6 tonnes of carbon per annum

have stated our comparative history in the KPIs on page 17. As this requires us to include 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 waste generation are actively encouraged and have become more important as unit fuel costs increase, and as the manufacturing activities of Performance Products grows in future years, waste streams will become more important. Regenerative dynamometers enable the re-use of electricity generated by testing operations, leading to savings and environmental benefits, which include lower water usage. The majority of our test cells have this capability.

We focus our operational carbon footprint improvements on underlying energy efficiency prior to use of fuels for testing. We continue to use CO<sub>2</sub>e tonnes ('tonnes equivalent') per employee as an intensity measure.

Our scope 1 variability is driven by varying fuel and fire suppression needs on client projects in Technical Consulting. Scope 2 is electricity and shows an increase in line with increasing fuel use in testing, which is encouraging as manufacturing activity levels have

increased and we invested in additional machinery. In the year we have changed operating practices to reduce the number of FM200 discharges without increasing risk to staff or property. This reduced by 53% compared with 2014.

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

We now have an enhanced energy-saving focus amongst our facility managers, where sharing best practice is encouraged and budgets for this area are allocated. Some recent examples of improvements are:

- When extending several buildings at our Shoreham site, we took this opportunity to install LED light fittings throughout, resulting in lighting energy savings of between 35% and 60%. Additionally, through the use of Solar PV roof panels (5kWp) and sun pipes, we were able to generate 4752 kWh of extra electricity and create a saving of 2.6 tonnes of carbon per annum; and
- Instead of sending them off-site for recovery, Ricardo stipulates the re-use of timber pallets, which results in an estimated 30 tonnes of material wastage per annum being diverted from landfill. Likewise, the use of cardboard bailers has facilitated recycling and continues to generate revenue. The result of this is an estimated 23 tonnes of cardboard being diverted from landfill every year, and this figure is set to increase significantly as McLaren engine production increases.

### CO<sub>2</sub>e '000 tonnes per employee

CO <sub>2</sub> e '000 tonnes	2015	2014	2013
Scope 1	8.2	8.1	6.1
Scope 2	10.4	8.8	8.7
Total	18.6	16.9	14.8
Tonnes per employee	8.8	8.1	7.5

In deciding if an emission is within Scope 1, we apply the operational control test.



We chose to embrace the Energy Saving Opportunity Scheme ('ESOS') early in UK, completing the audit work at the end of the year. The equivalent in other European countries does not apply as the businesses are under the threshold in the European regulations, but transferable findings will be shared across the Group.

Good relationships are maintained with national and local regulatory organisations such as the Environment Agency and Environmental Health Departments in the UK, and the Environmental Protection Agency and Michigan Department of Environmental Quality in the US. Processes are in place to keep up to date on regulatory issues and are the subject of regular audits.

Many of Ricardo's clients require certification to the environmental management system standard ISO 14001 for their key suppliers. We are accredited to this standard in our technical centres in the UK, US, Germany and Czech Republic. The application of the policy is defined by appropriate processes and procedures as part of the quality system in each division. Many of these are closely linked to both quality and health and safety procedures. Individual divisions focus on continuous improvement based on their emission footprints and business needs.

Business processes within the ISO 9001 certifications are used to ensure the appropriate staff members are appraised, objectives are set and training needs are identified. Best practice is shared between divisions by internal audits and discussions between quality, health, safety and

environmental managers. The suite of certifications and the supporting internal and external audit programmes are used to check policy effectiveness and identify improvement opportunities. Staff training in health, safety and environmental matters is a priority and is reviewed annually as part of normal appraisal processes. We are registered in the UK for the Carbon Reduction Commitment ('CRC'), but Ricardo does not engage in carbon trading as we are not required to.

### Governance – CSR

The Board as a whole reviews the key elements of corporate social responsibility on an annual basis. To underline the importance of integrity in all relationships between employees and stakeholders, we have ethics, fraud prevention and whistle-blowing policies which are communicated to all employees. A summary of these is communicated externally via 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 whistle-blowing policy we provide a procedure for any employee to raise any malpractice concerns in an appropriate manner, with protection to the whistle-blower.

### Health and safety – operations

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 fully 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 OHSAS18001 in our technical centres in the UK, US, Germany and Czech Republic. Ricardo Energy & Environment has a RoSPA Gold Award; a demonstration of our commitment to good governance and to being an employer of choice. Our Health and Safety Policy is widely available via the intranet and to the public via the website.

### Health and safety

Reportable accidents



Based on current RIDDOR definitions

Good relationships are maintained with local regulators in the main territories in which we operate. We recognise the level of reportable accidents as a primary performance indicator. The number of reportable accidents decreased from 2014; the level is still low overall and shows the 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.

### Health and safety – chemical risk

The National Chemical Emergency Centre ('NCEC') at Ricardo Energy & Environment is delivering chemical emergency response telephone advice to 50% of the world's top 100 chemical manufacturers and over 400 other organisations. As the UK chemical emergency centre we also receive a grant from Government to provide support to the emergency services, a role we have undertaken for 42 years. The economic impact of our work is significant, providing a saving of £2.8m in the last year for the Company and ensuring not only the efficiency of



Rt Hon Matthew Hancock MP, then Minister for Small Business, Industry and Enterprise, signing the Coast to Capital Growth Deal at Ricardo in March 2015



Ricardo staff volunteer their time as part of a 'Give & Gain' day, at Stanmer Community Garden in Brighton



At the Ricardo Detroit Technology Campus a symposium entitled 'Innovation, Sustainability & Mobility: Shared Visions Shaping the Future' drew a highly influential all-female panel of leading industry Experts

valuable emergency services but also reducing the impact of incidents on UK transport infrastructure amounting to savings of millions of pounds.

**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 where we operate and by expecting the same from our suppliers. We articulate this via our Values and Code of Conduct, which contain the following relevant policy elements:

- 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;
- We will not engage in activity that can be considered as trafficking in persons, including the use of forced labour or

procurement of immoral services for the performance of contracts;

- There should be no discrimination against, or harassment of, any employee or job applicant either directly or indirectly;
- Encourage all our employees to take an active role against all forms of discrimination and harassment; and
- Ricardo will only employ or use 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.

**Suppliers**

Relations with the supplier community are regarded as an essential ingredient in

achieving client and shareholder satisfaction. Our policy is that key suppliers should be certified to ISO 9001 and ISO 14001, and all suppliers are encouraged to obtain these certifications. Where a choice between suppliers is possible, various procurement methods are used, depending on the type of product or service being procured. For service functions for our main sites, 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 tied to any suppliers in such a manner as to jeopardise the independence of the business. Initiatives being managed by our Head of Global Procurement are delivering a number of savings by consolidating the supply base and in some cases by securing better rates for longer-term contracts. We strongly encourage our suppliers to comply with our Code of Conduct or their own equivalents.

**Local communities**

It is our policy objective to make a positive contribution to all countries and communities in which we operate, particularly in education in areas local to our main sites. Most of the larger Ricardo offices support local community activity and give charitable donations, particularly where employees participate in community or charitable fund-raising activities, many of which have been linked to celebrating the Company's centenary. The focus is on creating sustainable links and on improving the image and understanding of the business and the engineering profession in the community. These activities are often used as development opportunities for staff as part of their career paths. Examples in education include the provision of work experience placements for local schools, active engagement in STEM events across the education age range, promoting engineering and Ricardo at careers fairs, and by employees acting as school and academy governors. We have a number of higher education relationships with universities close to our major sites. These support our R&D agenda as well as cementing community relationships.

Our community engagement in the UK is broadening with Business in the Community ('BITC'), a business-led charity focused on responsible business: within this scheme we work with local academies close to our



Jonathan Stafford and Thomas Collyer hiked up Snowdon as part of the Ricardo100 Global Challenge in order to raise money for the charity Engineers Without Borders



A STEM event for pupils at the Shoreham Academy



A STEM project was supported by Ricardo staff at Steyning Primary School, where children aged 9 – 11 years were helped to build their very own functioning and drivable electric car – known as a Green Goblin – based on a kit

larger UK sites and undertake community engagement projects as part of their 'Give and Gain' programme. We have some employee-led health-related activity, with several sites engaging in the 'Movember' campaign to raise funds for prostate cancer.

Community engagement promoting STEM and diversity has been a key part of our employee involvement during our centenary year. A wide range of activities have been undertaken:

- The Ricardo Global Challenge, where teams have been taking a variety of Ricardo-related vehicles around the world and raising money for charity

(pages 52 to 55). Over 60 staff took part in this and are raising money for a range of charities, which will be added to by the Company. More details can be found on our special centenary microsite: [ricardo100.com](http://ricardo100.com);

- An all-female panel of leading industry experts at our Detroit Technical Centre discussed 'Innovation, Sustainability & Mobility: Shared Visions Shaping the Future';
- A series of family open days at our larger sites around the world over the summer has provided opportunities for our families to get a view of our heritage and current activities and to thank them for their support;

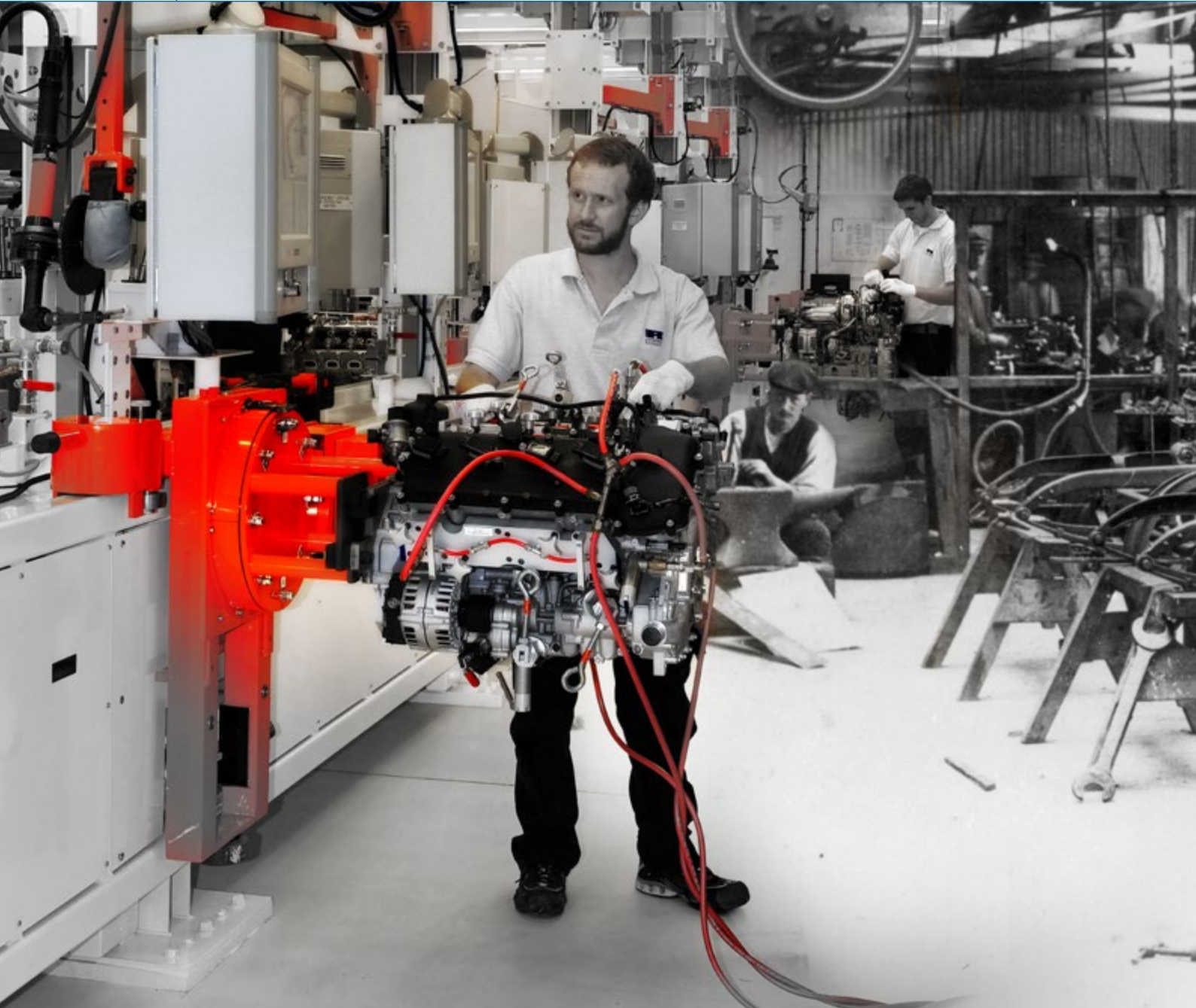
- The award of the first Ricardo scholarship to a student of Northbrook College, near our Shoreham headquarters. This will provide financial support and summer work placements during his studies for an engineering degree; and
- Presentations of the Ricardo Centenary Lecture at Ricardo various locations, including conferences and to professional bodies around the world, as well as presentations in schools and colleges.

We also work with our local communities to provide business input on economic regeneration, and we actively engage in local partnerships, particularly around Shoreham, where we are the largest private sector employer in the Adur District. To this end we actively supported the Greater Brighton City Deal, which secured public and private investment for the area and hosted the signature of the Growth Deal for the Coast to Capital Local Enterprise Partnership.

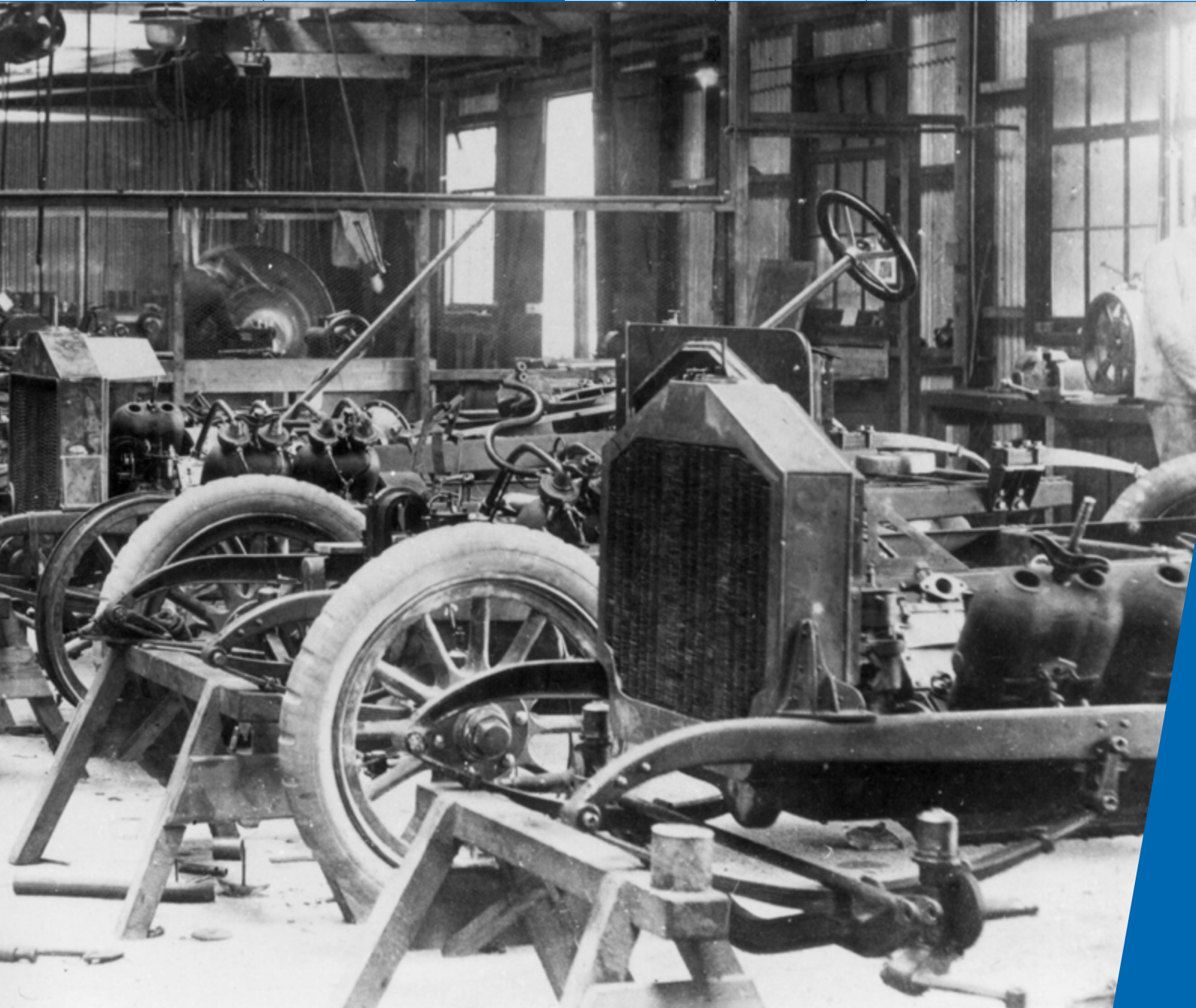
We often match staff donations to charitable activities, particularly where there is active staff participation in events. Financial contributions to charities in the year to 30 June 2015 were £11,816 (2014: £17,798). The effectiveness of these policies is informally measured by community feedback.

Our 2015 Strategic Report, from page 6 to page 41, has been reviewed and approved by the Board of Directors on 9 September 2015

**Dave Shemmans**  
Chief Executive Officer  
9 September 2015



# Case studies



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# New technologies for wind energy

Developing new reliability innovations to help  
make wind energy a more commercially attractive  
proposition on land and offshore



As the dash for offshore wind development continues across the UK and continental Europe, the need for world-class design processes and new technological innovation has never been greater, and in both of these respects, Ricardo is leading the way.

While offshore windfarm locations bring a generally higher speed and greater consistency of wind conditions, and also enable much larger and more efficient turbine designs to be used, the ability to convert wind resource into revenue for energy sold into the power grid is crucial for commercial success. Turbine failures lead to unplanned maintenance costs and lost energy production – factors that are compounded offshore by the challenge of accessibility. With a requirement for highly skilled personnel, specialist equipment and support vessels, as well as windows of favourable weather for reliable access to installed turbines, operation and maintenance costs present a significant, unpredictable and highly variable

*"The Ricardo MultiLife™ wind turbine bearing system offers the potential to significantly extend bearing life – by in excess of 500 percent in rig tests carried out to date"*



burden on the total cost of energy generated. Of the factors that can lead to turbine failures – whether on land or offshore – poor reliability of turbine drivetrains is generally accepted as being consistently one of the most significant causes.

### Ensuring turbine drivetrain reliability through design

Ricardo has been in the business of assisting wind farm developers and turbine manufacturers to improve the reliability of their drivetrains for a number of years. In late 2011, the Company was contracted to support the design of a new compact gearbox for the new Samsung Heavy Industries (SHI) 7 MW offshore turbine. DB Wind (formerly known as David Brown Gear Systems) had been selected by SHI as the turbine's gearbox supplier. While DB Wind would develop the design concept, it contracted Ricardo from the very early stages of the programme to support this effort in parallel. Ricardo was required in this project to provide engineering support to DB Wind's design programme in order to help ensure that overall cost-of-energy targets were met. This involved us participating

in a concept design review of the gearbox and drivetrain, followed by structural strength and fatigue analysis, multi-degree-of-freedom dynamic analysis of the drivetrain, validation of selected key components, and system rig test planning and execution, including vibration measurements and analysis. In addition to these practical aspects of the design process, Ricardo also assisted in aspects of DNV (Det Norske Veritas) certification of the overall drivetrain design.

### New Ricardo innovations to improve turbine life

While the use of advanced computer aided engineering simulation methods has become an essential tool in optimising wind turbine drivetrains, Ricardo believes that achieving further significant gains in reliability and design – and consequent reductions in the cost per kilowatt hour of energy generated – will require the application of completely new drivetrain innovations. For the past few years, therefore, Ricardo has been actively pursuing the development of a range of technologies that are aimed at providing a transformative effect on the reliability and robustness of wind power drivetrain systems.

Forensic investigation undertaken by Ricardo on behalf of wind energy clients has identified an important similarity in bearing failure mechanisms commonly arising in wind turbine gearboxes. Wear on the inner race of bearings in the inaccessible planetary stages of the gearbox tends to be concentrated over a small arc of some 40 degrees and can lead to premature failure, whilst the remainder of the race remains unworn.

The Ricardo MultiLife™ wind turbine bearing system offers the potential to significantly extend bearing life – by in excess of 500 percent in rig tests carried out to date – irrespective of the root cause of the bearing damage. This is achieved by rotating the inner race of the planet bearings on an as-needed or scheduled basis, which ensures that the fatigue damage or wear never reaches a critical localised condition during the turbine life. Put simply, the entire 360 degree circumference of the race is more gradually expended, not just 40 degrees of it. As a result, unplanned removal and repair of the gearbox – which can be a particularly costly maintenance operation for offshore turbines – can be avoided.

The MultiLife™ concept was originally designed for retrofit to existing turbines with minimal modification to the gearbox. In recent discussions, suppliers of new gearboxes have sought assurances of 25-year device life to support their extended warranties. A larger-scale version of MultiLife™ is also applicable to the races of certain types of direct-drive turbine main bearings that suffer damage from sustained lift and gravity loads.

### Wind farm testing

As part of Ricardo's OWDIn (Offshore Wind Drivetrain Innovation) project, part funded by the UK government's





Department of Energy and Climate Change, a MultiLife™ system has now been installed for live validation trials at the Barnesmore wind farm operated by ScottishPower Renewables in County Donegal, Ireland, a location that is known to experience aggressive wind conditions. This work – in which Ricardo is collaborating with ScottishPower Renewables and the Universities of Sheffield and Strathclyde – will enable the full potential to be evaluated for the first time in an operating wind farm environment.

In addition to its assessment of MultiLife™, the OWDIn project is also acting as a demonstration of a further Ricardo innovation aimed at extending wind turbine drivetrain life. Ricardo's TorqLife™ concept is a unique and highly innovative dual-function coupling that avoids drivetrain overloads and consequent failures. It is based on an arrangement of hydraulic cylinders between the rotor shaft and gearbox, or direct-drive generator, which are able kinematically to isolate non-torque loads and enable peak torque truncation to bring the torque to within acceptable limits. This Ricardo innovation offers the prospect of enabling wind turbine drivetrains to survive in the harshest conditions for their full 25-year operating life without major maintenance intervention.

### Condition monitoring innovation

While MultiLife™ and TorqLife™ are aimed at delivering through-life turbine reliability, the ability to identify incipient failures in the field remains a significant commercial priority for wind farm operators. As such,

knowledge of the condition at any given moment of key drivetrain system components can be extremely valuable in the scheduling of repairs in advance rather than reacting after the event. For this reason Ricardo is also working on the development of next-generation sensor technology for better and more effective condition monitoring.

Ricardo SensorLife™ focuses on the practical application of acoustic and ultrasonic sensors with advanced signal processing techniques for detection of early-stage faults for bearing and mechanical drivetrain condition monitoring. With these techniques, the sensor data not only gives advanced warnings of system health issues, beyond the current state-of-the-art, but can also potentially be used to develop remaining useful life predictions for key components in the drivetrain, whether direct-drive or geared.

With its advanced simulation-led design capability and range of innovations to extend turbine drivetrain life and provide through-life monitoring, Ricardo is making a tangible difference in improving the commercial case for wind energy.

In addition, this same body of expertise and experience is also being applied to tidal stream turbines with the UK Offshore Renewable Energy Catapult recently asking Ricardo to lead a project to develop reliability design processes and simulation tools for tidal stream powertrains. In this way Ricardo is helping to ensure that these valuable and clean sources of renewable energy can be exploited to the full.

Ricardo MultiLife™ was installed and commissioned in early 2015 on a 600 kW turbine at the Barnesmore wind farm operated by ScottishPower Renewables in County Donegal, Ireland

# McLaren engine manufacture shifts into high gear

Ricardo's advanced engine production facility has been developed to double its production capacity and treble its floor area, consolidating all associated inventory management and inspection functions in a single unit, following the award of the Company's largest ever contract – to support the future requirements of McLaren's ambitious model range expansion



Announcing the supercar engine manufacturing supply agreement with Ricardo in 2011, McLaren Automotive promised that the launch engine – the 600PS (592hp) twin-turbo V8 codenamed M838T, developed in collaboration with Ricardo – was just the beginning and that it would form the core of a whole family of engines to power a wide range of McLaren supercars.

Four years down the road, McLaren has been supremely successful, its road cars prized by sports enthusiasts on every continent and its track models highly regarded by race drivers. True to McLaren's word, distinct three tier model range – Sports Series, Super Series and Ultimate Series – has now become established, with at least double that number of individual models. As McLaren is successful in expanding its range, so too is Ricardo in managing the processes of high quality, high performance engine manufacture.



*"McLaren has extended the supply agreement to 2020 and beyond, calling for a doubling of production volumes as well as the inclusion of several additional engine variants."*

In December 2013 McLaren had shown its faith in Ricardo by drawing up a new and even more ambitious supplier agreement, extending the supplier contract to 2020 and beyond and calling for a doubling of production volumes as well as the inclusion of several additional engine variants. Now, Ricardo was asked to provide capacity for up to 5000 engines per year.

### **Significant expansion of manufacturing operations**

With each of these moves adding substantially to the scale and complexity of the manufacturing operation, Ricardo decided to embark on a major extension of its state-of-the-art engine manufacturing facility. The original 600 square metre building would continue to house the innovative and highly regarded ten-station core assembly process, but in order to simplify material and component flow processes, it was decided to move the entire logistics and support operation into a new adjoining building measuring a further 1200m<sup>2</sup>.

The new building also concentrates previously dispersed functions such as delivery of goods, metrology – where components are minutely inspected – and prototype build and re-work stations. An incidental advantage of physically separating the manufacturing phase from the unpacking and preparation of incoming components from suppliers is that packing materials are kept well away from the assembly process, making it easier to maintain the near clean room conditions necessary for the assembly environment.

### **Improved inventory management and parts flow**

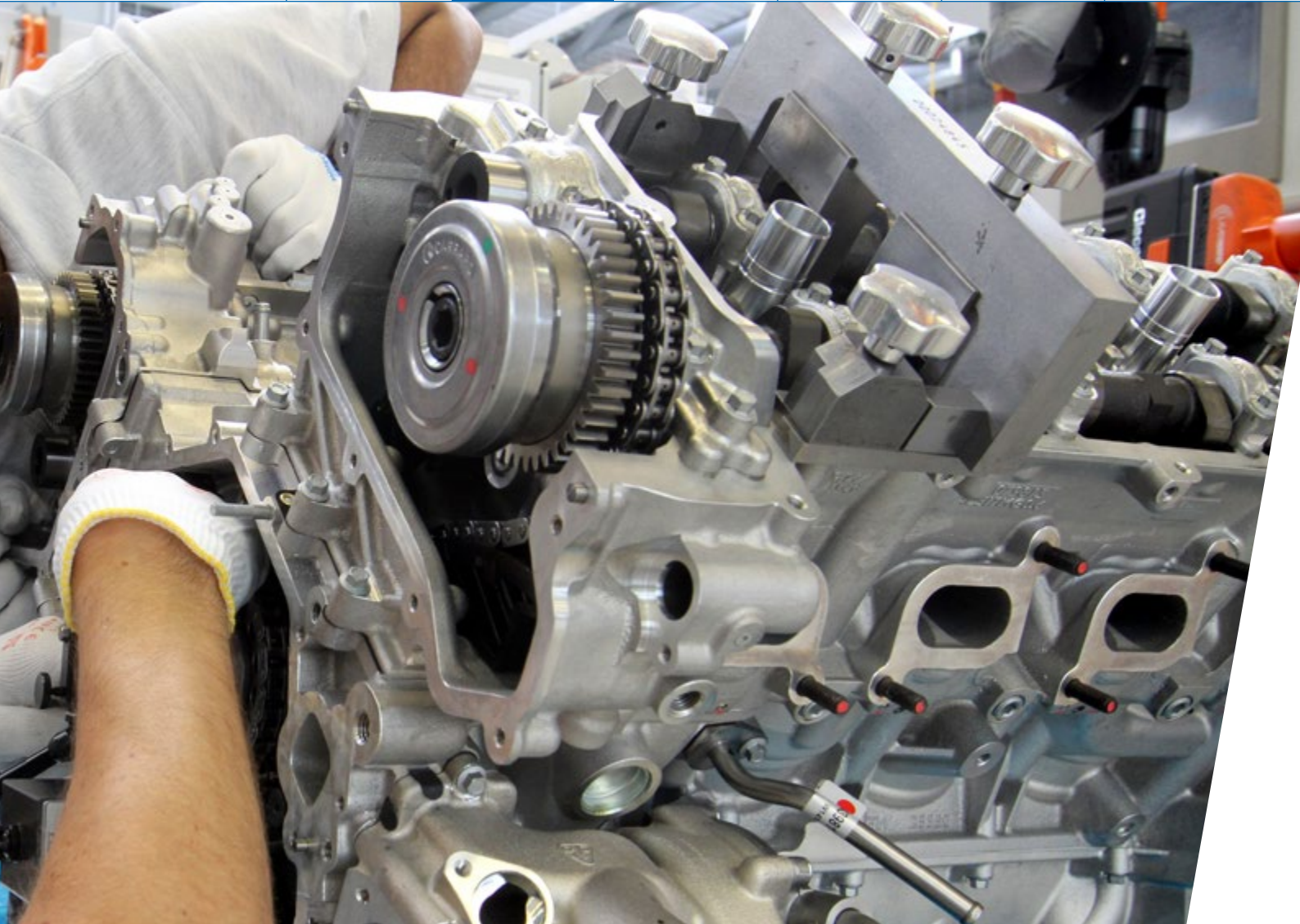
Knowing that an even greater variety of engine derivatives was in the pipeline, and conscious of the future need to stock an expanding range of spare parts and service kits to support every McLaren model until the end of its warranty life, Ricardo has provided for extensive racking to store the vast range of part numbers. For example, every McLaren model has a different specification of turbo, and all must be stocked and available for immediate picking.



In parallel with the greater complexity of engine types and the move towards remote racking, Ricardo manufacturing specialists took the opportunity to upgrade the process by which components are brought to each engine for fitting. Instead of parts being individually picked by the assembly operator, complete component sets, or kits, are pre-grouped for sub-assemblies such as the inlet system and the reciprocating components and are delivered to the appropriate assembly station. This simplifies the picking process, improves efficiency and adds a further dimension of confidence in ensuring absolute quality. In addition, Ricardo already has safeguarding measures such as differently sized bolt heads and fittings that automatically prevent the wrong components being installed.

While Ricardo's innovative ten-station 'no faults forward' assembly process remains the same as before, a selection of new machines enables the line to work fractionally faster, with eleven engines now possible in a working shift. But even that boosted capacity is still only half the volume required to satisfy McLaren's increased appetite for Ricardo-built engines.

Rather than duplicating the arrangement of assembly and sub-assembly stations, Ricardo planners opted to



make the existing machinery work harder by moving to two shifts a day. As from the first quarter of 2016 the two-shift pattern will begin to be introduced, with weekly output gradually ramping up.

Test cells, with their sophisticated monitoring equipment, represent a large capital investment and until now the single dedicated cell in the original McLaren manufacturing area has been run on a one and a half shift schedule to keep pace with the facility's daily output. In deciding to invest in a second and even more advanced cell, Ricardo is not only doubling its McLaren engine testing capacity but also providing added security: should one cell fail or require routine maintenance, the whole production flow will not be halted.

A further and somewhat less technical complication of two-shift working is that the rest of the research, engineering and administrative staff on the Shoreham site work a conventional single-shift day, meaning that the canteen and other essential facilities may be closed at times when McLaren engine assembly staff are working. The answer was for the architects of the extended building to include offices, meeting rooms, crew rooms and a staff kitchen in the new facility, along with dedicated secure entrances and a goods-out bay to make

the engine manufacturing unit fully independent from the main Ricardo complex.

Other enhancements introduced at the same time as the expansion include solar panels to generate electricity from the roof surface, and feeding back into the mains grid the substantial energy dissipated by the 600 hp-plus engines as they are put through their paces in the test cells.

### Technical and commercial success

When the Ricardo engine manufacturing unit was originally opened in 2011 it was widely praised for the highly innovative manner in which it blended the high quality 'no faults forward' culture of mass manufacture in a high performance low to medium volume context. The fact that just four years later, the facility has been expanded based on an investment of similar scale to its original development, is testimony to its commercial success – and that of the McLaren supercars that use the engines it assembles.

In addition to being a success in its own right, the unit also demonstrates the very best of the Ricardo 'Performance Products' business model; manufacturing high-quality, high-performance products that have been engineered and developed by Ricardo.

Ricardo has already built over 6000 high-performance engines for McLaren, and the new contract provides for the assembly of up to 5000 engines per year

# One hundred years of innovation

Ricardo celebrates its 100th birthday this year with a host of special events and projects which not only salute its glorious past but which – vitally for a Company whose very lifeblood is innovation – look forward to developing solutions for the challenges of the next 100 years





# RICARDO

## 1915-2015

One hundred years ago this year, Engine Patents Ltd – which would soon become known as Ricardo & Co – registered for business. Before long, its shy and quietly spoken engineering genius founder, Harry Ricardo, would become celebrated as the man who developed the efficient, reliable and smoke-free engines that allowed the British tanks to operate successfully on the western front and help bring the First World War to a close.

Harry Ricardo succeeded where scores of other engineers had failed. His secret was a rigorously scientific and analytical approach to every engineering challenge, and it was this over-arching philosophy that guided Ricardo and his colleagues



One of the highlights of the Ricardo centenary year celebrations, the Ricardo100 Global Challenge commenced at Shoreham in May

to the rich variety of patented innovations that triggered many of the step changes in automotive engineering throughout the 20th century. Two of the most celebrated early developments are the Turbulent Head, which allowed simple petrol engines to develop the power and efficiency of more complex overhead valve units, and the Comet Combustion Chamber, which revolutionised the high-speed diesel engine and opened the door to the highly efficient diesels that dominate today's car market.

Knighted in 1949 for his services to the internal combustion engine industry, Sir Harry Ricardo was something of an engineering polymath: he was as intrigued by the challenges of intricate aero engines and mighty locomotives as economical passenger car engines, high-performance motorsport and the

thermodynamics of combustion. But whatever the area of focus, the watchwords were the same: energy efficiency, optimum use of resources, and protection of the environment.

And today, with four decades having elapsed since Sir Harry's death, that powerful ethos is clearer than ever, guiding the Company's every action and informing its holistic vision of the future – a future where those protective values are sure to become even more relevant than they were in Sir Harry's day.

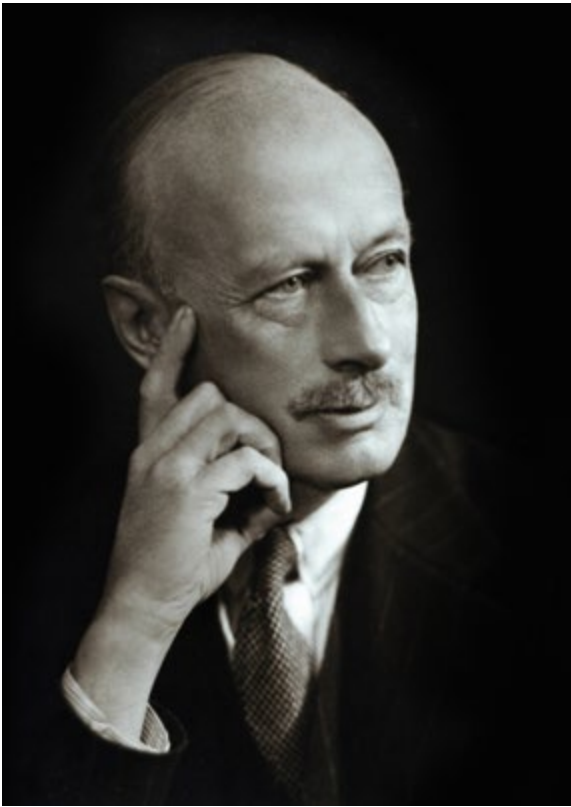
That is why in celebrating its centenary, Ricardo is looking as much to the challenges of the future as to the glories of its past, examining how the accumulated wisdom of a hundred years of innovation can be brought to bear on an uncertain future where climate change and other global phenomena pose an existential threat to nations and populations.

### The Ricardo100 Global Challenge

A round the world charity rally, the Ricardo 100 Global Challenge, kicked off in May to unite many famous vehicles – old and new, large and small – housing breakthrough Ricardo technologies. It also linked together teams from







Ricardo's many divisions and worldwide locations, visiting long-standing Ricardo customers in Europe, India, China, Japan and the United States, and paying homage to some of the sites of Ricardo triumphs.

In fact, a roll-call of the vehicles taking part in the charity relay gives a vivid picture of the technologies pioneered by Ricardo and launched into production models: the grand Le Zebre sedan of 1923, designed in its entirety by Ricardo and featuring the Turbulent Head engine; the Citroën Rosalie, with a Ricardo Comet diesel, was the world's first commercially available diesel passenger car, and at the very opposite end of the spectrum the ultra-modern McLaren 12C, powered by an advanced twin-turbo V8 engine designed and developed in collaboration with Ricardo and manufactured in a dedicated facility at Ricardo's Shoreham headquarters.

Across central Europe, engineers from Ricardo Motorcycle drove some of the impressive BMW motorcycles they have helped to develop. The Ricardo India leg of the relay crossed the Himalayas towards China aboard a pair of Mahindra Scorpios with transmissions engineered in a collaboration with colleagues at the Ricardo UK

transmission and driveline team. Across North America, teams took up the baton with heavyweight machinery in the shape of the Hummer H2 and the Dodge Challenger muscle car, both with significant Ricardo US engineering input. One particularly poignant location on the itinerary was Bonneville Salt Flats in Utah, a long-standing favoured location for world speed record attempts. It was here on the vast, dried-up seabed that the Ricardo-engineered Flying Spray took the world diesel land speed record in 1936 and also where, almost 70 years later, a new Ricardo team set a fresh record in 2006 with the JCB Dieselmax using a pair of off-highway JCB engines upgraded by the Company especially for the purpose.

On returning to the UK, Ricardo Energy & Environment teams started the UK return legs starting in Glasgow and heading south through the consultancy's facilities at Harwell and London. The electronics engineers of Ricardo Cambridge and transmission and driveline teams from Leamington also ran legs of the relay. In the case of the latter, this included use of the iconic Jensen FF, the world's first 4x4 passenger car. With the baton returned to Shoreham in a McLaren 12C on July 24, the final ceremonial leg to the doors of the new Vehicle Emissions Research Centre was driven in the Le Zebre sedan by Dr Camilla Bosanquet, daughter of Sir Harry Ricardo, coinciding with the formal dedication of this new world-class emissions testing facility on July 28.

Also part of the centenary celebrations has been the commissioning of an ambitious limited-edition book documenting the Company, the key personalities, projects and products in its history, and the step changes in technology it gave to the world. The book concludes with a section in which Ricardo specialists turn their thoughts to the likely shape of the planet – arising from possible future socio-technical changes – a century from now in 2115.

In this same vein, throughout the centenary year a programme of lectures and presentations by leading Ricardo engineers in major cities and conferences worldwide is presenting a clear vision of the coming century and how technology and engineering innovation will play an essential part in assuring our future.


### Celebrating the past – looking to the future

Ricardo is one of very few companies worldwide that can demonstrate an uninterrupted, century-long commitment to pushing the boundaries of energy efficiency and clean technology. This is clearly a cause for celebration for our employees past and present, for our customers and for our many other stakeholders around the world.

It was a hundred years ago that the young Harry Ricardo formed his Company to tackle some of the most pressing problems of the time. This is a baton that is willingly and enthusiastically picked up for the century ahead by today's Ricardo plc in helping to deliver the technologies and innovations that will help create a truly sustainable future for the generations that follow.

The first major commercial success for Harry Ricardo (left) and the Company today known as Ricardo plc, came in the design of an engine which transformed the performance of the world's first battle tank (opposite, middle), while one of its most recent was the design and manufacture of the Ocelot/Foxhound (opposite, bottom)





# The road to Paris – and beyond

With their many decades of international experience, consultants from Ricardo Energy & Environment have been helping countries large and small to prepare for a new worldwide climate regime at the COP21 talks in Paris in December



Ricardo Energy & Environment is helping countries around the world to prepare for the landmark international climate change negotiations in Paris in December 2015. Almost 200 countries will be represented at the negotiations, and for the first time in many years there is real optimism about a global agreement to limit greenhouse gas (GHG) emissions. The hope is that the Paris conference will result in a new international climate regime covering the actions to be taken by all countries – including emerging developing economies – for the period after 2020. Alongside increased action in the pre-2020 period, this would be a major step in efforts to prevent dangerous climate change.

Over the past three years Ricardo Energy & Environment has been supporting countries preparing not only for the Paris negotiations but also for the challenges of implementing the actions which countries will be committing to take in the years to come. From providing advice on initiatives to reduce the man-made emissions that drive climate change to measures to adapt to its effects, the climate consultants of Ricardo Energy & Environment are regarded as leaders in their field, drawing upon a track record of more than 30 years of experience.

### Ensuring developing countries can participate effectively in negotiations

To ensure that developing countries are as well prepared for the Paris negotiations as they can be, Ricardo Energy & Environment has been running a major programme funded by the Climate Development Knowledge Network to build capacity amongst climate negotiators from the poorest and most climate vulnerable countries. This has included running negotiator training workshops in Peru, Colombia, Ethiopia, Sudan and Qatar, and an e-learning course from which nearly 400 participants from developing countries have graduated.

### INDCs - building blocks of the post-2020 climate regime

Countries around the world are currently preparing to submit details on how they intend to contribute to global action to tackle on climate change. These Intended Nationally Determined Contributions, or INDCs, will typically include a national target for GHG emissions together with a rationale as to why that action is fair and ambitious alongside their implementation plans. Developing countries are also likely to include how they plan to adapt to the impacts of climate change. Already more than 30 countries including the EU and US have submitted their INDCs and by Paris it is anticipated that INDCs covering more than 85 percent of global emissions will have been submitted.

Ricardo Energy & Environment is using its many decades of policy support to UK and European governments to help countries around the world develop their INDCs. Its experts in GHG emissions, emissions reductions policies, scenario modelling, and climate change adaptation and finance, are helping countries establish the evidence base for INDCs. The consultancy has INDC projects in 12 countries in Africa, Asia, Eastern Europe and the Middle East. Further projects are expected as the deadline for submissions approaches. Ricardo Energy & Environment has also worked with the Climate Development Knowledge Network to develop an INDC guide for least developed countries and small island states based on lessons learned from projects to support INDC development.

### Creating enabling environments for low carbon policies

Ambitious plans are nothing without implementation and Ricardo Energy & Environment has been working with governments across the world to ensure that they are ready to implement their obligations under the new Paris Agreement and to take advantage of new sources of funding.

The Green Climate Fund will be the centrepiece of efforts to mobilise \$100 billion by 2020 to fund action to tackle climate change in developing countries, but countries need to ensure that they have the institutions and skills to make best use of funding. Ricardo Energy & Environment has been promoting this initiative by delivering support in Bangladesh, Vietnam, Thailand and Tanzania, to assist them in accessing the Fund. It has also completed a comprehensive review of India's ability to access and mobilise climate finance, including recommendations on how to ensure that the country can successfully access funding needed to implement its national and state climate plans.

This funding will only be effective if countries can attract private sector investment through the establishment of stable regulatory frameworks for low-carbon technologies. Ricardo Energy & Environment's new practice, PPA Energy, is expert in developing national frameworks for energy regulation, with a particular focus on renewable energy strategies, policies and regulations. PPA has carried out projects including advice on feed-in tariff design and structure, grid connection systems and power purchase agreements in more than 90 countries across the world, including 28 in Africa.

Implementation needs to be tracked and success stories replicated, and through the Information Matters project we have been building capacity in monitoring, reporting and verification systems in the Philippines, Ghana, Dominican Republic and Chile. These systems will not only allow countries to report internationally and to donors on their actions but will also improve national policy making by ensuring that lessons learned are captured and replicated.



### Supporting national emission reduction actions

The engine room of action on climate change covering the period before and after 2020 will remain effective emissions reduction policies or, in UN speak, Nationally Appropriate Mitigation Actions. These will include carbon pricing instruments such as carbon taxes and emissions trading systems, measures to encourage deployment of renewables like feed-in tariffs and sectoral policies to reduce energy demand and limit emissions.

Ricardo Energy & Environment's deep technical expertise in emissions reductions – in particular in sectors such as transport, waste and industrial energy efficiency – is particularly sought after by countries designing national policies, with ongoing projects in India, Jordan and Vietnam. Tools to model transport emissions which were developed for European Commission have been used in South Africa and hopefully will in the future be used, as part of INDC implementation, in other countries.

### Co-benefits of climate action

New initiatives are seeking to combine action on climate change with improvements to air quality, water resources, energy access and sustainable urbanisation.

While reducing greenhouse gases may be the most immediate hook for securing support from international donor agencies, developing countries are more likely to be motivated by immediate drivers relating to the quality of their local environment and how to increase available resources than by the emissions reductions themselves. Ricardo Energy & Environment is working with a number of countries on how to address these so-called co-benefits of climate action.

In China and India, for example, Ricardo Energy & Environment is working to improve the air quality of some of the world's most polluting cities. In Jordan, Ricardo Energy & Environment is reviewing how to use policies to put a price on emissions as a driver to improve the energy efficiency of water resource

management, while in Bangladesh our work on the INDC includes efforts to improve access to sustainable energy in rural areas.

Cities are the place where rubber hits the road as the nexus between development, sustainable use of resources and GHG emissions. We are working with C40 – the network of the world's megacities committed to addressing climate change – to build high quality inventories in 12 global cities which will allow city governments to see where future emissions are going to come from and to plan their development in a way which minimises their carbon footprint.

### Adaptation to future climate impacts

Due to the inertia in the climate system, action to reduce emissions today will take many years to make a difference, so we are already locked in to future changes to our global climate. Adaptation to these changes will be a key part of the Paris climate deal: countries are already developing national adaptation plans aimed at minimising the effects on their economies and population of those impacts. It is hoped Paris will catalyse greater action in this area, including through additional finance, providing further potential opportunities for Ricardo Energy & Environment to make a difference.

In the Country Level Impacts of Climate Change ('CLICC') project, Ricardo Energy & Environment is leading a consortium that includes the UK Met Office and the World Research Institute to work with more than 20 countries including the United States, India and China, and vulnerable states such as Fiji and Nepal. CLICC, a project funded by the UK Department of Energy & Climate Change and supported by the United Nations Environment Programme aims to improve the way country level impacts of climate change are assessed and communicated to both decision makers and potentially the public. Better communication of this information will help connect national plans, international dialogue, finance and research to support implementation of the Paris deal.



# Strength in numbers

Ricardo, Inc. is helping the US Defense Advanced Research Projects Agency (DARPA) in its effort to use a public competition to boost innovation and help achieve a five-fold reduction in development time for next-generation vehicle development

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In the modern era of rapidly evolving mission environments, military planners require new vehicles and materiel systems to be conceived, developed and deployed as fast as possible. From conventional force projection and peacekeeping assignments to asymmetric warfare and counter-insurgency defence, vehicles need to be capable across multiple hostile theatres of operation, and to adapt with previously unprecedented speed wherever new requirements emerge.

By 2010, DARPA had determined that the prevailing model of military vehicle design and development was increasingly incapable of delivering new vehicle innovations sufficiently quickly for these modern requirements. For this reason, the agency initiated the Adaptive Vehicle Make (AVM) portfolio of programmes intended to address revolutionary approaches to the design, verification and manufacturing of complex defence systems, with the aim of achieving a five-fold reduction in the time required for design, development, and manufacturing of new complex military vehicles.



DARPA sought to implement a model-based approach to vehicle development similar to that of the electronics and software industries. In addition to this radical approach to the design process, DARPA also wanted to go much further in what it described as 'opening the aperture for innovation.' Rather than restrict itself to the innovative capacity of a small number of major defence contractors, the agency wished to assess the potential of harnessing the skills and inspiration of a much wider community of interest across the entire United States.

The result was the DARPA FANG (Fast, Adaptable, Next-generation Ground vehicle) Challenge, a \$1-million prize competition open to the U.S. public to design a next-generation military vehicle utilising the tools and processes developed by the agency and its partners. As a part of this endeavour, Ricardo was contracted to administer the Challenge competition, co-ordinating the efforts of a wide range of partner organisations.

### Design libraries, the building blocks of simulation

Ricardo's first contract in preparation for the FANG challenge – in January 2012 – was in the preparation of the Component, Context and Manufacturing Model Libraries (C2M2L) on which the design process would be based. The component model library would comprise the building blocks of vehicle design, starting with powertrain and mobility models. Component models needed to include both generic and extremely high-fidelity representations. For example, an engine 'component class' model would give a broad representation of a generic engine, whereas detailed models needed to be created of all of the candidate engines within the marketplace from which the vehicle's intended power unit could be chosen. To accomplish this goal, Ricardo carried out an in-depth market survey of available engines, including every available attribute of relevance to the design process.

### Setting the challenge

The chosen focus for the demonstration of the DARPA FANG challenge was an amphibious Infantry Fighting





### Building the FANG

Ricardo refined the design data package from the winning team in order to create a technical data package with sufficient detail such that it could be constructed. This package included over 2300 unique components, including all of the necessary detailed dimensions and tolerances. The FANG vehicle was built by the DARPA iFAB team (Instant Foundry Adaptive through Bits), itself led by the Applied Research Laboratory at Penn State University. DARPA's iFAB vision is to move away from wrapping a capital-intensive manufacturing facility around a single product, and towards the creation of a flexible, programmable, potentially distributed network of manufacturing facilities capable of accommodating a wide range of systems and system variants with extremely rapid reconfiguration timescales.

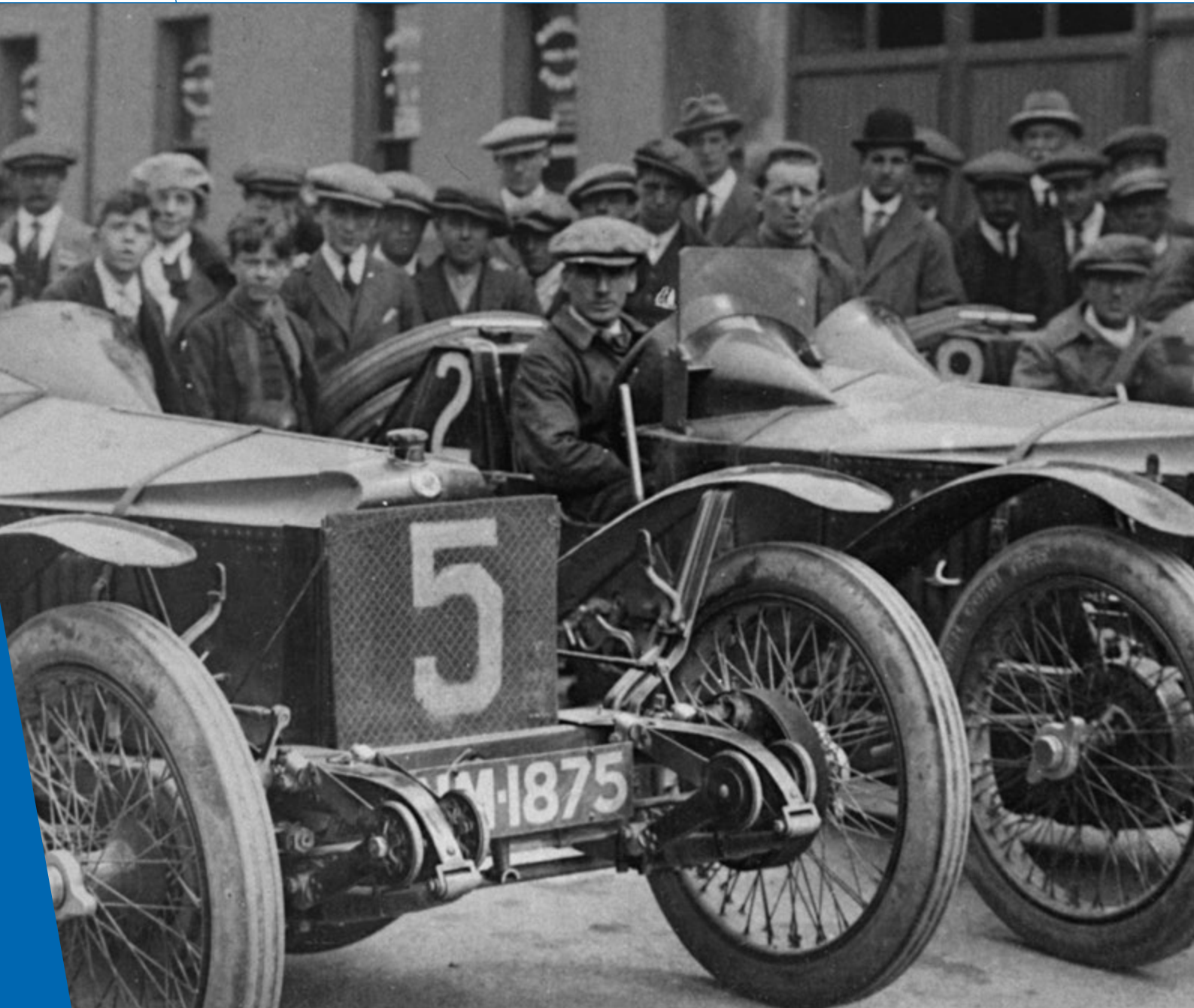
### Validation through testing

With both a powertrain buck and the full prototype vehicle delivered by February 2014, simulation and dynamometer testing of the powertrain was carried out by Ricardo to validate the design parameters, including maximum speed, power, torque, grade performance, and fuel economy. This was followed by shake-down testing of the vehicle and then by a comprehensive range of overall performance testing at the Camp Grayling, Michigan military base.

The FANG challenge successfully demonstrated a range of radical alternatives to the conventional process of defence vehicle design and development. With public competitions increasingly being recognised as a valuable tool in capturing innovation from the widest possible community of interest, Ricardo is developing a reputation as an expert administrator of such competitions. As the DARPA FANG Challenge illustrated, preparation and professionalism are crucial to the success of such endeavours. It was not least due to the success of the DARPA FANG project that Ricardo was selected in late 2014 by the U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy to administer a crowdsourcing initiative – currently in progress – in the renewable energy sector, in the form of the Wave Energy Converter (WEC) prize challenge.

Vehicle (IFV) intended for use by the U.S. Marine Corps Expeditionary Forces (MEF). In administering the first FANG challenge, a key imperative for Ricardo and its partners on the project was to communicate the existence of the Challenge in order to ensure the widest possible participation of suitably qualified teams and individuals – a fundamental requirement of the prize-challenge approach to capture innovation.

The results of the outreach efforts were apparent in the very broad range of media that picked up on the story, ranging from mainstream channels including the Wall Street Journal and Fox News, to more technology-focused media outlets such as Gizmag and Wired. Together with social media initiatives, this publicity resulted in 1,060 registrations of interest in the first FANG challenge by late 2012. Ricardo set a training and pre-screening challenge in order to identify the teams having the most realistic chance of succeeding in the competition. Towards the end of the competition, 19 teams qualified to advance to the final competition, which ran from January to April 2013, with the \$1 million prize awarded to a three-person team with members in Ohio, Texas and California.



# Directors' report



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## Board of Directors



**David Hall** *CBE, MA, MSc*  
**Non-Executive Director, Senior Independent Director**

David Hall was appointed a non-executive director on 21 February 2006 and Senior Independent Director on 18 November 2009. He is 68 years old. He was formerly at the Boston Consulting Group, where he served on the worldwide Executive Committee, was Chairman of BCG's ten global practice groups and had global responsibility for HR. He was also Chairman of the Financial Services Compensation Scheme. David joined Vestra Wealth LLP as Senior Independent Director on 1 May 2013. He resigned as Senior Independent Director on 30 June 2015.

**Peter Gilchrist** *CB*  
**Non-Executive Director, Senior Independent Director**

Peter Gilchrist was appointed non-executive director on 1 December 2010 and Chairman of the Remuneration Committee on 14 November 2013. He is 62 years old. His military career spanned almost four decades in the British Army, his last appointment was at the British Embassy in Washington DC. Earlier, for 4½ years, he was Master General of the Ordnance on the Army Board and an executive director in the Defence Procurement Agency. Peter is currently Chairman of Push Technology Limited, Enterprise Control Systems Limited and the Board of Trustees, Tank Museum. He is also a director of Synergie Business Limited. He was appointed Senior Independent Director on 1 July 2015

**Ian Lee** *BA, CA, CPA*  
**Non-Executive Director**

Ian Lee was appointed non-executive director and Chairman of the Audit Committee in 2008. He is 68 years old and was a former audit partner of Ernst & Young and a member of their UK Governing Council. He was the Convener of the Institute of Chartered Accountants of Scotland Audit and Assurance Committee. Ian was a non-executive director and chairman of the audit committee of Clyde Process Solutions plc. He is currently Vice-Chair of NHS Greater Glasgow and Clyde Board and is the independent external member of the audit committee of the Student Loans Company.

**Hans-Joachim Schöpf**  
**Non-Executive Director**

Hans-Joachim Schöpf was appointed non-executive director on 1 July 2009. He is 72 years old. He was formerly executive vice president at DaimlerChrysler AG, head of Mercedes R&D and member of the board of Mercedes Car Group. Since retiring from DaimlerChrysler in 2004, Professor Schöpf has been appointed to directorships of BEHR and TK Bilstein in Germany and Valmet Automotive in Finland, and is a member of the advisory board of Mahle. In addition, Professor Schöpf was a director of Ballard Power Systems in Canada until the end of 2007. He is an Honorary Professor of the Technical University of Vienna and Honorary Senator of the Technical College of Esslingen. Professor Schöpf retired from the Ricardo plc Board on 30 June 2015.



**Dave Shemmans** *BEng*  
**Chief Executive Officer**

Dave Shemmans, aged 49, joined Ricardo in 1999. He was appointed to the Board as Chief Executive Officer Designate in February 2005, and became the Chief Executive Officer of Ricardo plc on 4 November 2005. Prior to joining Ricardo he was Operations 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.

**Terry Morgan** *CBE*  
**Non-Executive Director and Chairman**

Terry Morgan was appointed non-executive director and Deputy Chairman on 2 January 2014. Terry is 66 years old. He is currently non-executive Chairman of Crossrail Limited, the Manufacturing Technology Centre and the National Skills Academy for Railway Engineering. He is also a non-executive director of Boxwood Limited and has served as non-executive director of the Department of Energy and Climate Change.

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

Mark Garrett joined Ricardo in 1998 and was appointed Chief Operating Officer in 2010. He is 52 years old and is a Chartered Engineer and a Fellow of the Institution of Mechanical Engineers.

**Ian Gibson** *BSc, ACA*  
**Chief Financial Officer**

Ian Gibson, aged 55, was appointed Chief Financial Officer on 1 July 2013. Ian is a Chartered Accountant (originally with Deloitte). He is a highly experienced finance professional with almost thirty years' commercial experience, most recently as Chief Financial Officer of Cable & Wireless Worldwide plc.

**Patricia Ryan**  
**Group General Counsel & 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 and is a member of the Law Society.

# Corporate governance statement

## CHAIRMAN'S OVERVIEW

I am pleased to introduce the Directors' Report for the year ended 30 June 2015. Governance is an important contributor to the success of the Ricardo Group.

The Board is committed to ensuring that appropriate standards of governance are maintained throughout the Group.

This report sets out the way 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.

As part of the Board's succession planning, during the year our Nomination Committee conducted a search for an additional non-executive director and I am pleased to advise that Laurie Bowen joined the Board on 1 July 2015.

## Terry Morgan, CBE



## UK CORPORATE GOVERNANCE CODE

The Board confirms that the Company has complied with the provisions of the UK Corporate Governance Code published in September 2012 ('the Code') throughout the year ended 30 June 2015.

The Code and associated guidance are publicly available on the Corporate Governance page of the Financial Reporting Council's website. [www.frc.org.uk/corporate](http://www.frc.org.uk/corporate).

## THE ROLE OF RICARDO'S BOARD

Our role is 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 of businesses (over a certain size);
- Annual budgets;
- Capital expenditure;
- Financial results;

- Overseeing systems of internal control, governance and risk management;
- Dividends; and
- Appointment and removal of directors and company secretary.

The full schedule of matters reserved for our decision is available on our website ([www.ricardo.com](http://www.ricardo.com)). We delegate certain responsibilities to our Nomination, Audit and Remuneration Committees. 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 us.

There are eight scheduled Board meetings a year and otherwise as required. Details of attendance at scheduled Board and Committee meetings are shown in the table opposite. 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. The Board agenda is set by the Chairman in consultation with the Chief Executive Officer and the Company Secretary.

We spent considerable time focusing on the Group strategies and reviewing progress against respective objectives. We held a strategy meeting in November 2014 at our Midlands Technical Centre at which we agreed and set the strategy for the next five years.

	Board meetings	Committee meetings		
		Audit	Remuneration	Nomination
Number of scheduled meetings in the year	8	3	5	1
Number attended by each member:				
Michael Harper*	3	–	3	–
Hans-Joachim Schöpf**	7	3	5	1
David Hall, CBE	6	3	4	–
Ian Lee	8	3	5	1
Peter Gilchrist, CB	8	3	5	1
Dave Shemmans	8	–	–	1
Mark Garrett	8	–	–	–
Ian Gibson	8	–	–	–
Terry Morgan, CBE***	8	2	4	1

\* Michael Harper resigned 29 October 2014

\*\* Hans-Joachim Schöpf retired from the Board 30 June 2015

\*\*\* Terry Morgan appointed Chairman 29 October 2014

Every June we hold a business planning session during which each divisional Managing Director presents their budgets for the following year for review and approval by the Board.

## BOARD COMPOSITION AND INDEPENDENCE

As at 30 June 2015 our Board comprised five non-executive directors and three executive directors as follows:

Terry Morgan, CBE	Non-Executive Chairman (independent at the time of appointment)
Dave Shemmans	Chief Executive Officer
Ian Gibson	Chief Financial Officer
Mark Garrett	Chief Operating Officer
David Hall, CBE	Independent Non-Executive Director and Senior Independent Director
Ian Lee	Independent Non-Executive Director and Chair of Audit Committee
Peter Gilchrist, CB	Independent Non-Executive Director and Chair of Remuneration Committee
Hans-Joachim Schöpf	Independent Non-Executive Director

Michael Harper resigned as Chairman of the Board on 29 October 2014.

Terry Morgan became Chairman of the plc Board at the close of the AGM on 29 October 2014.

David Hall resigned as Senior Independent Director on 30 June 2015 and Peter Gilchrist was appointed as Senior Independent Director in his place.

Hans-Joachim Schöpf retired from the Board on 30 June 2015. Biographies of directors, giving details of their experience

and other commitments are set out on pages 66 and 67. 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.

On 1 July 2015 the Company announced that Laurie Bowen had been appointed as a non-executive director to the Board. Laurie has most recently been Chief Executive Officer of Business Solutions for Cable & Wireless Communications since 2014 and was previously President of Enterprise Business & Growth Ventures for Tata Communications since 2012. Laurie was also a non-executive director of Transcom Worldwide during that time and has an MBA and BScs Electrical Engineering and Computer Science from Washington University in St Louis.

The Board has concluded that Terry Morgan CBE, Ian Lee, David Hall CBE, Peter Gilchrist CB and Laurie Bowen are independent in character and judgement. They have never been employees of the Company nor have they participated in any of the Company's share schemes, pension schemes or bonus arrangements. They 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 his own fees. They all held office throughout the year with the exception of Laurie Bowen who joined the Board on 1 July 2015.

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

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.

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. In accordance with the Company's Articles of Association and the Code, all directors will retire at the Annual General Meeting

in November 2015 and, being eligible, will offer themselves for election and re-election (as appropriate). We believe that each of the directors should be elected and re-elected by the shareholders because each continues to be effective and demonstrates commitment to the role that each of them performs.

During the year the Chairman met the other non-executive directors without the attendance of the executive directors on a number of occasions. There were formal meetings between the Senior Independent Director and each of the non-executive and executive directors without the presence of the Chairman at which the performance of the Chairman was reviewed.

There were several other occasions during the year when discussions between various directors took place on an informal basis.

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.

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. One executive director, Dave Shemmans, held a non-executive directorship during the year under review.

## CHAIRMAN, CHIEF EXECUTIVE OFFICER AND SENIOR INDEPENDENT DIRECTOR

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.

Terry Morgan 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 minutes of this committee are circulated to, and considered by, the Board.

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.

## BOARD APPOINTMENTS

We recognise our responsibility for planned and progressive refreshing of the Board. There is a formal and transparent procedure for the appointment of new directors, the primary responsibility for which is delegated to the Nomination Committee. Further details of the work undertaken by the Committee during the year under review are contained on page 72. Our Board continued to discuss matters relating to succession planning and talent management for leadership succession.

## Diversity

Our Board 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 and international experience and gender in its employees and aims to recruit the best person for the role in all its positions Group-wide.

Our Board appreciates that a diverse range of backgrounds is an important part of succession planning at all levels in the Group. Our Board 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 the diversity of our workforce are described in the Strategic Report on pages 32 and 33.

## Induction

There is a written framework for the full, formal and tailored induction of new directors.

Laurie Bowen's induction will include site visits, meetings with senior management and advisers and the provision of corporate documentation to facilitate her understanding of our business, its operations, key markets and risks.

## SUPPORT AND PROFESSIONAL DEVELOPMENT

Our 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.

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 together with specific presentations on key projects for the business.

Directors are updated continually on the Group's business with monthly performance packs and by means of additional presentations on matters including insurance, treasury and health, 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 Towers Watson 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 he requires.

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 100.

## BOARD EVALUATION

We conduct an evaluation of our activities and effectiveness annually, facilitated by the Company Secretary.

The determination of whether or not to conduct an external review is considered annually by the Nomination Committee. Following consideration of the Committee's recommendation we decided to continue with the internal review of our effectiveness this year.

The aim of the review is to check progress against the issues identified in last year's evaluation and identify any new issues. Our approach calls for the completion of a questionnaire by all directors on the processes and behaviours of the Board and its Committees including, amongst other things, the quality of leadership and setting of objectives, the appropriateness of our skill level and how well our members work and communicate together and with others. In addition, each director completes a separate questionnaire concentrating on his or her individual input to the Board and specific training requirements.

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

Following completion of these questionnaires, Terry Morgan conducted one-to-one interviews with each director and the Company Secretary. David Hall conducted one-to-one interviews

with each director, in the absence of Terry Morgan, on his performance as Chairman of the Board.

The results of the evaluation were analysed and reviewed by the Board in conjunction with the progress made on the previous year's objectives. During the year under review, the Board's objectives included, amongst other things, continuing focus on improving quality of earnings and shareholder value; key risks and mitigation plans; and talent management and succession planning, and the Board considers it has made good progress against its objectives.

Overall the conclusion from the evaluation and appraisal process was positive, with each director actively contributing to the effectiveness of the Board and the Committees of which he is a member.

## BOARD COMMITTEES

Our Board has Nomination, Audit and Remuneration Committees. Written terms of reference for each committee are reviewed annually and are available on our website, [www.ricardo.com](http://www.ricardo.com) or on request from the Company Secretary.

### Remuneration Committee

#### Composition

The Remuneration Committee, which is chaired by Peter Gilchrist, comprises the independent non-executive directors, Ian Lee, Hans-Joachim Schöpf (retired 30 June 2015), Laurie Bowen (appointed 1 July 2015), Peter Gilchrist, David Hall and Terry Morgan.

#### Responsibilities

During the year, the Committee had five scheduled meetings. The work of the Committee, including the Chairman's Overview, is described in the Directors' Remuneration Report on pages 81 to 99. The Directors' Remuneration Report is the subject of a binding vote by shareholders at the 2015 Annual General Meeting.

## Nomination Committee



### CHAIRMAN'S OVERVIEW

A key focus during the year has been the appointment of an additional non-executive director. This appointment was managed in conjunction with recruitment consultants, the JCA Group. Further details of this process are included in the Responsibilities section below.

In addition, we continued to focus on talent management and succession planning for management below Board level.

### Terry Morgan, CBE

#### Composition

The Nomination Committee, which is chaired by Terry Morgan, comprises the independent non-executive directors Ian Lee, Hans-Joachim Schöpf, Peter Gilchrist, David Hall, and 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.

The search for our new non-executive director during the year was managed with the assistance of recruitment consultants the JCA Group, who have signed up to the voluntary Code of Conduct for executive search firms. The JCA Group provided a shortlist of candidates who were interviewed by Terry Morgan, Dave Shemmans, Ian Lee and Peter Gilchrist before it was agreed to offer the role to Laurie Bowen. Laurie will undertake an extensive induction programme to ensure a rounded understanding of the business and our ambitions. Laurie joined the Board as non-executive director on 1 July 2015. The JCA Group have no other connection with the Company.

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

The Committee recognises the need for diversity, in its broadest sense, when considering the composition of the Board. Diversity in all its aspects, including gender diversity, continues to be important to the Company.

The Board's policy on diversity is set out on pages 32 and 33 together with details of female representation elsewhere within the Group.

The Chairman of the Committee is the Chairman of the Board, Terry Morgan, except when a new Chairman of the Board is being sought, when 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

Name	Date of Appointment	Tenure
David Hall, CBE	February 2006	9 years
Ian Lee	August 2008	7 years
Hans-Joachim Schöpf	July 2009	6 years (retired 30 June 2015)
Peter Gilchrist, CB	December 2010	5 years
Dave Shemmans	April 2005	10 years
Mark Garrett	July 2008	7 years
Ian Gibson	July 2013	2 years
Terry Morgan, CBE	January 2014	18 months
Laurie Bowen	July 2015	-

The Committee has spent time looking at succession planning for the executive director team as well as for the Board over the medium-term. We have also discussed talent management and succession planning for the top managers in the business.

## Audit Committee



### CHAIRMAN'S OVERVIEW

During the year the Audit Committee has embedded the processes which it has previously developed, taking a more active role in discussing and evaluating risk as delegated by the Board to ensure that appropriate challenge and guidance is provided to management.

As in previous years, the Committee has again reported its key considerations in respect of the significant accounting judgements taken by management during the year. The business has seen some fundamental changes in its centenary year, such as the internal reorganisation and integration of its UK and German Technical Consulting divisions into a single

European Technical Consulting business, over which the Committee considered the implications on risk, internal audit and associated accounting matters such as the appropriate identification of cash-generating units for goodwill impairment testing purposes.

Furthermore, the Group has completed four acquisitions to the date of this report, with the acquisition of Lloyd's Register Rail being the most significant. This presents its own set of challenges in terms of risk management, integration and planning as to how the new Rail business, in particular, will be incorporated into the Committee's processes which have been developed thus far.

In addition, the number and size of the businesses acquired has resulted in the engagement with the external auditor in respect of due diligence services being provided to the Group which are in excess of the value of the recurring external audit services. The Committee carefully considered and approved these non-audit services based on the existence and rigorous application of appropriate safeguards to ensure that the auditors' objectivity and independence was not compromised and to maintain a robust and high quality audit process.

### Ian Lee

### Composition

The Audit Committee, which is chaired by Ian Lee, comprises the independent non-executive directors Hans-Joachim Schöpf, David Hall, Terry Morgan and Peter Gilchrist. Terry Morgan resigned from the Audit Committee on his appointment as Chairman of the plc Board on 29 October 2014.

The Committee's Chairman, Ian Lee, has recent and relevant financial experience and a professional accountancy qualification as considered desirable by the Financial Reporting Council's Guidance on Audit Committees issued in September 2012.

The executive directors, Terry Morgan 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.

### 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 the Company's financial statements before submission to the Board for approval, ensuring their compliance with the appropriate accounting standards, the law and the Listing Rules of the UK Listing Authority;
- To review the Company's internal financial controls and internal control and risk management systems, and to review the effectiveness of the internal audit function and ensure that it is adequately resourced;
- To 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, and to review the scope and planning of the audit and be satisfied with the auditors' independence, objectivity and effectiveness on an ongoing basis;
- To review the content of the Annual Report and Accounts and advise the Board on whether, taken as a whole, they are fair, balanced and understandable and provide the information necessary for shareholders to assess the Company's performance, business model and strategy;
- To establish and oversee the Company's arrangements for employee disclosure and fraud prevention arrangements within the Company; and
- To implement the policy relating to any non-audit services performed by the external auditors.

The Chairman of the Audit Committee meets regularly with the Head of Internal Audit and executive management on matters of risk, controls, audit and accounting.

The Audit Committee receives reports from management and internal audit on the effectiveness of the system of internal controls and risk management systems. The Committee also receives from the external auditors a report of matters arising during the course of the audit which the auditors deem to be of significance for the Audit Committee's attention.

The Committee meeting in September carried out a full review of the year-end financial statements and of the audit, using as a basis reports prepared by the Chief Financial Officer and the external auditors and taking into account any significant accounting policies, any changes to them and any significant estimates or judgements.

Questions are asked of management of any significant or unusual transactions where the accounting treatment could be open to different interpretations. A similar, but less detailed review is carried out in February when the Interim Report is considered.

The Committee also reviewed the processes to assure the integrity of the Annual Report and Accounts, in particular that the information presented in the report, when taken as a whole, is fair, balanced and understandable and contains the information necessary for shareholders to assess the Company's performance, business model and strategy.

The February meeting also considered, amongst other things, the Company's approach to risk appetite and the risk profile.

The July meeting focused on the risk management process, the risk profile, terms of reference, the results of internal audits for the year, the plan for the following year, the systems for internal control and reviews the ethics and whistleblowing processes.

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 year under review included:

- Review of any significant financial reporting issues and judgements in respect of the half-year results and year-end accounts;
- Review of any significant matters raised by the internal auditors;
- Review of risk management processes and impact assessment on the risk profile of the Group as a result of the internal reorganisation and acquisitions completed during the year;
- Consideration of the audit fee and the balance between audit and non-audit fees;
- Annual review of the terms of reference of the Committee;
- Evaluation of auditor independence and effectiveness;
- Recommending the re-appointment of the external auditors; and
- Review of the effectiveness of internal control systems.

### Significant financial reporting issues considered by the Audit Committee

The Committee considers reports from the Chief Financial Officer and Group Risk Manager and reports from the outcome of the half-year review and annual audit. The Committee supports PricewaterhouseCoopers LLP in displaying the necessary professional scepticism their role requires.

The Committee considered the following significant issues in approving the 2015 financial statements:

#### Contract accounting and performance

The Group derives a significant proportion of its revenue from fixed price contracts that may extend for a substantial period of time. All contracts are based on detailed proposals issued to clients which are approved in accordance with the Group's authority limits, which may include Board approval where contract values dictate. Revenue and margin performance is 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 revenue recognised on contracts. Unforeseen future events may adversely impact the accuracy of those forecasts and recoverability judgements.

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 categorised into five levels with one being the lowest and five being the highest. The risk category of a contract is determined from the application of quantitative and qualitative criteria. As a contract progresses the project is allocated a 'traffic-light' based colour rating to categorise its performance against a number of factors, including cost, schedule, customer relationship, availability of resources and technical complexity.

High risk contracts (Category 4 and 5 contracts) which experience significant challenges are categorised internally as 'Red' contracts, which are monitored and controlled at the senior management level and reported as appropriate to the Board as part of the monthly performance review. Net Group project over and under spends are also monitored and reported to the Board on a monthly basis. A summary of these 'Red Cat 4/5' contracts is presented bi-annually by senior management to the Committee at the February and September meetings, whereby the significant judgements taken are reviewed, challenged and evaluated.

Following the September review, the Committee satisfied itself with the judgements taken by management with regards to the Red Cat 4/5 contracts. In addition, these contracts are subjected to a focused level of audit work during the external audit process.

#### Identifying cash-generating units following an internal reorganisation

IFRS requires goodwill to be reviewed at least annually for impairment. In order to review for impairment, goodwill is allocated to cash-generating units ('CGUs'). CGUs are required to be identified consistently from year to year, unless a change is justified. During the year ended 30 June 2015, the UK and German Technical Consulting businesses were reorganised to

form a European Technical Consulting division ('EUTC'), along with a separate global Motorcycle division. The rationale for the reorganisation is to improve coordination and delivery to clients as well as achieve costs efficiencies, whilst the new Ricardo Motorcycle division creates a critical mass of capability, expertise and global reach in motorcycle and scooter engineering. Prior to the reorganisation, two separate CGUs were identified as Ricardo UK and Germany Technical Consulting, with goodwill allocated of £2.7m and £12.5m, respectively. Following the reorganisation and as outlined in more detail in Note 13, 'Goodwill', to the financial statements, a single CGU has been identified as EUTC, with allocated goodwill of £12.7m as at 30 June 2015.

When assessing the appropriateness of the single CGU, the Committee received an analysis from senior management which outlined the rationale for the reorganisation, the business model and resulting cash flows. The analysis also outlined the reasons for identifying a single CGU, which included; all of the assets and the vast majority of headcount residing under EUTC management; resource sharing within EUTC and the Motorcycle division will continue to take place as appropriate in future years and; there were no Motorcycle customers when the Germany TC business was acquired in 2003. Management have performed an annual impairment review of the reallocated goodwill of EUTC and the other CGUs in existence in the business. Significant headroom exists between the value in use of the respective CGUs and the carrying value of the associated goodwill. The Committee reviewed and challenged the analysis and was satisfied with the approach of identifying EUTC as a single CGU and the carrying value of the associated goodwill.

### Capitalisation and carrying value of development costs

Certain directly attributable costs which are 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, it is probable that the resulting asset will generate economic benefits for the Group and 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 2015, £4.2m of development costs were capitalised.

The Committee received reports from senior management detailing their analysis and assumptions used when assessing whether the costs incurred met the requirements for capitalisation under IFRS, including whether future economic benefit supports the recoverability of the asset. The Committee was satisfied that the level of capitalisation and the carrying value of the assets was appropriate. In addition, this matter is a key focus for the external audit.

### Deferred taxation

The Group holds an £8.8m deferred tax asset in relation to accumulated tax losses and credits as outlined in Note 25, 'Deferred tax', to the financial statements. A key management judgement is the extent to which a deferred tax asset should be

recognised in respect of accumulated tax losses and credits. As in the prior year, an assessment has been performed to consider an appropriate amount of the deferred tax asset to recognise in respect of losses incurred by Ricardo Deutschland GmbH.

The Committee addressed this issue through reporting from senior management and a process of critically evaluating and challenging the appropriateness of management's plans and expectations for future taxable profits. The Committee satisfied itself on the carrying value of the deferred tax asset. In addition, this matter is a key focus of the external audit.

### Internal audit

The internal audit function is centrally managed and is led by suitably skilled staff from head office or parts of the business independent from the business or function being audited. It is resourced by staff from around the Group with suitable skills, experience and independence for the area they are auditing.

Where relevant, external specialists are used to supplement internal resources where 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.

As part of the annual process the Committee's review 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 and 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 Company's risk management system.

### Whistleblowing, ethics and fraud prevention

Internal audit scope includes a review of compliance with Group policies, including on established whistleblowing, ethics (including Bribery Act related matters) and fraud prevention policies.

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

One matter was reported to the Committee during the year and following investigation by senior management, it was established that there was no case to answer.

### External audit

PricewaterhouseCoopers LLP were appointed as external auditors in 1990 and no formal tender for audit services has been conducted since appointment. One of the Committee's duties under its Terms of Reference is to ensure that at least once every ten years, commencing 1 July 2013, the audit services contract

is put out to tender to enable the committee to compare the quality and effectiveness of the services provided by the incumbent auditor with those of other audit firms.

The auditor's quality and effectiveness are assessed on their own merits on an annual basis after the completion of each audit. Subject to continued satisfactory performance in this regard, it is expected that the audit services contract will be put out to tender no later than when the five-year rotation cycle of the incumbent audit partner draws to a conclusion in 2018.

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.

The Committee considers all relationships between the external auditors and the Company to ensure that they do not compromise the auditors' judgement or independence, particularly with the provision of non-audit services where a policy relating to these has been agreed by the Board.

Essentially the external auditors would be excluded from carrying out non-audit services if they are put in the position of auditing their own work, making management decisions for the Company, if a mutual interest between the Company and the auditors is created, or if the auditors take on the role of an advocate for the Company.

Our policy in respect of services provided by the external auditors is as follows:

#### **Audit-related services**

The external auditors are invited to provide services which, in their position as auditors, they must or are best placed to undertake. This includes review of the interim results and any other review of the accounts for regulatory purposes; assurance work related to compliance and corporate governance, including high-level controls; work in connection with listing particulars and prospectuses (if required); regulatory reviews or reviews commissioned by the Audit Committee; and accounting advice and reviews of accounting standards.

#### **Tax consulting**

In cases where they are best suited, we use the external auditors provided that such advice does not conflict with the external auditors' statutory responsibilities and ethical guidance.

#### **General consulting**

There may be occasions when the external auditors are best placed to undertake other accounting, advisory, consultancy and due diligence work on behalf of the Company due to their in-depth knowledge of the Company. However, the following are specifically prohibited:

- Work related to accounting records and financial statements that will ultimately be subject to external audit;
- Management of, or significant involvement in, internal audit services;
- Secondments to management positions that involve any decision-making;

- Any work where a mutuality of interest is created that could compromise the independence of the external auditor; and
- Any other work which is prohibited by UK ethical guidance.

If the external auditors carry out non-audit services and the cost of these services is estimated to exceed £50,000 or in aggregate more than 100 percent of the audit fees, prior approval by the Committee is required.

During the financial year, PricewaterhouseCoopers LLP were appointed to perform due diligence work in respect of recent acquisition activities, the value of which exceeds the value of audit services provided. This is permissible subject to prior approval by the Audit Committee. These appointments were appropriately approved on the basis that after due consideration, it was deemed that the external auditors were best placed to perform the work, and appropriate safeguards were in place to avoid the auditors' objectivity and independence from being impaired.

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 split between audit and non-audit fees for the year ended 30 June 2015 and information on the nature of non-audit fees are disclosed in Note 6 to the financial statements.

The Committee carried 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 and execution;
- The role of management in ensuring an effective audit;
- Communication with and support of the Audit Committee; and
- The formal reporting of the auditors.

The assessment was completed with input from an internal questionnaire completed by senior and relevant finance staff.

The Committee considered a report on the audit firm's own internal quality control procedures, consideration of the audit firm's annual transparency report.

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

The Audit Committee has recommended to the Board that the reappointment of PricewaterhouseCoopers LLP be proposed to shareholders at the 2015 Annual General Meeting.

## **RISK AND ACCOUNTABILITY**

The Board has overall accountability for ensuring that risk is effectively managed across the Group and, on behalf of the Board, the Audit Committee reviews the effectiveness of the Group's risk management processes and the risk profile.

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. That said, 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 of loss.

Risks are reviewed by all business areas on a half-yearly basis and measured against a defined set of likelihood and impact criteria. This is captured in consistent reporting formats, enabling Internal Audit and Risk to consolidate the risk information and summarise the key risks in the form of the Group Risk Profile ahead of it being submitted to the Board for final approval.

As part of the risk management process, directors and senior managers are required to certify on a bi-annual basis that they have established effective controls to manage risk and to comply with legislation and Group procedures and disseminated Group policies.

Ricardo's internal control and monitoring procedures include:

- Clear and understood responsibility on the part of the line and financial management for the maintenance of good financial controls and the production of accurate and timely management information;
- Control of key financial risks through clearly laid down authorisation levels and appropriate segregation of accounting duties, the control of key project risks through project delivery and review systems and the control of other key business risks via a number of processes and activities recorded in the Group risk register;
- Detailed monthly forecasting and reporting of trading results, balance sheets and cash flow, with regular review by management of variances from budget;
- Reporting on compliance with internal financial controls and procedures by Group Internal Audit; and
- Review of reports by external auditors.

To ensure our risk process drives improvement across the business, we monitor ongoing status and progress of key action plans against each risk on a half-yearly basis. Risk is a key consideration in all strategic decision-making at Board level.

## Principal risks and uncertainties

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

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 financial performance measurement. Non-contract risks are owned by the leaders of global product groups, 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's Risk Manager, 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 appetite is managed by a number of internal controls via authority limits as well as setting excesses on insurances. Risk appetite was formally reviewed during the year and stated as an internal policy document.

We comply with the Code by:

- Classifying risks as either strategic or operational and as either internally or externally driven; they are evaluated on a gross and net risk basis; and
- The Chief Executive Officer reviewing higher-rated risks on the register with the Audit Committee twice each year (with all Directors of the Board present or in attendance).

We set out below details of our principal risks, the mitigating activities in place to address them and additional actions implemented to further reduce net risk to the Group. It is recognised that the Group is exposed to a number of risks, wider than those listed. Additional risks and uncertainties not presently known to management, or currently deemed to be less material, may also have an adverse effect on the business.

**Customers and markets**

The Group is largely dependent on a dynamic marketplace which is exposed to many external pressures, competition and structural change caused by global economic, cost-base, environmental and capacity concerns.

**Impact**

This could cause changes in client product plans or government policy leading to delays in the placement of orders, the redirection, delay or curtailment of contracts, slippage in payments or variations in demand for resources. The precise timing of order receipt and rate of ramp-up of project workload delivering the subsequent revenue, profit and cash streams may give some volatility in our ability to forecast future performance.

**Mitigation**

These risks are mitigated by the strategy of broadening the base of the business to reduce exposure to any one specific client, territory or market sector, and the success of this strategy is measured by the key performance indicators for client dependency and sector dependency shown on page 16 and by the geographic spread disclosed in Note 3 to the financial statements. In the event of a sudden downturn, contingency plans are quickly deployed to minimise the short-term performance effects and preserve cash whilst protecting the long-term needs of the stakeholders. The impact of insolvency risk is mitigated by robust working capital management and the use of credit insurance where this is economically available.

**Contract performance**

The majority of the Group's revenue arises from contracts for engineering and environmental consulting services. The costs and liabilities to complete these contracts may be different from initial estimates, thus reducing or increasing margins and project timescales. In low-volume manufacturing there is a risk of dependency on specialist suppliers or product liability or recall or warranty claims.

**Impact**

Onerous contract terms, failure to perform on contracts, the infringement of the rights of others, or a faulty product could potentially subject the business to a claim from a customer and loss of reputation or reduced opportunity for repeat business or increased costs. On contracts where we exceed planned performance, additional profit may be generated. 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 clients and increase operating costs.

**Mitigation**

These risks are proactively managed by clearly defined lead qualification, bidding and project management processes, whereby projects are categorised according to their risk level, 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 good quality and meets client requirements without infringing the rights of others. These processes are subject to continued improvement focus with the central leadership of the Chief Operating Officer and are core to our strategy. Procurement processes are in place to assess critical suppliers and selections are often made with the involvement of the client. In low-volume manufacturing there are rigorous quality assurance processes in place to reduce the risk of product liability, warranty and recall claims.

**People**

Ricardo is a business that is knowledge-driven and people-led, with a focus on attracting and retaining the best talent. Recruiting, developing and retaining talent and knowledge are essential.

**Impact**

The failure to recruit, develop or retain the very best talent would restrict growth and the execution of the strategy and have an impact on delivery and client relationships.

**Mitigation**

We are focusing 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, encourage mobility, professional development and provide appropriate remuneration and working conditions. Our people as stakeholders are reviewed further on pages 32 and 33.

**Technology**

The business is driven by changes in technology to meet the needs of markets, sectors and regulators on varying time scales.

**Impact**

If the Group invests in the wrong technologies it could lose marketplace advantage and business levels could reduce. If there are delays in the implementation of new regulations, which in turn delay client programmes dependent on new technology, the time taken to deliver returns from our R&D programmes may also increase.

**Mitigation**

Our R&D programmes are developed through a mixture of client consultation, long-range forecasting and deep technology roadmap development. Many of our programmes are collaboratively developed and delivered with governments, clients, partners and suppliers, which creates strong links to the market and ensures the output is relevant and credible. The programmes are approved and delivered by the recently formed Ricardo Innovations Group, which operates within Ricardo as a global R&D organisation singularly focused on delivery and exploitation of approved programmes. This change enables staff and facilities to be dedicated onto relevant programmes regardless of geography, which will accelerate delivery of innovation to market and promote the exploitation of developed IP and know-how. Further details of our R&D programmes are given on pages 30 and 31.



### Compliance with laws and regulations

The Group's operations are subject to an increasingly wide range of domestic and international laws, regulations, restrictions and standards.

#### Impact

Non-compliance with these laws, regulations, restrictions and standards could expose the Group to fines, penalties or loss of reputation, or result in trading restrictions which could have a material adverse effect on the business.

#### Mitigation

To mitigate these risks the Group has a number of defined policies and operating procedures, and takes professional advice, where considered necessary, to ensure that employees and others act with the highest ethical standards and within local legal and regulatory requirements. Our Code of Conduct is published on [www.ricardo.com](http://www.ricardo.com) to increase awareness and provide availability to external stakeholders. Also, the Group's internal audit programme includes within its remit the review of compliance with applicable legislation and regulations and awareness of key policies. Policies are updated as regulations change and as our knowledge of best practice increases. We aim to anticipate the effects of working in new sectors, particularly rail, which adds to the range of regulations, standards and laws with which we need to comply and new territories where laws, regulations and cultures are addressed.

### Defined benefit pension scheme

The Group has a UK defined benefit pension scheme which currently has a funding deficit

#### Impact

Any decline in the value of the pension fund assets, improvement in the life expectancy, 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.

#### Mitigation

The current UK funding plan was agreed on the basis of a valuation undertaken at 5 April 2014 and anticipates deficit recovery contributions being made until January 2021. The Group also 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 can be in a borrowing position, requiring some borrowing from its bankers

#### Impact

There is a risk of the Group being unable to secure sufficient funds or the cost of funds and facilities being high.

#### Mitigation

This risk is managed by robust cash management, regular improvement initiatives, monitoring forecast and actual cash flows, maintaining good relationships with the Group's bankers and ensuring sufficient borrowing facilities are in place at all times to support the Group's requirements, with additional headroom available to meet possible downside scenarios. The Group has ample facility and covenant headroom. Further details of the Group's borrowing facilities and other financial risks can be found in Note 23 to the financial statements.

## Risk Management and Internal Control

Internal Audit and Risk comprises both the Group Risk and Internal Audit function. Whilst Group Risk facilitates and manages the risk process that is ultimately owned by the Board, Internal Audit is accountable to the Audit Committee.

The following examples illustrate how Internal Audit work supports Group Risk 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 projects in divisions and identify best-practice techniques which can be shared across divisions, and lessons learned have been applied;
- Selected in-depth process reviews evaluate control risks and efficiency leading to revaluation 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 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.

The Committee has completed its review of the effectiveness of the Group's systems of internal control during the year and up to the date of the Annual Report, in accordance with the requirements of the revised Turnbull Guidance on Internal Control, published by the FRC. The Committee confirms that no significant failings or weaknesses were identified in the review.

## 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.

Shareholders and analysts days were held at our Shoreham Technical Centre in 2015, allowing shareholders and investors to meet senior management and board directors, visit non-confidential engineering projects and receive presentations on Ricardo's strategy.

Additionally, the Chairman communicates with key shareholders at least once a year and both the Chairman, 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, the capital markets advisory firm, provides 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.

### Ricardo's AGM

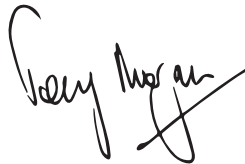
The Notice of Meeting sets out the resolutions being proposed at the Annual General Meeting (4 November 2015 at 10.00am). Last year all resolutions were passed with votes ranging from 99% to 100%. Shareholders unable to attend the AGM are encouraged to vote in advance of the meeting.

The Annual General Meeting ('AGM') in October 2014 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](http://www.ricardo.com)) contains a wealth of information, including:

- Latest Ricardo news, Stock Exchange announcements and press releases; and
- Annual Report and Investor presentations.

Directors' Corporate Governance Statement approved by the Board on 9 September 2015 and signed on its behalf by:



**Terry Morgan, CBE**  
Chairman



**Ian Lee**  
Chairman of the Audit Committee

# Directors' remuneration report

## CHAIRMAN'S OVERVIEW

I am pleased to present our Directors' Remuneration Report for 2015, for which we will be seeking your approval at our Annual General Meeting.

At our last AGM in 2014, shareholders were asked to vote separately on our remuneration policy and remuneration report for the first time with the intention being that the policy would remain in effect until the 2017 AGM. Consequently, we do not propose to make any changes to our remuneration policy this year, however we have reproduced it in this report for ease of reference. We have also made some minor changes to the reproduced text so as to reflect last year's shareholder approvals and update the 'remuneration outcomes' chart on page 86. The full remuneration policy which was approved by shareholders last year is available exactly as approved on our Company website.

The Committee has always aimed to ensure that the remuneration at Ricardo is closely linked to the business strategy and to align executives' interests with KPIs described on pages 16 and 17 of the annual report through the use of our incentive plans. During the year, the Committee carried out a comprehensive review of Ricardo's remuneration philosophy and principles in order to ensure that this continued to be the case. The Committee's other activities included:

- Approving the annual bonus outcomes and vesting of long-term incentive plan awards;
- Reviewing base salary levels for executive directors;
- Setting 2014/2015 annual bonus targets and performance targets for our long-term incentive plans;
- Reviewing the 2014/2015 Directors' Remuneration Report inclusive of the new remuneration policy; and
- Reviewing our terms of reference.

It is the Committee's intention to be clear and transparent in matters of remuneration and we hope that the report's format continues this approach by being informative and easy to understand. As always, we welcome feedback from shareholders on both the content and style of the report.

### 2014/2015 performance and remuneration

The Remuneration Committee, after considering other alternatives, has decided that the broad remuneration framework and policy that was approved by shareholders last year provides the best alignment of



executive remuneration with the long-term sustainable performance of the Company and remains right for the Company and shareholders; we therefore decided not to make any changes. The decisions we have taken within the terms of our existing policies have been designed both to reward superior performance that benefits shareholders and focus management on delivering the agreed business strategy. The Committee adopted a set of principles for how to account for acquisitions and the adjustments made to cash and profit in the report for the purposes of Ricardo's incentive schemes are based on those endorsed principles.

The Committee remains focussed on ensuring that executive pay is closely linked to the performance of the Company and the successful development of its business. All of the Committee's decisions are made in the context of performance achieved. During the year ended 30 June 2015, Ricardo delivered revenue of £257.5m and underlying profit before tax of £26.8m, both of which were 9% ahead of the previous year. This positive performance contributed to how investors value the Company and our market capitalisation increased from £334.8m to £451.8m over the year; an increase of £117m or 35%.

Annual bonuses for executive directors, which are based on a combination of Group profit before tax, cash balance and the achievement of individual objectives, paid out at 74%, 59% and 57% of base salary for the Chief Executive Officer, Chief Financial Officer and Chief Operating Officer, respectively (equivalent to 59%, 59% and 57% of maximum opportunity, respectively), an increase relative to 2013/2014 reflecting improved Group performance. The Committee decided that with the international expansion of the Group they would widen the comparator to the whole group of employees. By comparison, bonuses paid to all employees across the

Group also increased year-on-year as shown in the annual report on remuneration. The change in the employees' annual bonus represents the movement in the aggregate of all bonuses across all divisions with performance against target varying between divisions.

Awards granted to executive directors under our long-term incentive plan, which were based on Ricardo's TSR performance against the FTSE Small Cap Index (excluding financial services companies and investment trusts) and Ricardo's growth in normalised earnings per ordinary share over the past three years, vested during the year at 67% of maximum. It is worth noting that the timing of performance periods applicable to awards changed in 2011. There is a nil sum for the 2013/2014 LTIP award because the performance period for awards made in October 2010 ended in June 2013 and these awards were therefore disclosed in the 2012/2013 column of last year's report. The effect of this is to reduce the single figure total accordingly. To confirm, no changes were made to grant policy over this period – the differences in values shown year-on-year reflect the

change in the timing of the performance periods only. Going forward, the performance periods for long-term incentive plan awards will continue to end 35 days after the preliminary results announcement in respect of the last financial year in the 3-year performance period. For example, awards made in 2012 will vest in November 2015, subject to the satisfaction of performance conditions over the performance period which expires in October 2015 and will be disclosed in the 2015/2016 financial year.

It is pleasing that the Committee has received considerable shareholder support and I am grateful to our shareholders for this. As appropriate, the Committee will continue to engage and communicate with shareholders regarding Ricardo's remuneration policy and to take suitable action when required. Similar to last year, I have included below a summary of the executive directors' remuneration packages for your reference at a glance.

**Peter Gilchrist**

## The executive directors' remuneration arrangements – at a glance

	<b>Dave Shemmans</b>	<b>Ian Gibson</b>	<b>Mark Garrett</b>
Base salary	£453,200 (effective 01/01/2015)	£291,748 (effective 01/01/2015)	£254,616 (effective 01/01/2015)
Annual bonus	Maximum opportunity of 125% of salary Based on PBT (60%), cash (15%) and personal targets (25%) 50% of any bonus to be deferred into shares for three years	Maximum opportunity of 100% of salary Based on PBT (60%), cash (20%) and personal targets (20%) 50% of any bonus to be deferred into shares for three years	Maximum opportunity of 100% of salary Based on PBT (60%), cash (20%) and personal targets (20%) 50% of any bonus to be deferred into shares for three years
Matching shares	Matching award of shares on bonus deferred of up to 1:1 basis Subject to three-year performance conditions: 50% EPS growth, 50% TSR vs FTSE Small Cap Index	Matching award of shares on bonus deferred of up to 1:1 basis Subject to three-year performance conditions: 50% EPS growth, 50% TSR vs FTSE Small Cap Index	Matching award of shares on bonus deferred of up to 1:1 basis Subject to three-year performance conditions: 50% EPS growth, 50% TSR vs FTSE Small Cap Index
LTIP	Annual award of shares with face value of 100% of base salary Vesting subject to three-year performance conditions: 50% EPS growth, 50% TSR vs FTSE Small Cap Index	Annual award of shares with face value of 55% of base salary Vesting subject to three-year performance conditions: 50% EPS growth, 50% TSR vs FTSE Small Cap Index	Annual award of shares with face value of 55% of base salary Vesting subject to three-year performance conditions: 50% EPS growth, 50% TSR vs FTSE Small Cap Index
Pension	21.2% of salary over Lower Earnings Limit*	20% of salary over Lower Earnings Limit	20% of salary over Lower Earnings Limit
Other benefits	Company car allowance: £17,500 Private fuel Private medical insurance Life assurance	Company car allowance: £12,000 Private fuel Private medical insurance Life assurance	Company car allowance: £12,000 Private fuel Private medical insurance Life assurance
Share retention policy**	100% of base salary	100% of base salary	100% of base salary

\* This reflects legacy pension arrangements.

\*\* This is the shareholding requirement for each executive director.

## Directors' Remuneration Policy

### Remuneration policy

This policy report outlines the framework of Ricardo's remuneration strategy, which is designed to ensure the close alignment with Ricardo's strategic plan, for the three years from the 2014 AGM which was held on 29 October 2014. There have been no changes of substance to the text of the policy that was approved at the 2014 AGM (a copy of the originally approved text is available in last year's annual report on our website at [www.ricardo.com](http://www.ricardo.com)). We have updated the 'remuneration outcomes' chart on page 86 and the page references for ease of use.

The objective of Ricardo's executive remuneration policy is to provide remuneration packages that will reward and thereby retain talented people in the business and enable the recruitment of appropriately skilled and experienced newcomers. Therefore, the executive remuneration policy is to set levels of base salary that are competitive – compared with relevant companies of similar size and complexity to Ricardo - and to provide other remuneration package elements, namely the annual bonus plan and long-term incentive schemes, that give the senior management team the opportunity to receive upper quartile earnings for superior individual and corporate performance.

Pay element and link to strategy	Maximum	Operation
<b>Base salary</b>		
<i>To provide a core level of remuneration to enable the Company to attract and retain skilled, high-calibre executives to deliver its strategy</i>	There is no prescribed maximum annual increase. However, generally speaking, increases will be in line with salary increases for employees across the Group.	<p>Salary levels are reviewed annually in January each year.</p> <p>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.</p> <p>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.</p>
<b>Pension</b>		
<i>To offer market competitive retirement benefits</i>	<p>For the Chief Executive Officer, the pension contribution is 21.2% of salary due to legacy pension arrangements.</p> <p>For all other executive directors, the pension contribution is 20% of salary over the Lower Earnings Limit.</p>	<p>The Company operates a Defined Contribution Scheme, the Ricardo International Pension Scheme ("RIPS"). The policy for executive directors continues to be a pension contribution of 20% of base salary only over the Lower Earnings Limit. Contributions are made up to the annual allowance limit and the rest paid as cash in lieu of pension.</p> <p>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 cash payment in lieu of pension.</p> <p>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.</p> <p>Early retirement is available with the consent of the Company and the trustees if the individual is over 55 or retiring due to ill health.</p> <p>The same policy approach applies to all employees although contribution levels vary by seniority.</p> <p>Under the transitional arrangements to the Defined Contribution Scheme, the Chief Executive Officer was also entitled to a death in service benefit which was a protected term as carry-over on death from the previous (discontinued) Defined Benefit arrangement such that he was entitled on death to a spouse's pension of 35% of annual salary and a pension per child of 12.5% of annual salary, subject to a maximum limit of 25%, until the child attains the age of 18 (or 21 if in full time education). This benefit ended on 31 January 2015 and he thereafter became entitled to death in service benefits in line with other executive directors, as described above.</p>
<b>Other benefits</b>		
<i>To provide market competitive benefits</i>	The cost to the Group of providing such benefits will vary from year to year in accordance with the cost of insuring such benefits.	<p>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 insurance. The benefits arrangements are reviewed on an annual basis.</p> <p>Certain other employees are eligible for the same or similar benefits described above depending on their role, seniority and geographical location.</p>

Pay element and link to strategy	Maximum	Operation
<p><b>Annual bonus</b></p> <p><i>To reward the annual delivery of financial and operational targets</i></p>	<p>Maximum opportunity of 125% of base salary for the CEO and 100% of salary for other executive directors.</p>	<p>Executive directors participate in the annual bonus plan. Under this plan, payouts are based on performance measured against:</p> <ul style="list-style-type: none"> <li>• Group PBT;</li> <li>• Group cash balance; and</li> <li>• achievement of individual strategic objectives. Individual objectives vary from year to year but our policy is to set goals which relate to achievement 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.</li> </ul> <p>The performance targets and weightings are reviewed annually to ensure alignment to strategy. The weighting of the Group PBT portion will be at least 50% of total bonus opportunity.</p> <p>The choice of these measures, and their respective weightings for each individual, will be disclosed at the end of the performance period and reflect 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.</p> <p>A payment scale for different levels of achievement against each performance target is specified by the Committee at the outset of each year – these range from 0% for below-threshold performance up to 100% for full satisfaction of the relevant target.</p> <p>One half of any bonus paid to an executive director 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.</p> <p>The principal purpose of this bonus deferral mechanism is to:</p> <ul style="list-style-type: none"> <li>• provide for further alignment of executives' and shareholders' interests;</li> <li>• provide an additional retention element; and</li> <li>• encourage executive directors to build up a shareholding of a value of at least one times basic annual salary within five years of appointment (see share retention policy).</li> </ul> <p>Bonus arrangements exist for certain other employees throughout the Group on terms that are applicable to their role, seniority and geographical location.</p> <p>Clawback: The Committee retains the discretion to reduce or 'claw back' the number of deferred bonus shares to vest in the event of significant misstatement of the Company's financial results in respect of the financial year to which the bonus relates.</p>

Pay element and link to strategy	Maximum	Operation
<p><b>Long-term incentives</b></p> <p><b>Deferred bonus matching shares ('DBP')</b></p> <p><i>DBP to link short-term and long-term performance</i></p>	<p><b>DBP:</b> Maximum opportunity of 62.5% of salary for the CEO and 50% of salary for other executive directors.</p>	<p><b>Deferred bonus matching shares:</b></p> <p>Executive directors will be granted an award over further shares (up to a maximum of 1 for 1) in relation to deferred bonus shares. The vesting of these awards will be subject to both continued employment and the extent to which performance conditions measured over a specified three year period are met. These awards will be granted pursuant to the rules of the Ricardo plc 2011 Deferred Bonus Plan (the '2011 DBP'), for which shareholder approval was given at the 2011 Annual General Meeting.</p> <p>The performance conditions applicable to the above awards will be identical to those that will be applied to the awards to be made under the terms of the Ricardo plc 2014 Long-Term Incentive Plan (the '2014 LTIP' or the 'LTIP') in the same period. These are described in more detail below.</p>
<p><b>Long-term incentive plan ('LTIP')</b></p> <p><i>To focus motivation on the long-term performance of the Group and reward shareholder value creation</i></p> <p><i>To encourage share ownership and alignment with shareholders</i></p>	<p><b>LTIP:</b></p> <p>Normal maximum: face value of 100% of salary.</p> <p>Exceptional maximum award under the 2014 LTIP plan rules: face value of 200% of salary per year. This does not apply to current executive directors.</p>	<p><b>LTIP:</b></p> <p>Awards under the LTIP are made on an annual basis to the executive directors and a small group of other senior executives. Awards are subject to the following performance conditions:</p> <ul style="list-style-type: none"> <li>• 50% of any award vests according to Ricardo's total shareholder return (share price movement plus dividends reinvested – 'TSR') performance relative to the constituents of the FTSE Small Cap Index (excluding financial services companies and investment trusts) over the three years from grant. <ul style="list-style-type: none"> <li>- For below median performance, none of this portion of awards will vest.</li> <li>- For median performance, 25% of this portion of awards will vest.</li> <li>- For upper quartile or above performance, 100% of this portion of awards will vest.</li> <li>- For between median and upper quartile performance, straight-line vesting will apply.</li> </ul> </li> <li>• 50% of any award vests according to Ricardo's growth in normalised earnings per ordinary share ('EPS') over a period of three consecutive financial years.</li> </ul> <p>The Committee will decide appropriate EPS growth targets each year. Threshold performance (for which 25% of this portion will vest) is generally intended to align to the performance of the relevant market and / or our competitors' level. If the maximum performance is achieved, we would expect to have significantly outperformed the relevant market and / or our competitors.</p> <p>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. 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.</p> <p>For both deferred bonus shares and LTIP awards, dividends and dividend equivalents for each performance or deferral period may also be paid in respect of shares under award to the extent that shares have vested to participants.</p> <p><b>Clawback:</b> The rules of the 2014 LTIP include provision for 'clawback' which would allow the Committee discretion to claw back the value of awards in the event of:</p> <ul style="list-style-type: none"> <li>• Material mis-statement of results;</li> <li>• Material error in performance assessment; or</li> <li>• Misconduct (for example, reputational issues) or fraud.</li> </ul>
<p><b>Share retention policy</b></p> <p><i>To align further the interests of executive directors and shareholders and encourage both the continued holding of Ricardo shares and a long-term business perspective</i></p>		<p>The Board operates a share retention policy for the executive directors. It is the intention of this policy that each executive director will own shares in the Company with a value at least equal to one times basic annual salary within five years of the date of the executive's appointment.</p> <p>Executive directors are not required to purchase shares to fulfil this requirement but are expected to retain all shares earned under various share plans, less an allowance for income tax and national insurance, until the requirement is met.</p>

## Non-executive directors – fees and appointments

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. The Committee determines the Chairman's fees. The Chairman and the executive directors determine the fees paid to the other non-executive directors. Non-executive directors are not present at meetings for any discussion or decision about their own remuneration. The fees are reviewed each January.

Non-executive directors do not participate in incentive plans. They receive reimbursement for travel and incidental costs incurred in furtherance of company business. An aggregate limit on fees paid to non-executive directors of £500,000 is laid down in the Company's Articles of Association.

Remuneration for non-executives is in the form of cash fees and is payable monthly. The Chairman of the Board receives an annual fee. 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 non-executive directors do not participate in any of the Company's share 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 terms of the non-executive directors appointments, as at 30 June 2015, are:

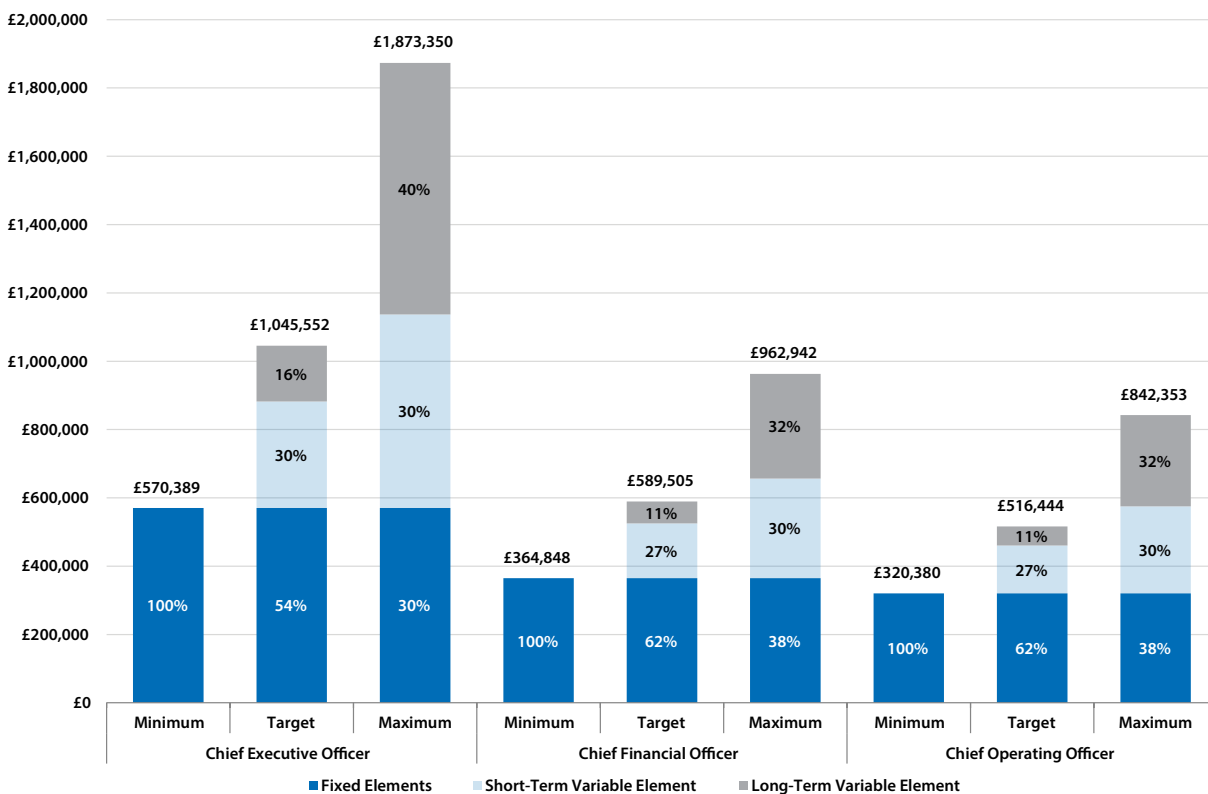
Terry Morgan, CBE	18 months
David Hall, CBE <sup>1</sup>	4 months
Ian Lee	25 months
Hans-Joachim Schöpf <sup>2</sup>	0 months
Peter Gilchrist, CB <sup>3</sup>	17 months
Laurie Bowen <sup>4</sup>	36 months

1. David Hall resigned from the role of the Senior Independent Director on 30 June 2015 and intends to retire from the Company after the Annual General Meeting in 2015.
2. Hans-Joachim Schöpf retired from the Company on 30 June 2015.
3. Peter Gilchrist became the Senior Independent Director on 1 July 2015.
4. Laurie Bowen joined the Ricardo Board on 1 July 2015.

## 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 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 have been updated to reflect the 2014/2015 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 salary of £453,200, pension (pension contribution and cash in lieu) of 21.2% of salary above the Lower Earnings Limit and benefits equal to those received in 2014/2015;
- For minimum performance, executive directors receive only the fixed elements of pay;
- For target performance, an assumption of 55% of bonus payout and threshold vesting for long-term incentives is applied;
- For maximum performance, maximum bonus payout and maximum vesting for long-term incentives are applied; and
- No share price increase has been assumed.

### Recruitment remuneration policy

New executive directors will be appointed on remuneration packages with the same structure and elements as described in the policy table above. Annual bonus and LTIP 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 remuneration relinquished when leaving a former employer. Any such award would reflect the nature, time horizons 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.

### Termination remuneration policy

The contractual termination provision is payment in lieu of notice equal to one year's basic salary or, if termination is part

way through the notice period, the amount of salary relating to any unexpired notice to the date of termination<sup>1</sup>. 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.

Share scheme 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 either vest at that time or, in the case of awards granted under the 2014 LTIP, on their originally anticipated vesting date (although the Remuneration Committee retains the discretion to allow vesting at cessation, depending on the circumstances under the 2014 LTIP rules). These awards will also usually be subject to 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 accrued but untaken holiday and any 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 in the next Directors' Remuneration Report.

### Change of control

In the event of a termination due to change of control, awards granted under the 2014 LTIP and the previous 2006 Long-Term Incentive Plan ('2006 LTIP') and matching awards granted under the 2011 DBP will normally vest at that time, taking into account the extent to which the performance criteria have been met and the time elapsed since grant.

### Executive directors' service contracts

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.

Executives	Date of service contract
Dave Shemmans	7 April 2005
Ian Gibson	15 May 2013
Mark Garrett	28 January 2008

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

## Executive share options

Executive share option plan awards have not been made to executive directors in recent years and there is no intention to make any such awards in future. However, the Company wishes to retain the flexibility to make ESOP awards below Board level in certain circumstances – for example, recruiting in territories where the prevailing local remuneration market practice involves the grant of share options or for retaining key individuals following acquisitions. The ESOP was put up for renewal and was subsequently approved at the 2014 AGM.

No share options were granted during the year ending 30 June 2015 to directors (or indeed any Ricardo employees). The outstanding share options that were disclosed in last year's remuneration report were exercised in September 2014 and consequently no director currently holds outstanding share options. The maximum level of award that can be made to any executive under this plan is 100% of basic salary per annum. ESOP awards that are granted must be subject to performance conditions. Also, the exercise price per share payable to acquire the shares subject to the option must be equal to the market value of a Ricardo share on the date of grant.

## All-employee share plans

For its UK employees the Company operates from time to time tax advantaged Share Incentive Plan ('SIP') and Save As You Earn share option ('SAYE') arrangements, which 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.

The SIP provides for partnership, matching, free and dividend shares, either by delivery of market purchased or newly issued shares. The Company has to date offered partnership shares and, in the year ended 30 June 2012, offered an award of 281 shares to all UK-based employees (with overseas employees being provided with a broadly equivalent benefit via a cash-based 'notional' share arrangement). The latter shares (and the cash equivalent awards) vested on the third anniversary of grant, subject to continued employment.

## 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 3.58%, of which 3.13% 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 Long-Term Incentive Plan and deferred bonus arrangements. To date, all the shares required to satisfy deferred bonus awards have been purchased in the market by the EBT, whereas 2006 LTIP grants have involved the issue of new shares to the trust. Any such new issue shares are, however, included in the dilution limits noted above.

## Consideration of employment conditions elsewhere in the company

Ricardo does not consult directly with employees on the subject of director remuneration, but 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;
- Pay and employment conditions of employees of the Group; and
- As necessary, the views of the Company's principal shareholders (which are sought by the Committee's Chairman).

## Consideration of shareholders' views

Shareholders' views in respect of directors' remuneration have been taken into account in the formulation of the directors' remuneration policy. The Committee continues to welcome feedback and comments regarding the remuneration arrangements at Ricardo.

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 periodically reviews policy in the context of the changing business environment. Any material future changes to policy will be discussed with shareholders in advance.

## Annual Report on remuneration

The paragraphs in this Annual Report on Remuneration that have been audited are indicated below.

### The Remuneration Committee

During the year under review the Committee was chaired by Peter Gilchrist. The Committee also comprised of Terry Morgan, Ian Lee, Hans-Joachim Schöpf (who retired on 30 June 2015) and David Hall (who is due to retire after the AGM in 2015).

The non-executive directors 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 66 and 67; details of attendance at the meetings of the Committee during the year ended 30 June 2015 are shown on page 69.

### Role and responsibilities of the Remuneration Committee

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](http://www.ricardo.com), and its responsibilities include:

- Recommending to, and agreeing with the Board the policy for executive remuneration, and reviewing and monitoring the level and structure of senior management remuneration;
- 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 consultants it appoints.

### Advisors to the Remuneration Committee

The Committee is supported by the Group HR Director (Timothy Hargreaves), the Group Head of Reward and Performance (Mark Jarvis) and the Company Secretary (Patricia Ryan). The Chief Executive Officer (Dave Shemmans) is not a member of the Committee but may attend its meetings by invitation and is consulted in respect of certain of its proposals. Similarly, the Chief Financial Officer (Ian Gibson) is not a member of the Committee but may occasionally be invited to attend parts of its 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.

Towers Watson and Shepherd and Wedderburn LLP have been jointly appointed by the Committee to provide it with independent advice on executive remuneration. During the year, Towers Watson and Shepherd and Wedderburn provided advice on matters under consideration by the Committee and updates on good practice, legislative requirements and market practice.

Towers Watson's fees for this work amounted to £55,857 (calculated based on a mixture of fixed fees and time spent). Towers Watson is a member of the Remuneration Consultants Group and their work is governed by the Code of Conduct in relation to executive remuneration consulting in the UK. Towers Watson, through separate teams, also provides services to Ricardo in relation to Ricardo's benefits and pension plan. Shepherd and Wedderburn's fees for advising the Committee amounted to £22,680 (also calculated based on a mixture of fixed fees and time spent) – and they also advise Ricardo on the design, implementation and operation of its various share incentive plans.

The Remuneration Committee is satisfied that the advice provided on executive remuneration is objective and independent and that no conflict of interest arises as a result of other services.

## Remuneration for 2014/2015

This section of the report explains how Ricardo's remuneration policy has been implemented during the financial year.

### Single total figure table (audited)

The table below sets out the remuneration received by the executive directors and non-executive directors during the year. Please note that the LTIP figures are £nil for 2013/2014 due to a change in performance periods between awards granted in 2010 and 2011 as is more fully described in note 3 to the table.

	Financial year	Fixed remuneration			Variable remuneration						
		Basic salary and fees (£000)	Benefits <sup>1</sup> (£000)	Pension (£000)	Bonus (cash element) <sup>2</sup> (£000)	Bonus (deferred element) (£000)	TOTAL BONUS (£000)	Deferred bonus matching shares (£000)	LTIP <sup>3</sup> (£000)	TOTAL LTIs (£000)	TOTAL (£000)
<b>EXECUTIVE DIRECTORS</b>											
Dave Shemmans	2014/2015	447	22	94	167	167	334	0	470	470	1,367
	2013/2014	434	23	91	106	106	212	0	0	0	760
Ian Gibson	2014/2015	287	16	56	85	85	170	0	0	0	529
	2013/2014	279	18	55	51	51	102	0	0	0	454
Mark Garrett	2014/2015	251	16	49	72	72	144	0	129	129	589
	2013/2014	244	16	48	44	44	88	0	0	0	396
<b>NON-EXECUTIVE DIRECTORS</b>											
Terry Morgan	2014/2015	104	1	0	0	0	0	0	0	0	105
	2013/2014	21	1	0	0	0	0	0	0	0	22
David Hall	2014/2015	49	1	0	0	0	0	0	0	0	50
	2013/2014	50	2	0	0	0	0	0	0	0	52
Hans-Joachim Schöpf	2014/2015	43	2	0	0	0	0	0	0	0	45
	2013/2014	41	13	0	0	0	0	0	0	0	54
Peter Gilchrist	2014/2015	50	2	0	0	0	0	0	0	0	52
	2013/2014	46	4	0	0	0	0	0	0	0	50
Ian Lee	2014/2015	50	4	0	0	0	0	0	0	0	54
	2013/2014	49	6	0	0	0	0	0	0	0	55

1. Further information on benefits for the executive directors can be found on page 91. The benefits figures for non-executives represent reimbursement of expenses incurred while traveling for business and committee meetings.

2. Further details of the annual bonus can be found on page 91.

3. The performance period for awards made in November 2011 ended in October 2014 and so the value is only included in the 2014/2015 row of the single remuneration figure table above. The LTIP figures are £nil for the 2013/2014 row because the performance period for awards made in October 2010 ended in June 2013 and so their value was previously disclosed in the 2012/2013 row of last year's table. For the sake of completeness, the performance period for awards made in November 2012 will end in October 2015 and will be included in the single remuneration figure for the 2015/2016 financial year.

## Base salary

Base salaries were reviewed in January 2015. As described in the policy section, a number of factors are taken into account when salaries are reviewed: principally market levels of total pay for comparable roles in companies of similar size, complexity and sector, as well as the individual director's experience, scope of responsibilities and performance, and the salary increases for employees across the Group. The increases for the executive directors were 3%. These increases were in the context of average salary increases across the Group of around 3%.

Current salary levels from 1 January 2015 are:

- Dave Shemmans: £453,200
- Ian Gibson: £291,748
- Mark Garrett: £254,616

## Pension (audited)

(a) The Defined Benefit scheme is closed and there are no active members. During the year ended 30 June 2015, the transfer value in respect of the Chief Executive Officer has increased. The transfer value at 30 June 2015 was £432,000, an increase of £89,000 from the prior year.

The CEO's Normal Retirement Date ('NRD') is 16 June 2031 at which point he will receive his pension at 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:

	£'000	£'000
	Employer contributions payable in the year	Cash in lieu
Dave Shemmans	18	76
Ian Gibson	0	56
Mark Garrett	28	21

## Other benefits (audited)

The Company provides other cash benefits and benefits in kind to executive directors. These include a company car or cash alternative, private fuel, private medical insurance, life assurance and permanent health insurance. The car allowance for Dave Shemmans is £17,500 p.a. and for Ian Gibson and Mark Garrett is £12,000 p.a.

Non-executive directors can recover travel expenses for board meetings and do not receive any other benefits. If tax is payable by a non-executive director on travel expenses for board meetings, these may be paid gross of tax.

## Annual performance-related bonus (audited)

For the year ended 30 June 2015, the maximum annual performance-related bonus opportunity was 125% of salary for the Chief Executive Officer and 100% of salary for the other executive directors. The amount of bonus actually paid for the period was based on achievement against the financial measures of Group profit before tax (60%) and Group cash balance at year end (15% for CEO / 20% for other executive directors) and the achievement of specified individual objectives (25% for CEO /

20% for 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 following table sets out the targets which applied to the bonus paid to executive directors for the 2014/2015 financial year:

Measure	Weighting as a percentage of maximum bonus opportunity			Performance Required			Actual (adjusted) <sup>1</sup>			Payout as a percentage of maximum opportunity		
	CEO	CFO	COO	Threshold	On-Target	Maximum	CEO	CFO	COO	CEO	CFO	COO
Profit before tax	60%	60%	60%	£24.6m	£26.6m	£28.6m		£26.6m <sup>1</sup>		30.0%	30.0%	30.0%
Group cash balance	15%	20%	20%	£13.6m	£17.6m	£19.6m		£17.9m <sup>1</sup>		8.6%	11.5%	11.5%
Personal objectives	25%	20%	20%	0%	75%	100%	82%	85%	75%	20.5%	17.0%	15.0%
Total payout as a percentage of maximum opportunity										59%	59%	57%
Maximum opportunity as a percentage of salary										125%	100%	100%
Total payout as a percentage of salary										74%	59%	57%

1. The actual underlying profit before tax of £26.8m was adjusted by £0.2m to £26.6m for acquisition related costs. The actual net cash balance of £14.3m was adjusted by £3.6m to £17.9m for acquisition related expenditure.

A sliding scale of targets for each financial measure of the Group was set at the start of the 2014/2015 financial year:

Performance achieved	% of element payable
Threshold	0%
On-target	50%
Maximum	100%
Between any two points	Straight line percentage

The personal objectives of the executive directors were different for each individual, but broadly related to:

- Developing and efficiently executing the strategic plan;
- Identifying opportunities for inorganic growth;
- Improving margin by focusing on reducing costs;
- Managing R&D processes; and
- Mentoring new executives and succession planning.

The performance of the Company over the year included a 9% increase in underlying profit before tax to £26.8m (2014: £24.6m) and an overall cash inflow in the period of £1.7m compared to

an overall cash inflow of £6.5m in the prior year. The underlying profit before tax of £26.8m was adjusted by £0.2m for acquisition-related costs, to give an adjusted underlying profit before tax of £26.6m. The profit target was achieved at a level of 50% of maximum. The net cash of £14.3m was adjusted by the £3.6m acquisition-related expenditure, to give an adjusted net cash balance of £17.9m. The cash target was achieved at a level of 57.5% of maximum. The Committee judged that individual objectives were achieved at a level of 82% for the CEO, 85% for the CFO, and at 75% for the Chief Operating Officer.

In light of the above performance against all three measures, the Committee concluded that a bonus payment should be made. The total bonus was 59% of maximum bonus for the CEO, 59% of maximum for the CFO, and 57% of maximum for the Chief Operating Officer. This represents a bonus of 74%, 59% and 59% of base salary, respectively.

One half of any bonus paid to an executive director is subject to a policy of compulsory deferral into ordinary shares, via the 2011 DBP, the release of which is subject to continued employment for a three-year period from the award date.

## Long-term incentives

### Awards vesting during the financial year (audited)

Awards under the LTIP made in November 2011 vested in November 2014 on the basis of EPS and TSR performance over performance periods, the last of which ended in October 2014. 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	Nil
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 + 4% p.a.	Nil
RPI + 4% p.a.	30%
RPI + 11% p.a.	100%
Between RPI + 4% and RPI + 11% p.a.	Straight-line basis

Over the three-year performance period, Ricardo was ranked between the median and upper quartile of the TSR comparator group, giving a vesting level for this portion of 72%. The EPS figure for the year represented growth of RPI + 7% p.a., compared to the base year, with the result that the EPS condition was achieved to a level of 62%. Therefore, the overall vesting level for this award is 67%. The number and value of shares which vested in November 2014 in respect of awards granted to each of the executive directors in November 2011 is set out on page 97 of this report.

## Awards made in the year (audited)

Awards were made to the executive directors under the 2011 DBP and 2014 LTIP in October 2014. The awards granted to each executive were as follows:

### 2011 DBP

	Chief Executive Officer Dave Shemmans	Chief Financial Officer Ian Gibson	Chief Operating Officer Mark Garrett
Type awarded	Performance Shares (Matching Award) <sup>1</sup>		
Basis for award	1:1 match for corresponding Deferred Award		
Date of award	29 October 2014		
Number of shares	16,640	8,082	6,859
Share price <sup>2</sup>	£6.352	£6.352	£6.352
Face value of award	£105,697	£51,337	£43,568
% which would vest for the achievement of threshold performance	25%	25%	25%
End of last performance period	35 days after release of preliminary results announcement in respect of the 2016/2017 financial year (expected to be October 2017)		

1. As the Matching 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 28 October 2014.

### 2014 LTIP

	Chief Executive Officer Dave Shemmans	Chief Financial Officer Ian Gibson	Chief Operating Officer Mark Garrett
Type awarded	Performance Shares <sup>1</sup>	Performance Shares <sup>1</sup>	Performance Shares <sup>1</sup>
Basis for award	100% of base salary	55% of base salary	55% of base salary
Date of award	29 October 2014	29 October 2014	29 October 2014
Number of shares	69,269	24,525	21,404
Share price <sup>2</sup>	£6.352	£6.352	£6.352
Face value of award	£439,997	£155,783	£135,958
% which would vest for the achievement of threshold performance	25%	25%	25%
End of last performance period	35 days after release of preliminary results announcement in respect of the 2016/2017 financial year (expected to be October 2017)		

1. As the 2014 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 28 October 2014.

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.

#### Relative TSR portion (50%)

Relative TSR performance against the FTSE Small Cap (excluding financial services companies and investment trusts)

	Vesting level
Below median	Nil
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.	Nil
RPI + 3% p.a.	25%
RPI + 10% p.a.	100%
Between RPI + 3% and RPI + 10% p.a.	Straight-line basis

## Performance targets history

The Committee reviews targets each year and has adjusted the top end of the EPS target range a number of times in recent years to ensure that it remains appropriately stretching. For awards made in the year ending 30 June 2008, maximum vesting of the EPS portion required growth of RPI + 10% p.a. For awards in

years ending 30 June 2009 and 2010, the EPS growth required for maximum vesting was RPI + 11% p.a. This target was increased again to RPI + 12% p.a. for awards in the year ending 30 June 2011. This increase was made in response to a relatively low base year. The figure was subsequently adjusted to RPI + 11% p.a. for awards in the year ending 30 June 2012 and RPI + 10% p.a. for awards in

years ending 30 June 2013, 2014 and 2015 respectively. The EPS targets to be met in order to achieve threshold vesting have since 2008 required performance in excess of RPI + 4% p.a., however this target was reduced to RPI + 3% p.a. for awards made in the financial year ended 30 June 2015. This change was the result of extensive consideration of the EPS target in particular in light of market expectations and management plans. This reduction is also offset by a reduction in the threshold vesting level applicable to these awards. The performance condition applicable to the TSR portion of awards has remained constant through this period. The number and value of shares which were awarded to each of the executive directors in the year ended 30 June 2015 are set out above.

During the year the Committee considered the potential impact of acquisitions on the performance targets applicable to bonus and long-term incentive awards and adopted a set of principles to guide the Committee's approach. Applying these principles to the acquisition of Lloyd's Register Rail, which materially completed on 1 July 2015, the Committee determined that no adjustments to the relevant targets would be required.

### Non-executive directors' fees

Current non-executive director fees as from 1 January 2015 are as follows:

	£'000
Chairman's total fees	135
Other non-executive director fees:	
Basic fee	43
Additional fee for Audit and Remuneration Committee Chairmen	7
Additional fee for the Senior Independent Director	6

The above table reflects a 3% increase in the Chairman's fees and the basic fee for non-executive directors relative to 2013/2014.

### Executive director board appointments with other companies during 2014/2015

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 period from 1 September 2014 to 30 June 2015 (inclusive) amounted to £25,000.

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

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

### Directors' shareholdings (audited)

The interests of directors and their connected persons in ordinary shares as at 30 June 2015 (or date of cessation of employment, if earlier), including any interests in share options and shares provisionally awarded under the LTIP and Deferred Bonus Plan are presented below.

At 9 September 2015, the interests in shares of the directors who were still in office were unchanged from those at 30 June 2015.

	Shareholding as at 30 June 2015 <sup>1</sup>	As a percentage of base salary for executive directors (i.e. those who are subject to the share retention policy)	Not subject to performance conditions  Deferred Awards <sup>3</sup>	Subject to performance conditions  LTIP awards and Matching Awards <sup>3</sup>	Share options exercised during the financial year <sup>2</sup>  2004 Executive Share Option Plan
<b>EXECUTIVE DIRECTORS</b>					
Dave Shemmans	104,085	198%	97,455	348,496	0
Mark Garrett	59,206	200%	43,573	118,419	7,068
Ian Gibson	0	0%	8,270	58,590	0
<b>NON-EXECUTIVE DIRECTORS</b>					
Michael Harper <sup>4</sup>	35,000	N/A	0	0	0
Terry Morgan	10,000	N/A	0	0	0
David Hall	20,000	N/A	0	0	0
Hans-Joachim Schöpf <sup>5</sup>	0	N/A	0	0	0
Peter Gilchrist	4,970	N/A	0	0	0
Ian Lee	13,610	N/A	0	0	0

1. The mid-market closing price of the Company's shares on 30 June 2015 was 862.0p (2014: 640.5p).

2. Following Mark Garrett's share option exercise during the year (further details of which are provided on page 99 there were no further vested but unexercised share options outstanding held by directors.

3. Deferred Awards and Matching Awards were granted pursuant to the 2011 Deferred Bonus Plan and LTIP awards were granted pursuant to either the 2006 LTIP or the 2014 LTIP.

4. As at 29 October 2014, the date that Michael Harper ceased to hold office as a director.

5. As at 30 June 2015, the date that Hans-Joachim Schöpf ceased to hold office as a director.



As described in the policy table, 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 basic annual salary within five years of the date of the executive's appointment. As at 30 June 2015, Dave Shemmans and Mark Garrett meet this shareholding requirement. Ian Gibson has not yet met this required level and will be expected to retain any vested shares net of tax from the LTIP and Deferred Bonus Plan until the guideline has been achieved.

### 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 2013/2014 and 2014/2015. The employee

figures represent information in respect of all employees rather than just the UK population referred to last year, given the international expansion of the Group, and the Committee intends to refer to this comparator group in the future. The increase in the CEO's bonus compared to the prior year reflects performance against the Group targets of profit before tax and the cash balance, together with the degree of achievement of personal objectives. The CEO's bonus in 2013/2014 was relatively low at 38% of maximum opportunity which also contributed to the relatively large year on year increase shown. By comparison, bonuses paid to all employees across the Group also increased year on year. The change in the employees' annual bonus represents the movement in the aggregate of all bonuses across all divisions with performance against target varying between divisions.

	CEO	Employees
Base salary	3%	3%
Benefits	0%	0%
Annual bonus	58%	3%

### 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 2013/2014 and 2014/2015.

	2013/2014 (£m)	2014/2015 (£m)	% change
Total remuneration spend	117.9	118.2	0.1%
Distribution to shareholders	8.0	8.7	8.75%

### Voting outcome at AGM

The AGM for the financial year 2013/2014 was held on 29 October 2014 and Ricardo's remuneration resolutions received strong support from shareholders. The results of the vote on the various remuneration resolutions are set out below.

	Remuneration Policy	Remuneration Report	2014 LTIP	2014 ESOP
% of votes for	98.30%	99.30%	98.86%	96.20%
% of votes against	1.69%	0.69%	1.13%	3.79%
Number of votes withheld <sup>1</sup>	18,413	8,367	9,185	565,367

1. 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

## Implementation of remuneration policy in following year

The Committee does not propose to make significant changes to the remuneration policy in 2015/2016 and anticipates the implementation of the policy to be similar to that of the current financial year.

The Committee will:

- Review base salary levels for the executive directors with effect from 1 January 2016;
- Set/review the performance targets for the 2015/2016 annual bonus and long-term incentive awards to be made in 2015 to ensure continued alignment to strategy;
- Make awards under the 2014 LTIP; and
- Make awards under the 2011 DBP where necessary.

The Committee has so far considered the targets to apply to the

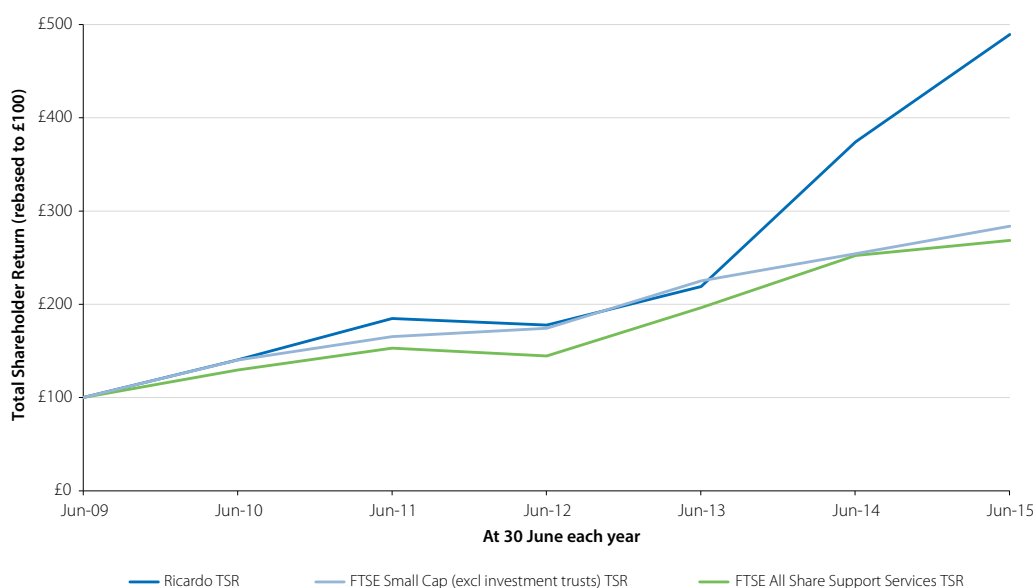
EPS portion of performance awards to be made under the 2014 LTIP and 2011 DBP later on in the year. In order to ensure that the targets remain challenging in light of market expectation of the Company's EPS performance, the Committee has determined that:

- No part of the EPS portion of these grants will vest if the Company's EPS growth does not exceed the growth in inflation ('RPI') by 3% compound per annum;
- 25% of this portion will vest where EPS growth meets RPI +3% compound per annum;
- 100% of this portion will vest where EPS growth meets or exceeds RPI + 10% compound per annum; and
- Vesting will take place on a straight-line basis between RPI + 3% and RPI + 10% compound per annum.

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

## TSR performance graph & CEO pay history

### TSR for the years 30 June 2009 to 30 June 2015



The chart above shows Ricardo's TSR performance for the past 6 years against the FTSE Small Cap index (excluding investment trusts). In the Directors' 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 CEO Dave Shemmans' remuneration for the period is represented in the table below.

Financial Year	CEO Single figure of total remuneration (£000)	Annual variable element award rates against maximum opportunity	Long-term incentive vesting rates against maximum opportunity
2014/2015	1,367	59%	67%
2013/2014	760	38%	N/A
2012/2013	1,546	75%	77%
2011/2012	979	58%	35%
2010/2011	1,116	97%	46%
2009/2010	708	19%	36%

## Directors' interests in shares provisionally awarded under the Long-Term Incentive Plan (audited)

The following chart sets out in graphical form how the Long-Term Incentive Plan operates



For details of the share retention policy, see page 85.

The Directors' interests in shares provisionally awarded under the Long-Term Incentive Plan are as follows:

	3-year cycle Ending	Award Date <sup>(1)</sup>	Share price at award date in pence	At 1 July 2014	Allocated	Lapsed	Vested	At 30 June 2015 <sup>(2)</sup>	Vesting Date
Dave Shemmans	2014	Nov 11	368.80	108,644	–	35,788	72,856	–	03.11.14
	2015	Nov 12	364.40	113,804	–	–	–	113,804	15.11.15
	2016	Oct 13	582.10	73,380	–	–	–	73,380	16.10.16
	2017	Oct 14 <sup>(3)</sup>	635.20	–	69,269	–	–	69,269	29.10.17
Ian Gibson	2016	Oct 13	582.10	25,983	–	–	–	25,983	16.10.16
	2017	Oct 14 <sup>(3)</sup>	635.20	–	24,525	–	–	24,525	29.10.17
Mark Garrett	2014	Nov 11	368.80	29,826	–	9,825	20,001	–	03.11.14
	2015	Nov 12	364.40	33,205	–	–	–	33,205	15.11.15
	2016	Oct 13	582.10	22,676	–	–	–	22,676	16.10.16
	2017	Oct 14 <sup>(3)</sup>	635.20	–	21,404	–	–	21,404	29.10.17

1. Awards made under the 2006 LTIP: performance conditions as outlined on page 92.

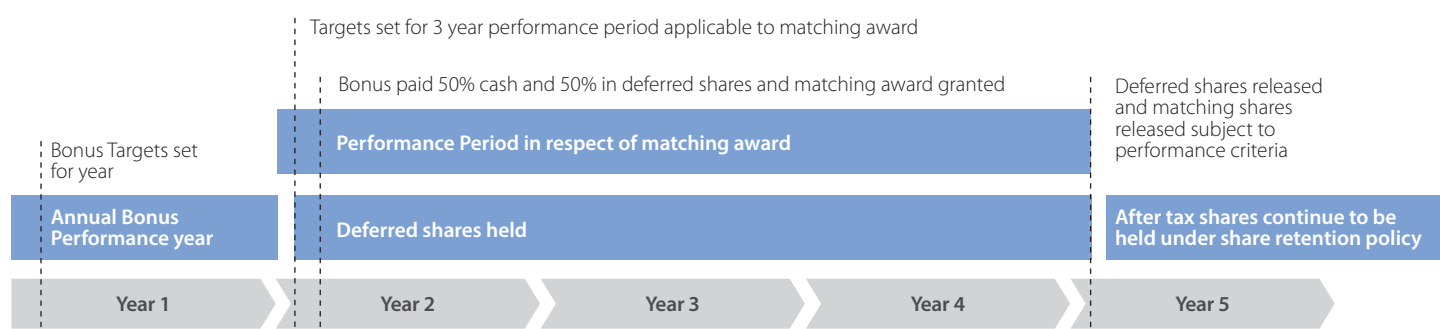
2. The mid-market closing price of the Company's shares on 30 June 2015 was 862.0p (2014: 640.5p).

3. Awards made under the 2014 LTIP: performance conditions as outlined on page 93. The face value of the awards made in October 2014 at the date of grant was Dave Shemmans: £439,996.69; Ian Gibson: £155,782.80; Mark Garrett: £135,958.21.

The value of shares vested under the November 2011 awards was £470,467.62 for Dave Shemmans and £129,156.46 for Mark Garrett. The market price per share of these shares that vested on 3 November 2014 was 645.75p.

## Directors' interests in shares provisionally awarded under the Deferred Bonus Plans (audited)

The following chart sets out in graphical form how the Deferred Bonus Plan operates



For details of the share retention policy, see page 85.

The Directors' interests in shares provisionally awarded under the Deferred Bonus Plan are as follows:

	Type of Award	Award date	Deferral / performance period	Share price at award date in pence	Number of provisional shares					At 30 June 2015
					At 1 July 2014	Awarded	Dividend shares <sup>(1)</sup>	Lapsed	Vested	
Dave Shemmans	Deferred	Nov 11	3 yrs	368.80	38,408	–	–	–	38,408	–
	Deferred	Nov 12	3 yrs	364.40	43,512	–	1,015	–	–	44,527
	Matching <sup>(2)</sup>	Nov 12	3 yrs	364.40	41,111	–	–	–	–	41,111
	Deferred	Oct 13	3 yrs	582.10	35,082	–	818	–	–	35,900
	Matching <sup>(2)</sup>	Oct 13	3 yrs	582.10	34,292	–	–	–	–	34,292
	Deferred	Oct 14	3 yrs	635.20	–	16,640 <sup>(3)</sup>	388	–	–	17,028
Ian Gibson	Matching <sup>(2)</sup>	Oct 14	3 yrs	635.20	–	16,640 <sup>(3)</sup>	–	–	–	16,640
	Deferred	Oct 14	3 yrs	635.20	–	8,082 <sup>(3)</sup>	188	–	–	8,270
Mark Garrett	Matching <sup>(2)</sup>	Oct 14	3 yrs	635.20	–	8,082 <sup>(3)</sup>	–	–	–	8,082
	Deferred	Nov 11	3 yrs	368.80	15,021	–	–	–	15,021	–
Mark Garrett	Deferred	Nov 12	3 yrs	364.40	19,744	–	460	–	–	20,204
	Matching <sup>(2)</sup>	Nov 12	3 yrs	364.40	18,655	–	–	–	–	18,655
	Deferred	Oct 13	3 yrs	582.10	15,979	–	372	–	–	16,351
	Matching <sup>(2)</sup>	Oct 13	3 yrs	582.10	15,620	–	–	–	–	15,620
	Deferred	Oct 14	3 yrs	635.20	–	6,859 <sup>(3)</sup>	159	–	–	7,018
	Matching <sup>(2)</sup>	Oct 14	3 yrs	635.20	–	6,859 <sup>(3)</sup>	–	–	–	6,859

1. Amounts allocated include shares equivalent to dividends on provisional shares.

2. Matching Awards made under the 2011 DBP: performance conditions as outlined on page 93.

3. The face value of the awards made in October 2014 at the date of grant was Dave Shemmans: £105,697.28 Ian Gibson: £51,336.86; Mark Garrett: £43,568.37.

The value of shares vested under the November 2011 awards was £248,019.66 for Dave Shemmans and £96,998.11 for Mark Garrett. The market price per share of these shares that vested on 3 November 2014 was 645.75p.

## The 2004 Executive Share Option Plan (audited)

	At 1 July 2014	Granted	Exercised	Lapsed	At 30 June 2015	Exercise price in pence	Date from which exercisable	Expiry date
Mark Garrett	7,068	–	7,068 <sup>(1)</sup>	–	–	305.00	22.10.11 <sup>(2)</sup>	21.10.18

1. These options were exercised on 11 September 2014 when the market value of a share was 634.7p. The aggregate gain was £23,303.20.
2. The ability to exercise the above options was originally subject to certain EPS related performance conditions which have now been satisfied. Further details of these conditions can be found on page 56 of the Ricardo plc Annual Report & Accounts 2011 which is available on the Company's website.

The closing mid-market price of the Company's shares on 30 June 2015 was 862.0 pence. The highest closing price during the year was 955.5 pence and the lowest closing price during the year was 605.0 pence.



**Peter Gilchrist**

Chairman of the Remuneration Committee

9 September 2015

## Additional disclosures

### Group results and dividends

The Directors recommend the payment of a final ordinary share dividend for 2015 of 11.95 pence net per share on 13 November 2015 to shareholders who are on the register of members at the close of business on 23 October 2015, which together with the interim dividend paid on 7 April 2015 makes a total of 16.6 pence net per ordinary share for the year (2014: 15.2 pence).

### Acquisitions and disposals

The acquisitions of Vepro Limited and Power Planning Associates Limited were made in the year under review. No disposals were made during the year.

### Events after the reporting date

The acquisition of the Lloyd's Register Rail business from the Lloyd's Register Group was substantially completed on 1 July 2015. The acquisition of Cascade Limited was also completed on 18 August 2015.

### Research and Development

The Group continues to devote effort and resources to research and development of new technologies. Costs of £9.8m have been incurred, of which £4.2m has been capitalised and £5.6m has been charged to the income statement during the year.

### Market value of land and buildings

The Directors are of the opinion that the market values of the Group's properties are not substantially different from the values included in the Group's Consolidated Financial Statements.

### Board of Directors

The current Directors of the Company at the date of this report appear on pages 66 and 67. Michael Harper retired from the Board on 29 October 2014.

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

On 1 July 2015, the Company announced the resignation of David Hall as Senior Independent Director on 30 June and the appointment of Peter Gilchrist in his place. In addition, the Company announced the retirement of Hans-Joachim Schöpf as a non-executive director and the appointment of Laurie Bowen.

### Directors' interests in shares

Directors' interests in shares and share options are contained on pages 94 and 97 to 99 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 s.309B of the Companies Act 1985 or s.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 Company, entered into qualifying third party indemnity provisions as defined by s.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 'Pulse' presentations to all members of staff, department and team briefings and meetings with Works Council 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.

### Suppliers' payment policy

In view of the international nature of the Group's operations there is no specific Group-wide policy in respect of payments to suppliers. Relationships with suppliers are governed by the Group's policy commitment to long-term relationships founded on trust and

mutual advantage. Within this overall policy, individual operating companies are responsible for agreeing terms and conditions for their business transactions and ensuring that suppliers are aware of the terms of payment.

## Share capital

As at 9 September 2015 the Company's share capital is divided solely into 52,417,047 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 trusts 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 Association of British Insurers. Based on the Company's issued share capital, as at 30 June 2015, these were in respect of the limit of 10% in any rolling 10-year period for all plans (3.67%) and in respect of the limit of 5% in any rolling 10-year period for discretionary share plans (3.22%).

The Company was given authority to purchase up to 15% of its existing ordinary share capital at the 2014 Annual General Meeting ('AGM'). That authority will expire at the conclusion of the AGM in 2015 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 2015 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 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 2015 AGM, all Directors wishing to remain in office would stand for re-election at the 2016 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 4 November 2015.

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 26 August 2015, 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
JP Morgan Asset Management	5,383,392	10.27
Schroder Investment Management	3,622,375	6.91
Standard Life Investments	3,558,574	6.79
Royal London Asset Management	3,110,141	5.93
Lansdowne Partners	2,970,139	5.67
Baillie Gifford & Co Limited	2,914,055	5.56
Hargreave Hale	2,888,243	5.51
Delta Lloyd Asset Management	1,984,510	3.79
BlackRock Investment Management (UK)	1,596,146	3.05

## Donations

During the year the Group made various charitable donations which are summarised in the Corporate Social Responsibility Report on page 41. The Group made no political donations during the year to 30 June 2015.

## Auditors

A resolution to reappoint PricewaterhouseCoopers LLP as auditors of the Company will be proposed at the AGM.

## Going concern

The Group's business activities together with the factors likely to affect its future development, performance and position are set out in the Strategic Report on pages 6 to 41. The financial position of the Group, its cash flows and liquidity position are presented on pages 113 and 114. As set out in further detail in Note 1(a) to the financial statements, the Directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for the foreseeable future. Thus they continue to adopt the going concern basis of accounting in preparing the financial statements.

Directors' Report approved by the Board on 9 September 2015 and signed on its behalf by:



**Patricia Ryan**

Group General Counsel & Company Secretary



# Financial statements





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# Statement of Directors' responsibilities

## in respect of the Annual Report and financial statements

The Directors are responsible for preparing the Annual Report, the Directors' Remuneration Report and the financial statements in accordance with applicable law and regulations.

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 ('IFRSs') 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 the Company and of the profit or loss of the Group for that period. In preparing these financial statements, the Directors are required to:

- Select suitable accounting policies and then apply them consistently;
- Make judgements and accounting estimates that are reasonable and prudent;
- State whether applicable IFRSs as adopted by the European Union have been followed, subject to any material departures disclosed and explained in the financial statements; and
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and the Group 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. They are also responsible for safeguarding the assets of the Company and the Group 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 Company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

### Disclosure of information to the auditors

In accordance with Section 418 of the Companies Act 2006, each Director confirms that:

- so far as the Director is aware, there is no relevant audit information of which the 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 Company's auditors are aware of that information.

### Responsibility statement of the Directors in respect of the Annual Report

Each of the Directors, whose names and functions are listed on the Board of Directors page, confirms that, to the best of their knowledge:

- the Group financial statements, which have been prepared in accordance with IFRSs as adopted by the EU, give a true and fair view of the assets, liabilities, financial position and profit of the Group; and
- the Strategic Report contained in this Annual Report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal risks and uncertainties that it faces.

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's performance, business model and strategy.



**Dave Shemmans**  
(Chief Executive Officer)  
9 September 2015



**Ian Gibson**  
(Chief Financial Officer)

# Independent auditors' report

## to the members of Ricardo plc

### REPORT ON THE FINANCIAL STATEMENTS

#### Our 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 2015 and of the Group's profit and the Group's and the Parent Company's cash flows for the year then ended;
- the Group financial statements have been properly prepared in accordance with International Financial Reporting Standards ('IFRSs') as adopted by the European Union;
- the Parent Company financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union and as applied in accordance with the provisions of the Companies Act 2006; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Group financial statements, Article 4 of the IAS Regulation.

#### What we have audited

Ricardo plc's financial statements comprise:

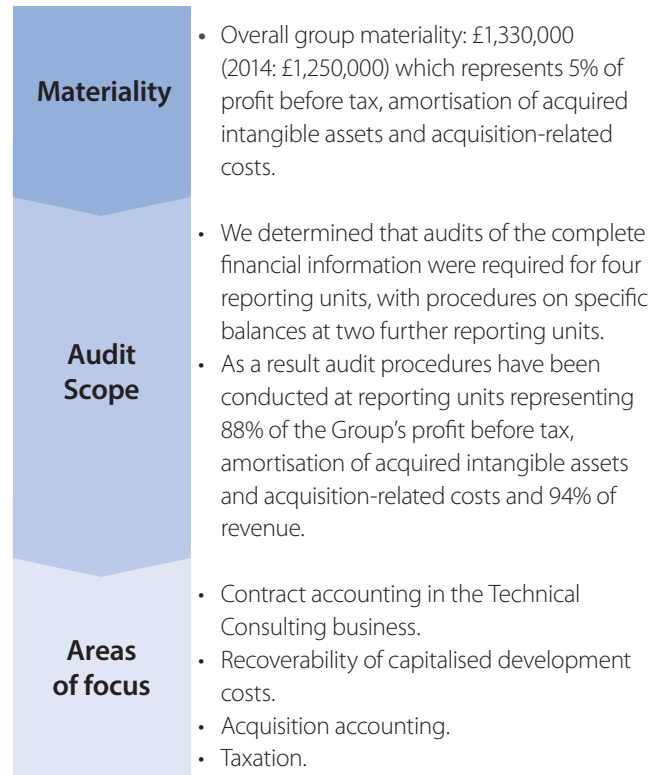
- the Consolidated and Parent Company Statements of Financial Position as at 30 June 2015;
- the Consolidated Income Statement and Consolidated Statement of Comprehensive Income for the year then ended;
- the Consolidated and Parent Company Statements of Cash Flow for the year then ended;
- the Group and Parent Company Statements of Changes in Equity for the year then ended; and
- the notes to the financial statements, which include a summary of significant accounting policies and other explanatory information.

Certain required disclosures have been presented elsewhere in the Annual Report & Accounts (the 'Annual Report'), rather than in the notes to the financial statements. These are cross-referenced from the financial statements and are identified as audited.

The financial reporting framework that has been applied in the preparation of the financial statements is applicable law and IFRSs as adopted by the European Union and, as regards the Parent Company financial statements, as applied in accordance with the provisions of the Companies Act 2006.

### Our audit approach

#### Overview



#### The scope of our audit and our areas of focus

We conducted our audit in accordance with International Standards on Auditing (UK and Ireland) ('ISAs (UK & Ireland)').

We designed our audit by determining materiality and assessing 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. As in all of our audits we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the Directors that represented a risk of material misstatement due to fraud.

The risks of material misstatement that had the greatest effect on our audit, including the allocation of our resources and effort, are identified as 'areas of focus' in the tables on the following pages. We have also set out how we tailored our audit to address these specific areas in order to provide an opinion on the financial statements as a whole, and any comments we make on the results of our procedures should be read in this context. This is not a complete list of all risks identified by our audit.

Area of focus	How our audit addressed the area of focus
<p><b>Contract accounting in the Technical Consulting business</b></p> <p><i>Refer to page 74 ('Contract accounting and performance' within the Audit Committee Report), Notes 1(c) and (e) to the financial statements for the Directors' disclosures of the related accounting policies, judgements and estimates for further information.</i></p> <p>Contract accounting is used in the Group's Technical Consulting business, which contributes the majority of the revenue, at £197m (2014: £181m). The contracts are inherently complex and may span a number of reporting periods. They therefore require estimates and judgements by management related to the stage that the contract has reached and the costs to complete the work, that could lead to an under or overstatement of revenue and profit, either intentionally or in error.</p> <p>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 client and the cash payments received.</p> <p>The Consolidated Statement of Financial Position at 30 June 2015 showed amounts recoverable on contracts ('AROC') of £31.2m, receivables of £40.5m and payments received in advance of £15.1m in respect of the Technical Consulting business. We carried out procedures on each of these balances in the course of the work described opposite.</p> <p>AROC represents work done that has not yet been invoiced and we focused on the risk that it, or the receivables for work that had been invoiced prior to the year-end, would not be recoverable in full. We also considered whether payments received in advance were recognised where the related work had not yet been done.</p> <p>In addition, provisions of £1.9m were held on the Consolidated Statement of Financial Position to cover expected costs arising from uncertain contract outcomes and we considered whether this was sufficient.</p>	<p>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 attended the 'Red Category 4' (high-risk and under-performing contracts) review meetings in January and July 2015 with the Group Chief Financial Officer and the divisional Managing 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 position in the financial statements.</p> <p>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 estimates used in the long-term contract accounting calculations, such as costs to complete, key project risks, contingencies held and adherence to billing schedules.</p> <p>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.</p> <p>We discussed significant AROC 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. No material issues were identified in this testing.</p> <p>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.</p> <p>We also tested manual journals with a material impact on revenue and found that all journals relating to contract accounting were properly supported.</p>
<p><b>Recoverability of capitalised development costs</b></p> <p><i>Refer to page 75 ('Capitalisation and carrying value of development costs' within the Audit Committee Report), and Notes 1(c), (f) and (o) to the financial statements for the Directors' disclosures of the related accounting policies, judgements and estimates for further information.</i></p> <p>The Group has increased its focus on research and development activities, targeted on areas that can maximise future benefit and during the year £4.2m of development spend was capitalised in respect of development projects.</p> <p>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 projects and, until signed contracts exist, there is a risk that such projects will not generate sufficient economic benefit in the future to support the current carrying value.</p>	<p>We tested that development costs 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.</p> <p>We found that the costs on these projects had been capitalised in accordance with the criteria set out in IAS 38.</p> <p>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 tested 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.</p>

Area of focus	How our audit addressed the area of focus
<p><b>Acquisition accounting</b>  <i>Refer to Notes 1(b), (c) and (o) to the financial statements for the Directors' disclosures of the related accounting policies, judgements and estimates for further information.</i>            The Group acquired Vepro and PPA in the financial year, as described in Note 12.            Acquisition accounting can be complex. Earn-out arrangements require an estimate of the total consideration payable and there is also a need for an allocation of some of the consideration between goodwill and other intangible assets (e.g. customer relationships and brands), which had been calculated through a discounted cash flow model. These were both matters that we focused on, as well as the useful economic lives assigned to the intangible assets identified.            In addition, management have separately presented the amortisation of acquisition-related intangible assets and acquisition-related costs as 'specific adjusting items' within the Consolidated Income Statement so we needed to be satisfied that the costs included were appropriately classified.            Post year-end the Group completed the acquisitions of Lloyd's Register Rail and Cascade, as described in Note 38.</p>	<p>We tested the calculations prepared by management of the consideration, including the treatment of the earn-out arrangements, to check that they had been appropriately accounted for as consideration or as an ongoing post-acquisition expense. We were satisfied with the calculations performed.            We obtained and tested the allocation of the consideration to other identifiable intangible assets, including brands and customer relationships arising on acquisition to determine whether the accounting standard had been appropriately applied. We found the judgements taken by management around the valuation of intangibles to be reasonable, based on our work on the discounted cash flow models they used.            We considered the appropriateness of amortisation rates for the identified intangible assets and recalculated the charge during the year. We were satisfied that the useful economic lives used for each class of intangible asset were appropriate on the basis of management's assessment of the likely period of benefit arising.            We tested a sample of items that were classified as acquisition-related costs and confirmed that they were accurate and appropriately classified under the Group's accounting policy.            We read the disclosure included in the financial statements for these post year-end acquisitions and ensured these were in compliance with the accounting standards.</p>
<p><b>Taxation</b>  <i>Refer to page 75 ('Deferred taxation' within the Audit Committee Report), and Notes 1(c) and (l) to the financial statements for the Directors' disclosures of the related accounting policies, judgements and estimates for further information.</i>            The Group claims significant R&amp;D credits and has potential liabilities for permanent establishment risks and transfer pricing for which it maintains provisions.            The German and US entities have £3.1m and £4.6m, respectively, of recognised deferred tax assets, but the performance of these statutory entities in the past few years has been variable, leading to doubt over the likely realisation of the assets.</p>	<p>We obtained the tax calculations, including those for R&amp;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 German and US statutory entities and the process by which they were prepared in considering the forecast utilisation of the relevant deferred tax assets.            We noted that the reorganisation of the Technical Consulting operations in Europe results in a greater likelihood of the German deferred tax asset being utilised and found management's assessment of recoverability to be reasonable.            We noted the US businesses, although close to break even, are in a profitable position and continue to utilise the deferred tax asset recognised.</p>

## 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 geographic structure of the Group, the accounting processes and controls, and the industry in which the Group operates.

The Group is structured by division, with significant reporting units in the UK, Germany and the USA, and further smaller reporting units in locations across Asia and Europe. The Group financial statements are a consolidation of 30 reporting units, comprising the Group's operating businesses and centralised functions. During the year the Technical Consulting business in Germany was restructured and a significant portion integrated with the UK Technical Consulting division to create Europe Technical Consulting. The result of this restructure is that we have

reduced the level of procedures performed in Germany.

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 Ricardo Group this is a reasonable indicator of the scale of activities of an individual entity. Based on this measure the full scope components were Europe Technical Consulting and Performance Products, as each division made up more than 15% of the Group's revenue. We also included Ricardo Energy & Environment in full scope for group reporting given the scale of the operation and the requirement for a UK statutory audit to be performed. Ricardo, Inc. and Ricardo Software in the US are the other main 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 higher level risk-focused procedures with respect to the remaining entities and performed procedures over consolidation entries.

The group audit team was responsible for all the work carried out in the UK. The specified procedures on the US operations were carried out by a team from PwC US under our instruction. Discussions were held with the PwC US team at both planning and completion to discuss the scope of their procedures and their findings. Taken together, our audit work and specified procedures on Ricardo, Inc. and Ricardo Software addressed 88% of the Group's profit before tax, amortisation of acquired intangible assets and acquisition-related costs and 94% 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 and to evaluate the effect of misstatements, both individually and on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

Overall group materiality	£1,330,000 (2014: £1,250,000).
How we determined it	5% of profit before tax, amortisation of acquired intangible assets and acquisition-related costs.
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 agreed with the Audit Committee that we would report to them misstatements identified during our audit above £65,000 (2014: £62,000) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

### Going concern

Under the Listing Rules we are required to review the Directors' statement, set out on page 101, in relation to going concern.

We have nothing to report having performed our review.

As noted in the Directors' statement, the Directors have concluded that it is appropriate to prepare the financial statements using the going concern basis of accounting. The going concern basis presumes that the Group and Parent Company have adequate resources to remain in operation, and that the Directors intend them to do so, for at least one year from the date the financial statements were signed. As part of our audit we have concluded that the Directors' use of the going concern basis is appropriate.

However, because not all future events or conditions can be predicted, these statements are not a guarantee as to the Group's and Parent Company's ability to continue as a going concern.

## OTHER REQUIRED REPORTING

### Consistency of other information

#### Companies Act 2006 opinion

In our opinion, the information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

### ISAs (UK & Ireland) reporting

Under ISAs (UK & Ireland) we are required to report to you if, in our opinion:

<ul style="list-style-type: none"> <li>information in the Annual Report is:           <ul style="list-style-type: none"> <li>materially inconsistent with the information in the audited financial statements; or</li> <li>apparently materially incorrect based on, or materially inconsistent with, our knowledge of the Group and Parent Company acquired in the course of performing our audit; or</li> <li>otherwise misleading.</li> </ul> </li> </ul>	We have no exceptions to report arising from this responsibility.
<ul style="list-style-type: none"> <li>the statement given by the Directors on page 104, in accordance with provision C.1.1 of the UK Corporate Governance Code ('the Code'), that they consider the Annual Report taken as a whole to be fair, balanced and understandable and provides the information necessary for members to assess the Group's and Parent Company's performance, business model and strategy is materially inconsistent with our knowledge of the Group and Parent Company acquired in the course of performing our audit.</li> </ul>	We have no exceptions to report arising from this responsibility.
<ul style="list-style-type: none"> <li>the section of the Annual Report on pages 74 and 75, as required by provision C.3.8 of the Code, describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee.</li> </ul>	We have no exceptions to report arising from this responsibility.

## Adequacy of accounting records and information and explanations received

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
- 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.

## Directors' remuneration

### Directors' remuneration report - Companies Act 2006 opinion

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

## Other Companies Act 2006 reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion, certain disclosures of Directors' remuneration specified by law are not made. We have no exceptions to report arising from this responsibility.

## Corporate governance statement

Under the Listing Rules we are required to review the part of the Corporate Governance Statement relating to the Parent Company's compliance with ten provisions of the UK Corporate Governance Code. We have nothing to report having performed our review.

## RESPONSIBILITIES FOR THE FINANCIAL STATEMENTS AND THE AUDIT

### Our responsibilities and those of the Directors

As explained more fully in the Statement of Directors' Responsibilities set out on page 104, the Directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and ISAs (UK & Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

This report, including the opinions, has been prepared for and only for the Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

### What an audit of financial statements involves

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of:

- whether the accounting policies are appropriate to the Group's and the Parent Company's circumstances and have been consistently applied and adequately disclosed;
- the reasonableness of significant accounting estimates made by the Directors; and
- the overall presentation of the financial statements.

We primarily focus our work in these areas by assessing the Directors' judgements against available evidence, forming our own judgements, and evaluating the disclosures in the financial statements.

We test and examine information, using sampling and other auditing techniques, to the extent we consider necessary to provide a reasonable basis for us to draw conclusions. We obtain audit evidence through testing the effectiveness of controls, substantive procedures or a combination of both.

In addition, we read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.



**Andrew Paynter** (Senior Statutory Auditor)  
for and on behalf of PricewaterhouseCoopers LLP  
Chartered Accountants and Statutory Auditors  
Gatwick

**9 September 2015**

# Consolidated income statement

for the year ended 30 June 2015

	Notes	Year ended 30 June 2015			Year ended 30 June 2014		
		Underlying £m	Specific adjusting items <sup>(1)</sup> £m	Total £m	Underlying £m	Specific adjusting items <sup>(1)</sup> £m	Total £m
Revenue	2 & 3	257.5	-	257.5	236.2	-	236.2
Cost of sales		(155.7)	-	(155.7)	(142.6)	-	(142.6)
Gross profit		101.8	-	101.8	93.6	-	93.6
Administrative expenses		(74.8)	(3.9)	(78.7)	(68.5)	(1.1)	(69.6)
Other income		0.7	-	0.7	0.5	-	0.5
Operating profit	5	27.7	(3.9)	23.8	25.6	(1.1)	24.5
Net finance costs	8	(0.9)	-	(0.9)	(1.0)	-	(1.0)
<b>Profit before taxation</b>		<b>26.8</b>	<b>(3.9)</b>	<b>22.9</b>	<b>24.6</b>	<b>(1.1)</b>	<b>23.5</b>
Taxation	9	(4.6)	0.3	(4.3)	(4.5)	0.2	(4.3)
<b>Profit for the year</b>		<b>22.2</b>	<b>(3.6)</b>	<b>18.6</b>	<b>20.1</b>	<b>(0.9)</b>	<b>19.2</b>
<b>Earnings per ordinary share</b>							
Basic	11			<b>35.6p</b>			36.9p
Diluted	11			<b>35.2p</b>			36.4p

(1) Specific adjusting items comprise amortisation of acquired intangible assets and acquisition-related costs. Further details are given in Note 4.



# Consolidated statement of comprehensive income

for the year ended 30 June 2015

	<i>Notes</i>	<b>Year ended 30 June 2015</b>	Year ended 30 June 2014
		<b>£m</b>	£m
Profit for the year		<b>18.6</b>	19.2
Items that will not be reclassified to profit or loss:			
Remeasurements on the defined benefit scheme	24	<b>(4.7)</b>	(3.2)
Deferred tax on items taken directly to equity	25	<b>1.5</b>	0.7
Total items that will not be reclassified to profit or loss		<b>(3.2)</b>	(2.5)
Items that may be reclassified subsequently to profit or loss:			
Currency translation on foreign currency net investments	30	<b>0.5</b>	(3.0)
Total items that may be reclassified subsequently to profit or loss		<b>0.5</b>	(3.0)
Total other comprehensive loss for the year (net of tax)		<b>(2.7)</b>	(5.5)
<b>Total comprehensive income for the year</b>		<b>15.9</b>	13.7

# Statements of changes in equity

for the year ended 30 June 2015

Group	Notes	Share capital £m	Share premium £m	Other reserves £m	Retained earnings £m	Total equity £m
At 1 July 2014		13.1	14.2	3.4	76.9	107.6
Profit for the year		-	-	-	18.6	18.6
Other comprehensive income/(loss) for the year		-	-	0.5	(3.2)	(2.7)
Equity-settled transactions	28	-	-	-	1.4	1.4
Proceeds from shares issued	27 & 29	-	0.1	-	-	0.1
Purchases of own shares to settle awards		-	-	-	(0.9)	(0.9)
Ordinary share dividends	10	-	-	-	(8.1)	(8.1)
<b>At 30 June 2015</b>		<b>13.1</b>	<b>14.3</b>	<b>3.9</b>	<b>84.7</b>	<b>116.0</b>
At 1 July 2013		13.0	14.0	6.4	66.5	99.9
Profit for the year		-	-	-	19.2	19.2
Other comprehensive loss for the year		-	-	(3.0)	(2.5)	(5.5)
Equity-settled transactions	28	-	-	-	1.2	1.2
Proceeds from shares issued	27 & 29	0.1	0.2	-	-	0.3
Ordinary share dividends	10	-	-	-	(7.5)	(7.5)
At 30 June 2014		13.1	14.2	3.4	76.9	107.6

Company		Share capital £m	Share premium £m	Other reserves £m	Retained earnings £m	Total equity £m
At 1 July 2014		13.1	14.2	-	76.4	103.7
Profit for the year		-	-	-	16.1	16.1
Other comprehensive loss for the year		-	-	-	(3.2)	(3.2)
Equity-settled transactions	28	-	-	-	1.4	1.4
Proceeds from shares issued	27 & 29	-	0.1	-	-	0.1
Purchases of own shares to settle awards		-	-	-	(0.9)	(0.9)
Ordinary share dividends	10	-	-	-	(8.1)	(8.1)
<b>At 30 June 2015</b>		<b>13.1</b>	<b>14.3</b>	<b>-</b>	<b>81.7</b>	<b>109.1</b>
At 1 July 2013		13.0	14.0	-	70.2	97.2
Profit for the year		-	-	-	15.0	15.0
Other comprehensive loss for the year		-	-	-	(2.5)	(2.5)
Equity-settled transactions	28	-	-	-	1.2	1.2
Proceeds from shares issued	27 & 29	0.1	0.2	-	-	0.3
Ordinary share dividends	10	-	-	-	(7.5)	(7.5)
At 30 June 2014		13.1	14.2	-	76.4	103.7

# Consolidated and parent company statements of financial position

at 30 June 2015

	Notes	Group		Company	
		30 June 2015	30 June 2014	30 June 2015	30 June 2014
		£m	£m	£m	£m
<b>Assets</b>					
<b>Non-current assets</b>					
Goodwill	13	26.0	25.1	-	-
Other intangible assets	14	18.9	16.7	4.6	4.9
Property, plant and equipment	15	49.6	48.3	7.7	7.8
Investments	16	-	-	73.9	68.3
Deferred tax assets	25	13.7	10.9	4.9	5.3
		<b>108.2</b>	101.0	<b>91.1</b>	86.3
<b>Current assets</b>					
Inventories	17	7.8	7.9	-	-
Trade and other receivables	18	78.6	66.6	57.8	49.4
Derivative financial assets	22	0.2	-	0.2	-
Current tax assets		2.1	1.1	-	-
Cash and cash equivalents	33	59.7	12.6	0.5	0.5
		<b>148.4</b>	88.2	<b>58.5</b>	49.9
<b>Total assets</b>		<b>256.6</b>	189.2	<b>149.6</b>	136.2
<b>Liabilities</b>					
<b>Current liabilities</b>					
Trade and other payables	20	(63.8)	(56.3)	(13.7)	(12.0)
Current tax liabilities		(5.8)	(3.2)	(0.6)	(0.5)
Derivative financial liabilities	22	(0.1)	-	(0.1)	-
Provisions	26	(0.4)	(0.7)	-	-
		<b>(70.1)</b>	(60.2)	<b>(14.4)</b>	(12.5)
<b>Net current assets</b>		<b>78.3</b>	28.0	<b>44.1</b>	37.4
<b>Non-current liabilities</b>					
Borrowings	21	(45.4)	-	(5.4)	-
Retirement benefit obligations	24	(20.7)	(19.5)	(20.7)	(19.5)
Deferred tax liabilities	25	(3.1)	(0.5)	-	(0.5)
Provisions	26	(1.3)	(1.4)	-	-
		<b>(70.5)</b>	(21.4)	<b>(26.1)</b>	(20.0)
<b>Total liabilities</b>		<b>(140.6)</b>	(81.6)	<b>(40.5)</b>	(32.5)
<b>Net assets</b>		<b>116.0</b>	107.6	<b>109.1</b>	103.7
<b>Shareholders' equity</b>					
Share capital	27	13.1	13.1	13.1	13.1
Share premium	29	14.3	14.2	14.3	14.2
Other reserves	30	3.9	3.4	-	-
Retained earnings	31	84.7	76.9	81.7	76.4
<b>Total equity</b>		<b>116.0</b>	107.6	<b>109.1</b>	103.7

The notes on pages 115 to 149 form an integral part of these financial statements.

The financial statements of Ricardo plc (registered number 222915) on pages 110 to 149 were approved by the Board of Directors on 9 September 2015 and signed on its behalf by:



**Dave Shemmans**  
(Chief Executive Officer)



**Ian Gibson**  
(Chief Financial Officer)

# Consolidated and parent company statements of cash flow

for the year ended 30 June 2015

		Group		Company	
	Notes	Year ended 30 June 2015 £m	Year ended 30 June 2014 £m	Year ended 30 June 2015 £m	Year ended 30 June 2014 £m
<b>Cash flows from operating activities</b>					
Cash generated from/(used in) operations	32	28.4	23.3	(7.0)	(5.8)
Net finance (costs)/income		(0.1)	-	0.9	0.7
Tax paid		(1.3)	(1.7)	-	-
Net cash generated from/(used in) operating activities		27.0	21.6	(6.1)	(5.1)
<b>Cash flows from investing activities</b>					
Acquisitions of subsidiaries, net of cash acquired	12	(2.4)	-	-	-
Purchases of property, plant and equipment		(10.4)	(6.3)	(0.3)	(0.2)
Government grants received in respect of property, plant and equipment		0.1	1.5	-	-
Proceeds from sale of property, plant and equipment		0.1	0.1	-	-
Purchases of intangible assets		(5.5)	(4.2)	(0.8)	(0.7)
Purchases of investments in subsidiary undertakings		-	-	(4.9)	-
Dividends received from subsidiaries		-	-	15.6	13.6
Net cash (used in)/generated from investing activities		(18.1)	(8.9)	9.6	12.7
<b>Cash flows from financing activities</b>					
Proceeds from issuance of ordinary shares		0.1	0.3	0.1	0.3
Purchases of own shares to settle awards		(0.9)	-	(0.9)	-
Net proceeds from borrowings		48.4	-	8.4	-
Repayments of borrowings		(3.0)	-	(3.0)	-
Dividends paid to shareholders	10	(8.1)	(7.5)	(8.1)	(7.5)
Net cash generated from/(used in) financing activities		36.5	(7.2)	(3.5)	(7.2)
Effect of exchange rate changes on cash and cash equivalents		1.7	1.0	-	-
<b>Net increase in cash and cash equivalents</b>	33	<b>47.1</b>	<b>6.5</b>	<b>-</b>	<b>0.4</b>
Cash and cash equivalents at 1 July	33	12.6	6.1	0.5	0.1
<b>Net cash and cash equivalents at 30 June</b>	33	<b>59.7</b>	<b>12.6</b>	<b>0.5</b>	<b>0.5</b>
<b>At 1 July</b>					
Cash and cash equivalents		12.6	6.8	0.5	0.6
Bank overdrafts		-	(0.7)	-	(0.5)
		12.6	6.1	0.5	0.1
<b>At 30 June</b>					
Cash and cash equivalents		59.7	12.6	0.5	0.5
Bank overdrafts		-	-	-	-
		59.7	12.6	0.5	0.5

# Notes to the financial statements

## 1 Accounting policies

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 2014 and 30 June 2015. Ricardo plc ('the Company') is a public limited company, 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, United Kingdom.

### (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.

The Group's business activities together with the factors likely to affect its future development, performance and position are set out in the Strategic Report on pages 6 to 41. The financial position of the Group, its cash flows and liquidity position are presented on pages 113 and 114. In addition, Note 23 includes the Group's financial risk management objectives, policies and processes; details of its financial instruments and its exposure to credit risk and liquidity risk. The Group's committed borrowing facilities are also detailed in Note 21.

The Group's forecasts and projections, taking account of reasonably possible changes in trading performance, show that the Group should be able to operate within the level of its current facilities for the foreseeable future.

The principal risks and uncertainties affecting the forecasts and projections to which the Group is exposed relate to customers and markets, contract performance, people, technology, compliance with laws and regulations, defined benefit pension scheme and financing. Further details of these risks and uncertainties are provided on pages 77 to 79.

The Directors have carried out a critical review of the Group's 2015/16 budget and medium-term business plans, with due regard for the risks and uncertainties to which the Group is exposed and the impact that these could have on trading performance. The key assumptions used in constructing the budget relate to:

- Management's assessment of revenue from the year-end closing order book and weighted opportunity pipeline;
- Expected growth based on past experience and future market trends; and
- Management's assessment of the level of costs required to deliver the planned revenue.

At the time of approving the financial statements, the Directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for the foreseeable future. Thus they continue to adopt the going concern basis of accounting in preparing the annual 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 2015:

#### Amendment to IAS 19 'Employee Benefits'

This amendment clarifies the requirements that relate to how contributions from employees or third parties that are linked to service should be attributed to periods of service. In addition, it permits a practical expedient if the amount of the contributions is independent of the number of years of service.

#### Amendments to IAS 27 'Separate Financial Statements', IFRS 10 'Consolidated Financial Statements' and IFRS 12 'Disclosure of Interests in Other Entities'

The amendments provide 'investment entities' (as defined) an exemption from the consolidation of particular subsidiaries and instead requires that an investment entity measures the investment in each eligible subsidiary at fair value through profit or loss in accordance with IFRS 9 'Financial Instruments' or IAS 39 'Financial Instruments: Recognition and Measurement'. The amendments also require additional disclosure about why the entity is considered an investment entity, details of the entity's unconsolidated subsidiaries, and the nature of the relationship and certain transactions between the investment entity and its subsidiaries. Lastly, the amendments require an investment entity to account for its investment in a relevant subsidiary in the same way in its consolidated and separate financial statements (or to only provide separate financial statements if all subsidiaries are unconsolidated).

#### Amendment to IAS 32 'Financial Instruments: Presentation'

This amendment clarifies that the right of set-off must not be contingent on a future event. It must also be legally enforceable for all counterparties in the normal course of business, as well as in the event of a default, insolvency or bankruptcy. The amendment also considers settlement mechanisms.

#### Amendment to IAS 36 'Impairment of Assets'

This amendment removed certain disclosures of the recoverable amount of cash-generating units ('CGUs') which had been included in IAS 36 by the issue of IFRS 13.

#### Amendment to IAS 39 'Financial Instruments: Recognition and Measurement'

This amendment considers legislative changes to 'over-the-counter' derivatives and the establishment of central counterparties. Under IAS 39, novation of derivatives to central counterparties would result in discontinuance of hedge accounting when novation of a hedging instrument meets specified criteria.

#### Annual Improvements 2010-2012 Cycle

Amendments to IFRS 2 'Share-based Payments', IFRS 3 'Business Combinations', IFRS 8 'Operating Segments', IFRS 13 'Fair Value Measurement', IAS 16 'Property, Plant and Equipment', IAS 24 'Related Party Disclosures' and IAS 38 'Intangible Assets'.

#### Annual Improvements 2011-2013 Cycle

Amendments to IFRS 3 'Business Combinations', IFRS 13 'Fair Value Measurement' and IAS 40 'Investment Property'.

**1 Accounting policies (continued)****(a) Basis of preparation (continued)***IFRIC 21 'Levies'*

This interpretation addresses what the obligating event is that gives rise to pay a levy and when a liability should be recognised.

None of these amendments or interpretations to published standards have had any significant impact on these financial statements. Amended standards and interpretations that are not yet effective have not been early adopted and are disclosed in Note 1(w).

**(b) Basis of consolidation**

The consolidated financial statements comprise the financial statements of the Company and all of its subsidiaries (together 'the Group') made up 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. They are deconsolidated from the date that control ceases.

The Group applies the acquisition method of accounting to account for business combinations. The consideration transferred for an acquisition is the fair values of the assets transferred and the liabilities incurred. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. 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 costs are expensed as incurred.

Intercompany transactions and balances are eliminated on consolidation. Where necessary, amounts reported by subsidiaries are adjusted to conform with the Group's accounting policies.

**(c) Management judgements and key accounting estimates**

In preparing the financial statements, management is required to exercise judgement in making estimates and assumptions that affect reported amounts and disclosures. These judgements 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. Actual results could differ from those estimates and assumptions. The following accounting policies have been identified as being particularly sensitive to complex or subjective judgements or estimates.

*Performance and revenue recognition for fixed price contracts*

The Group derives a significant proportion of its revenue from the supply of professional services under contracts, most of which are normally fixed price contracts that may extend for a significant period of time. 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. Management judgement and experience is required to determine the completeness of those forecasts, the recoverability of the costs incurred and the revenue recognised on contracts. Unforeseen future events may adversely impact the accuracy of those forecasts and recoverability judgements. Further details are given in Note 19.

*Retirement benefit costs*

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. Further details are given in Note 24.

*Current and deferred taxation*

Legislation related to taxation is complex and its impact on the Group may be uncertain. In preparing the Group's financial statements management estimates its taxation net of any taxation liability credits relating to research and development, having taken appropriate professional advice. 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.

The recognition of assets and liabilities related to deferred taxation also requires management to exercise judgement, in particular the extent to which assets should be recognised. Further details are given in Note 25.

*Goodwill*

Management carries out an impairment review of goodwill on an annual basis or more frequently if events or changes in circumstances indicate a potential impairment. Determining whether goodwill is impaired requires an estimation of the value in use of the cash-generating units ('CGUs') to which goodwill has been allocated. During the year the German Technical Consulting business that formed part of Ricardo Deutschland GmbH was fully integrated with the UK Technical Consulting business to form the European Technical Consulting business, and the global Motorcycle division was created from the remaining business of Ricardo Deutschland GmbH. As a result of this integration, management determined that the carrying value of the goodwill allocated to the German Technical Consulting CGU should be aggregated with a separately identifiable element of goodwill within the Ricardo UK CGU and reallocated to the Ricardo Europe Technical Consulting CGU. The value in use calculation also requires management judgement to estimate the future cash flows expected to arise from the Ricardo Europe Technical Consulting CGU and to apply a suitable discount rate in order to calculate the present value of those future cash flows. The Group's acquisition activities that have taken place during the year have also given rise to the identification of other CGUs and management has applied judgement to the subsequent reallocation of the carrying value of goodwill across the remaining identifiable CGUs. Further details are given in Note 13.

*Acquisition-related intangible assets*

Other intangible assets include customer contracts and relationships, and other acquisition-related intangible assets as described in Note 14. The relative size of these assets makes the judgements regarding initial recognition significant to the Group's financial position. The fair value of these assets is determined by use of appropriate valuation techniques, including the excess earnings and royalty relief method. The use of different assumptions for the expectation of future cash flows and the discount rate could change the value of the intangible assets. Management also exercises judgement in estimating the useful lives of these assets and in considering whether any indicators of impairment have arisen, which impacts the Group's financial performance.

*Development costs*

Certain directly attributable costs which are incurred in the development of an intangible asset are capitalised. 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.

## 1 Accounting policies (continued)

### (c) Management judgements and key accounting estimates (continued)

#### *Provisions*

A provision is required 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 management's best estimate of the expenditure required to settle the Group's liability. These estimates are reviewed each year and updated as necessary.

### (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.

### (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 senior management level reviews of contracts deemed to be of higher risk, ensure that the Group identifies and recognises expected losses on fixed price contracts immediately.

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.

#### *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 income statement in the period 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 as part funding of research and development projects but also as part funding for capital projects. A grant is not recognised in the 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 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. Payments to defined

**1 Accounting policies (continued)****(h) Retirement benefit costs (continued)**

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. Actuarial gains and losses are recognised in the statement of comprehensive income except where they result from settlements or curtailments, in which case they are reported in the income statement.

Past service cost is recognised immediately to the extent that the benefits are already vested, and otherwise is amortised on a straight-line basis over the average period until the benefits become vested. The retirement benefit obligations recognised in the statement of financial position represent the present value of the defined benefit obligations as adjusted for unrecognised past service cost, and as 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 expected return on the scheme's assets and the increase during the year in the present value of the scheme's liabilities arising from the passage of time are included in finance costs.

**(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 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 profit or loss 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 model as explained in Note 28. The expected life used in the model is 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 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 Pound 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 the rates of exchange prevailing on the dates of the transactions. 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 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 other 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 income statement as a component of the gain or loss arising on disposal.

**(l) Taxation**

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the income statement, except to the extent that it relates to items recognised in other comprehensive income or directly in equity, in which case, the associated tax is also recognised in other comprehensive income or equity, respectively.

Current tax is the expected tax payable on the taxable income for the year, calculated using the average enacted rate applicable, and any adjustment to tax payable in respect of previous years.

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.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available 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.

**(m) Dividends**

Dividends are recognised as a liability in the year in which they are fully authorised. Interim dividends are recognised when paid.

**(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 and liabilities acquired. 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



## 1 Accounting policies (continued)

### (n) Goodwill (continued)

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 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 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 plus any costs directly attributable to bring the specific software 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	Between 3 and 8 years
- Software	Between 2 and 10 years
- Development costs	Between 2 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	Between 25 and 50 years
- Short-term leasehold property	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) Investments

Investments in subsidiaries are stated at cost less any impairment in value.

### (r) 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 of disposal 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.

### (s) 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 the Technical Consulting segment and using the first-in, first-out method in the Performance Products segment. Work in progress is stated at cost, including attributable overheads, less any foreseeable losses and progress payments received and receivable.

### (t) 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 non-current liabilities.

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 the 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 using the effective interest rate method. Differences between initial value and redemption value are recorded in the income statement over the period of the loan.

The fair values of non-derivative financial instruments other than loans due for repayment after more than one year are approximately equal to their book values. The fair value of loans due for repayment after more than one year is estimated by discounting the future contractual cash flows at the current market interest rate available to the Group for similar financial instruments.

**1 Accounting policies (continued)****(t) Financial instruments (continued)***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 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.

**(u) Provisions**

A provision is required 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.

**(v) 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 and acquisition-related costs. Acquisition-related costs are costs that the Group incurs to effect a business combination, including the costs associated with the integration of acquired businesses.

**(w) New standards and interpretations**

At 30 June 2015, 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
<i>International Financial Reporting Standards</i>		
IFRS 9 'Financial Instruments'	01-Jan-18	No
IFRS 14 'Regulatory Deferral Accounts'	01-Jan-16	No
IFRS 15 'Revenue from Contracts with Customers'	01-Jan-18	No
<i>Amendments to International Financial Reporting Standards</i>		
IFRS 10 'Consolidated Financial Statements'	01-Jan-16	No
IFRS 11 'Joint Arrangements'	01-Jan-16	No
IFRS 12 'Disclosure of Interests in Other Entities'	01-Jan-16	No
IAS 16 'Property, Plant and Equipment'	01-Jan-16	No
IAS 27 'Separate Financial Statements'	01-Jan-16	No
IAS 28 'Investments in Associates'	01-Jan-16	No
IAS 38 'Intangible Assets'	01-Jan-16	No
IAS 41 'Agriculture'	01-Jan-16	No
Annual Improvements 2012-2014 Cycle	01-Jan-16	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 IFRS 15 'Revenue from Contracts with Customers', which may have an impact on revenue recognition and related disclosures. Beyond the information above, it is not practicable to provide a reasonable estimate of the effect of IFRS 15 until a detailed review has been undertaken.

## 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 provides services in relation to the development and implementation of engineering and environmental projects and in relation to management and operational consultancy.
- Performance Products generates income from manufacturing, assembly, software sales and related services.

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.

Management monitors the operating results of its strategic business units separately for the purpose of making decisions about allocating resources and assessing performance. Segment performance is measured based on operating profit. Included within the Head Office and consolidation adjustments column in the following tables are functions managed by a central division, including the costs of running the public limited company.

### Year ended 30 June 2015

	Technical Consulting	Performance Products	Head Office and consolidation adjustments	Total
	£m	£m	£m	£m
Total segment revenue	199.2	62.5	-	261.7
Inter-segment revenue	(2.6)	(1.6)	-	(4.2)
<b>Revenue from external customers</b>	<b>196.6</b>	<b>60.9</b>	<b>-</b>	<b>257.5</b>
Underlying operating profit	20.0	7.7	-	27.7
Specific adjusting items (Note 4)	(1.2)	-	(2.7)	(3.9)
Operating profit	18.8	7.7	(2.7)	23.8
Net finance costs	(0.1)	-	(0.8)	(0.9)
<b>Profit before taxation</b>	<b>18.7</b>	<b>7.7</b>	<b>(3.5)</b>	<b>22.9</b>
<b>Total assets per financial statements</b>	<b>163.5</b>	<b>34.7</b>	<b>58.4</b>	<b>256.6</b>
<b>Total liabilities per financial statements</b>	<b>48.7</b>	<b>18.2</b>	<b>73.7</b>	<b>140.6</b>
Depreciation and amortisation	7.4	1.4	1.7	10.5
Capital expenditure - other intangible assets	3.7	1.0	0.8	5.5
Capital expenditure - property, plant and equipment	4.9	2.9	0.3	8.1

**2 Operating segments (continued)**

Year ended 30 June 2014

	Technical Consulting £m	Performance Products £m	Head Office and consolidation adjustments £m	Total £m
Total segment revenue	182.3	56.7	-	239.0
Inter-segment revenue	(1.3)	(1.5)	-	(2.8)
Revenue from external customers	181.0	55.2	-	236.2
Underlying operating profit	17.8	7.9	(0.1)	25.6
Specific adjusting items (Note 4)	(1.1)	-	-	(1.1)
Operating profit	16.7	7.9	(0.1)	24.5
Net finance costs	-	-	(1.0)	(1.0)
Profit before taxation	16.7	7.9	(1.1)	23.5
Total assets per financial statements	143.2	27.1	18.9	189.2
Total liabilities per financial statements	41.8	14.4	25.4	81.6
Depreciation and amortisation	7.1	1.1	1.3	9.5
Capital expenditure - other intangible assets	2.6	0.9	0.7	4.2
Capital expenditure - property, plant and equipment	6.3	1.6	0.2	8.1

Revenues from one customer represent approximately £37.2m (2014: £27.2m) of the Group's external revenue, of which £3.5m (2014: £3.7m) is reported in the Technical Consulting segment and £33.7m (2014: £23.5m) in the Performance Products segment.

**Non-current assets by geographical location (excluding deferred tax assets)**

Asset location	2015 £m	2014 £m
United Kingdom	67.7	62.8
Germany	16.3	19.4
United States	9.8	7.2
Rest of the World	0.7	0.7
<b>Total</b>	<b>94.5</b>	<b>90.1</b>

### 3 Revenue

#### a) Revenue by category

	2015	2014
	£m	£m
Rendering of services	201.4	186.0
Sale of goods	56.1	50.2
<b>Total</b>	<b>257.5</b>	<b>236.2</b>

#### b) Revenue by customer location

	2015	2014
	£m	£m
United Kingdom	120.8	97.4
Germany	25.6	27.1
Rest of Europe	20.8	27.7
Europe total	167.2	152.2
United States	39.2	38.0
China	20.0	14.0
Japan	17.6	17.0
Rest of Asia	9.9	13.9
Asia total	47.5	44.9
Rest of the World	3.6	1.1
<b>Total</b>	<b>257.5</b>	<b>236.2</b>

### 4 Specific adjusting items

	2015	2014
	£m	£m
Amortisation of acquisition-related intangible assets (Note 14)	1.3	1.1
Acquisition-related costs associated with LR Rail (Note 38(a))	2.1	-
Other acquisition-related costs	0.5	-
<b>Total</b>	<b>3.9</b>	<b>1.1</b>

The costs associated with the Lloyd's Register ('LR') Rail acquisition comprise costs incurred in the year ended 30 June 2015 for services rendered to, and consumed by, the Group to effect the LR Rail acquisition which materially completed on 1 July 2015, in addition to related integration activities. Other acquisition-related costs primarily comprise costs incurred in the year ended 30 June 2015 for services rendered to, and consumed by, the Group to effect the Vepro and Power Planning Associates ('PPA') acquisitions (see Note 12), in addition to the costs of the associated earn-out arrangements.

**5 Operating profit**

	2015	2014
	£m	£m
The following items have been charged/(credited) in arriving at operating profit:		
Amortisation of other intangible assets (Note 14)	4.2	3.0
Depreciation of property, plant and equipment (Note 15)	6.3	6.5
Cost of inventories recognised as expense	28.7	24.5
Operating lease rentals payable	5.6	5.1
Repairs and maintenance on property, plant and equipment	3.5	3.1
Redundancy and termination costs	1.4	0.7
Impairment losses on trade receivables (Note 18)	0.8	(0.2)
Net foreign exchange losses	0.2	0.5
	2015	2014
	£m	£m
With respect to the Group research and development activities the following items have been charged/(credited) in arriving at operating profit:		
Research and development expenditure in the year	5.6	5.5
Government grant income received in respect of part of this expenditure	(1.1)	(1.3)
<b>Total</b>	<b>4.5</b>	<b>4.2</b>

**6 Auditors' remuneration**

	2015	2014
	£m	£m
During the year the Group obtained the following services from the Group's auditors and network firms:		
Fees payable to the parent company's auditors for the audit of the parent company and consolidated financial statements	0.1	0.1
Fees payable to the parent company's auditors and its associates for other assurance services:		
The audit of the parent company's subsidiaries, pursuant to legislation	0.2	0.2
<b>Total audit fees</b>	<b>0.3</b>	<b>0.3</b>
Audit-related assurance services	0.1	0.1
Other non-audit services	0.4	-
<b>Total non-audit fees</b>	<b>0.5</b>	<b>0.1</b>

Fees payable to the parent company's auditors comprised £129,000 (2014: £139,000) for the audit of the parent company and consolidated financial statements, £192,000 (2014: £187,000) for the audit of the parent company's subsidiaries and £42,000 (2014: £46,000) for audit-related assurance services pursuant to the interim review.

Fees payable to the parent company's auditors for other non-audit services of £446,000 (2014: £4,000) comprised £442,000 (2014: £Nil) for due diligence in respect of completed and proposed acquisitions and £4,000 (2014: £4,000) for other services.

## 7 Employees

	2015	2014
	£m	£m
Staff costs		
Wages and salaries (including redundancy and termination costs)	99.6	99.3
Social security costs	11.7	11.6
Other pension costs (Note 24)	5.4	5.4
Share-based payments (Note 28)	1.5	1.6
<b>Total employee benefit expense</b>	<b>118.2</b>	<b>117.9</b>

	2015	2014
	Number	Number
Average monthly number of employees (including executive directors) during the year		
Technical Consulting	1,833	1,787
Performance Products	254	248
Head Office	38	40
<b>Total average headcount</b>	<b>2,125</b>	<b>2,075</b>

	2015	2014
	£m	£m
Key management compensation		
Short-term employee benefits	4.2	3.6
Share-based payments	1.1	0.8
Post-employment benefits	0.2	0.2
<b>Total key management compensation</b>	<b>5.5</b>	<b>4.6</b>

The key management personnel are the Board of Directors and the Managing Directors within the UK, US, Germany and Asia.

The remuneration received by the executive and non-executive directors during the year is disclosed in the Directors' Remuneration Report on page 90.

## 8 Net finance costs

	2015	2014
	£m	£m
Finance income:		
Bank interest receivable	0.2	0.2
	<b>0.2</b>	<b>0.2</b>
Finance costs:		
Interest payable on bank borrowings	(0.3)	(0.2)
Defined benefit pension financing costs (Note 24)	(0.8)	(1.0)
	<b>(1.1)</b>	<b>(1.2)</b>
<b>Net finance costs</b>	<b>(0.9)</b>	<b>(1.0)</b>

## 9 Taxation

	2015	2014
	£m	£m
Current tax:		
UK corporation tax	2.3	1.1
Adjustments in respect of prior years	(0.2)	-
Total UK tax	2.1	1.1
Foreign corporation tax	1.2	1.0
Adjustments in respect of prior years	(0.2)	-
Total foreign tax	1.0	1.0
Total current tax	3.1	2.1
Deferred tax:		
Charge for year relating to temporary differences	1.4	2.1
Adjustments in respect of prior years	(0.2)	0.1
Total deferred tax	1.2	2.2
<b>Total taxation</b>	<b>4.3</b>	<b>4.3</b>
Tax on items recognised directly in equity	(1.5)	(0.7)

Tax on items recognised directly in equity relate to the tax impact of remeasurements on the defined benefit scheme and equity-settled share-based payment transactions.

The Finance Act 2013 included legislation to reduce the main rate of UK corporation tax from 21% to 20% with effect from 1 April 2015. As these changes had been substantively enacted at the reporting date, closing deferred tax balances in the UK have therefore been valued at 20%.

Further reductions to the UK corporation tax rate have been announced. The changes, which are expected to be enacted separately, propose to reduce the rate to 19% from 1 April 2017 and 18% from 1 April 2020. The changes had not been substantively enacted at the reporting date and, therefore, are not recognised in these financial statements.

The tax charge for the year is lower (2014: lower) than the standard rate of corporation tax in the UK. The differences are set out below:

	2015	2014
	£m	£m
Profit for the year before tax	22.9	23.5
Profit for the year multiplied by the average enacted rate of corporation tax in the UK of 20.75% (2014: 22.5%)	4.8	5.3
Effects of:		
Losses not recognised	1.3	1.2
Expenses not deductible for tax purposes	1.3	0.1
Government tax incentives <sup>(1)</sup>	(3.0)	(2.6)
Irrecoverable overseas tax <sup>(2)</sup>	0.7	0.8
Adjustments to taxation in respect of prior years	(0.6)	(0.2)
Tax rate differences	(0.2)	(0.3)
<b>Total taxation</b>	<b>4.3</b>	<b>4.3</b>

(1) Primarily relates to R&D tax credits

(2) Primarily relates to withholding taxes

## 10 Dividends

	2015	2014
	£m	£m
Final dividend for the year ended 30 June 2014 of 10.9p (2013: 10.0p) per share	5.7	5.2
Interim dividend for the year ended 30 June 2015 of 4.65p (2014: 4.3p) per share	2.4	2.3
<b>Equity dividends paid</b>	<b>8.1</b>	<b>7.5</b>

The Directors are proposing a final dividend in respect of the financial year ended 30 June 2015 of 11.95p per share which will absorb £6.3m of retained earnings. It will be paid on 13 November 2015 to shareholders who are on the register of members at the close of business on 23 October 2015, subject to approval at the Annual General Meeting on 4 November 2015.



## 11 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 where the exercise price is less than the market price of the Company's ordinary shares at year-end.

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.

	2015	2014
	£m	£m
<b>Earnings</b>	<b>18.6</b>	19.2
Add back amortisation of acquisition-related intangible assets (net of tax)	1.1	0.9
Add back other acquisition-related costs (net of tax)	2.5	-
<b>Underlying earnings</b>	<b>22.2</b>	20.1

	Number of shares millions	Number of shares millions
<b>Basic weighted average number of shares in issue</b>	<b>52.3</b>	52.0
Effect of dilutive potential shares	0.6	0.8
<b>Diluted weighted average number of shares in issue</b>	<b>52.9</b>	52.8

<b>Earnings per share</b>	<b>pence</b>	pence
Basic	<b>35.6</b>	36.9
Diluted	<b>35.2</b>	36.4

<b>Underlying earnings per share</b>	<b>pence</b>	pence
Basic	<b>42.4</b>	38.7
Diluted	<b>42.0</b>	38.1

## 12 Acquisitions

On 8 October 2014 the Group acquired 100% of the issued share capital of Vepro Limited ("Vepro"), and on 13 November 2014 the Group also acquired 100% of the issued share capital of Power Planning Associates Limited ("PPA") for a combined consideration of £3.6m.

Vepro brings specialist motorcycle chassis, powertrain integration and prototype build expertise to the Ricardo Motorcycle business. It also brings complementary customer relationships with key accounts in India and the United States.

PPA provides a valuable extension to the Group's energy sector capability, ranging from conventional small scale and distributed power systems, to renewable power and smart grid technologies. With a particular emphasis on innovation within the power industry, PPA also specialises in techno-economic and management consultancy services for the energy sector.

The following table sets out the total consideration paid for both Vepro and PPA, together with the provisionally determined fair value of assets acquired and liabilities assumed.

	£m
Initial cash consideration	3.0
Contingent consideration	0.6
<b>Total consideration</b>	<b>3.6</b>
<b>Fair value of identifiable assets acquired and liabilities assumed</b>	
Customer contracts and relationships (Note 14)	0.7
Property, plant and equipment (Note 15)	0.1
Trade and other receivables	0.5
Cash	0.6
Trade and other payables	(0.6)
<b>Total identifiable net assets</b>	<b>1.3</b>
Goodwill (Note 13)	2.3
<b>Total</b>	<b>3.6</b>

All of the initial cash consideration was paid before the year-end.

The contingent consideration arrangements require the Group to pay, in cash, to the former owners of Vepro and PPA, up to a maximum undiscounted total amount of £0.9m based on profit and revenue targets being met, respectively. The fair value of the contingent consideration of £0.6m was estimated by applying the income approach. The fair value estimates are based on a discount rate of 10% and assumed probability-adjusted results in Vepro and PPA. This is a Level 3 fair value measurement under the IFRS 13 fair value hierarchy.

Adjustments were made to identifiable assets and liabilities on acquisition to reflect their fair value. These included the recognition of customer-related intangible assets amounting to £0.7m. 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. None of the goodwill recognised is expected to be deductible for tax purposes. These estimates of fair value may be adjusted in future in accordance with the requirements of IFRS 3 'Business Combinations'.

The fair value of trade and other receivables of £0.5m includes trade receivables of £0.3m and amounts recoverable on contracts of £0.2m, all of which is expected to be collectible.

Acquisition-related costs incurred to complete the transactions of £0.1m have been charged to the Consolidated Income Statement for the year ended 30 June 2015 and are disclosed within other acquisition-related costs as specific adjusting items in Note 4.

The revenue included in the Consolidated Income Statement in relation to these acquired businesses was £1.5m. The underlying operating profit over the same period was £0.2m. This is reported in the Technical Consulting segment.

Had the acquired businesses been consolidated from 1 July 2014, the Consolidated Income Statement would show revenue of £259.0m and underlying operating profit of £27.9m based on the management accounts plus the reported results for the post-acquisition period.

### 13 Goodwill

Group	£m
At 1 July 2013	25.9
Exchange adjustments	(0.8)
At 30 June 2014	25.1
Acquisition of business (Note 12)	2.3
Exchange adjustments	(1.4)
<b>At 30 June 2015</b>	<b>26.0</b>

The recoverable amount of each 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 an 85% operating cash flow conversion rate. The three year plan is prepared by management, reviewed and approved by the Board, and 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 the lower of the planned growth rate in year three and the external forecast of the economic growth rate for the economies in which the CGU primarily operates. Apart from operating cash flows and economic 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:

	Goodwill		Pre-tax discount rate		Growth rate into perpetuity	
	2015	2014	2015	2014	2015	2014
	£m	£m	%	%	%	%
Ricardo Europe Technical Consulting <sup>(1)</sup>	12.7	-	8.2	n/a	4.0	n/a
Germany Technical Consulting <sup>(1)</sup>	-	12.5	n/a	7.8	n/a	3.1
Ricardo UK Performance Products <sup>(2)</sup>	1.1	-	9.5	n/a	4.3	n/a
Ricardo UK <sup>(2)</sup>	-	2.7	n/a	8.1	n/a	4.3
Ricardo Energy & Environment <sup>(3)</sup>	10.8	9.9	9.2	8.1	4.3	4.3
Ricardo Motorcycle <sup>(4)</sup>	1.4	-	10.8	n/a	4.3	n/a
<b>At 30 June</b>	<b>26.0</b>	<b>25.1</b>				

(1) During the year the Technical Consulting business in Germany, with the exception of the Motorcycle business as described in footnote (4), was fully integrated with the Technical Consulting business in the UK to form the European Technical Consulting business. As a result of this integration, the lowest level at which goodwill is monitored for internal management purposes is at the European Technical Consulting business level. Consequently, the carrying value of the goodwill previously allocated to the Germany Technical Consulting CGU has been reallocated to the Ricardo Europe Technical Consulting CGU. In addition, and as set out in further detail in footnote (2), an identifiable proportion of the carrying value of the goodwill previously allocated to the Ricardo UK CGU has also been reallocated to the Ricardo Europe Technical Consulting CGU.

(2) The goodwill previously allocated to the Ricardo UK CGU relates to two legacy businesses; Gemini and Tarragon. The goodwill related to Tarragon and Gemini was historically subsumed within the UK Technical Consulting and UK Performance Products businesses, respectively. As set out in further detail in footnote (1), the Technical Consulting business in the UK has been integrated with the Technical Consulting business in Germany and therefore the Ricardo UK CGU no longer represents the smallest identifiable group of assets that generates largely independent cash inflows. Since the goodwill previously allocated to the Ricardo UK CGU contains a separately identifiable element that relates to the UK Technical Consulting business, this has been reallocated to the Ricardo Europe Technical Consulting CGU. The remaining separately identifiable element has been allocated to the Ricardo UK Performance Products CGU, being the smallest identifiable group of assets to which the Gemini goodwill relates.

(3) The Ricardo Energy & Environment CGU contains the carrying value of the goodwill which was previously allocated to the Ricardo-AEA CGU. As set out in further detail in Note 12, the Group acquired PPA during the year for its capabilities and expertise in the energy sector and innovation in the power industry to complement its existing consultancy market offering through AEA which was acquired in 2012. The identifiable post-acquisition assets and liabilities of PPA, as well as its employees and contracts have since been subsumed and fully integrated into AEA. The combined offering of both of these businesses has since been rebranded as 'Ricardo Energy & Environment', which represents the smallest identifiable group of assets that generates independent future cash inflows.

(4) As set out in further detail in Note 12, the Group acquired Vepro for its capabilities and expertise in the motorcycle and scooter sector to complement the recently formed global Motorcycle business that was borne out of the German Technical Consulting integration as described in footnote (1). Whilst the intention is for the Vepro business to be subsumed within the global Motorcycle business, this has not been implemented as of the year-end. Consequently, the goodwill arising from the acquisition of Vepro has been allocated to the Ricardo Motorcycle CGU but has been assessed for impairment against a value in use calculation which has been performed by management to assess the discounted future cash flows expected to arise only from the Vepro business.

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 2015, resulting in no impairment for the year (2014: £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 1% increase in the pre-tax discount rate and a further scenario whereby both sensitivities are combined together.

## 14 Other intangible assets

Group	Acquisition-related intangible assets			Development costs	Total
	Customer contracts and relationships	Other	Software		
	£m	£m	£m	£m	£m
<b>Cost</b>					
At 1 July 2013	8.5	0.3	15.6	1.9	26.3
Additions	-	-	1.2	3.0	4.2
Disposals	-	-	(0.1)	-	(0.1)
Exchange rate adjustments	-	-	(0.4)	-	(0.4)
At 30 June 2014	8.5	0.3	16.3	4.9	30.0
Acquisition of business (Note 12)	0.7	-	-	-	0.7
Additions	-	-	1.3	4.2	5.5
Reclassifications	-	-	1.0	(0.5)	0.5
Exchange rate adjustments	-	-	(0.1)	-	(0.1)
<b>At 30 June 2015</b>	<b>9.2</b>	<b>0.3</b>	<b>18.5</b>	<b>8.6</b>	<b>36.6</b>
<b>Accumulated amortisation</b>					
At 1 July 2013	0.7	-	9.5	0.5	10.7
Charge for the year	1.1	-	1.5	0.4	3.0
Disposals	-	-	(0.1)	-	(0.1)
Exchange rate adjustments	-	-	(0.3)	-	(0.3)
At 30 June 2014	1.8	-	10.6	0.9	13.3
Charge for the year	1.2	0.1	1.7	1.2	4.2
Reclassifications	-	-	0.6	(0.3)	0.3
Exchange rate adjustments	-	-	(0.1)	-	(0.1)
<b>At 30 June 2015</b>	<b>3.0</b>	<b>0.1</b>	<b>12.8</b>	<b>1.8</b>	<b>17.7</b>
<b>Net book value</b>					
<b>At 30 June 2015</b>	<b>6.2</b>	<b>0.2</b>	<b>5.7</b>	<b>6.8</b>	<b>18.9</b>
At 30 June 2014	6.7	0.3	5.7	4.0	16.7
At 30 June 2013	7.8	0.3	6.1	1.4	15.6

Company	Software	
	£m	
<b>Cost</b>		
At 1 July 2013	6.6	
Additions	0.7	
At 30 June 2014	7.3	
Additions	0.8	
<b>At 30 June 2015</b>	<b>8.1</b>	
<b>Accumulated amortisation</b>		
At 1 July 2013	1.5	
Charge for the year	0.9	
At 30 June 2014	2.4	
Charge for the year	1.1	
<b>At 30 June 2015</b>	<b>3.5</b>	
<b>Net book value</b>		
<b>At 30 June 2015</b>	<b>4.6</b>	
At 30 June 2014	4.9	
At 30 June 2013	5.1	

Software for both the Group and the Company primarily comprises external purchase costs and internal costs that have been capitalised in respect of an ERP system. Software for both the Group and the Company includes £0.2m (2014: £0.3m) in respect of assets under construction which are not being amortised until the assets are made available for use.

Development costs include £2.9m (2014: £2.8m) in respect of assets under construction which are not being amortised until the assets are made available for use.

The amortisation charge of £4.2m (2014: £3.0m) is included within administrative expenses in the Consolidated Income Statement.

## 15 Property, plant and equipment

Group	Land and buildings £m	Short-term leasehold property £m	Plant and machinery £m	Fixtures, fittings and equipment £m	Total £m
<b>Cost</b>					
At 1 July 2013	18.8	7.9	99.7	16.7	143.1
Additions	3.5	0.1	3.2	1.3	8.1
Disposals	-	-	(0.4)	(0.2)	(0.6)
Exchange rate adjustments	(0.2)	(0.2)	(3.5)	(0.7)	(4.6)
At 30 June 2014	22.1	7.8	99.0	17.1	146.0
Acquisition of business (Note 12)	-	0.1	-	-	0.1
Additions	2.4	0.1	3.5	2.1	8.1
Disposals	-	-	(1.4)	(0.9)	(2.3)
Reclassifications	(3.0)	-	6.3	1.3	4.6
Exchange rate adjustments	(0.4)	0.1	0.7	(0.1)	0.3
<b>At 30 June 2015</b>	<b>21.1</b>	<b>8.1</b>	<b>108.1</b>	<b>19.5</b>	<b>156.8</b>
<b>Accumulated depreciation</b>					
At 1 July 2013	3.1	3.6	76.3	11.9	94.9
Charge for the year	0.4	0.4	3.8	1.9	6.5
Disposals	-	-	(0.3)	(0.2)	(0.5)
Exchange rate adjustments	-	(0.2)	(2.6)	(0.4)	(3.2)
At 30 June 2014	3.5	3.8	77.2	13.2	97.7
Charge for the year	0.4	0.4	3.7	1.8	6.3
Disposals	-	-	(1.3)	(0.9)	(2.2)
Reclassifications	0.4	-	3.0	1.4	4.8
Exchange rate adjustments	-	0.1	0.6	(0.1)	0.6
<b>At 30 June 2015</b>	<b>4.3</b>	<b>4.3</b>	<b>83.2</b>	<b>15.4</b>	<b>107.2</b>
<b>Net book value</b>					
<b>At 30 June 2015</b>	<b>16.8</b>	<b>3.8</b>	<b>24.9</b>	<b>4.1</b>	<b>49.6</b>
At 30 June 2014	18.6	4.0	21.8	3.9	48.3
At 30 June 2013	15.7	4.3	23.4	4.8	48.2

The carrying value of assets under construction included in property, plant and equipment amounts to £5.0m (2014: £7.3m), of which £Nil (2014: £5.3m) is in respect of the Vehicle Emissions Research Centre in the UK, as the asset was made available for use during the year.

At 30 June 2015, contracts had been placed for future capital expenditure, which have not been provided for in the financial statements, amounting to £1.9m (2014: £4.5m) net of government grants receivable.

Company	Land and buildings £m	Short-term leasehold property £m	Fixtures, fittings and equipment £m	Total £m
<b>Cost</b>				
At 1 July 2013	5.7	6.0	0.3	12.0
Additions	-	-	0.2	0.2
At 30 June 2014	5.7	6.0	0.5	12.2
Additions	-	-	0.3	0.3
<b>At 30 June 2015</b>	<b>5.7</b>	<b>6.0</b>	<b>0.8</b>	<b>12.5</b>
<b>Accumulated depreciation</b>				
At 1 July 2013	1.6	2.4	-	4.0
Charge for the year	0.1	0.2	0.1	0.4
At 30 June 2014	1.7	2.6	0.1	4.4
Charge for the year	0.1	0.2	0.1	0.4
<b>At 30 June 2015</b>	<b>1.8</b>	<b>2.8</b>	<b>0.2</b>	<b>4.8</b>
<b>Net book value</b>				
<b>At 30 June 2015</b>	<b>3.9</b>	<b>3.2</b>	<b>0.6</b>	<b>7.7</b>
At 30 June 2014	4.0	3.4	0.4	7.8
At 30 June 2013	4.1	3.6	0.3	8.0

A contingent liability of up to £2.8m which is associated with a guarantee provided to the Ricardo Group Pension Fund in July 2013 (see Note 35) is secured on specific land and buildings.

## 16 Investments

Company	Shares in subsidiaries £m
At 1 July 2013 and at 30 June 2014	68.3
Additions	5.6
<b>At 30 June 2015</b>	<b>73.9</b>

Details of the Company's subsidiaries are shown in Note 37.

The Directors consider that the fair value of investments is not less than the carrying value.

## 17 Inventories

Group	2015 £m	2014 £m
Raw materials and consumables	6.3	5.5
Work in progress	1.5	2.4
<b>At 30 June</b>	<b>7.8</b>	<b>7.9</b>

During the year £0.2m of inventory was written down (2014: £0.2m written back) and included in cost of sales in the Consolidated Income Statement.

## 18 Trade and other receivables

	Group		Company	
	2015 £m	2014 £m	2015 £m	2014 £m
Trade receivables	41.1	40.2	-	-
Less provision for impairment of receivables	(0.6)	(0.5)	-	-
Trade receivables - net	40.5	39.7	-	-
Amounts recoverable on contracts (Note 19)	31.2	20.2	-	-
Amounts owed by Group undertakings	-	-	57.0	48.6
Prepayments and accrued income	4.5	4.2	0.6	0.8
Other receivables	2.4	2.5	0.2	-
<b>At 30 June</b>	<b>78.6</b>	<b>66.6</b>	<b>57.8</b>	<b>49.4</b>

Trade and other receivables analysis by category:

Current assets	78.6	66.6	57.8	49.4
<b>At 30 June</b>	<b>78.6</b>	<b>66.6</b>	<b>57.8</b>	<b>49.4</b>

Provision for impairment of receivables:

At 1 July	(0.5)	(0.9)	-	-
Income statement (charge)/credit	(0.8)	0.2	-	-
Amounts utilised	0.7	0.2	-	-
<b>At 30 June</b>	<b>(0.6)</b>	<b>(0.5)</b>	<b>-</b>	<b>-</b>

In respect of the Company, £10.2m of the amounts owed by Group undertakings are due for repayment within the next 12 months and the remaining £46.8m has no fixed repayment date. £39.9m of the amounts owed by Group undertakings carry interest at rates between 2.3% and 5.0% with the remaining £17.1m being interest-free. All amounts owed by Group undertakings are unsecured.

The provision for impairment of receivables has been calculated based on past experience and is in relation to specific customers.

**19 Contracts in progress**

Group	2015 £m	2014 £m
Amounts due from contract customers:		
Amounts expected to be recovered within 12 months (Note 18)	31.2	20.2
Amounts due to contract customers:		
Amounts expected to be settled within 12 months (Note 20)	(15.1)	(14.4)
<b>Net amounts due from contract customers at 30 June</b>	<b>16.1</b>	<b>5.8</b>
Analysed as:		
Contract costs incurred plus recognised profits less recognised losses to date	368.5	290.3
Less progress billings	(352.4)	(284.5)
<b>Contracts in progress at 30 June</b>	<b>16.1</b>	<b>5.8</b>
<b>IAS 11 contract revenue</b>	<b>189.8</b>	<b>175.4</b>

**20 Trade and other payables**

	Group		Company	
	2015 £m	2014 £m	2015 £m	2014 £m
Trade payables	15.6	15.7	0.5	0.3
Tax and social security payable	6.1	3.8	0.4	0.3
Amounts owed to Group undertakings	-	-	8.1	6.0
Accruals and deferred income	23.2	18.5	2.7	3.0
Payments received in advance on contracts (Note 19)	15.1	14.4	-	-
Other payables	3.8	3.9	2.0	2.4
<b>At 30 June</b>	<b>63.8</b>	<b>56.3</b>	<b>13.7</b>	<b>12.0</b>

In respect of the Company, £1.6m of the amounts owed to Group undertakings are due for repayment within the next 12 months and the remaining £6.5m has no fixed repayment date. £4.3m of the amounts owed to Group undertakings carry interest at rates between 2.4% and 3.1% with the remaining £3.8m being interest-free. All amounts owed to Group undertakings are unsecured.

**21 Borrowings**

	Group		Company	
	2015 £m	2014 £m	2015 £m	2014 £m
Non-current bank loans	45.4	-	5.4	-
<b>At 30 June</b>	<b>45.4</b>	<b>-</b>	<b>5.4</b>	<b>-</b>

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 adjusted leverage of the Group and range from 1.6% to 2.35% above LIBOR. At the reporting date, the Group has an adjusted leverage which attracts the lowest rate of interest, being 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.

## 22 Fair value of financial assets and liabilities

There are no differences between the fair value of financial assets and liabilities and their carrying value:

	Group		Company	
	2015	2014	2015	2014
	£m	£m	£m	£m
<b>Assets as per Statements of Financial Position</b>				
Loans and receivables:				
Trade receivables	40.5	39.7	-	-
Amounts owed by Group undertakings	-	-	57.0	48.5
Cash and cash equivalents	59.7	12.6	0.5	0.5
Assets at fair value through profit and loss:				
Derivative financial assets	0.2	-	0.2	-
<b>At 30 June</b>	<b>100.4</b>	<b>52.3</b>	<b>57.7</b>	<b>49.0</b>
<b>Liabilities as per Statements of Financial Position</b>				
Other financial liabilities at amortised cost:				
Borrowings	45.4	-	5.4	-
Trade payables	15.6	15.7	0.5	0.3
Amounts owed to Group undertakings	-	-	8.1	6.0
Liabilities at fair value through profit and loss:				
Derivative financial liabilities	0.1	-	0.1	-
<b>At 30 June</b>	<b>61.1</b>	<b>15.7</b>	<b>14.1</b>	<b>6.3</b>

Net derivative financial instruments of £0.1m (2014: £Nil) 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 were (charged)/credited to the Consolidated Income Statement:

	2015	2014
	£m	£m
On loans and receivables	(2.2)	(2.4)
On other financial assets and liabilities	2.0	1.9
<b>At 30 June</b>	<b>(0.2)</b>	<b>(0.5)</b>



## 23 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 and 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	
	2015	2014	2015	2014
	£m	£m	£m	£m
Gearing ratio				
Net (funds)/debt (Note 33)	<b>(14.3)</b>	(12.6)	<b>4.9</b>	(0.5)
Total equity	<b>116.0</b>	107.6	<b>109.1</b>	103.7
Total capital	<b>101.7</b>	95.0	<b>114.0</b>	103.2
<b>At 30 June</b>	-	-	<b>4.3%</b>	-

### (c) Liquidity risk

The Group and Company policy towards managing their liquidity risks is to maintain a mix of short and medium-term borrowing facilities with their bankers. Short-term flexibility is provided by bank overdraft facilities. In addition, the Group and Company maintain medium-term borrowing facilities in order to provide the appropriate level of finance to support the current and future 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 £89.4m (2014: £49.2m). This included committed facilities of £75.0m (2014: £35.0m). £45.4m of committed facilities, net of direct issue costs, were drawn at 30 June 2015 (2014: £Nil) primarily in order to fund the acquisition of Lloyd's Register Rail on 1 July 2015, as disclosed in Note 38(a). Of the committed facilities, a £35.0m facility is available for the period to September 2019 and £40.0m is available until April 2020. In addition, the Group has uncommitted facilities including overdrafts of £14.4m at 30 June 2015 (2014: £14.2m), which mature throughout the year to June 2016 and are renewable annually.

	Group		Company	
	2015	2014	2015	2014
	£m	£m	£m	£m
Maturity of borrowings				
Maturing:				
After 12 months and within 5 years	<b>(45.4)</b>	-	<b>(5.4)</b>	-
<b>At 30 June</b>	<b>(45.4)</b>	-	<b>(5.4)</b>	-

	Group		Company	
	2015	2014	2015	2014
	£m	£m	£m	£m
Maturity of trade payables				
Maturing:				
Within 1 month	<b>(9.2)</b>	(10.0)	<b>(0.5)</b>	(0.3)
After 1 month and within 3 months	<b>(5.7)</b>	(4.9)	-	-
After 3 months and within 12 months	<b>(0.3)</b>	(0.8)	-	-
After more than 12 months	<b>(0.4)</b>	-	-	-
<b>At 30 June</b>	<b>(15.6)</b>	(15.7)	<b>(0.5)</b>	(0.3)

**23 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.

	<b>2015</b>	2014
	<b>£m</b>	£m
Ageing of net trade receivables		
Not overdue and not impaired	<b>30.8</b>	28.6
Overdue but not impaired:		
0 - 90 days overdue	<b>6.7</b>	8.9
91 - 180 days overdue	<b>1.0</b>	1.8
Over 180 days overdue	<b>2.0</b>	0.4
<b>At 30 June</b>	<b>40.5</b>	39.7

Our customers include the world's major transportation original equipment manufacturers, supply chain organisations, energy companies, financial institutions and government organisations. Revenue by customer location is disclosed within Note 3(b) and trade receivables are derived from these customer groups and locations.

Net trade receivables of £30.8m (2014: £28.6m) that are neither past due nor impaired consist of £25.9m (2014: £19.8m) relating to the UK business, £1.3m (2014: £2.0m) relating to the German business, £3.2m (2014: £5.2m) relating to the US business and £0.4m (2014: £1.6m) relating to the Chinese business. Net trade receivables of £9.7m (2014: £11.1m) that are overdue but not impaired consist of £5.3m (2014: £7.0m) relating to the UK business, £1.5m (2014: £1.1m) relating to the German business, £1.9m (2014: £2.2m) relating to the US business and £1.0m (2014: £0.8m) relating to the Chinese business.

We have very limited experience of bad debts with any of these customers. £18.5m of the total net trade receivables balance was received in July 2015. 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.

	Group		Company	
	<b>2015</b>	2014	<b>2015</b>	2014
	<b>£m</b>	£m	<b>£m</b>	£m
Maximum exposure to bank counterparty risk				
Cash at bank and in hand	<b>59.7</b>	12.6	<b>0.5</b>	0.5
Derivative financial assets	<b>0.2</b>	-	<b>0.2</b>	-
<b>At 30 June</b>	<b>59.9</b>	12.6	<b>0.7</b>	0.5

Cash at bank and in hand of £59.7m (2014: £12.6m) consists of £47.0m (2014: £6.0m) held in the UK, £0.7m (2014: £1.0m) held in Germany, £2.2m (2014: £2.9m) held in the US, £7.7m (2014: £1.2m) held in China and £2.1m (2014: £1.5m) held in the rest of the world.

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 the institution's credit standing.

## 23 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 21, the exposure to interest rate movements is not currently hedged as the variable rates of interest are largely dependent upon the adjusted leverage of the Group, which is currently attracting the lowest possible rate of interest. The effect of any foreseen changes in the LIBOR are considered insignificant, although the policy is reviewed on an ongoing basis.

	Group		Company	
	2015	2014	2015	2014
Financial assets and liabilities by interest type	£m	£m	£m	£m
Floating rate financial liabilities	(45.4)	-	(5.4)	-
No interest financial liabilities	(15.6)	(15.7)	(8.5)	(6.3)
Floating rate financial assets	12.8	7.6	57.0	48.5
No interest financial assets	87.7	44.7	0.8	0.5
<b>Net financial assets at 30 June</b>	<b>39.5</b>	<b>36.6</b>	<b>43.9</b>	<b>42.7</b>

#### 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, Germany and China.

The carrying amounts of the Group's foreign currency denominated monetary assets and liabilities are:

	Assets		Liabilities	
	2015	2014	2015	2014
	£m	£m	£m	£m
US Dollar	7.3	9.9	(1.6)	(1.3)
Euro	5.0	5.8	(3.5)	(3.8)
Chinese Renminbi	8.8	3.7	-	(0.1)

It is the Group's policy not to undertake any speculative currency transactions.

The Group hedges transactional exposures relating to its foreign currency exposures on contracts by taking out foreign exchange contracts or other derivative financial instruments.

The Company hedges currency risk on its US Dollar, Euro and Chinese Renminbi denominated receivables from related parties.

### (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 10% change in the value of the US Dollar, Euro or Chinese Renminbi would have an insignificant impact on the value of financial instruments at the year-end. Given the fluctuations in the Group's principal foreign currencies during the year and after the year-end, a 10% 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 hedges

The Group uses foreign currency contracts designated as cash flow hedges to hedge 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 designated as a hedge of 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, the change in the fair value of the instrument (if any) is recognised directly in profit or loss.

	2015	2014
Cash flows expected to occur and affect profit and loss	£m	£m
Within 3 months	25.7	18.4
<b>Total</b>	<b>25.7</b>	<b>18.4</b>

## 24 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 2014. At that date, the assets of the fund had a market value of £96.3m and were sufficient to cover 79% of the benefits that had accrued to members when assessed on the Trustees' prudent funding basis. Contributions due to the RGPF during the year ending 30 June 2016 are £4.3m. The Company has agreed with the Trustees that the annual contributions of £4.3m will continue until 31 January 2021, in order to eliminate the Trustees' funding deficit revealed at the 5 April 2014 valuation. The next triennial valuation is due on 5 April 2017, and this process is expected to complete in the year ending 30 June 2018. The results of the 2017 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 2015 and the pension costs relating to the RGPF were assessed using the projected unit credit method in accordance with the advice of Mercer, qualified actuaries. The post-retirement mortality assumptions used were updated from the prior year to use the new standard baseline which have been released by SAPS, known as the 'Series 2' tables with 98% multiplier for males and 95% multiplier for females, and with future improvements in line with the Continuous Mortality Investigation ('CMI') 2014 projection model with 1.25% long-term trend (based upon each member's year of birth). Under these mortality assumptions the expected future lifetime from age 65 is:

Age	2015		2014	
	Males	Females	Males	Females
65 in 20 years	25.3	27.0	24.4	27.1
65 now	23.7	25.1	22.6	25.2

The other significant assumptions made were:

	At 30 June 2015	At 30 June 2014
Discount rate	3.80%	4.35%
Inflation	3.25%	3.35%
Rate of increase in pensions in payment:		
Pre 1 July 2002 accrual	3.65%	3.55%
Post 1 July 2002 accrual	3.20%	3.20%
Rate of increase in pension in deferment	2.25%	2.35%
Percentage of pension to be commuted for a lump sum at retirement	25.00%	25.00%

Scheme assets are comprised as follows:

	2015			2014		
	Quoted £m	Unquoted £m	Total £m	Quoted £m	Unquoted £m	Total £m
Equities	28.9	-	28.9	26.8	-	26.8
Bonds	54.4	-	54.4	46.6	-	46.6
Cash	-	0.1	0.1	-	0.1	0.1
Property	-	6.3	6.3	-	5.5	5.5
Diversified Growth Funds	19.7	-	19.7	19.2	-	19.2
<b>At 30 June</b>	<b>103.0</b>	<b>6.4</b>	<b>109.4</b>	<b>92.6</b>	<b>5.6</b>	<b>98.2</b>

## 24 Retirement benefit obligations (continued)

Movements in the fair value of scheme assets and present value of defined benefit obligations were as follows:

	2015			2014		
	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	98.2	(117.7)	(19.5)	89.7	(109.4)	(19.7)
Current service cost	-	-	-	-	-	-
Interest income/(expense) (Note 8)	4.3	(5.1)	(0.8)	4.2	(5.1)	(0.9)
Credit/(charge) to the income statement	4.3	(5.1)	(0.8)	4.2	(5.1)	(0.9)
Return on plan assets, excluding amounts included in interest income	7.1	-	7.1	4.0	-	4.0
Loss from change in demographic assumptions	-	(1.5)	(1.5)	-	-	-
Loss from change in financial assumptions	-	(11.9)	(11.9)	-	(7.2)	(7.2)
Experience gains	-	1.6	1.6	-	-	-
Total remeasurements in other comprehensive income	7.1	(11.8)	(4.7)	4.0	(7.2)	(3.2)
Contributions from sponsoring companies	4.3	-	4.3	4.3	-	4.3
Benefits paid	(4.5)	4.5	-	(4.0)	4.0	-
Total movements	11.2	(12.4)	(1.2)	8.5	(8.3)	0.2
<b>At 30 June</b>	<b>109.4</b>	<b>(130.1)</b>	<b>(20.7)</b>	<b>98.2</b>	<b>(117.7)</b>	<b>(19.5)</b>

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 £5.8m
Increase in inflation rate	0.25%	Increase by £3.3m
Increase in life expectancy	1 year	Increase by £4.3m

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 period.

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 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.
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, so 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 17.5 years.

	2015	2014
	£m	£m
Expected maturity analysis of undiscounted pension benefits:		
Less than a year	3.8	3.7
Between 1-2 years	3.9	3.8
Between 2-5 years	12.5	12.1
Next 5 years	23.8	23.0

	2015	2014
	£m	£m
Amounts charged in the income statement in respect of pensions		
In respect of defined contribution schemes	5.4	5.4
In respect of defined benefit schemes	0.8	1.0
<b>Total</b>	<b>6.2</b>	<b>6.4</b>
Included within:		
Staff costs	5.4	5.4
Finance costs	0.8	1.0
<b>Total</b>	<b>6.2</b>	<b>6.4</b>

## 25 Deferred tax

## (a) Deferred tax analysis by category

	Group		Company	
	2015 £m	2014 £m	2015 £m	2014 £m
Non-current deferred tax assets	13.7	10.9	4.9	5.3
Non-current deferred tax liabilities	(3.1)	(0.5)	-	(0.5)
<b>Net deferred tax asset at 30 June</b>	<b>10.6</b>	<b>10.4</b>	<b>4.9</b>	<b>4.8</b>

## (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 2013	(3.7)	4.6	10.8	(0.6)	1.7	12.8
(Charged)/credited to the income statement	(0.3)	(0.9)	(0.8)	0.1	(0.3)	(2.2)
Credited to statement of comprehensive income	-	0.3	-	-	0.4	0.7
Exchange rate adjustments	0.1	(0.1)	(0.8)	-	(0.1)	(0.9)
At 30 June 2014	(3.9)	3.9	9.2	(0.5)	1.7	10.4
Charged to the income statement	(0.1)	(0.6)	(0.4)	-	(0.1)	(1.2)
Credited to statement of comprehensive income	-	0.9	-	-	0.6	1.5
Exchange rate adjustments	(0.1)	(0.1)	-	-	0.1	(0.1)
<b>At 30 June 2015</b>	<b>(4.1)</b>	<b>4.1</b>	<b>8.8</b>	<b>(0.5)</b>	<b>2.3</b>	<b>10.6</b>

At 30 June 2015 and 30 June 2014 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 deferred tax asset has not been recognised for the current year tax losses within Ricardo Deutschland GmbH. The deferred tax asset not recognised in respect of these losses at 30 June 2015 amounts to £3.0m (2014: £2.6m). The carrying value at 30 June 2015 for the deferred tax asset in Ricardo Deutschland GmbH that has been recognised is £3.1m (2014: £3.7m). The Directors are of the view that it is probable that future taxable profits will be available within Ricardo Deutschland GmbH against which the carrying value of the recognised deferred tax asset can be utilised in the foreseeable future.

Company	Retirement benefit obligations £m	Tax losses and credits £m	Unrealised capital gains £m	Other £m	Total £m
At 1 July 2013	4.6	0.4	(0.6)	0.9	5.3
(Charged)/credited to the income statement	(1.0)	(0.1)	0.1	(0.2)	(1.2)
Credited to statement of comprehensive income	0.3	-	-	0.4	0.7
At 30 June 2014	3.9	0.3	(0.5)	1.1	4.8
Charged to the income statement	(0.7)	(0.4)	-	(0.3)	(1.4)
Credited to statement of comprehensive income	0.9	-	-	0.6	1.5
<b>At 30 June 2015</b>	<b>4.1</b>	<b>(0.1)</b>	<b>(0.5)</b>	<b>1.4</b>	<b>4.9</b>

## 26 Provisions

Group	Warranty provision £m	Dilapidation provision £m	Other £m	Total provisions £m
At 1 July 2013	2.5	0.1	-	2.6
Charged to income statement	1.0	0.1	-	1.1
Utilised in year	(0.2)	-	-	(0.2)
Released in year	(1.4)	-	-	(1.4)
At 30 June 2014	1.9	0.2	-	2.1
Charged to income statement	0.5	0.1	0.2	0.8
Utilised in year	(0.5)	-	-	(0.5)
Released in year	(0.7)	-	-	(0.7)
<b>At 30 June 2015</b>	<b>1.2</b>	<b>0.3</b>	<b>0.2</b>	<b>1.7</b>

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 are expected to unwind over the periods of the warranty obligations, which are less than five years.

The dilapidation provision 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. The timing of the cash flows is dependent upon the remaining term of the associated lease.

Other provisions comprises various provisions including those for litigation and restructuring costs. The associated cash outflows for restructuring costs are primarily less than one year.

	2015 £m	2014 £m
Analysis of total provisions		
Current	0.4	0.7
Non-current	1.3	1.4
<b>At 30 June</b>	<b>1.7</b>	<b>2.1</b>

## 27 Share capital

Group and Company	2015 Number	2014 Number	2015 £m	2014 £m
Allotted, called-up and fully paid ordinary shares of 25p each				
At 1 July	52,272,885	52,005,432	13.1	13.0
Allotted under share option schemes	7,068	80,000	-	-
Allotted under LTIP scheme	137,094	187,453	-	0.1
<b>At 30 June</b>	<b>52,417,047</b>	<b>52,272,885</b>	<b>13.1</b>	<b>13.1</b>

The consideration received for shares allotted under the share option schemes, Long-Term Incentive Plan ('LTIP') and Share Incentive Plan ('SIP') during the year ended 30 June 2015 was £0.1m (2014: £0.3m).

Dividends were paid at the reduced rate of 0.01p per share for interim and final dividends in respect of shares held by an employee benefit trust in relation to the LTIP. There were 3,224 such shares at 30 June 2015 (2014: 3,224 shares).

## 28 Share-based payments

The Group operates the following share-based payment schemes: 2004 Ricardo plc Executive Share Option Plan (the '2004 Plan'), together with the Equity-settled Executive Share Options; Equity-settled Long-Term Incentive Plan ('LTIP'); Deferred Share Bonus Plan; Equity-settled Share Incentive Plan ('SIP') and Cash-settled International Notional Share Plan ('INSP').

The general terms and conditions, including vesting requirements and performance conditions for the 2004 Plan, Deferred Share Bonus Plan, LTIP and the All Employee Share Plans (SIP and INSP) are described in the Directors' Remuneration Report.

The Equity-settled Executive Share Options, the LTIP and the SIP require shareholder approval for the issue of shares, whereas the Deferred Share Bonus Plan acquires shares in the market to settle the obligation.

The share-based payments charge of £1.5m (2014: £1.6m) disclosed in Note 7 comprises £1.4m (2014: £1.2m) in respect of equity-settled schemes and £0.1m (2014: £0.4m) in respect of the cash-settled scheme.

### Equity-settled Executive Share Options

	2015		2014	
	Number	Weighted average share price	Number	Weighted average share price
Outstanding at 1 July	9,895	305p	89,895	271p
Exercised	(7,068)	305p	(80,000)	268p
<b>Outstanding at 30 June</b>	<b>2,827</b>	<b>305p</b>	<b>9,895</b>	<b>305p</b>
Exercisable at the end of the year	2,827	305p	9,895	305p

The outstanding options had a weighted average contractual life of 3.3 years (2014: 4.3 years). The remaining options are exercisable at 305p.

During the years ended 30 June 2015 and 30 June 2014, no equity-settled executive share options were awarded.

### Equity-settled Long-Term Incentive Plan ('LTIP')

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'.

	2015	2014
	Shares allocated <sup>(1)</sup>	Shares allocated <sup>(1)</sup>
Outstanding at 1 July	728,967	756,992
Awarded	216,588	231,169
Lapsed	(67,346)	(55,369)
Forfeited	(77,397)	(16,372)
Vested	(137,094)	(187,453)
<b>Outstanding at 30 June</b>	<b>663,718</b>	<b>728,967</b>

(1) Shares allocated excludes dividend roll-up.

The outstanding LTIP awards had a weighted average contractual life of 1.3 years (2014: 1.4 years). The weighted average exercise price in both 2015 and 2014 was £Nil.

For the LTIP plan cycles outstanding at the start of the year where the performance criteria are based on the Group's Total Shareholder Return ('TSR') performance relative to the comparator group, as the TSR is dependent on the future market price of shares, the charge to the Consolidated Income Statement has been calculated using the Monte Carlo model, using the following assumptions for the plan cycles commencing in these years:

	2015	2014
Weighted average share price at date of award	647p	595p
Expected volatility	25.0%	26.4%
Expected life	3 yrs	3 yrs
Risk free rate	1.0%	0.8%
Dividend yield	2.2%	2.4%
Possibility of ceasing employment before vesting	10%	10%
Weighted average fair value per LTIP as a percentage of a share at date of award	75.9%	61.5%

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.



## 28 Share-based payments (continued)

### Deferred Share Bonus Plan

The Deferred Share Bonus Plan is described in the Directors' Remuneration Report.

	2015	2014
	Number of deferred shares	Number of deferred shares
Outstanding at 1 July	413,587	284,996
Awarded	76,059	145,086
Forfeited	(23,184)	(11,991)
Dividend shares awarded in the year	4,762	7,006
Vested	(128,037)	(11,510)
<b>Outstanding at 30 June</b>	<b>343,187</b>	<b>413,587</b>

The outstanding deferred bonus plans had a weighted average contractual life of 1.1 years (2014: 1.5 years). The weighted average exercise price in both 2015 and 2014 was £Nil.

For the matching shares awarded where the performance criteria are based on the Group's Total Shareholder Return ('TSR') performance relative to the comparator group, as the TSR is dependent on the future market price of shares, the charge to the Consolidated Income Statement has been calculated using the Monte Carlo model and the same assumptions described in the LTIP section above.

### Equity-settled Share Incentive Plan ('SIP')

The Share Incentive Plan is described in the Directors' Remuneration Report.

	2015	2014
	Number of deferred shares	Number of deferred shares
Outstanding at 1 July	195,505	217,074
Forfeited	(3,660)	(25,415)
Dividend shares awarded in the year	-	3,846
Vested	(191,845)	-
<b>Outstanding at 30 June</b>	<b>-</b>	<b>195,505</b>

In the prior year, the outstanding SIP had a weighted average contractual life of 0.3 years. The weighted average exercise price in both 2015 and 2014 was £Nil.

### Cash-settled International Notional Share Plan ('INSP')

The International Notional Share Plan is described in the Directors' Remuneration Report.

	2015	2014
	Number of deferred shares	Number of deferred shares
Outstanding at 1 July	143,655	161,460
Forfeited	(8,845)	(18,837)
Dividend shares awarded in the year	-	2,826
Vested	(134,810)	(1,794)
<b>Outstanding at 30 June</b>	<b>-</b>	<b>143,655</b>

In the prior year, the outstanding INSP had a weighted average contractual life of 0.3 years. The weighted average exercise price in both 2015 and 2014 was £Nil.

**29 Share premium**

Group and Company	£m
At 1 July 2013	14.0
Arising on shares issued	0.2
At 30 June 2014	14.2
Arising on shares issued	0.1
<b>At 30 June 2015</b>	<b>14.3</b>

**30 Other reserves**

Group	Merger reserve £m	Translation reserve £m	Hedging reserve £m	Total £m
At 1 July 2013	1.0	7.8	(2.4)	6.4
Exchange rate adjustments	-	(3.0)	-	(3.0)
Transfer between reserves	-	(2.4)	2.4	-
At 30 June 2014	1.0	2.4	-	3.4
Exchange rate adjustments	-	0.5	-	0.5
<b>At 30 June 2015</b>	<b>1.0</b>	<b>2.9</b>	<b>-</b>	<b>3.9</b>

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 foreign currency differences arising from the translation of financial statements of foreign operations. The hedging reserve represents the net fair value loss on cash flow hedges and net investment hedges. The transfer from the hedging reserve to the translation reserve in the year ended 30 June 2014 related to hedges which have been closed out.

**31 Retained earnings**

	Group £m	Company £m
At 1 July 2013	66.5	70.2
Profit for the year	19.2	15.0
Remeasurements on the defined benefit scheme	(3.2)	(3.2)
Tax on items recognised directly in equity	0.7	0.7
Dividends paid	(7.5)	(7.5)
Equity-settled transactions	1.2	1.2
At 30 June 2014	76.9	76.4
Profit for the year	18.6	16.1
Remeasurements on the defined benefit scheme	(4.7)	(4.7)
Tax on items recognised directly in equity	1.5	1.5
Dividends paid	(8.1)	(8.1)
Purchases of own shares to settle awards	(0.9)	(0.9)
Equity-settled transactions	1.4	1.4
<b>At 30 June 2015</b>	<b>84.7</b>	<b>81.7</b>

The Company has not presented its own income statement and statement of comprehensive income as permitted by Section 408 of the Companies Act 2006.

### 32 Cash generated from/(used in) operations

	Notes	Group		Company	
		2015	2014	2015	2014
		£m	£m	£m	£m
Profit before tax		<b>22.9</b>	23.5	<b>17.7</b>	16.0
Adjustments for:					
Share-based payments	28	<b>1.4</b>	1.2	<b>1.4</b>	1.2
Cash flow hedges		<b>(0.1)</b>	-	<b>(0.1)</b>	-
Dividends received from subsidiaries		-	-	<b>(15.6)</b>	(13.6)
Net finance costs/(income)	8	<b>0.9</b>	1.0	<b>(0.2)</b>	0.3
Depreciation and amortisation	14 & 15	<b>10.5</b>	9.5	<b>1.5</b>	1.3
Operating cash flows before movements in working capital		<b>35.6</b>	35.2	<b>4.7</b>	5.2
Decrease/(increase) in inventories		<b>0.2</b>	(0.3)	-	-
Increase in trade and other receivables		<b>(10.6)</b>	(13.5)	-	-
Increase in intercompany balances		-	-	<b>(6.3)</b>	(4.8)
Increase/(decrease) in payables		<b>8.0</b>	6.9	<b>(1.0)</b>	(1.7)
Decrease in provisions		<b>(0.4)</b>	(0.5)	-	-
Defined benefit payments		<b>(4.4)</b>	(4.5)	<b>(4.4)</b>	(4.5)
<b>Cash generated from/(used in) operations</b>		<b>28.4</b>	23.3	<b>(7.0)</b>	(5.8)

### 33 Net funds/(debt)

Net funds/(debt) is defined by the Group as net cash and cash equivalents less borrowings.

	Group		Company	
	2015	2014	2015	2014
	£m	£m	£m	£m
Analysis of net funds/(debt)				
Net cash and cash equivalents	<b>59.7</b>	12.6	<b>0.5</b>	0.5
Borrowings maturing after one year	<b>(45.4)</b>	-	<b>(5.4)</b>	-
<b>At 30 June</b>	<b>14.3</b>	12.6	<b>(4.9)</b>	0.5

	Group		Company	
	2015	2014	2015	2014
	£m	£m	£m	£m
Movements in net funds/(debt)				
Net funds at start of year	<b>12.6</b>	6.1	<b>0.5</b>	0.1
Net increase in cash and cash equivalents	<b>47.1</b>	6.5	-	0.4
Net proceeds from borrowings	<b>(45.4)</b>	-	<b>(5.4)</b>	-
<b>At 30 June</b>	<b>14.3</b>	12.6	<b>(4.9)</b>	0.5

**34 Operating leases**

By date of commitments:	<b>2015</b>	2014
Group	<b>£m</b>	£m
Future aggregate minimum lease payments under non-cancellable operating leases falling due:		
Within one year	<b>4.6</b>	4.5
Between one and five years	<b>16.8</b>	13.8
After five years	<b>13.0</b>	12.2
<b>Total</b>	<b>34.4</b>	30.5
By nature of commitments:	<b>2015</b>	2014
Group	<b>£m</b>	£m
Future aggregate minimum lease payments under non-cancellable operating leases:		
Land and buildings	<b>33.1</b>	29.7
Other	<b>1.3</b>	0.8
<b>Total</b>	<b>34.4</b>	30.5

**35 Contingent liabilities**

In the ordinary course of business, the Group has £0.7m (2014: £0.8m) of guarantees and counter-indemnities in respect of bonds relating to performance under contracts. The Group is also involved in various disputes or litigation, which are 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.

**36 Related party transactions**

	<b>2015</b>	2014
	<b>£m</b>	£m
The Company had the following transactions with Group undertakings:		
Sale of services	<b>13.4</b>	11.3
Finance income	<b>1.2</b>	0.8
Finance costs	<b>(0.2)</b>	(0.1)
Dividend income	<b>15.6</b>	13.6
The Company had the following year-end balances with related parties:		
Amounts owed by Group undertakings	<b>57.0</b>	48.6
Amounts owed to Group undertakings	<b>(8.1)</b>	(6.0)

All transactions with Group undertakings, which are disclosed in Note 37, occurred on an arm's length basis.

Transactions with the Ricardo Group Pension Fund are disclosed in Note 24. £0.4m of outstanding contributions were due by the Company as at 30 June 2015 (2014: £0.4m).

### 37 Subsidiaries

The Company owns directly, or indirectly(\*), 100% of the issued share capital, unless otherwise noted, of the following subsidiaries at 30 June 2015 which are all included in the consolidated financial statements:

Subsidiary	Principal activities	Country of incorporation
Ricardo UK Limited	Technical, Strategic Consulting and Performance Products	United Kingdom (registered in England and Wales)
Ricardo-AEA Limited	Environmental Consulting	United Kingdom (registered in England and Wales)
Ricardo Vepro Limited	Technical Consulting	United Kingdom (registered in England and Wales)
Power Planning Associates Limited	Environmental Consulting	United Kingdom (registered in England and Wales)
Ricardo Asia Limited	Technical Consulting and Business Development	United Kingdom (registered in England and Wales)
Ricardo Russia Limited	Technical Consulting and Business Development	United Kingdom (registered in England and Wales)
Ricardo, Inc.	Technical, Strategic Consulting and Software	United States
Ricardo Defense Systems LLC*	Technical and Strategic Consulting	United States
Ricardo Deutschland GmbH*	Technical Consulting	Germany
Ricardo Strategic Consulting GmbH*	Strategic Consulting	Germany
Ricardo Italia S.R.L.	Technical Consulting and Business Development	Italy
Ricardo Prague S.R.O.	Technical Consulting	Czech Republic
PPA Energy (Pty) Limited*	Environmental Consulting	South Africa
Ricardo India Private Limited (99%)	Technical Consulting and Business Development	India
Ricardo Shanghai Company Limited	Technical, Strategic Consulting and Software	China
Ricardo Japan K.K.	Technical Consulting and Business Development	Japan
Ricardo Investments Limited	Holding Company and Management Services	United Kingdom (registered in England and Wales)
Ricardo GmbH*	Holding Company	Germany
Ricardo Iberia SL*	Dormant	Spain
Ricardo Danmark ApS*	Dormant	Denmark
Ricardo Certification Limited*	Dormant	United Kingdom (registered in England and Wales)
Ricardo Certificacion SL*	Dormant	Spain
Ricardo Certificering B.V.*	Dormant	Netherlands
Ricardo Certificering ApS*	Dormant	Denmark
Ricardo EMEA Limited*	Dormant	United Kingdom (registered in England and Wales)
Ricardo Consulting Engineers Limited*	Dormant	United Kingdom (registered in England and Wales)
B&R Taylor Limited	Dormant	United Kingdom (registered in England and Wales)
Fenton Technology Design Limited	Dormant	United Kingdom (registered in England and Wales)
PPA Energy Developments Limited*	Dormant	United Kingdom (registered in England and Wales)
Ricardo Mayfly Limited	Dormant	Bailiwick of Jersey
Ricardo Pension Scheme (Trustees) Limited	Dormant	United Kingdom (registered in England and Wales)
Ricardo Special Vehicles Limited	Dormant	United Kingdom (registered in England and Wales)
Ricardo Technology Limited	Dormant	United Kingdom (registered in England and Wales)
Ricardo Test Services Limited	Dormant	United Kingdom (registered in England and Wales)
Ricardo Transmissions Limited	Dormant	United Kingdom (registered in England and Wales)

The Group owns 100% of the issued share capital of all of these subsidiaries.

**38 Events after the reporting date****a) Lloyd's Register Rail acquisition**

On 1 July 2015 the Group materially completed the acquisition of the Lloyd's Register Rail ('LR Rail') business, operating assets and employees of Lloyd's Register Rail Limited and Lloyd's Register Rail Europe B.V. together with various other assets relating to the rail business of Lloyd's Register Group Limited and the group of companies of which it is the ultimate holding company. LR Rail is a rail consultancy and assurance business and is a trusted partner to a wide range of international clients. LR Rail uses its understanding of critical and complex technologies and its independent expert advice to provide services ranging from rolling stock design, signalling and train control, intelligent rail systems, operational efficiency improvement, training and independent assurance services.

The following table sets out the consideration paid for LR Rail, together with the provisional assessment of the net assets acquired.

	£m
<b>Initial cash consideration</b>	<b>40.6</b>
Provisional assessment of identifiable net assets acquired	12.6
Provisional goodwill and other acquisition-related intangible assets	28.0
<b>Total</b>	<b>40.6</b>

All of the initial cash consideration of £40.6m was paid after the year-end in July 2015. The acquisition was completed on a cash-free and debt-free basis, subject to normal levels of working capital.

Adjustments have not yet been made to identifiable net assets on acquisition to reflect their fair value, including the recognition of customer-related intangible assets separable from the goodwill arising on acquisition. It is expected that the remaining value of goodwill will 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.

The provisional assessment of net assets acquired is based upon available aggregated financial information which does not show each major class of asset acquired and liability assumed. In accordance with the sale and purchase agreement, Lloyd's Register is not required to prepare and deliver completion accounts until after the date of approval of these financial statements.

The provisional value for initial consideration and provisional assessment of net assets acquired may be adjusted in future in accordance with the requirements of IFRS 3 'Business Combinations' and the sale and purchase agreement.

The provisional assessment of net assets of £12.6m includes net trade receivables of £12.8m, all of which is expected to be collectible. In the ordinary course of business, LR Rail also has £3.4m of guarantees and counter-indemnities in respect of bonds relating to performance under contracts. These are not recognised in the provisional assessment of identified net assets.

Acquisition-related costs of £2.1m have been charged to the Consolidated Income Statement for the year ended 30 June 2015 and are disclosed as a specific adjusting item in Note 4.

**38 Events after the reporting date (continued)****b) Cascade Consulting acquisition**

On 18 August 2015 the Group acquired 100% of the issued share capital of Cascade Consulting Holdings Limited, and its subsidiary, Cascade Consulting (Environment & Planning) Limited (together, 'Cascade Consulting') for total consideration of £3.2m. Cascade Consulting provides additional capability and reach in the areas of water resource and water quality management, ecosystem services and environmental impact assessment.

The following table sets out the consideration paid for Cascade Consulting, together with the provisional assessment of the net assets acquired.

	£m
<b>Initial cash consideration</b>	<b>3.2</b>
Provisional assessment of identifiable net assets acquired	0.6
Provisional goodwill and other acquisition-related intangible assets	2.6
<b>Total</b>	<b>3.2</b>

All of the initial cash consideration of £3.2m was paid after the year-end in August 2015. The acquisition was completed on a cash-free and debt-free basis, subject to normal levels of working capital.

Adjustments have not yet been made to identifiable net assets on acquisition to reflect their fair value, including the recognition of customer-related intangible assets separable from the goodwill arising on acquisition. It is expected that the remaining value of goodwill will 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 the goodwill recognised is expected to be deductible for tax purposes.

Given the proximity of the completed acquisition of Cascade Consulting to the date of approval of these financial statements, the provisional assessment of net assets acquired is based upon available aggregated financial information, which does not show each major class of asset acquired and liability assumed.

The provisional value for initial consideration and provisional assessment of net assets acquired may be adjusted in future in accordance with the requirements of IFRS 3 'Business Combinations' and the sale and purchase agreement.

The provisional assessment of net assets of £0.6m includes net trade receivables of £0.7m, all of which is expected to be collectible.

No acquisition-related costs have been charged to the Consolidated Income Statement for the year ended 30 June 2015.

# 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 company number  
222915

## Registrars

Capita Registrars  
Northern House  
34 Beckenham Road  
Beckenham  
Kent  
BR3 4TU

## 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

## Website: [www.ricardo.com](http://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	23 October 2015
Annual General Meeting	4 November 2015
Final Dividend Payment Date	13 November 2015

## Shareholder Services

Capita Registrars 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 Capita to take advantage of this service should visit [www.capitaregistrars.com/](http://www.capitaregistrars.com/) shareholders.

## Shareholder Enquiries

Tel: 0870 162 3131  
(from the UK)  
Tel: +44 20 8639 3131  
(for non-UK callers)

## Principal Bankers

Lloyds TSB Bank plc  
55 Corn Street  
Bristol  
BS99 7LE

HSBC Bank plc  
Global House  
High Street  
Crawley  
West Sussex  
RH10 1DL

## Financial Advisers

NM Rothschild & Sons  
New Court  
St Swithin's Lane  
London  
EC4P 4DU







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# Emissions legislation

Global tailpipe and CO<sub>2</sub> emissions legislation adherence are 'must haves' in the development budget of many of our clients

	2010	2015	2020	2025
Passenger car, LCV & HPV	Europe	Euro 5	Euro 6	Euro 7
	US (49 States)	Tier 2	Pass Car 130 g/km	Pass Car 95 g/km
	California	27.5/23.5 mpg Cars/LCVs	Tier 3	
		LEV II (2009)	37.8/28.8 mpg Cars/LCVs	54.5 mpg Fleet (combined cars & LCVs)
		27.6/20.3 mpg Fleet/LCVs	LEV III	43.4/26.8 mpg Fleet/LCVs
Motorcycles & personal transportation	China	Euro 4	Euro 5	
		18-45 mpg	24-50 mpg weight classed	56 mpg fleet average
	Japan	Post New Long Term	39.5/35.8 mpg Cars/LCVs	57/63 mpg Gasoline/Diesel
Commercial vehicles (medium & heavy duty truck)	Europe	Euro 3	Euro 4	Euro 5
	US (49 States)	Classes I, II & III	Harmonisation with California	Euro 6/7
	California	Tier 2		
	China	Stage III		
	Japan	ISO 6460 Limits 0 - 125cc / > 125 cc	ISO 6460 and WMTTC	WMTTC to be adopted with new Stage IV emission limits
		13.1-48.2 km/litre		Harmonised to EU
		Euro V	Euro VI	Euro VII?
Agricultural & industrial vehicles	US (49 States)	EPA 10	Phase 1	Phase 2
	California	CARB 10	Phase 1	Phase 2
	China	Euro III	Euro IV	Euro V
		Post New Long Term (decreasing NOx limits in stages)	Fuel economy standards in place	
		World's first heavy duty fuel economy legislation		
Rail	Europe	Stage IIIA	Stage IIIB	Stage IV
	US	Tier 4 Interim	Tier 4 Final	Stage V
	China	Stage II	Stage III	Stage IV
	Japan	S.I./Diesel standards	New standards similar to Euro IIIB	
	EU & Russia	Stage IIIA	Stage IIIB	
	US	Tier 2	Tier 3	
	India	Planning adoption of US Tier 2 regulations		
	Australia	Not yet regulated		
			Tier 4 switch & line haul locomotives	

Source: Ricardo EMLEG database



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