Creating a world fit for the future

Ricardo plc

Annual Report & Accounts 2020/21

At Ricardo, our vision is to create a world fit for the future.

A world where we can all live sustainable lives, breathe clean air, access clean water, use clean energy and travel safely and sustainably while conserving resources.

Strategic report

Case studies

Corporate governance

Financial statements

Additional information

Working across multiple transportation sectors, energy and the environment, and defence, and supported by niche manufacturing, we deliver:

Technologically advanced solutions that ensure access to clean air and water

Ricardo provides advice, tools and solutions that enable the sustainable provision of clean air and water. We do this by utilising state-of-the-art quality measurement, modelling and decision-supporting tools to assess water risk and resource management. We also develop strategies and solutions for water providers to support the improvement of water availability and quality throughout the water cycle.

Cross-sector engineering solutions to accelerate decarbonised transport

Our solutions offer full lifecycle analysis to address environmental, manufacturing, supply and end-of-life performance, in order to deliver reduced- and zero-emission transport for both passengers and goods. We also deliver low-volume, high-value manufacturing products that support reductions in greenhouse-gas emissions.

Innovation to support global net zero and industry agendas

We are a partner of choice in delivering strategies and solutions to reduce carbon intensity in energy and promote renewable sources. We provide lifecycle analysis and endorsed advice to industries that are focused on achieving net zero carbon emissions and are experts in the optimisation of energy-grid performance and interactions with static and mobile assets. Our portfolio of services is designed to manage and abate climate change.

Comprehensive expertise in safety, assurance and certification

As a notified and designated body for new and modified rail systems, we provide independent assurance of clients' safety processes and implementation. The vehicle safety systems that we design help to safeguard both people and infrastructure.

Strategic report

An introduction to Ricardo

Ricardo plc is a world-class environmental, engineering and strategic consulting company. We shape the markets in which we operate through the delivery of solutions built on technological and sustainable innovation.

With more than 100 years of engineering excellence, we provide exceptional levels of technical expertise to deliver leading-edge innovative and sustainable cross-sector solutions designed to solve our clients' most complex strategic and operational challenges.

Financial highlights

Order book

(7)%

FY	£m
2020/21	293.5
2019/20	314.0
2018/19	314.0
2017/18	294.6
2016/17	248.5

Order intake

(5)%

FY	£m
2020/21	352.1
2019/20	368.7
2018/19	386.0
2017/18	413.4
2016/17	365.8

Revenue

-%

FY	£m
2020/21	351.8
2019/20	352.0
2018/19	384.4
2017/18	378.5
2016/17	352.1

Underlying[(1)] profit before tax

15%

FY	£m
2020/21	18.0
2019/20	15.6
2018/19	37.0
2017/18	37.5
2016/17	38.3

Underlying[(1)] basic earnings per share

5%

FY	pence
2020/21	22.4
2019/20	21.3
2018/19	53.7
2017/18	55.1
2016/17	55.7

Dividend per share (paid and proposed)

10%

FY	pence
2020/21	6.86
2019/20	6.24
2018/19	21.28
2017/18	20.46
2016/17	19.30

Statutory profit/(loss) before tax

174%

FY	pence
2020/21	3.9
2019/20	(5.3)
2018/19	26.5
2017/18	27.0
2016/17	32.2

Statutory basic earnings/(loss) per share

124%

FY	pence
2020/21	2.9
2019/20	(12.2)
2018/19	37.1
2017/18	33.0
2016/17	46.8

Net debt[(1)]

(36)%

FY	£m
2020/21	(46.9)
2019/20	(73.4)
2018/19	(47.4)
2017/18	(26.1)
2016/17	(37.9)

Underlying[(1)] cash conversion[(1)]

(15.1)pp

FY	%
2020/21	87.0
2019/20	102.1
2018/19	75.3
2017/18	95.3
2016/17	50.5

Cash conversion[(1)]

(19.1)pp

FY	£m
2020/21	93.8
2019/20	112.9
2018/19	74.4
2017/18	95.1
2016/17	47.6

Headcount[(1)]

(3)%

FY	Number
2020/21	2,901
2019/20	3,003
2018/19	2,981
2017/18	3,061
2016/17	2,927

(1) Please see the glossary on page 197 for a definition of the above terms.

Comparative Alternative Performance Measures ('APMs') prior to FY 2019/20 have not been updated to reflect the adoption of IFRS 16.

Ricardo at a glance

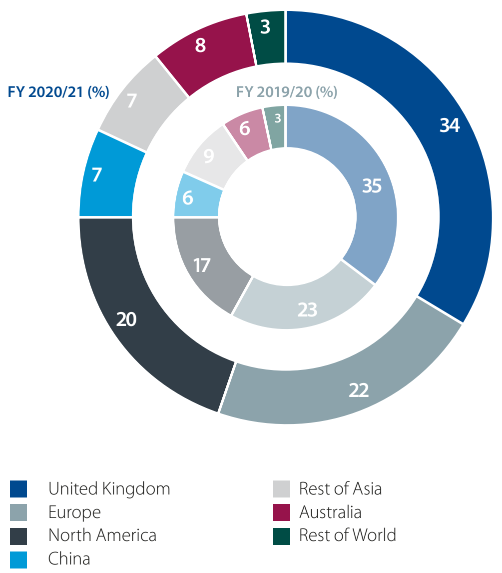
At Ricardo, our vision is to create a world fit for the future

We do this by using our diversified expertise to support clients with technical solutions that create a cleaner and safer tomorrow

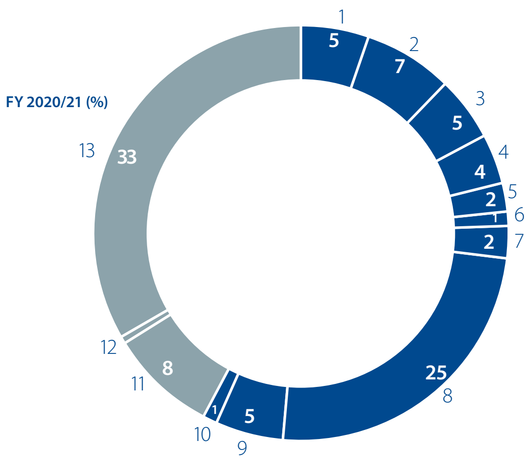
Where we operate

We have operations in 21 countries with more than 55 sites reaching key regions and countries across the world. Ricardo delivers complex technology and engineering projects by combining its global expertise with local knowledge.

REVENUE BY GEOGRAPHY



ORDER INTAKE BY DESTINATION



1. Australia
2. China
3. Germany
4. India
5. Japan
6. South Korea
7. Middle East
8. North America (US & Canada)
9. Netherlands
10. Other Asia
11. Other Europe
12. Rest of the world >1%
13. UK

Our end-markets

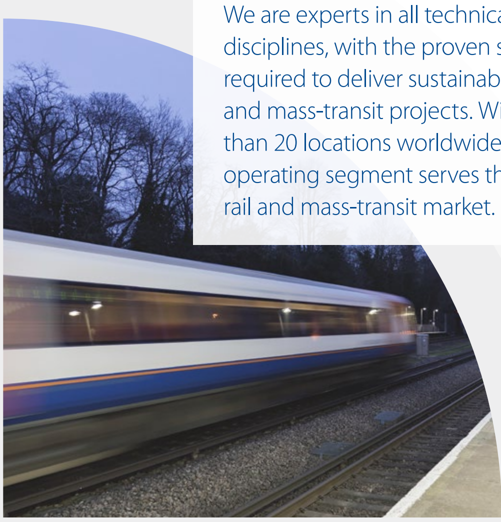
Working across four key market sectors, through our five operating segments, we deliver engineering consultancy services and solutions from the initial concept phase right up to the delivery of our customers' programmes.

ENERGY & ENVIRONMENT

With over 40 years' experience, our Energy & Environment operating segment works across the value chain to deliver insights, policy development and technical expertise to meet today's energy and environmental challenges. Key market sectors include air quality, climate action, policy, water, waste and chemical resources.

RAIL & MASS TRANSIT

We are experts in all technical railway disciplines, with the proven skills required to deliver sustainable rail and mass-transit projects. With more than 20 locations worldwide, our Rail operating segment serves the global rail and mass-transit market.



AUTOMOTIVE

Customers put their trust in our consulting, design, engineering and niche manufacturing capability services in key market sectors including: passenger, light and heavy duty commercial and off-highway vehicles; motorcycles; and motorsports. This sector is served by our Automotive & Industrial and Performance Products operating segments.

AEROSPACE, MARINE & DEFENCE

Working in partnership with our clients, we deliver wide-ranging consulting, design and engineering programmes across the civil and commercial marine, aerospace and defence industries. These markets are served by our Automotive & Industrial, Energy & Environment and Performance Products operating segments. Our Defense operating segment serves the US military including civil aerospace, marine and defence.

Our people

EMPLOYEES WORLDWIDE

2,901

Our people are at the heart of Ricardo. We have close to three thousand dedicated and talented people working on projects worldwide.

UNITED IN OUR

Shared values

Ricardo's shared values – respect, integrity, innovation and passion – actively guide our behaviours and are reflected in how we work together. The Ricardo culture is rooted in these values and behaviours and includes a commitment to delivering diversity and inclusion.

Our rankings and awards

Our rankings and awards demonstrate our commitment to delivering the best environmental, engineering and strategic-consulting expertise for our customers. We are honoured to be recognised for the great work we strive to deliver every day.

FINANCIAL TIMES	• UK's leading management consultants 2021: - Silver media for our Energy & Environment team - Bronze medal for our Automotive & Industrial team
FORBES	• Included in Forbes' America's Best Management Consulting Firms 2016, 2017 & 2020
BRITISH ENGINEERING	• Excellence Awards 2020: Design Consultancy of the Year and Grand Prix winner
THE ENGINEER	• 'Collaborate to Innovate' Award 2020
ENVIRONMENTAL ANALYST	• UK's No.1 consultancy for air quality • UK's No.2 consultancy for sustainability and ESG • UK's No.4 consultancy for waste management/circular economy, government and agencies work, environmental risk and due diligence • UK's No.5 consultancy for climate change and energy-sector consulting

Sir Terry Morgan CBE
Chair

Chair's statement

"During the pandemic, Ricardo's clear purpose and values have been instrumental in allowing the business to continue to deliver customer-service excellence.

I am deeply grateful to our colleagues across the Group for their hard work and continued support - this has ensured that we have delivered in the year and allowed us to make further strategic progress."

Results

Overall, the Board has been pleased at how Ricardo has been able to continue to deliver a robust set of results despite the challenging market conditions.

For the year ended 30 June 2021, the Group delivered revenue of £351.8m, together with underlying profit before tax of £18.0m and underlying basic earnings per share of 22.4 pence. On a reported basis, the Group delivered a profit before tax of £3.9m and the basic earnings per share was 2.9 pence.

As ever, we remain committed to paying a dividend to our shareholders. The Board has recommended a final dividend of 5.11 pence per share. This, together with the interim dividend of 1.75p per share, which was paid on 9 April 2021, results in a total dividend of 6.86p per share for the year.

Strategy

Ricardo's purpose is to create a world fit for the future. And we do this by using our diversified expertise to support customers with technical solutions that create a cleaner and safer tomorrow.

Our purpose – combined with our values of respect, integrity, innovation and passion – has been even more important in guiding us through the pandemic.

To make sure that we remain focused on the right issues beyond the pandemic, the Board commissioned an extensive strategic review to assess the Group's priorities and strategic direction. This review will ensure that Ricardo can continue to execute effectively in line with its purpose and values. Following the review, the Board has approved various recommendations to accelerate growth through organic and inorganic expansion, including a focused approach to disposals and acquisitions.

Our people, culture and diversity

Our talented teams spanning the globe have proven to be the backbone to our business. Thanks to their dedication, we have ensured that Ricardo has continued to run flawlessly, delivering service excellence throughout this challenging time.

Prominent achievements for this financial year included being named Design Consultancy of the Year for 2020 in the British Engineering Excellence Awards, which celebrate design excellence, in recognition of our innovative consultancy services.

We also received a double recognition in the fourth Financial Times annual rating of the UK's leading management consultants: a silver and a bronze medal. The silver medal was awarded to our Energy & Environment team for its expertise in the sustainability sector, while the bronze was awarded to our Automotive & Industrial team for its expertise in strategic consulting within the automotive sector.

These awards are testament to Ricardo's unfailing commitment to delivering the very best environmental, engineering, and strategic consulting expertise for our customers and we are honoured to be recognised for the great work that our teams deliver every day.

As a board, we understand the importance of building

“Ricardo is certainly on the road to recovery and, through a more focused strategy, we aim to continue to accelerate our position in growing markets.”

engagement and a good corporate culture. It was pleasing to see a slight improvement in our recent employee engagement score and that our colleagues take great pride in working for Ricardo. We regularly monitor the company culture and seek opportunities throughout the year to engage with colleagues across the Group.

To encourage more diversity across the Group, the Board continues to focus on improving gender balance across senior management. We are making progress within our senior management team with the recent appointments of both our Group Marketing Director and our Group People, Teams & Organisation Director. We are now actively working to improve both gender and ethnic diversity across all levels of the business.

Environmental, Social and Governance (‘ESG’)

Being a sustainable company in practice is not about just one or two things – it is at the heart of everything that we do and the solutions we deliver. As an international company, we are part of a larger effort that is guided by the UN’s Sustainable Development Goals (‘SDGs’) and, as part of this, Ricardo is committed to achieving net zero by 2030.

Ricardo is delivering on its commitments to increase the visibility of reporting its ESG agenda. This has included greater transparency regarding the Group’s sustainability initiatives, such as reporting on electricity sourcing from renewable sources, defining targets for operational decarbonisation, publishing carbon emissions attributable to air and rail travel, and communicating the company’s approach to the achievement of net zero carbon from its operations. This is testament to our commitment to the highest standards of corporate governance, which ultimately builds a better business and supports long-term performance.

Group Chief Executive Officer

In January 2021, the Board, together with Dave Shemmans, agreed that he would leave his role as Group Chief Executive Officer. Subsequent to the announcement, the Board initiated a thorough and rigorous process to recruit a successor who can continue to deliver on the strategy of the Group, and I was delighted to announce on 26 August 2021 the appointment of Graham Ritchie.

Graham will join the Group on 1 October 2021. Graham has a proven track record in leading large divisions within listed companies and is well placed to ensure the strong execution of Ricardo’s strategy. I am excited by Graham’s vision for the Group along with his passion in driving operational efficiency and accelerating growth for the business. The Board and I look forward to working with him to ensure the next steps in the advancement of Ricardo’s strategic ambition.

On 30 September 2021, Dave steps down from his role as Ricardo’s Chief Executive Officer, having led the Group for the last sixteen years. I would like to take the opportunity to thank Dave for his contributions over the years and wish him every success in the future.

Future prospects

As a Group, we are in a unique position to harness our expertise to support the global shifts that are changing the way we live and do business. This provides us with a solid foundation that will allow us to emerge from the pandemic and benefit from sustainable growth.

Ricardo is certainly on the road to recovery and, through a more focused strategy, we aim to continue to accelerate our position in growing markets.

I would like to end by once again giving a huge ‘thank you’ to our teams across the globe for their unfailing commitment to Ricardo and wishing all our stakeholders a safe and healthy year ahead.

Sir Terry Morgan CBE
Chair

Dave Shemmans
Chief Executive Officer

Chief Executive's review

"Over the last eight years we have significantly diversified our portfolio and, by so doing, Ricardo is now positioned as a world-class environmental, engineering and strategic consultancy offering expertise that is supporting global green agendas.

Although we remain in an uncertain world, the resilience of our operating model and the focused delivery of our strategic priorities has ensured that we have steered back onto a course that will guide our business to a position of strength. This has been made possible thanks to the amazing team that, throughout the pandemic, has demonstrated its agility, dedication and ingenuity in continuing to provide excellent service to our customers and remaining committed to achieving our ambition: to create a world fit for the future."

Strategy update

Ricardo operates in five key operating segments: Energy & Environment ('EE'), Rail, Defense, Performance Products ('PP') and Automotive & Industrial ('A&I'). All segments achieved positive results against a backdrop of COVID-19, with the exception of A&I. Although we are seeing signs of recovery in A&I, with increased order intake in the US and China, it is likely to be some time before we can expect a to see a full global automotive industry recovery.

At the same time, the increasing focus on climate change and green recovery stimulus programmes is driving significant opportunities. As a Group, we are in a unique position where we can harness our expertise to support the global shifts that are changing the way we live and do business.

Ricardo is well placed – both technologically and operationally – to be able to deliver sustainable solutions into this world. The Group has no single dependency on any market, customer or geography and is able to take advantage of the intersection between transportation, energy and environment to deliver a unique proposition around environment, energy and clean transportation.

The change in emphasis towards the energy and environmental sector, together with expansion into rail and other key transportation sectors, has proven to have been prescient and has been very important in delivering our improved performance in FY 2020/21. Our Rail, EE and Defense segments, which benefit from government spending, together with the longer-cycle PP business, have provided robust revenues through the economic cycle, which have counterbalanced the challenges in A&I.

We continue to deliver against our strategic plan, making sure that we take the most appropriate actions and invest in areas that will accelerate our growth and deliver a sustainable future for the Group.

Growth through both organic and inorganic investment will be focused on decarbonisation and net zero, from policy development to engineering solutions in the transport and energy market sectors. Furthermore, we plan to extend our portfolio into clean-energy solutions with a focus on

Ricardo is part of the Cranfield Aerospace Solutions-led Project Fresson delivering the world's first truly green passenger carrying airline services using hydrogen fuel-cell technology.

electrification and hydrogen while continuing to support the transition from fossil fuel-based internal combustion engines.

Strengthening our market position by leveraging our key differentiator around the intersection between transportation, energy and environment is crucial to our success both today and tomorrow.

Performance highlights

We delivered an improved performance in FY 2020/21, with the business recovering from the impact of COVID-19. Overall, we closed the year with a robust order intake and saw growth across all our operating segments, with the exception of A&I which has suffered from the continuing market challenges exacerbated by the pandemic.

EE and **Rail** delivered strong performances in the year, with both increasing revenue and operating profit compared to the prior year. Defense delivered strong revenue growth, driven by an expansion in our engineering services and the receipt of the first USD 10m order from a significant USD 89m three-year contract to provide up to 9,480 critical safety-improvement Antilock Brake Systems/Electronic Stability Control retrofit kits for the US Army's High Mobility Multipurpose Wheeled Vehicle.

PP returned to growth, driven by increased transmission volumes year-on-year and steadily increasing engine volumes throughout the year, together with perpetual software licenses.

A&I, particularly within the EMEA region, was impacted by the difficult operating conditions affecting the global automotive industry. This altered demand over the year. Structural changes and a shift in approach to focus on renewable energy sources and higher-growth end-markets ensure that the segment is well positioned for future growth.

Throughout the year, we have remained committed to delivering innovative and sustainable solutions driven by our ingenuity and agility in solving customers' problems. This, in turn, has led to several influential green strategic partnerships and contract wins for the Group, including working with the UK consortium, led by Cranfield Aerospace Solutions, to deliver the world's first truly green passenger-carrying airline service using hydrogen fuel-cell technology. We are also jointly developing a next-generation battery-management system with Singapore-based Orient Technology and have formulated an alliance with AFC Energy to collaborate on innovative hydrogen-power applications that will accelerate global efforts to decarbonise energy and infrastructures in support of carbon-neutral measures. Similarly, we are leading a consortium that has won funding to design a community-scale greenhouse-gas removal system. Ricardo's technology will use sustainable forestry waste to remove greenhouse gases and provide local communities with renewable heat and electricity.

Operationally, our priorities during the year have been focused on effective execution, our digital agenda and our people plan, which have allowed us to continue to function with minimal disruptions.

Our digital-first agenda is about embedding digital into our operational structures, our processes and our digital customer experiences and solutions. It has enabled us to drive best practice right across the Group and has been instrumental

Ricardo's new Electrified Propulsion Research Centre at Shoreham Technical Centre is enabling the research and development of the next generation of electrified vehicles.

throughout the pandemic. We have proven to be both innovative and agile in our approach and have developed a range of virtual solutions – including testing facilities and multiple software applications – to allow us to maintain output towards customers' programmes and ensure the efficient and timely delivery of ongoing projects.

Our people are pivotal to our success. It is a testament to their hard work, agility and relentless focus in delivering service excellence that we have been able to maintain levels of output even in times of uncertainty. The pandemic has taught us how important it is to work collaboratively at all levels of the organisation, and our shared values – respect, integrity, innovation and passion – reflect how we work together internally and how we treat our customers. As a business, we share a commitment to delivering a diverse and inclusive environment in which we support our colleagues to be the very best they can be. Every year we make further strides in improving engagement and I am so pleased that this year has been no different, with percentage improvements shown across our employee-engagement survey results.

As a business, we are duty bound to operate in a responsible and sustainable way and we make sure that sustainability is at the core of all that we do. An organisation such as ours that offers and delivers commercial solutions in support of global sustainability agendas understands the importance of achieving net zero. In light of this, we have set ourselves a critical target: a commitment to realise net zero by 2030.

We are making great progress toward this goal and already delivering and/or exceeding expectations, according to our exacting annual initiatives.

COVID-19

As the world gradually moves to a recovery phase, we continually shape our response to the evolving situation. From the outset, our utmost priority has been the safety and the wellbeing of our colleagues, ensuring business continuity and supporting both our customers and the communities where we live and work. These priorities have remained constant, with our teams working collaboratively at all levels to make certain that our plans are fit for purpose at each new entry phase.

From the beginning of FY 2020/21, our manufacturing sites have been operating and delivering uninterrupted services to our customers. We have actively managed our operational response to ensure that our main manufacturing sites remain in production. The manufacturing teams in the UK and US have been closely aligned, sharing best practice and actively supporting effective supply-chain management, which has been constantly affected by part shortages and freight difficulties.

Our offices have also remained open for those who wish to return to work. As restrictions start to lift, the Group's approach to returning to office work is both encouraging and welcoming. We want our colleagues to reintegrate, reconnect, and assist in recharging the business.

Brexit
On 31 December 2020, the UK's Brexit transition period ended, which has meant that doing business with Europe has inevitably changed with new rules being applied. Like other companies, we have experienced increased paperwork and processing time for both importation and exportation procedures, resulting in some tasks taking up to three times as long to complete. Nevertheless, thanks to our rigorous planning – which included holding extra stock of priority parts prior to Brexit – the timing has had little impact on our deployment capabilities.

In general, because of our relentless focus on proactive supply chain management, we are able to maintain and manage our customer relationships in the UK, Europe, Asia and America.

Looking ahead
Ricardo is successfully embarking on its route to growth, focusing on developing its world-class engineering, scientific and consulting capability and operating in markets that offer long-term growth prospects and which are driven by the ever-changing nature of our world.

Our diversified business portfolio - with expertise and capabilities that are at the intersection between transportation, energy and environment - allows us to deliver a unique proposition. We are able to advance solutions that ensure access to clean air and water; we have a deep knowledge of delivering cross-sector engineering solutions to accelerate decarbonised transportation; and we most certainly are a partner of choice for innovation to support global net zero and industry agendas.

As we enter FY 2021/22, we do so with an robust order book and pipeline . This is a business with a positive outlook and as a Group we continue to push the boundaries, strengthening our business for a sustainable future.

Closing statement
I would like to sign off my final review here at Ricardo with a warm and heartfelt note of thanks. I have had the pleasure of leading Ricardo for the past sixteen years and would like to thank all our customers, colleagues and shareholders for their support during my tenure. This is truly a special Group, with some amazingly talented people, in which I have enjoyed every moment.

I wish Ricardo all the very best.

Dave Shemmans
Chief Executive Officer

Ricardo Certification is providing Notified Body services for the supply of high-speed intercity express trains for German national operator, Deutsche Bahn.

Ricardo's business model

Our diversified business model allows us to leverage our key differentiator of operating at the intersection of transportation, energy and environment. In this way, we are able to respond to changing opportunities and risks in all the markets in which we operate and ensure that we continuously deliver value for our stakeholders.

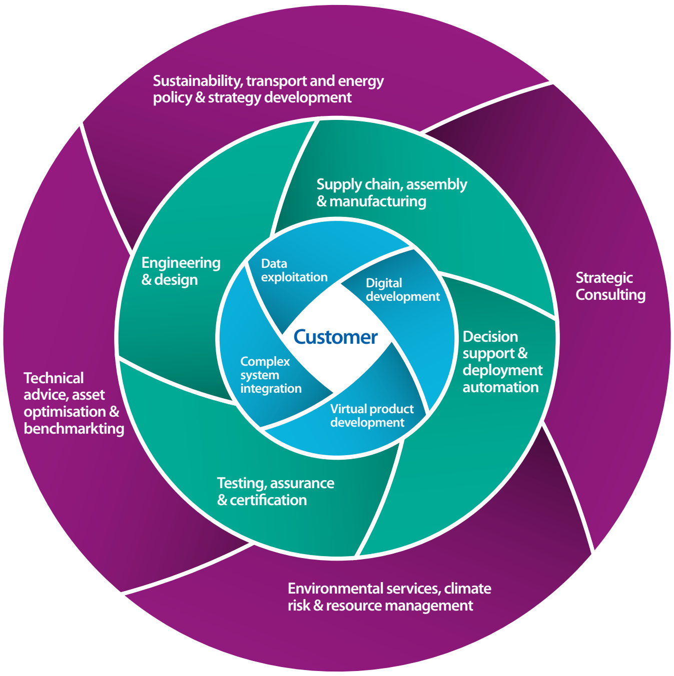
What we do

Ricardo's global team of experts – comprising engineers, scientists, economists, technical specialists and management consultants – bring the very best of their diverse experience to deliver innovative solutions that solve our customers' toughest strategic and operational challenges. We invest in physical and digital assets that support tool-chain validation, final-product certification and real-time data capture. As a Group, we have significant research and development capability to address the mobility, energy and sustainability challenges of the future.

CONSULTING AND ADVISORY SERVICES	We operate across various geographies and key markets, offering award-winning management and strategic consulting and advisory services through a wide range of technical and environmental disciplines that solve customers' ever-evolving challenges.
DESIGN AND ENGINEERING SERVICES	From transforming the environmental, energy and transportation sectors with next-generation, clean-energy solutions to supporting the transition from fossil fuel-based internal combustion engines, our customers rely on our deep knowledge and trusted experience in design, integration and system engineering.
PROJECT-MANAGEMENT SERVICES	Our value to customers comes from our belief in the approach of 'whole system' projects. Whether this is managing entire programmes, integrating complex systems, handling lifecycle logistics or providing support for product development and delivery, our experts offer deep knowledge not only of their own discipline but also of how this combines seamlessly within the wider operations.
TEST AND CERTIFICATION SERVICES	We provide a range of independent assurance services, primarily for the rail sector. In addition, we deliver certification, emissions and regulatory compliance, and validation services across multiple sectors as well as providing vehicle-testing programmes that are tailored to help customers optimise the performance and durability of propulsion systems throughout their development.
NICHE MANUFACTURING CAPABILITIES	We deliver high-performance, niche-volume manufacturing for precision and electromechanical products, advanced assembly, and special-vehicle retrofit services across the transportation and defence sectors.

Ricardo's business framework model

Our model is underpinned by enablers that provide customer value at each stage of service delivery



Ricardo's culture is embedded in shared values that guide our way of work. *Respect, Integrity, Innovation and Passion* drive us forward as an organisation and bind us together as a community. At Ricardo, we believe that building a diverse and inclusive culture supports growth and is essential for delivering a sustainable future.	CULTURE
Being responsible and acting ethically is fundamental to Ricardo. Focusing on responsible business practices across all our markets, we work systematically to improve both our approach and our obligations towards our shareholders and the broader stakeholder group. Our commitment is underpinned by Ricardo's governance framework and codes of conduct.	GOVERNANCE
At Ricardo, we take a proactive and engaged approach to maintaining safe, efficient and sustainable operations. We do this through continuous and rigorous improvement of our processes and systems to ensure that our customers' expectations are consistently met.	EFFECTIVE OPERATIONS

The value that we create

We create value for our customers, colleagues and shareholders, the communities in which we operate, and our suppliers.

CUSTOMER BENEFITS	Our customers include privately and publicly owned businesses of different sizes; major transportation original equipment manufacturers ('OEMs') and operators; governments; public authorities; and inter-governmental and international agencies. We support our customers by addressing their key challenges, aiding growth and increasing the efficiency of their operations.
EMPLOYEE ENGAGEMENT	Ricardo is a diverse global community of people with different backgrounds, practices and thinking. Our values guide our organisation, driving employee engagement and a sense of belonging. Our overall employee-engagement score slightly increased in FY21 (3.9 out of 5 compared to 3.8 in 2020), supporting our ambition to create an inclusive working environment.
SHAREHOLDER RETURNS	With more than 100 years of engineering excellence and trusted expertise, we have a long history of creating value for our shareholders. Our diversified business is well positioned to continue to deliver sustainable growth and shareholder value.
COMMUNITY SUPPORT	We contribute positively to the global communities in which we operate, recognising and mitigating our impact on people and the environment. This involves providing employment opportunities and community involvement through our charitable and STEM (science, technology, engineering and maths) education programmes, particularly during the pandemic.
SUPPLIER COMMITMENT	We work in close partnership with our suppliers to ensure that our supply chain is effective, efficient, ethically transparent and sustainable.

Our strategy

Our strategy and operating model defines our values, how we work together and our ambition. Being part of Ricardo means sharing our commitment to these key elements that shape our future.

Our Strategic Principles

1	SUSTAINABLE BUSINESS GROWTH	Ricardo delivers profitable and sustainable growth by investing effectively in our business. With a clear focus on market demands – driven by customer needs, technology advancements, and future policies and regulations – we will grow organically and by acquisition to support us in strengthening our overall market position.
2	RISK MITIGATION	We mitigate business cyclicality and aim to avoid external dependency, whether related to any specific geography, technology or sector. By focusing on risk mitigation and by building our expertise and services that are at the intersection of transport, energy and environment agendas across the globe, we aim to improve overall business performance and deliver enhanced customer and shareholder value.
3	CUSTOMER VALUE	We deploy our know-how, experience and application expertise within our key market sectors and draw upon our core cross-sector capabilities to provide greater insights and synergies. We employ R&D to provide leading technologies and innovation to our customers.
4	WORLD-CLASS TALENT	At the heart of Ricardo are our people. We are committed to attracting and developing talent from a broad range of disciplines to contribute towards our mission. Our high performance and innovative culture ensures that we consistently motivate our skilled and agile workforce to be the very best that they can be.
5	OPERATIONAL EXCELLENCE	To maintain an efficient and effective organisation and to keep up with the rate of technological change, we develop and invest in digital business models that allow us to leverage data and bring existing processes into a virtual environment. This supports our overall productivity and reduces the environmental impact of our business as we progress to our net zero objective.

Strategic performance

We use a range of performance metrics to provide a consistent measure of our underlying performance. This is monitored by the board regularly to ensure that our performance indicators are aligned with our strategic priorities.

1 SUSTAINABLE BUSINESS GROWTH

Key performance indicators | **Comments** | **Principal risk**

Order book

£m

We closed the year with an order book of £293.5m, which is 7% below the prior year. The Group's order intake reduced by 5% to £352.1m in the year reflecting challenging trading conditions, with delays in orders being placed and the continuing effects of the COVID-19 pandemic. Further details of the performance of each of the segments are provided on pages 45 to 55.

Principal risk: Customers and markets; COVID-19; Climate change

Revenue

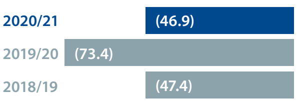
£m

Reported Group revenue was in line with the previous year. Energy & Environment, Rail, Defense and Performance Products delivered increased revenues compared to the prior year. Automotive & Industrial revenue reduced. Further details are provided in the Financial review section on pages 40 to 44 and in the operating segments review on pages 45 to 55.

Principal risk: Contracts; Customers and markets; COVID-19

Net debt

£m



The Group reduced its net debt by £26.5m. This improvement reflects £28.2m of proceeds, net of fees, from a successful share placing in November 2020 and a strong working capital performance. Excluding the placing, restructuring costs and acquisition-related payments, the Group generated £7.4m of cash in the year.

Contributions of £4.6m were paid into the defined benefit pension scheme.

Principal risk: Contracts; Financing; Defined benefit pension scheme

2 RISK MITIGATION

Key performance indicators | **Comments** | **Principal risk**

Segment diversity

Number of segments exceeding 10% of revenue

All five of our operating segments exceeded 10% of revenue, demonstrating that the Group is well diversified across all segments.

Segment diversity for FY 2019/20 and FY 2018/19 has been estimated in line with the move to reporting on five segments in the current year. Performance by segment is discussed on pages 45 to 55.

Principal risk: Customers and markets; Climate change; Technology; Supply chain

Customer dependency

Number of customers exceeding 5% of revenue

The number of customers with revenue above 5% is low. Revenue for the largest customer was 12%, the other two customers were both 6%.

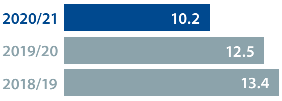
While we retain a small number of key relationships, we continue to have a diverse customer base across segments and geographies.

Principal risk: Customers and markets; Supply chain; COVID-19

3 CUSTOMER VALUE

Key performance indicators | Comments | Principal risk

Research and development spend
£m



Comments: R&D spend was lower in the current year as some long-running programmes completed in the year. Our R&D spend focused on research on innovative science and engineering, including the development of new tools, technology and processes in our Automotive & Industrial and Energy & Environment segments. Further details of our R&D projects are given on pages 17 to 19.

Principal risk:
Technology
Customers and markets
Climate change

Customer satisfaction %
Ratings using the net promoter method

Comments: Customer satisfaction has improved over the last three years, as has the number of scores that we receive. The net promoter system which we use gives us greater insight from the feedback.

Principal risk:
Contracts
Customers and markets

4 WORLD-CLASS TALENT

Key performance indicators | Comments | Principal risk

Employee and knowledge retention
Voluntary employee turnover % per annum

Comments: The level of voluntary attrition remains stable as the labour market recovers. There is strong competition around the world for our experienced consultants, engineers and scientists.

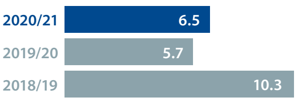
Further details of our approach to our people are given on pages 20 to 23.

Principal risk:
People
COVID-19

5 OPERATIONAL EXCELLENCE

Key performance indicators | Comments | Principal risk

Underlying operating profit margin
%



Comments: The increase in the Group's underlying operating profit margin reflects improved profitability in Energy & Environment, Rail and Performance Products. Margins reduced in Defense (due to delays in the timing of orders) and Automotive & Industrial, due to reducing revenue year-on-year. Further details are described in the Financial review section described on pages 40 to 44.

Principal risk:
Contracts
Customers and markets
Supply chain
COVID-19

Environment
tCO_2e per employee for scope 1[1] and scope 2[1] emissions

Comments: Scope 1 emissions vary year on year because of the mix of project work. Our scope 2 emissions are reducing primarily as a result of the sale of the Detroit test business at the end of FY 2019/20 and also due to lower office occupancy resulting from COVID-19 enforced home-based working.

Further details of our carbon footprint and progress towards net zero are described in pages 24 to 33.

Principal risk:
Climate change
Laws and regulations

Innovation

"Ongoing investment in research and development supports Ricardo's strategy for growth and business diversification. We evaluate the benefit to our clients of our latest innovations, focusing on delivering technology aligned with those enduring market drivers that bring value in volatile market conditions. This year we have invested more than ever in net zero technology around electrification and hydrogen."

Mike Bell
Group Strategy and Transformation Director

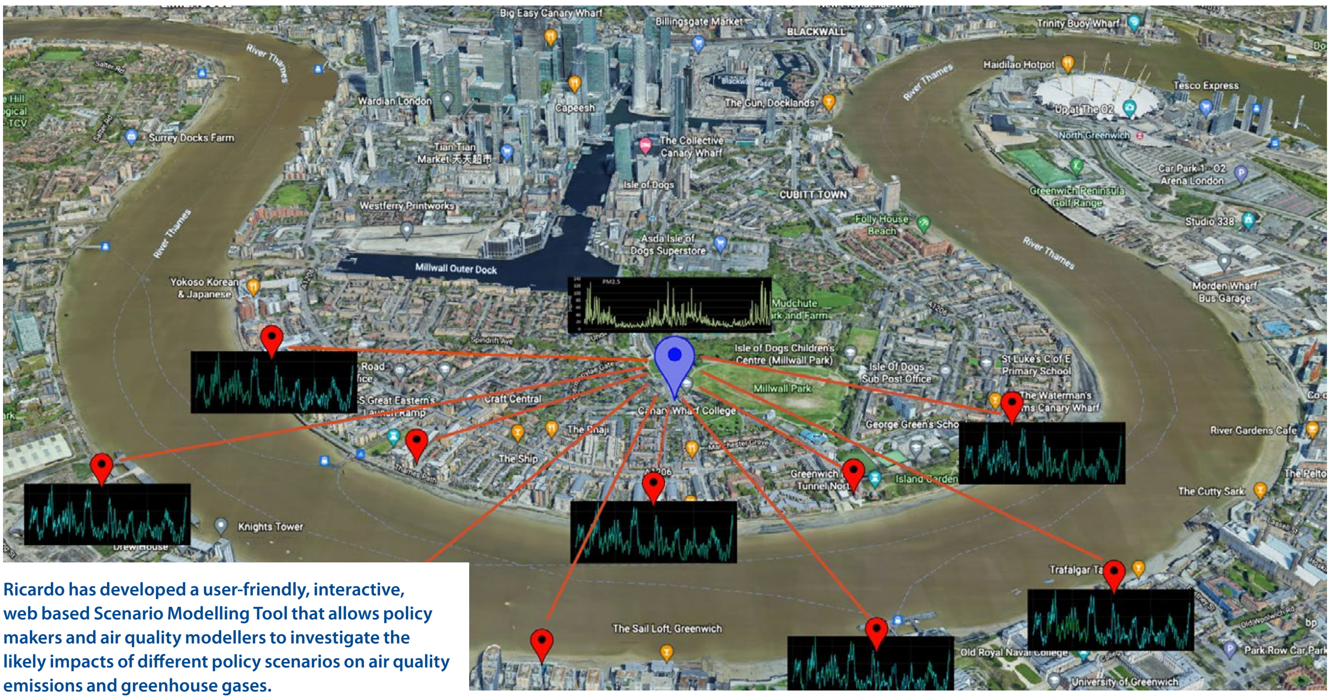
In line with Ricardo's vision and mission, our R&D portfolio extends across a range of market sectors. As the mobility sector moves towards a zero-emissions future, the breadth of Ricardo's operating businesses offers symbiotic opportunities. The interdependencies between energy, environment, scarce resources, waste, security and mobility are increasing. New roles and responsibilities, collaboration and new digital entrants are changing the landscape to open up new opportunities for technological developments.

Our R&D investment is focused on enhancing our competitiveness and delivering innovative market-leading services, solutions and software within the context of a sustainable, global marketplace. The impact of digitisation across our market sectors is reflected in our current portfolio, with a wider range of applications planned with particular focus on the changes being brought about as a result of the COVID-19 pandemic.

Software and data are now playing a critical role in our research projects - whether in the context of virtual engineering, modelling or artificial intelligence. The following sections highlight key R&D projects focused on measurement, design, simulation and manufacturing of sustainable customer solutions.

Measurement: air quality

Pervasive air-quality monitoring using low-cost air-quality sensors is gaining momentum. These sensor systems provide an opportunity to carry out 'hyper-local' monitoring, filling in the gaps between conventional, expensive monitoring sites. However, the performance of sensor systems and resultant data quality is variable, influenced by a wide range of external factors and further complicated by the fact that sensor systems provided by different manufacturers often respond in very different ways. The current process involves regularly co-locating sensors alongside more accurate monitoring equipment and calibrating manually. We are developing machine-learning software that will replace the time-intensive manual calibration process, avoiding relocation of monitoring equipment. The solution trains models that help to characterise the measurements from low-cost sensors at a range of temperature, humidity and pollutant concentrations. These models are used alongside our experts, allowing us to manage larger sensor networks efficiently and cost-effectively as well as reducing data loss and downtime.



Ricardo has developed a user-friendly, interactive, web based Scenario Modelling Tool that allows policy makers and air quality modellers to investigate the likely impacts of different policy scenarios on air quality emissions and greenhouse gases.

Ricardo is leading the UK-ALUMOTOR consortium to establish a supply chain in sustainable electric motors to kick start the green industrial revolution.

Net zero transport: virtual battery design

The HiFi Elements project delivered a virtual toolchain for the design, development and validation of vehicle batteries. Critically, it helps achieve up to a 50% reduction in design process time and up to a 20% development cost-reduction in the virtual development and validation process. It also captures battery ageing in the design process and delivers reduced order models as an output from the modelling tools. These can be run in real time with the application battery-management system and provide far more accurate and responsive management. This helps ensure that peak battery performance and life is delivered out in the field. This new toolchain is transforming Ricardo's delivery capabilities for its battery-pack project.

Net zero transport: thermal engineering

As battery charge rates increase, the corresponding safety and performance requirements become more demanding. Ricardo has developed a weight-efficient, immersion-cooled battery module system, I-CoBAT, which delivers significant improvements for the safe, ultra-fast charging rate of batteries. In addition, the design improves operational performance including the prevention of thermal runaway. The project was awarded *The Engineer* magazine's 'Collaborate to Innovate' award in 2021. This technology is now being leveraged in our high-performance battery projects for the aviation and road-transport sectors.

Thermal management is important for other aspects of electrification. The DiODE project has focused on removing heat from high-performance permanent magnet motors at the very point at which the heat is generated. Direct oil-cooling techniques have been developed to achieve a 20% increase in permanent magnet motor performance. In addition, the inverter integration has been improved by using deeply integrated inverter SiC (silicon carbide) switches within the casing and spray oil cooling. A range of innovative solutions were assessed including heat pipes and new materials. Finally, the overall package has been optimised to deliver an 8% mass reduction and a 13% cost reduction.

Net zero transport: battery health and machine learning

We have developed a novel approach to applying machine learning to fleets of battery-based electric vehicles to extract critical information on usage, battery health and prognostics. This delivers an 8% to 13% improvement in battery life for the targeted fleet user and also a 2% increase in vehicle range based on more accurate battery monitoring. The ConnectedBMS project applies machine learning to data collected from the battery-management system and updates the vehicle battery-

management parameters simultaneously to deliver the improvements as a service. It can also use preventative maintenance techniques to reduce vehicle downtime.

Net zero transport: hydrogen centre of excellence

Ricardo has invested in a hydrogen development and test facility at its Shoreham Technical Centre in the UK. While electrification will be the main technology choice for passenger and light commercial vehicles, hydrogen offers a solution for 'hard-to-decarbonise' applications where electrification does not meet all requirements – for example, heavy-duty trucks. The particular focus for the new facility will be a systems-led approach to vehicle development to deliver tailpipe-free emissions, integrating our enhanced test capability. The facility will provide a flexible environment to test engines, fuel cells and balance of plant for a range of R&D activities.

A Ricardo-designed direct-injection hydrogen engine for heavy-duty trucks is currently being tested with Brighton University. This ground-breaking work will validate our combustion development tools with direct-inject hydrogen and pave the way for our commercial activities with this exciting clean, net zero fuel for heavy-duty applications.

We have invested in our leading-edge fuel-cell integration and balance-of-plant optimisation toolchain tools. We have applied these to a variety of projects including Project Fresson, led by Cranfield Aerospace Solutions Ltd, in which Ricardo is responsible for fuel-cell selection, balance-of-plant development and integration.

Sustainable manufacturing: e-motor supply chain

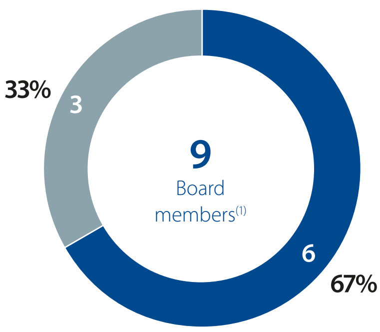
The UK-ALUMOTOR project is focused on the development of the UK supply chain for a highly sustainable electric traction-motor concept for a wide range of sector applications. Ricardo's patented technology makes use of synchronous reluctance principles for low noise and high efficiency. The motor operates without the need to use permanent magnets, which reduces the cost significantly, and employs aluminium windings to support operation under higher temperatures. The novel rotor construction incorporates composite elements offering high speed and high-temperature operation. This technology allows transport OEMs and Tier 1 suppliers to meet ever more stringent sustainability targets while offering compelling performance, efficiency and cost targets. As a next step, we intend to develop a light commercial vehicle variant of the motor, AlCoVes – (Alumotor for Commercial Vehicles) funded by Office for Zero Emissions Vehicles. This will continue our internal work to take it to prototype hardware level, demonstrating to customers the benefits this technology can bring to a fast-growing and lucrative sector.

Virtual engineering: digital twin-based design and optimisation

Ricardo has integrated its electrified systems modelling tools into a comprehensive toolchain to build models of complex systems that develop and mature with the system as it passes from concept to production then to usage in the field. This project demonstrates that digital twins add value during product development by reducing time and cost by up to 30% compared to the current state-of-the-art, as well as when products are in-service, through improving condition monitoring (state-of-health) by up to 10%.

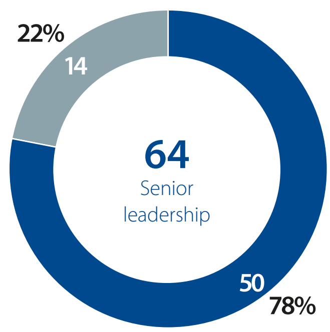
Our people

Board members



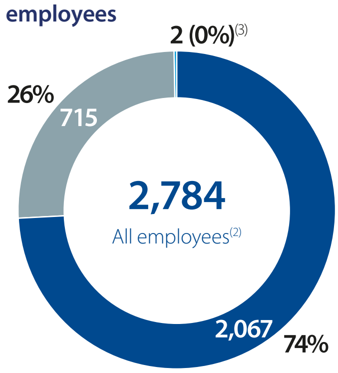
(1) Includes Company Secretary

Senior leadership



Male Female

All employees



(2) Excludes contractors
(3) Prefer not to say

'Respect' is one of the core values of Ricardo and this year we made it the focal point of our HR agenda. We celebrated this value with a suite of activities throughout the year, culminating in 'Respect Week' in April. This featured the first meeting of our newly established global, cross-divisional Diversity Equity Inclusion ('DEI') working group, virtual keynote talks, relevant online learning, a workshop on inclusive leadership with the Executive Group and a lot of animated discussions on our online forums. The highpoint of the week was our Respect Choir, which brought together colleagues from all regions and divisions, across all hierarchical levels, literally from placement student to Managing Director, in a stunning online recorded performance of 'This is me' from 'The Greatest Showman'.

DEI programmes often focus on particular groups of employees or communities within wider society. For us it is important that all of our people are treated with respect and feel cared for, that everybody is valued and recognised for their strengths and their contribution and that every team member feels they have a home and a future in Ricardo. We strongly believe that a diversity of approaches, viewpoints and ideas feeds the innovative capability that is at the heart of Ricardo's success.

Seok-Kyun Shin
Business Manager, Rail Asia

My journey with Lloyd's Register and Ricardo started in 2006 as a Reliability, Availability, Maintainability and Safety ('RAMS') Senior Consultant in the railway industry. Now I am working as Business Manager for the Korea, Japan and Philippines railway division. For the last 15 years I have worked in various positions including technical consultant, sales, and operations management and this broad experience has brought me good insight into the business along with a solid sense of pride and responsibility.

We as a business have introduced and developed RAMS and system assurance services in the railway markets of Korea and Japan. We have continuously tried to educate local OEMs, operators and research institutes for Korea this effort could help to update railway technical standards to include the relevant international RAMS standards as mandatory requirements.

It is truly great to see that Ricardo Rail Korea has trained many specialists at various levels and contributed to the local industry with Ricardo values and become an industry leader in the railway safety of Korea. Korea is a country with dynamic energy and cutting-edge technologies; alongside my colleagues I am working with a strong sense of responsibility to do our best for quality services. The atmosphere of sound competitiveness constantly encourages me to grow.

I personally love to simplify complicated problems and apply this rule of simplification and intuition to my life as well. I am often described as 'workaholic' as I sometimes focus too much on achieving a target, but I absolutely enjoy being stimulated and creating new values with my fantastic colleagues. As a next step, I would like to work for Ricardo on autonomous driving, exploring the synergy and convergence between the railway and automotive sectors with a firm principle of securing safety.

Yansong Chen
Vice President Engineering Services, Automotive & Industrial US

Joining Ricardo in May 2020 was an exciting move for me. After a 20-year career with Delphi Automotive, a global Tier 1 automotive supplier, it has been refreshing to bring my skillset to Ricardo, which offers a significantly expanded customer base and offers diversified technology and solutions. Ricardo's reputation for engineering excellence was impressed upon me as a customer when I engaged the company on hybrid-vehicle projects. Now I have the pleasure of leading the North American engineering team, which allows me to bring my variety of experience, ranging from implementation of infotainment systems and software to vehicle electrification. My goal is to lead Ricardo in developing future-proof technology for our customers.

I particularly enjoy the Ricardo culture and passion for excellence. I came to Ricardo amid the pandemic and on-boarded virtually. The help from the organisation was truly impressive, offering me a tremendous amount of openness and support, which resulted in Ricardo North America being able to grow quickly in capability and achieve record high sustainable engineering productivity. It has been a rewarding and fulfilling experience to lead the Ricardo North America engineering team and participate in the organisation's growth and improved business performance.

The promotion of female representation in engineering and leadership roles continues to be very close to our heart. Our key KPIs of females in leadership roles (18% in FY 2020/21 vs 17% in FY 2019/20 and 11% in FY 2018/19) and overall female representation (26% in FY 2020/21 vs 22% in FY 2019/20 and FY 2018/19) are steadily increasing.

The last year has, of course, been very much impacted by the COVID-19 pandemic. Nobody had expected this to be such a long journey and we are very conscious that the situation has affected all our people in many and different ways. As a company, we have increased our employee assistance offerings, especially around mental health, bereavement support and physical health, in order to provide the best support possible for our people worldwide. It was heart-warming to see, throughout

Finalists for the annual Ricardo Engineering Prize, which supports talented female engineering students to take a positive first step in their professional engineering career.

Brandon Macklin
ABS/ESC Program Manager, Defense

I served as a project manager for 10 years with one of the largest ground-vehicle combat-system manufacturers for the United States Army and Marine Corps, prior to joining Ricardo Defense in 2017.

The Ricardo Defense Antilock Braking System/Electronic Stability Control ('ABS/ESC') programme is extremely diverse and challenging. It's a programme that demands one have the intestinal fortitude and strategic business instinct to successfully deliver our product to multiple customers and locations simultaneously.

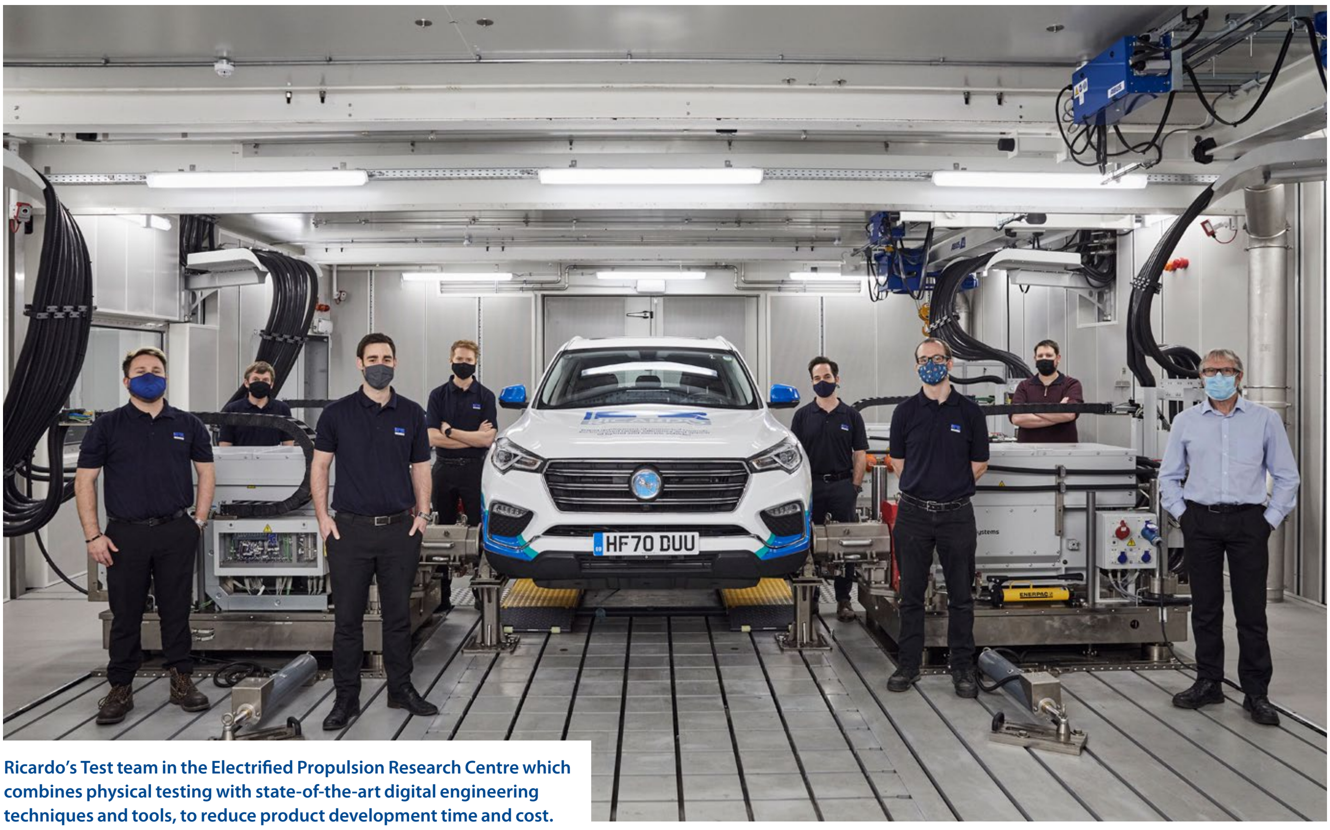
This program was created with the sole purpose of making military vehicles safe and saving the lives of US soldiers who use them. I'm proud to manage a program that delivers immediate results for combat-vehicle safety. What we do is greater than one individual; we help people make it from the battlefield back home safely to their families.

the whole year, how much effort our teams and managers put into staying connected and supporting each other.

The leaders in our business have, in many cases, had to manage people that are 'out of their sight' for the first time. They are emerging from this period as stronger leaders, having learned to trust and manage performance by outcomes rather than monitoring every step. Overall, we can only applaud our teams across all levels in the organisation, for the incredible adaptability and resilience they show and their continued commitment to deliver the best possible solution for our clients, every day, whatever the circumstances.

Home working has become a normality rather than a novelty for all those whose roles allow them to operate effectively away from their usual workplace. A lot of thought has gone into the planning for a post-pandemic world. As a company we have concluded that we want to continue to be an office-based business because we do not want to lose the spark of creativity that ignites when people are together, nor forgo the possibilities for informal knowledge sharing and support for junior colleagues that are so much more effective on-site.

The extended period of forced home working in most countries in which we operate has propelled forward our



Ricardo's Test team in the Electrified Propulsion Research Centre which combines physical testing with state-of-the-art digital engineering techniques and tools, to reduce product development time and cost.

thinking around flexible and agile working models. All parts of our business where on-site work is not absolutely required have already implemented, or are planning to implement, a hybrid working model that allows our people to manage their place of work more freely and accommodate a better work-life balance.

Despite the COVID-19 crisis taking a lot of management time and attention, we have not lost focus on our ambitions as an employer. We want all our people to be happy and engaged throughout their time with us. In addition to a positive, inclusive and engaging culture and competitive remuneration and benefits packages, the key is to provide our people with interesting and challenging work that allows them to learn and develop on a daily basis, supported by targeted training, mentoring and coaching activities.

It was particularly important for us to gauge if and how the very special circumstances and strains of the last 18 months have impacted our employee engagement. Therefore, for the second consecutive year, we ran the 'Gallup 12' employee-engagement survey. We were very pleased to find that the survey run in March resulted in a slightly higher overall average score than last year (3.9 out of 5 in 2021 compared to 3.8 in 2020).

To give some highlights: we improved response results on the question on overall satisfaction with Ricardo as an employer (increased from 3.8 to 3.9), on genuine care shown (increased from an already excellent 4.1 to 4.2) and clarity on expectations (also increased from 4.1 to 4.2). We acknowledge the effort put in by managers and HR teams to support our people and keep up performance despite difficult circumstances.

Analysis of the survey data also confirmed again that across all divisions our people value their colleagues' commitment to quality work and the overarching culture of excellence that Ricardo stands for (4.2 average score in 2021 compared to 4.1 in 2020). Unsurprisingly, we saw a slight decrease in some of the responses to questions around development opportunities. In spite of our best efforts to continue with training and development measures online, as well as regular manager-employee conversations, it proved very hard to create a feeling of continued development while 'stuck at home' – one of the main reasons that we will, as a company, not consider moving to a purely home-based environment. The divisions will now continue the established process of sharing their best practices and address joint issues together.

The last year saw the appointment of Malin Persson as the non-executive director responsible for workforce engagement. In this capacity, she is now supporting our employee engagement activities by conducting small group interviews with representative cross-sections of colleagues in all divisions and regions, providing an additional route for bottom-up feedback. This approach is very much appreciated by the participating team members as it adds another, more personal and direct element to our existing communication and feedback processes.

We all hope that the next year will bring our people back together in our offices to reconnect with each other and to meet new colleagues for the first time, to reinvigorate our teamwork and knowledge sharing and to recharge the relationship with the informal chats we have all missed so much.

Sofia Amaral
Senior Consultant, Energy & Environment

I am a senior consultant in the Sustainable Transport team at Ricardo Energy & Environment. Since joining Ricardo four years ago, I have worked on a variety of projects providing technical advice and evidence-based policy analysis to both public and private sector clients, mostly on transport, energy and environmental issues. Highlights include working on a two year, high-profile study for DG CLIMA of the European Commission to develop a methodology for carrying out lifecycle assessments of road vehicles supporting the UK Government to investigate the availability of hydrogen resources for producing biofuels for the aviation sector, and employing innovative techniques based on experimental and behavioural economics to support the European Commission with the design of more effective fuel economy/ CO_2 emissions labels for light-duty vehicles.

What I've enjoyed the most over the four years I have been at Ricardo is the diversity of people and experiences I'm exposed to. Only in the past year, I had the opportunity to work on projects across different technical areas (transport, energy, economics, agriculture and more) and engage with a range of clients and stakeholders from around the world, from smaller private organisations to the world's largest vehicle manufacturers and international public bodies. Through these experiences, I have worked with so many talented people across Ricardo that share the same passion for sustainability. With them, I have the opportunity to learn more every day, while helping policymakers and the industry navigate and tackle the greatest environmental challenges that we face today.

Sustainability and ESG

Our approach to environment, social and corporate governance ('ESG')

We understand the increasing importance of recognising and mitigating our impact on communities and the environment. Our vision, *'Creating a world fit for the future'*, is realised through a mission which integrates the economic, environmental and social aspects of sustainable development into our strategy, operating model and significantly into the work which we undertake on behalf of our customers. We recognise that effective management of ESG issues is an integral part of robust governance and business strategy with a link to financial performance and long-term business-model resilience. We are increasing our use of ESG KPIs to aid transparency and measure our progress quantitatively, especially relating to environmental impact.

Ricardo has a proactive and engaged approach to ESG, which is an essential part of our social value and the delivery of our strategic objectives outlined on page 14. The environment is at the heart of our strategy and is embedded in what we do and the solutions we deliver.

Our core activities of:

- Technologically advanced solutions that ensure access to clean air and water;
- Cross-sector engineering solutions to accelerate decarbonised transport;
- Innovation to support global net zero and industry agendas; and
- Comprehensive expertise in safety, assurance and certification

provide the capability to deliver on our ESG agenda.

We support these core activities with R&D to enhance our capabilities, described on pages 17 to 19. We rely on the innovation, the talent and the technical and communication skills of our teams, and we invest in their development for the benefit of all our stakeholders. Our values and policies are designed to ensure that we and our suppliers operate ethically and honestly, and that we meet our human-rights obligations.

We have a strong connection with many of the United Nations' Sustainable Development Goals ('UN SDGs'), published at www.un.org/sustainabledevelopment. These connections link to our core activities, our internal operations and our stakeholders, particularly the communities within which we operate.

Opposite, we set out the UN SDGs with which we strongly connect and outline how our core activities respond to each of the challenges.

Key ESG topics

The table below details a number of key ESG topics and highlights our activities in the area.

	ESG topics	Highlights
Company	Governance and management of ESG matters	• Compliance with the provisions of UK Corporate Governance Code 2018 • Board oversight of ESG topics
	Environmental stewardship and addressing climate change	• Implemented our Task Force on Climate-related Financial Disclosures (TCFD) recommendations, increasing our disclosures and embedding in our business planning processes
	Managing our environmental footprint	• Certification to ISO 14001 for 35 sites (96% of employees) • Reporting of GHG emissions (externally verified in accordance with ISO14064–3:2006) • Strategy to achieve net zero for business operations by 2030. To ensure we track and implement this ambition, we have defined science-based Targets to meet a 1.5°C future
	Managing ESG-related risks	• TCFD activities have identified a number of climate-related risks • Climate-related risks are subject to a bi-annual board review
Customer	Climate change/environmental projects	• 24% of our revenue is strongly driven by climate change or the environment • 51% of our revenue is driven by climate change or the environment to some degree • 33% of our R&D spend is strongly driven by climate change or the environment
Our people	"Healthy People, Healthy Business"	• Focus on team member well-being – increased since COVID-19 • Improving employee engagement – survey based on Gallup 12 (score 3.9/5)
	Human rights	• Support for Universal Declaration of Human rights
	Diversity	• Diversity – increase in women in senior leadership positions from 17% to 18%.
	Health & safety	• Certification to ISO 45001 for 35 sites (96% of employees) • Very low reportable accident levels
Suppliers	Sustainable procurement	• Development and deployment of sustainable procurement processes and supplier evaluation to support our policies
Society	Supporting governments and other public-sector bodies on their net zero journeys	• In the calendar year 2020, we supported 71 different governments around the world with their climate-action planning, including 34 national governments, 15 regional governments, and 22 city governments
	Local communities	• Active in communities working to promote science, technology, engineering and maths (STEM) in schools and colleges

SUSTAINABLE DEVELOPMENT GOALS

Sustainable Development Goal	Core activities	The way we operate	Stakeholders
3 GOOD HEALTH AND WELL-BEING	• Decarbonised and clean transport solutions • Access to clean air • Secure, connected mobility solutions	• Provision of a safe working environment, well-being programmes and employee benefits	• Governments and local communities, employees and their families
6 CLEAN WATER AND SANITATION	• Access to clean water	• Monitoring water use on larger sites	• Clients, water sector, governments and local communities
7 AFFORDABLE AND CLEAN ENERGY	• Net zero and carbon-neutral solutions • Decarbonised and clean transport solutions	• Reducing energy consumption and maximising renewable energy sourcing	• Clients, governments and local communities
11 SUSTAINABLE CITIES AND COMMUNITIES	• Decarbonised and clean transport solutions • Net zero and carbon-neutral solutions	• Working in partnerships with local communities around our larger sites to reduce collective energy use	• Clients, governments and local communities, employees and their families
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	• Net zero and carbon-neutral solutions • Decarbonised and clean transport solutions	• Net zero plan and targets which will reduce energy and resource use	• Clients, businesses, governments and local communities
13 CLIMATE ACTION	• Decarbonisation of transport • Access to clean air • Net zero and carbon-neutral solutions	• Climate change risk management • Net zero plan and targets • GHG reporting and reducing carbon footprint	• Clients, governments and local communities
14 LIFE BELOW WATER	• Access to clean air and water	• Active management of waste streams on our sites	• Clients, businesses, governments and local communities
15 LIFE ON LAND	• Access to clean air and water	• Active management of waste streams on our sites • Encouraging low-carbon travel to work	• Clients, businesses, governments and local communities

United Nations Sustainable Development Goals web site: https://www.un.org/sustainabledevelopment/

Governance and management of ESG matters

The Board is committed to ensuring that the highest standards of governance are maintained throughout the Group. The Board reviews key elements of ESG on an annual basis. Wider aspects of corporate governance including how we comply with the provisions of the UK Corporate Governance Code 2018 are described on pages 82 to 87. Our policies relating to ESG are all public, via our website, and are referenced in this report. This gives our stakeholders increased transparency regarding our commitments and the responsibility for execution within the business.

To underline the importance of integrity in all relationships between employees and stakeholders, we have policies covering ethics, fraud-prevention and whistleblowing, which are communicated to all team members. A summary of these is communicated externally through our Code of Conduct and Values, which include the policy elements required to meet our human-rights obligations. We have introduced annual employee refresher training for the Code of Conduct as well as induction material for new staff.

Anti-bribery and corruption

Under our ethics policy we do not permit bribery, anti-competitive or corrupt business practices in any dealings. Under our fraud-prevention and ethics policies, which cover anti-corruption matters, we do not allow intentional acts by one or more individuals within the business to use deception, bribery or theft to gain unjust or illegal advantage. Our fraud and bribery risk assessment covers a wide range of fraud, corruption, conflict of interest, insider dealing, prevention of facilitation payments, prevention of research misconduct and ethics risks and controls. This is reviewed annually with the Audit Committee. Under our whistleblowing policy, we provide a procedure for any team member to raise any malpractice concerns anonymously in an appropriate manner, with protection to the whistleblower. We have integrated a third-party specialist into our processes to provide due diligence checks on new clients, intermediaries and material suppliers. This allows us to identify potential risks and comply with anti-money laundering ('AML') and anti-bribery and corruption ('ABC'). In the areas we have assessed to date, we have not encountered any organisation which has rated very high from a risk perspective. We have not been subject to any fines or enforcement action on these matters during the year. Ethics and whistleblowing policies and reports are reviewed annually by the Audit Committee.

Our processes consider countries that we undertake business in and the relative levels of corruption therein. To this end, we have classified our revenue with reference to Transparency International's Corruption Perceptions Index ('CPI'). Of our total revenue, 0.79% was generated in countries with a CPI score of less than 40/100. Of this revenue, the majority is generated by our Energy & Environment division in their work with intergovernmental organisations ('IGOs') such as the World Bank.

Modern slavery

We continue to adhere to the requirements of the Modern Slavery Act 2015 and have published an updated statement for this financial year on our website and the UK government website. This subject is reviewed annually by the Audit Committee. Our procurement policy requires our suppliers to be compliant.

Environmental stewardship and addressing climate change

Clear scientific consensus exists that the Earth's climate is changing, and that greenhouse-gas ('GHG') emissions from human activities are *the* principal cause. For financial markets, climate change is accepted as a non-diversifiable, principal risk. At Ricardo, we understand that the implications of unchecked emissions and the consequent global warming will be severe. Climate change is pivotal to our ESG thinking and to the Group's strategy.

In common with many organisations, Ricardo already measures and discloses elements of its impact on the environment, in particular via GHG emissions inventory reporting (page 31).

Taskforce on Climate-related Financial Disclosures

The Task Force on Climate-related Financial Disclosures ('TCFD') recommendations are a global framework. The project was initiated by the Financial Stability Board ('FSB'), designed to enable publicly listed companies to better understand and disclose the impacts of climate change on their businesses.

The TCFD recommends that businesses consider both the opportunities and the risks associated with climate change.

The TCFD recommendations aim to improve the disclosure of information to allow investors, regulators and other stakeholders to better assess and manage the risks and opportunities resulting from climate change. While the recommendations are currently voluntary, Ricardo believes they align strongly with our vision and mission and aims to become a leader in best practice in the sectors we operate in. We have plans in place to be fully compliant in 2022 once legislation is in place and the international accounting rules have been published.

TCFD progress to date

We have an ongoing Group-wide TCFD programme which commenced in 2019. The overall aims of our programme are:

- To build on the climate-related features of our long-term strategy;
- To fully explore our climate-related opportunities and risks, in line with the TCFD ethos; and
- To develop class-leading capabilities, enabling us to support our clients' own TCFD journeys.

Our programme included an exploration of future climate-related scenarios, prioritisation of key risks and opportunities, assessment of potential business impacts and systematic distillation of recommendations. This complex undertaking was achieved using the Group's diverse skill-sets – climate specialists, scenario-planning experts and management consultants. Using external climate scenarios and impact assessments as inputs, we developed four bespoke scenario narratives, each describing a different hypothetical world around Ricardo in 2035. Brief summaries of these scenarios follow:

- *Creative Scavengers*. The world is on a 4ºC temperature-rise trajectory up to 2100, resulting in significant acute and physical risks. This scenario assumes a lack of cohesive international policy intervention, and sporadic technological progress.
- *Digitopolis*. The world is on a 2-3ºC temperature-rise trajectory through 2100, with commensurate acute and chronic physical risks. This scenario assumes some international policy intervention, progress in energy efficiency, and a reduction in travel enabled by digital technologies.
- *Technopolis*. Similarly, the world is on a 2-3ºC temperature-rise trajectory through 2100, with commensurate acute and chronic physical risks. This scenario assumes little international co-operation on policy interventions. Instead, major breakthroughs in renewable energy technologies enable some climate-change mitigation.
- *Ecopolis*. The world is on a less than 2ºC temperature-rise trajectory through 2100. Chronic physical risks are being addressed, although some extreme weather events remain inevitable. This scenario assumes cohesive international policy interventions and significant deployment of a broad suite of effective renewable-energy solutions.

Our work has resulted in a clear set of recommendations, which we have aligned to the four official TCFD recommended disclosure themes.

TCFD Theme	Progress to date
Governance	• Management role: The board and the Executive Committee review climate change twice a year as part of a wide review of ESG matters. • Oversight: Climate opportunities are reviewed at Board level on an annual basis as part of our strategy review and budget-setting processes. Climate-related risks are reviewed at Audit Committee meetings as part of our bi-annual risk-review process. • Document and disclose: our TCFD process is disclosed above and includes: scenarios, linkage to strategy, additional KPIs and disclosures.
Strategy	• Strategy impact: Ricardo's ESG agenda is aligned to our vision and mission. • Strategy identification: Ricardo's strategy includes specific themes that relate to climate change and its mitigation: electrification, hydrogen, digitisation, climate-change strategy and clean transportation. • Strategy resilience: Ricardo strategy has been tested, explored and developed across the four scenarios described above. These scenarios include a 4^{0}C and a below-2^{0}C scenario.
Risk management	• Process for identification: Our TCFD activities have enabled us to assess and integrate further climate-related risks into our enterprise-risk register • Process for management: our climate-change risks are managed in the same way as other enterprise risks, see page 35. • Organisation: our risks are owned by executive directors, divisional managing directors or heads of group functions.

TCFD Theme	Progress to date
Metrics and targets	• Company metrics: we are committed to disclosing additional climate change metrics with stakeholders. • We have analysed Ricardo's own revenue sources and characterised this revenue according to the extent to which each component aims to address an environmental or climate-change issue. This year we have added a metric on the connection between R&D spend and climate change. The results of this analysis are shown below on page 28. • Greenhouse-gas emissions inventory: our expanded inventory is externally verified and disclosed below • Climate-related targets: we have set out our net zero targets, progress this year and overall status in the table below. We have applied to have our Science Based Targets validated

Opportunities to enable a world fit for the future

We conducted TCFD activities in parallel with a long-term strategic-planning project for the Ricardo Group. Indeed, both activities used common future scenarios. Our TCFD journey highlighted six key areas of opportunity for the Group, including focusing on the power and energy sectors, leveraging our understanding of global regulatory frameworks and providing solutions outside the transportation sector. Importantly, the remaining three opportunity areas show clear overlap with our strategy (set out on page 14):

- *Digitalisation of products and services.* Our strategy includes a strong digitalisation focus. Not only will this drive technical innovation, it will also enable Ricardo and its stakeholders to reduce overall emissions.
- *Decarbonising transportation.* Projects focused on reducing the environmental impacts of transportation have been a cornerstone of the Ricardo business for decades. The development of mobility solutions with reduced life cycle GHG emissions is a critical feature of Ricardo's strategy.
- *Cross-divisional solutions.* Ricardo's operating segments operate in market sectors with increasing synergies. Joining up these capabilities to enable systems thinking, as well as comprehensive technical delivery across complex client programmes, is an essential part of our strategy.

Managing ESG-related risks

Ricardo's TCFD activities resulted in the identification of a number of climate-related risks, including the following:

- *Physical risks to our facilities.* The growing severity of climate change and variability causing physical disruption (for instance, flooding) to business.
- *Climate-liability risks.* Risks associated with either increases in client litigation, a reduction in consulting budgets, or an increase in litigation against Ricardo itself. Ricardo's existing risk register includes an assessment of risks to our business from litigation.
- *Reputational risks.* As investors and stakeholders place more focus on climate change, a perceived lack of action could result in reputational damage.
- *Changes in client requirements driven by climate change.* Climate change could result in changing demand for certain products

and services. Our strategy includes a strong decarbonisation focus.

- *Changes in regulations relating to climate change.* As environmental and emissions regulations tighten, the risk of penalties for non-compliance increases. As a provider of services relating to changes in global emissions standards and environmental legislation, we are in a strong position to anticipate and respond to emerging regulatory risks.

We have actioned the mitigation of these risks via our existing enterprise risk-management processes. The changes in client requirements and regulations have been combined to be become a principal risk, the mitigation of this becomes a series of opportunities for the business. Further information on our risk management and principal risks to the business is shown on pages 34 to 37.

Climate change and environmental revenue

Ricardo delivers many positive environmental outcomes as a result of the work we undertake. These include:

- Ricardo-and customer-funded engineering projects to develop low-emission and high-efficiency technologies for incorporation into products around the world.
- Lower carbon usage through the delivery of engineering projects that lead to more efficient consumer products being manufactured by our customers.
- Environmental consultancy, largely undertaken by Ricardo Energy & Environment, which includes: excellence in thought leadership around economic, societal and environmental interactions; extensive understanding of the climate change challenges facing organisations, including scarcity of natural resources, strategic sustainability and energy management; deep understanding of policy drivers, environmental strategy and economics, which provides insight and project delivery for business and industry; and modelling and data management to identify and realise value for organisations.
- Improvements in operating efficiency carried out by Ricardo Rail for rail operators and rolling-stock manufacturers.

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

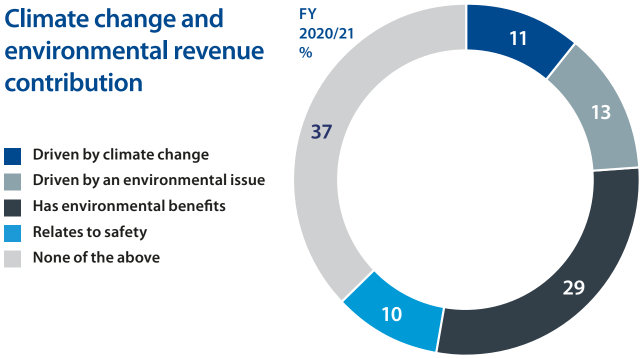
Ricardo's revenue streams have been analysed to assess how strongly they are driven by climate change and the environment. In addition to the climate change/environmental impact, we also categorise the revenue relating to safety as this has societal benefits. For instance, Ricardo Rail's expertise and activities in functional safety have significant societal benefits. For each item of revenue, we have applied one of the following classifications:

- Revenue generated which is specifically intended to address climate change, e.g. net zero and GHG inventory work in Energy and Environment and A&I projects driven by the decarbonisation of transport.
- Revenue generated which is driven by a significant environmental issue, e.g. improving the efficiency of existing power trains in Automotive & Industrial, natural resource management planning in Energy & Environment.
- Revenue generated which has environmental benefit as one of its drivers, e.g. asset optimisation and efficiency work in Rail, manufacture of efficient transmissions and engines in Performance Products.
- Revenue generated which relates to safety in terms of both assurance and mobility improvements, e.g. the ABS work in Defense and Certification work in Rail.
- None of the above.

This analysis shows:

- 24% of our revenue is strongly driven by climate change or the environment.
- 51% of our revenue is driven by climate change or the environment, to some degree.
- 10% of our revenue relates to the societal benefits associated with safety.
- Our business activities are well aligned to our vision: Creating a world fit for the future.

Climate change and environmental revenue contribution



Our R&D has a strong connection to climate change. We have measured this for the first time this year. A third of our R&D spend (£3.4m) was spent on areas which are specifically intended to address climate change. The innovation section of the report on pages 17 to 19 shows examples of these projects.

The Electrified Propulsion Research Centre, with the under-construction hydrogen development and testing facility, will form a global centre of excellence for sustainable mobility engineering.

Managing our environmental footprint

We are committed to managing our environment footprint and reducing it to a minimum, as well as ensuring that our services have a positive impact on society and the communities where we are based. The Board's commitment to this is embodied in our environmental policy (available internally and via our website) which covers:

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

The impact of our operations, particularly testing and manufacturing, are the largest contributors to our operational carbon footprint and GHG emissions. Our testing, for customer- and research-funded programmes, primarily uses fuel and electrical energy; in addition, there is energy required for heating some of our sites. Our manufacturing energy use is predominantly power for machine tools and assembly facilities and gas used in our heat-treatment plant. Our Scope 2 use is mainly electricity. We have measured our Scope 3 emissions from air and rail travel. Our Scope 3 conclusions this year have had to be compared to first-half data of the previous year due to the distortion caused by COVID-19 related travel bans which have lasted most of the current year.

We comply with the Companies Act 2006 (Strategic and Directors' Report) Regulations 2013 on GHG emissions and have stated our comparative history in our Strategic Performance on page 16. We comply with Streamlined Energy and Carbon Reporting ('SECR') via our disclosures below under the Greenhouse Gas Protocol and commenting on all elements of our net zero strategy. As this requires the inclusion of fuels used in engine and vehicle testing, year-on-year variability can be expected due to the mix in types of test and engine size. In the current year, the use of diesel for testing in the US reduced significantly as a consequence of selling our test operations in Detroit.

As part of our net zero strategy, we have focused energy saving on reducing our property portfolio.

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

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

Greenhouse-gas emissions

	FY 2020/21	FY 2019/20 baseline
Emissions - tCO_2e ('000s)		
Scope 1 – Gas (methane based) usage	**777**	
Scope 1 - Diesel usage	**555**	
Scope 1 – Gasoline usage	**381**	
Scope 1 – Other emissions	**703**	
Scope 1 - Total	**2,416**	4,343
Scope 2 – Location-based	**3,791**	4,981
Scope 2 – Market-based	**774**	2,016
Scope 3 – Air travel	**477**	3,967
Scope 3 – Rail Travel	**3**	No data
Total – Location-based (Scopes 1 and 2)	**6,208**	9,324
Total – Market-based (Scopes 1 and 2)	**3,191**	6,359
Total – Location-based (Scopes 1,2,3)	**6,688**	13,291
Total - Market-based (Scopes 1,2,3)	**3,671**	10,326
Scope 3 - Air travel baseline	**N/A**	6,015
Intensity Measures		
(tCO_2e per employee)		
Scope 1[(1)]	**0.83**	1.42
Scope 2 – Location-based	**1.31**	1.63
Scope 2 – Market-based	**0.27**	0.66
Scope 3 - Air travel	**0.17**	1.30
Total – Location-based (Scopes 1 and 2)	**2.14**	3.05
Total – Market-based (Scopes 1 and 2)	**1.10**	2.08
Total – Location-based (Scopes 1,2,3)	**2.30**	4.36
Total - Market-based (Scopes 1,2,3)	**1.26**	3.38
Electricity consumption MWh		
Electricity consumed (all sources)	**15,742**	17.455
Renewable energy consumed	**14,296**	12.973
Percentage of renewable electricity used	**91%**	74%

- The operational control test is applied to determine if an emission is within Scope.
- The inventory has been compiled according to the GHG Protocol and internal procedures with the exception that individual gases are not reported. Our GHG emissions for FY 2020/21 have been verified by Lloyds Register in accordance with ISO 14064–3:2006, 'Specification with guidance for validation and verification of greenhouse-gas assertions'.
- The base year is FY 2019/20, as this as the first year where data was verified. Data from previous years has been restated to improve quality. Some data includes estimates, which may be updated at a later time when more accurate data are available.
- Emission factors used for fuels and UK location-based electricity are based on UK BEIS/DEFRA conversion factors for 2021. Electricity emissions factors used for location-based calculations are the most recent confirmed IEA factors for the country. Electricity emissions factors used for market-based calculations where renewable electricity is not supplied are the most recent year GWP residual mix factors from aib-net.org for countries in Europe and UK and location-based for other countries.

- Air and rail-travel emissions are calculated by Susterra using bespoke factors that take account of route, class of travel, airline and aircraft type.
- Other Scope 1 emissions now include refrigerants used to top up cooling and air-conditioning plants, fire extinguishants such as FM200 and sulphur hexafluoride (SF6) associated with switchgear.
- SECR: Our UK operations are our biggest consumer of electricity, which is our only UK Scope 2 emission source, where we directly procure electricity from renewable sources for our largest sites: 97% of our renewable electricity (13,843 tCO_2e) and 10% of our non-renewable electricity (150 tCO_2e) are consumed in UK . The UK contribution to our Scope 1 emissions is 90% of our total Scope 1 emissions (2,417 tCO_2e). Our UK intensities are 1.44 tCO_2e per employee for Scope 1 and 8.58 tCO_2e per employee.
- We plan to increase our disclosures as we adopt science-based targets during FY 2021/22 and increase focus on Scope 3 emissions . This will include baseline measurement and increasing the reporting as we are able to measure more categories of Scope 3 emissions. We anticipate reporting Scope 3 categories 1, 2, 4, 5, 7, 9, 10, 11 & 12 starting from FY 2022/23 and have no Scope 3 emissions in Categories 3, 13, 14 or 15. Category 8 emissions are included within our Scope 1 and Scope 2 reporting.
- Our triggers for baseline recalculation would be an acquisition or disposal which changed head count by +/- 10% - this did not occur in the current or previous year.

	FY 2020/21	FY 2019/20 baseline
Water usage on large sites m^3		
Volume	**41,276**	55,506
Volume/ team member	**14.2**	18.2

- We measure water use on our sites with more than 50 team members – small sites are immaterial.
- The reduction in water consumption was mainly due to reduced test activity at the Shoreham Technical Centre and ceasing test operations in the US.

Renewable electricity – percentage used per financial year
%

Electricity user per financial year per employee
kWh

Net zero strategy and progress on GHG targets

Ricardo intends to achieve net zero GHG emissions from its operations by 2030, our progress and achievements towards our Carbon Reduction Plan are set out below and embedded in our business planning processes:

	Net zero objective	Achievements in FY 2020/21	Overall status
1	Maximising use of renewable energy sourcing;	Across the group we are at 91%, having improved from 74%. The largest improvement resulted from the sale of the Detroit test business in June 2020. Other improvements come from increased procurement of renewable energy and resizing some sites.	We have set an interim target of 90% for 2025 and are on track – progress on remaining sites requires renewable energy to be available in specific countries where we operate or agreement from specific property landlords where renewable energy is not currently used.
2	Reducing the size of our properties as more flexible office working is implemented	We have downsized in the following locations: • Seoul • Hong Kong • Copenhagen • Guildford We are moving to home- based working for the following locations from early FY 2021/22: • Cambridge, UK • Germany The number of home-based team members has increased by 60 to 162 since June 2020.	As part of our COVID-19 recovery planning, we are piloting flexible working for some of our office-based team members. Good overall progress being made.
3	Maximising 'digital-first' to optimise our travel needs	For the majority of this year, this has been the only way we could work with clients, suppliers and with colleagues.	We will see an increase in travel, but not to pre-COVID-19 levels. Good progress made.
4	Using high-speed trains in place of short-haul air travel where practical	We have identified routes where this is practical and have cascaded to those that use them. This approach has been in active use in China during the year where internal travel has been possible.	We expect increased use as more high-speed rail systems are introduced and governments introduce policy on this subject, France being an early example. Improvement opportunities have been identified for travel resumption.
5	Using the most fuel-efficient aircraft for long-haul travel	We have shared guidance with travellers, so we can implement when long-haul travel restarts.	We expect COVID-19 to accelerate the decommissioning of the most inefficient aircraft which will assist with implementation – the market will drive achievement. On track to achieve.
6	Implementing energy efficiency improvements focusing on our high-energy-use sites	Projects have been identified for investment in FY 2021/22. The focus is on our Shoreham and Midlands Technical Centres.	We will focus on energy reduction with good financial return to complement the maximisation of renewable energy procurement. On track to achieve.
7	Making use of verified offsetting schemes to offset residual emissions	Activity has been limited this year. We planned to pilot offsetting for some flights in Energy & Environment.	Our initial focus, at least until 2025, is on underlying emission reduction and use of renewables to reduce the amount we might need to offset.

Our rolling stock teams performed several weeks of overnight system integration tests during the upgrade of Utrecht's SUNIJ-lijn tram route.

Environmental management

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

Many of Ricardo's customers require certification for their key suppliers in respect of the environmental management system standard, ISO 14001. Our certification directly covers 35 sites and 96% of our people. The remaining colleagues and sites are managed via the ISO 14001 processes. The achievement of the standard is defined by appropriate policies, processes and procedures as part of the management system in each division. Many of these are closely linked to both quality and health and safety procedures.

Other environmental impacts arise from waste streams, which are monitored to identify potential improvement opportunities and to ensure legislative compliance. Higher-risk areas of our facilities, such as fuel storage and distribution systems, have containment and inspection regimes that meet local legislative requirements. We target zero pollution incidents and have had none this year.

The suite of ISO certifications and the supporting internal and external audit programmes are used to check policy effectiveness, to share best practice, identify improvement opportunities and ensure compliance. Staff training in health and safety and environmental matters is a priority and is reviewed annually as part of normal appraisal processes. We have not had any enforcement action, fines or penalties this year.

Human rights

The Group firmly believes in the principles behind the Universal Declaration of Human Rights. We support this by having a strong commitment to compliance with laws and regulations in the regions in which we operate, and by expecting the same from our suppliers. In January 2020 we published our Human Rights Policy, enhancing and clearly stating our commitments in the public domain. We specifically include statements on children's rights and child labour. We have no known incidents of human-rights policy breaches during the year.

In our Human Resources Policy, we protect freedom of expression, freedom of association and freedom from harassment, bullying and discrimination. We promote diversity and clear lines of responsibility, and we are a Living Wage Employer. We focus on our people taking ownership of their work-life balance to provide a flexible working environment. In South Africa, we have very few team members and do not need to comply with B-BBEE legislation. We have no known incidents of labour-standards breaches during the year.

Health and safety

Ricardo is committed to compliance with local health and safety legislation, to a safe working environment and to a minimal level of reportable accidents. We support training in health and safety internal audits and inspections, and we are now certified to ISO 45001 in our technical centres and larger offices in the US, the UK, the Netherlands, Italy, the Czech Republic and China. Our certification directly covers 35 sites and 96% of our people. The remaining colleagues and sites are managed along ISO 45001 processes. Our health and safety policy is available through our intranet and to the public through our website. Risk assessment is an integral part of our processes, both on a project basis for specific hazard management and more generally in the way we manage risk on our sites and in travel.

Our health and safety, HR and site management teams and occupational health providers have played a key part in our COVID-19 response . They have been actively supporting colleagues with concerns, delivering safe work environments and ensuring the business can operate with rapidly changing regulations across our sites around the world.

We recognise the level of reportable accidents as a measure of performance in health and safety. The overall level is still low and shows the continued success of our health and safety policies. We continue to target reducing accidents to zero and learning from near-misses as part of our commitment to continuous improvement and loss prevention. All accidents and non-injury incidents are investigated and reported to divisional management and employee consultation forums.

Reportable accidents*

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

The only reportable accident was not serious, and we had no fatalities.

Sustainable procurement

We published our Procurement Policy in January 2020 as part of a range of commitments to our stakeholders.

Relations with our suppliers are essential in achieving client and shareholder satisfaction. Our policy is that key suppliers should be certified to ISO 9001, ISO 14001 and ISO 45001 standards, and all suppliers are encouraged to obtain these certifications. Suppliers are expected to follow Ricardo policies on human rights. There are no significant supply contracts which are essential to the business of the whole Group, and we are not reliant upon any suppliers that would jeopardise the independence of the business.

Initiatives are managed by our Head of Global Procurement and savings are delivered by consolidating the supply base and reducing the total cost of doing business.

Investing in our communities

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

Our policy is published here: Engaging and supporting local communities (www.ricardo.com/policies/engaging-and-supporting-local-communities).

Community engagement in promoting Science, Technology, Engineering and Maths ('STEM') subjects and diversity has been a key part of our employee involvement. We responded to the COVID-19 crisis by focusing on 'digital-first' for our engagement and look forward to resuming normal activities as social-distancing rules are relaxed later in 2021.

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

Donations

We often match staff donations to charitable activities, particularly where there is active staff participation in events. Financial contributions to charities in the financial year were £4,787 (FY 2019/20: £17,484).

The effectiveness of these policies is informally measured by community feedback.

Risk management and internal control

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

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

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

Ricardo's internal control and monitoring procedures include:

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

To ensure our risk process drives continuous improvement across the business, we monitor the ongoing status and progress of key action plans against each risk on a half-yearly basis. Risk is a key consideration in all strategic decisions made at Board level. In the June 2021 risk-review cycle, we considered risks associated with our customers, suppliers, employees, finances, Brexit, COVID-19 and climate change. We now report the latter as an additional principal risk, but it is also an opportunity.

Progress on managing the impacts of COVID-19 has been reported to the Board on a regular basis during the year. Our principal risks and the approach to their mitigation are discussed on pages 35 to 37.

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

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

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

The Group's internal audit function provides assurances on divisional systems of internal control, risk management and compliance with applicable legislation and regulations. This is complemented by internal audits required as part of maintaining certifications to international standards for management systems. The effectiveness of these risk-management and internal audit processes is reviewed annually by the Audit Committee and is set out on pages 92 to 95.

Financial risks faced by the Group comprise capital risk, liquidity risk, credit risk and market risk (comprising interest rate risk and foreign exchange risk). The Group's objectives, policies and strategies in respect of these risks are set out in Note 27 to the Group financial statements.

The Company complies with the 2018 UK Corporate Governance Code by ensuring that:

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

We also ensure that emergent risks are considered as part of the Board's existing half-yearly reviews of risk and annual review of strategy.

Principal risks and uncertainties

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

The following table details the Group's principal risks, the mitigating activities in place to address them, and the additional actions implemented to further reduce the net risk to the Group.

The mitigation of the principal risks is within the Group's risk appetite, which is reviewed annually by the Audit Committee. It is also recognised that the Group is exposed to a number of emergent risks that are currently deemed to be less material, together with additional risks and uncertainties beyond those listed that are at present not known to management and which may also have an adverse effect on the business.

Movement in risk ↓ Reduced risk − No change ↑ Increased risk

Principal risk	Impact	Mitigation
Customers and markets The Group operates in a dynamic, diverse and politically volatile marketplace, which is exposed to many legislative and economic pressures. These include pressures to improve air quality, reduce greenhouse-gas emissions, improve public transport and to navigate the impact of COVID-19 and climate change. −	Changes in the market could cause changes or uncertainty in the product plans of major customers, infrastructure investment by governments or government policy, leading to delays in the placement of new orders or insourcing of activity, the redirection, deferral or curtailment of existing contracts, slippage in payments or variations in demand for resources and availability of project funding. Unpredictability in the timing of the receipt of orders and the utilisation of our resources to generate revenue and profit may give some volatility in our ability to forecast future performance. COVID-19 is one of many factors.	These risks are mitigated by the strategy of diversifying the Group to reduce exposure to any one specific customer, territory or segment. Challenges currently being faced by our automotive-related businesses across the globe can be mitigated by other segments. The success of this strategy is measured by the key performance indicators for customer dependency and segment diversity shown on page 15 and by the geographic spread of revenue, as disclosed in Note 5 to the Group financial statements. In the event of a sudden downturn in a segment or the wider economy, contingency plans are quickly deployed to minimise the impact on short-term performance and to preserve cash while protecting the long-term needs of the Group's stakeholders. The impact of insolvency risk is mitigated by robust working-capital management and the use of credit insurance where this is economically available.
COVID-19 (Pandemic disease) The Group operates in many countries and is subject to their public-health controls including the control of diseases that can be classified as pandemics. The consequences of this can be significant disruption to our people and their health, to our operations, ability to travel and those of clients and suppliers. This situation has existed in various levels and locations through the whole of the financial year. −	COVID-19 has been the first global pandemic to impact the business. The effects have included: lockdowns for many weeks in most territories where clients, suppliers and Ricardo operate; working from home or limited staff activity; delays in supplies; significant limitations on commuting and business travel; new and rapidly changing government requirements and so forth. All these slowed revenue generation and, in some cases, orders.	This risk was mitigated by a series of actions managed via our Crisis Management plan which was activated in early February 2020, integrating mitigations from our pandemic-disease planning and specific customer and market risks. This command-structure was supported by a team of senior Group staff reporting to the CEO, was in place during the whole financial year. We have operated our manufacturing and testing activities as near to normal as possible with additional health and safety controls to protect our staff. These controls and responses are reviewed regularly as guidance from governments changes. For our office-based staff, we responded to a variety of lockdown requirements around the world and continued to maximise the IT remote-working capabilities deployed in spring 2020. We made limited use of appropriate government schemes to support businesses. Our operating model became less dependent on fixed office locations. We have become more agile in the way our office-based staff work and we will need less space in some locations over time, executing an employee-focused "Healthy People, Healthy Business" approach. We are still very much an office and site-based business and are deploying a return-to-office strategy for Summer 2021 as regulations allow. This is very much based on getting teams to meet face-to-face, renew relationships, support our new team members and enable the softer "coffee machine" conversations. Each division is engaging with its colleagues and supporting those who are anxious with respect to a return to work. Our client and supplier-facing teams have successfully adopted 'digital-first' as we sell and deliver. We have started reducing our office capacity to make the business more resilient and efficient.
Climate change Climate change is both a series of risks and opportunities to the business, which we describe in pages 26 to 28 of our Sustainability and ESG section. Our clients' needs will change to meet the demand of society and we have to do our part in reducing the environmental impact of our operations. ↑	If we do not have the right services, capability and products to meet those client needs, we will be unable to meet our strategic objectives. We may have assets which are impaired due to the rate of climate change in certain markets. We may not deliver our net zero objectives. Our Shoreham and Prague sites are exposed for flood risk as sea levels rise.	We were early adopters of TCFD and are well versed in exploring both the risks and opportunities climate change brings. A core element of our revenue (11%) is generated by projects which specifically address climate change. We have a net zero strategy described on pages 29 to 31 underpinned by science-based targets. Our Shoreham site has a flood-defence wall which is resilient to 1:200 events allowing for a 1.5% temperature rise. Our Prague Technical Centre is in an area which is protected by the City's flood defences. We review the values of our assets for climate change-related impairment on an annual basis. This is an element of wider impairment reviews described in notes 1(k)-1(m) to the Group financial statements.

Principal risk	Impact	Mitigation
Contracts Group's revenue arises principally from fixed-price contracts for engineering, technical, environmental and strategic consultancy services, product supply (niche manufacturing of parts and components), together with accreditation and independent assurance services, with an increasingly broad range of projects, technologies, customers and geographies. There is a risk that the obligation to complete the agreed scope of these contracts may be carried out over a longer timescale or in a less cost-efficient manner than initially estimated, reducing profit margins. In product-supply contracts, there is a risk of product liability, recall or warranty claims and dependency on specialist suppliers. Contracts denominated in foreign currencies can be subject to exchange rate risk.	Failure to perform on contracts within estimated cost and delivery timescales could impact profitability. Faulty products, or the infringement of the rights of others, could potentially subject the business to increased costs, a claim from a customer, reputational damage or reduced opportunity for repeat business. Failure of production processes or product validation could lead to warranty or recall claims. Failure or poor performance of a supplier could disrupt delivery to customers and increase operating costs. Unhedged adverse foreign-exchange-rate movements on contracts could also affect profitability.	Project leadership and management are the Group's core competencies. Led by the Group Engineering and Programmes Director, the Group remains focused on the continuous improvement of these functions. Risks are proactively managed by clearly defined lead qualification, bidding, contracting and project-management processes, whereby projects are initially categorised according to their risk level and their performance is continually assessed throughout the life of the project, which in turn dictates the level of approval or review required. Internal procedures are in place to ensure that the technical content of our output is of high quality and meets customer requirements without infringing the rights of others, and within time and cost estimates. Procurement processes are in place to assess most suppliers and selections are often made with the involvement of the customer. In product-supply contracts, there are rigorous quality-assurance processes in place to reduce the risk of product liability, warranty and recall claims. Significant contracts in foreign currencies are hedged to protect against volatility in exchange rates.
People Ricardo is a diverse business that is knowledge-driven and people-led, with a focus on attracting and retaining the best talent. Recruiting, developing and retaining knowledge and diverse talent in the right locations is essential.	The failure to recruit, develop or retain the very best talent would restrict growth and the execution of our strategy, and would have an impact on delivery and customer relationships.	The Group is focused on a model of 'bringing in and bringing on' the best talent. We aim to ensure that we actively develop and manage staff to encourage their optimum contribution; we foster professional development, and we provide appropriate remuneration and flexibility in working conditions. Our IT infrastructure enables us to share work and mitigates mobility issues. Our people as stakeholders are discussed further on pages 20 to 23.
Technology The business is enabled through the development of new technology to meet the needs of market sectors, customers, and regulators on varying time scales.	If the Group invests in technologies that later prove to be unsuitable, it could lose marketplace advantage and revenue could reduce. If there are disruptions in the implementation of new regulations, which in turn accelerate or delay customer programmes dependent on new technology, the time taken to deliver returns from our R&D programmes may also increase.	Our R&D programmes are developed through a mixture of customer consultation, long-range forecasting, thought leadership and deep technology roadmap development. Many of our programmes are collaboratively developed and delivered with customers, partners, governments and suppliers, which creates strong links to the market and ensures the output is relevant and credible. The programmes are approved and delivered within the divisions. Staff and facilities are shared across multiple geographies to deliver innovative solutions and services to the market and capitalise on our internally developed intellectual property and know-how. Further details of a selection of our current R&D programmes are given on pages 17 to 19.
Supply chain The Group is dependent on suppliers for its production activities in its Performance Products and Defense Segments as well as other suppliers to enable other operations. Our clients which depend on production supply chains to generate their revenue and ability to give project work to Ricardo can be subject to sector-related supply-chain capacity constraints and logistics limitations.	Our production segments could be subject to interruptions or reduced output if our suppliers cannot deliver to time or quality or the client has supply-chain issues and reduces demand on Ricardo. In addition, as we do not deliver a complete product, other suppliers to our customers may cause supply-chain interruptions which causes our customers to halt production. The latter could impact Ricardo. Sector-wide supply-chain disruption will reduce the market size of funding availability for product-development work, particularly in Automotive and Industrial.	The choice of our production suppliers is often undertaken with the OEM client so that risk assessments are shared. Final selection is normally a client decision. Supplier quality-assurance needs are agreed with clients and operate within our processes and ISO 9001 certifications. We have increased our production supply-chain monitoring and expediting capability and capacity. The segment-wide risks are managed as any other customers and markets risks described above.

Principal risk	Impact	Mitigation
Laws and regulations The Group's operations are subject to an increasingly wide range of evolving domestic and international laws and regulations, including restrictions, standards and tax legislation.	Failure to comply with, or failure to adapt to changes in, laws and regulations including restrictions, standards and tax legislation could expose the Group to increased compliance costs, fines, penalties or reputational damage, or result in trading restrictions which could have a materially adverse impact on the business or impede the Group's ability to recover certain available tax-related credits.	To mitigate these risks, the Group has a number of defined policies and operating procedures in place and takes professional advice, where considered necessary, to ensure that the Group acts upon current and anticipated changes in legislation. Our Code of Conduct, which is published on www.ricardo.com, ensures that employees and others act with the highest ethical standards and within local legal and regulatory requirements. The Group's internal audit programme includes within its remit the review of compliance with applicable legislation and regulations, and awareness of key Group policies and procedures. These are updated as regulations change and as a result of our continuous drive to adopt best practice. We aim to anticipate the impact of working in new countries and new sectors, particularly within our Rail business, which operates in a growing list of territories and cultures, each with its own regulations, standards and laws with which we need to comply. Unsettled tax credits claimed within a financial year are recognised to an appropriate level at which management is highly confident of full recovery, and in a manner that is consistent with both current legislation and professional advice.
Defined benefit pension scheme The Group has a UK defined benefit pension scheme (the 'RGPF') which currently has a funding deficit (the scheme is in surplus on an IAS 19 accounting basis). The economic uncertainty caused by COVID-19 has increased the volatility in the assets and liabilities of the scheme.	Any decline in the value of the pension fund assets, increase in life expectancy, long periods of high inflation or decreases in interest rates would increase the funding deficit and require additional funding contributions in excess of those currently expected.	The Group closed the pension fund to future accrual in February 2010. The last approved triennial valuation of the RGPF was completed with an effective date of 5 April 2017. Based on the recovery plan agreed, annual contributions to the RGPF will be £4.6m through to 30 June 2022. The latest triennial valuation with an effective date of 5 April 2020 is currently being discussed by the Company and the Trustees. The results of the 2020 triennial valuation will determine whether the Group's current contribution commitment remains appropriate. Further details of the Group's defined benefit pension scheme can be found in Note 33 to the Group financial statements.
Financing The Group is in a net debt position, having drawn on available facilities primarily to fund acquisitions and for general corporate purposes	There is a risk of the Group being unable to secure sufficient financing at reasonable cost in order to carry out its strategic objectives.	This risk is mitigated by robust cash and working-capital management, regular process improvement initiatives, monitoring actual cash flows to budgets and forecasts, maintaining good relationships with the Group's bankers and ensuring that sufficient borrowing facilities are in place at all times to support the Group's funding requirements to deliver on its growth strategy, with additional headroom available to meet possible downside scenarios. As of 30 June 2021, the Group has sufficient headroom in its facilities and covenants. During September 2020 the covenants for the December 2020 and June 2021 tests were amended, providing further headroom. The Group increased its borrowing facilities in May 2020, raising the committed facility, to protect against downside scenarios and support the Group's growth strategy to 2023. The Group also raised £28.2m of funds via an equity placing in November 2020 to strengthen the balance sheet and reset leverage. Further details of the Group's borrowing facilities and other financial risks can be found in Note 24 and Note 27 to the Group financial statements, respectively.
Information security Ricardo has valuable intellectual assets comprised of propriety, customer, and supplier data.	The theft or loss of intellectual assets could result in reputational damage, loss of competitive advantage, business disruption and financial penalties.	Ricardo has implemented a global Information Security Management System ('ISMS') and achieved certification to ISO 27001 "Information Security Management" at our main facilities. The Group IT Director is accountable for managing information security resilience, which includes cyber risk. Dedicated information-security resources monitor and manage our threat profile. Penetration tests are conducted to augment our control regime. Information-security risks are reviewed by the Group IT Director each quarter and integrated with the Group's enterprise risk-management process. Bi-annual briefings on information security are made to the Audit Committee.

Viability statement

The Directors have assessed the prospects of the Group in accordance with provision 31 of the 2018 UK Corporate Governance Code.

The context supporting the assessment

The Group's prospects are underpinned by its business model and strategy, which can be found on pages 12 to 13. The Group continues to follow a balanced approach to its strategy, which is subject to ongoing monitoring and development as described herein. Following a decline in revenue and profitability in FY 2019/20, when the Group's revenue and underlying operating profit reduced by £32.4m (8%) and £19.6m (49%) respectively, the Group's results have improved in the current year as it continues its recovery from the impact of COVID-19. Revenue in the current year was £351.8m, in line with prior year, and underlying operating profit was £22.7m, an improvement of £2.7m (14%) on the prior year. The Group's reported operating profit was £8.6m, an improvement of £9.5m compared to the loss of £0.9m in the prior year. Revenues and profits were weighted towards the second half of the financial year as the business emerged from the impact of COVID-19. All segments delivered higher revenue and underlying operating profit than the prior year, apart from Automotive & Industrial. Within this segment, revenue and underlying operating profit improved in the US and China, but revenue and underlying operating profit declined in EMEA.

The Group enters the new financial year with an order book of £293.5m, of which over 70% is expected to be workable within the next twelve months. The year-end order book comprises the value of all unworked purchase orders and contracts received from customers.

On 11 November 2020, the Group raised £28.2m of proceeds, net of fees, by way of an equity placing. The placing was carried out to reduce leverage, strengthen the balance sheet and provide adequate working capital for the Group. Further details on the placing are provided in Note 28 to the Group financial statements.

The strategy of the Group is to develop and deliver innovative, cross-sector sustainable, efficient and secure energy, environmental and mobility solutions and products. The Group's businesses focus on the development of longer-term, multi-year contracts and relationships, underpinned by global macro trends. The Board has considered the risk appetite and profile of the Group in this context and has determined that this remains appropriate for the Group as a whole.

Assessing the prospects of the Group

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

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

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

Assessment of viability

The three-year business plan reflects the best estimate of the prospects of the Group. This has been stress-tested to consider the impact of the challenging market environment in the Automotive sector, on the Group's results, operations and financial position in a severe but plausible downside scenario. The scenario includes:

- A 15% reduction in Automotive & Industrial revenue in FY 2021/22, with a larger reduction in EMEA (in line with the decline seen in FY 2020/21) partially offset by lower than budgeted growth in the US and China. Automotive & Industrial revenue is modelled to increase by 5% in FY 2022/23 (with no growth in EMEA). In addition, external Software revenue (within the Performance Products segment) has been reduced by 10% in FY 2021/22;
- Delays in the ramp up of production volumes in Performance Products and Defense on key programmes;
- Half the budgeted revenue growth in Rail and Energy and Environment; and
- No improvement in the Group's working capital days.

The scenario incorporates appropriate mitigating actions and cost-saving measures which are within the Group's control. The scenario results in a reduction of 25% in the Group's EBITDA (excluding the impact of IFRS 16, consistent with the definition of the Group's banking covenants) in FY 2021/22, with 15% growth in FY 2022/23 on the sensitised FY 2021/22 EBITDA.

The impact of this scenario on the Group's business plan has been quantified and presented to the Board as part of the approval process. The scenario, which is based on aspects of the Group's principal risks and uncertainties, including customers and markets, COVID-19, contracts, and financing, as set out on pages 35 to 37, represents severe but plausible circumstances that the Group could experience.

The results of our stress-testing showed that the Group would be able to withstand the impact of the scenario occurring over the period of the plan, by making adjustments to its operating activities within the normal course of business. The severe but plausible downside scenario does not present a significant threat to the Group's liquidity. Although headroom under the Group's banking covenants is reduced under the scenario, no banking covenants are breached.

The Group also performed reverse stress-testing on its financial plan using these scenarios to identify the point at which its banking covenants would be breached. In the event of such scenarios materialising, more severe cost actions would be taken to ensure covenant compliance.

Viability statement

The Directors have assessed the prospects of the Group over the three-year period to 30 June 2024 and confirm that their assessment of the principal risks and uncertainties facing the Group was robust. A three-year period was selected for the following reasons:

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

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

Based on their assessment of prospects and viability, the Directors confirm that they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the three-year period ending 30 June 2024.

Going concern

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

Ian Gibson
Chief Financial Officer

Financial review

"The Group's results show real positive momentum as it continues to recover from the impact of COVID-19. Underlying profit before tax has improved by 15% to £18.0m and the Group has returned to profit on a reported basis, delivering a reported profit before tax of £3.9m, compared to the prior year loss of £5.3m. With the exception of Automotive & Industrial, all segments have delivered increased revenues and profits, with particularly strong performances from Energy & Environment and Rail. Automotive & Industrial continues to face challenging market conditions in EMEA and we have taken further action in the year to address this. Profitability in the US and China has improved.

"Net debt has reduced significantly. During the year we raised £28.2m via an equity placing which has allowed us to re-set the capital structure of the Group and reduce leverage. Our underlying cash performance has been good due to effective working capital management during the year."

Group results

This year, the Group delivered revenue of £351.8m, in line with the prior year, and underlying profit before tax of £18.0m, an increase of 15% on the prior year. On a reported basis, the Group has returned to profit, delivering profit before tax of £3.9m in the year, compared to a loss of £5.3m in the prior year. The results reflect a positive trajectory for the Group as it continues to recover from the impact of the COVID-19 pandemic, which significantly impacted the Group's results in the second half of FY 2019/20 and the first half of this financial year.

Revenue was stable year-on-year as revenue growth in Energy & Environment ('EE'), Defense, Rail and Performance Products was offset by a decline in the Group's Automotive & Industrial ('A&I') segment, which continues to be impacted by challenging market conditions, particularly in EMEA.

Profit generation was weighted towards the second half of the year, with the Group delivering an underlying profit before tax of £13.0m in the second half of FY 2020/21, compared to £5.0m in the first half. This reflects a combination of good profit growth in Defense, EE, and Rail, combined with a return to profit in A&I, which benefitted from restructuring actions taken in EMEA in the first half of the year, together with improved profitability in China.

EE performed strongly throughout the year due to increased Evidence and Policy work with the European Commission, Chemical Risk services and water-resource management work. Rail performed in line with our expectations, driven by good growth in Australia and Asia. The market in the UK and Netherlands remained challenging. Defense successfully delivered its first ABS/ESC fleet retrofit kits in the final quarter of the year. Together with ongoing ambulance retrofit and new vehicle kits, Defense delivered 2,950 ABS/ESC kits in total, an increase of 486 kits on FY 2019/20. Performance Products also delivered year-on-year growth, as transmissions volumes increased and the business benefitted from the mix and pricing of engines sold. The performance of EE and Rail are particularly pleasing as these segments underpin the Group's growth and diversification strategy.

Headline trading performance

		Underlying(1)		Reported	
	Revenue	Operating profit	Profit before tax	Operating profit/(loss)	Profit/(loss) before tax
FY 2020/21 (£m)	**351.8**	**22.7**	**18.0**	**8.6**	**3.9**
FY 2019/20 (£m)	352.0	20.0	15.6	(0.9)	(5.3)
Growth (%)	**-**	**14**	**15**	**1,056**	**174**
Constant currency growth(2) (%)	**1**	**14**	**15**	**1,056**	**174**

(1) Underlying measures exclude the impact on statutory measures of specific adjusting items as set out in Notes 2 and Note 6 to the Group financial statements. Underlying measures are considered to provide a more useful indication of underlying performance and trends over time.

(2) The Group generates revenues and profits in various territories and currencies because of its international footprint. Those results are translated on consolidation at the foreign exchange rates prevailing at the time. Constant currency growth/decline is calculated by translating the result for the current year using foreign currency exchange rates applicable to the prior year. This provides an indication of the growth/decline of the business, excluding the impact of foreign exchange (see Note 2 to the Group financial statements).

Net debt was £46.9m at 30 June 2021, compared to £73.4m at 30 June 2020. This improvement reflects £28.2m of proceeds, net of fees, from a successful share placing in November 2020, and a strong working capital performance. Excluding the placing, restructuring costs and acquisition-related payments, the Group generated £7.4m of cash in the year.

The segmental results are discussed in more detail on pages 45 to 55.

Order intake down 5% on FY 2019/20 with closing order book of £293.5m

Order intake of £352.1m represents a 5% reduction on the prior year. Order intake increased by 13% in EE, with significant contributions from the Policy, Water and Sustainability business units. Defense order intake increased by 70% year-on-year, due to securing the first USD 10m order for ABS/ESC retrofit units, combined with significant programme wins in Engineering Services, including the multi-year Infantry Squad Vehicle ('ISV') programme. Order intake reduced by 7% in Rail, due to lower orders in the UK and Netherlands. Australia and the Middle East performed strongly. Performance Products order intake reduced by 18% year-on-year, in line with our expectations, with two large transmission orders received in the prior year. As expected, order intake increased steadily throughout the financial year. Overall order intake in A&I declined by 20% year-on-year. It increased in both the US and China and reduced in EMEA.

Revenue in line with FY 2019/20

FY 2020/21 revenue was £351.8m, in line with the prior year. EE grew by 12% as the business continued to successfully win and deliver work throughout the COVID-19 pandemic. Defense revenue grew by 16% year-on-year, driven by the increase in ABS/ESC volumes and growth in Engineering Services, as noted above. Rail and Performance Products revenue increased by 3% and 1% respectively. Similar to the trend in order intake, A&I revenue reduced by 13%, which reflected a decline in EMEA, partially offset by growth in the US and a stable performance in China year-on-year. On a constant currency basis, the Group's revenue would have been £356.1m in FY 2020/21, a 1% increase on FY 2019/20 revenue of £352.0m.

Underlying operating profit up 14% on FY 2019/20, with reported operating profit of £8.6m (FY 2019/20: loss of £0.9m)

Underlying operating profit, which excludes specific adjusting items, increased by 14% to £22.7m (FY 2019/20: £20.0m). Underlying operating profit margin increased to 6.5% from 5.7%. Profitability improved throughout the course of the year, with underlying operating profit margin increasing from 4.5% in H1 FY 2020/21 to 8.2% in H2 FY 2020/21, driven by a combination of revenue growth across the Group and the benefit of cost reductions in A&I in the first half of the year.

Reported operating profit increased by £9.5m, from a loss of £0.9m in FY 2019/20 to a profit of £8.6m in FY 2020/21. The Group recognised costs of £14.1m in respect of specific adjusting items relating to the amortisation of acquired intangible assets, earn out costs for acquisitions made in prior years, restructuring actions in A&I, and the outgoing CEO. Specific adjusting items in the prior year were £20.9m. Specific adjusting items are discussed in more detail below.

Underlying profit before tax up 15% on FY 2019/20, with a reported profit before tax of £3.9m (FY 2019/20: loss of £5.3m)

Underlying profit before tax increased by 15% to £18.0m (FY 2019/20: £15.6m), driven by the improvement in underlying operating profit. There is no change to FY 2020/21 underlying or reported profit on a constant currency basis.

As noted above, the FY 2020/21 reported profit before tax includes £14.1m of costs relating to specific adjusting items (FY 2019/20: £20.9m), discussed in more detail below.

Net debt down 36% to £46.9m (FY 2019/20: £73.4m)

Closing net debt was £46.9m (FY 2019/20: £73.4m). The Group had a net cash inflow for the period of £26.5m. During the year, the Group completed a share placing which raised £28.2m, net of fees, in order to reset the capital structure of the Group, reduce leverage and repay borrowings to achieve an appropriate level of balance sheet efficiency and resilience. The Group paid acquisition-related earn out and retention costs of £5.2m, external project and legal fees of £0.7m, and reorganisation costs of £3.4m. In addition, £0.2m of contingent consideration

Ricardo Performance Products is supplying transmissions for the inaugural Indy Autonomous Challenge.

was received in relation to the sale of the DTC test business in June 2020. Excluding these specific adjusting items, the Group generated £7.4m of cash, which was achieved through a continuing strong focus on cost control and efficient working capital management. The composition of net debt is defined in Note 24 to the Group financial statements.

Basis of preparation

These consolidated financial statements of the Ricardo plc Group ('Group') have been prepared in accordance with international accounting standards in conformity with the requirements of the Companies Act 2006. The Group's principal accounting policies are detailed in Note 1 to the Group financial statements. 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 Group financial statements.

Specific adjusting items

As set out in more detail in Note 2 and 6 to the Group financial statements, the Group's underlying profit before tax for the half-year excludes £14.1m of costs incurred during the period that have been charged to the income statement as specific adjusting items (FY 2019/20: £20.9m).

Amortisation of acquired intangibles was £5.0m in the year, compared to £6.0m in FY 2019/20, with the reduction reflecting the end of the amortisation of intangible assets acquired as part of the purchase of AEA Ltd in 2012.

Acquisition-related costs of £2.1m were incurred in the year. These included £1.6m in relation to earn-out and deferred compensation payments for Transport Engineering Pty Ltd (renamed Ricardo Rail Australia, or 'RRA') and PLC Consulting Pty Ltd (renamed Ricardo Energy, Environment and Planning, or 'REEP'), acquired in May 2019 and July 2019 respectively. £0.5m of external fees were incurred in relation to certain strategic projects in the year. In the prior year, £2.8m of earn out costs for RRA and REEP were incurred, together with £0.4m of integration costs for these businesses, and £0.9m of deal fees on a number of aborted transaction processes, partially offset by a £1.1m gain on a foreign exchange option contract.

Purchases and disposals: The South office building of the Detroit Technology Campus ('DTC'), which was held-for-sale at 30 June 2020 and 31 December 2020, was impaired by £1.5m in the year to reflect its current fair value, as the impact of COVID-19 on the local property market reduced demand for office space and reduced prices. The building was purchased in August 2019 and impaired by £3.6m, net of the release of a lease liability under IFRS 16, in the prior year, as it was acquired for a price which reflected Ricardo as a long-term tenant. Management has decided to continue to use the building as offers received during the year were lower than expected. The building continues to be marketed for sale, but management no longer considers a sale within the next twelve months to be highly probable and it is therefore no longer presented as held-for-sale.

A charge of £0.5m was incurred in FY 2020/21 as a result of a reduction in the fair value of contingent consideration arising on the sale of the DTC test business. The business was sold in June 2020 and a loss on disposal of £2.1m was recognised within specific adjusting items in FY 2019/20.

Other reorganisation costs: £2.5m of redundancy costs were incurred in the A&I business in EMEA. Headcount reductions were made in H1 FY 2020/21 as the challenging trading environment and ongoing impact of COVID-19 continued to depress the level of short-term workable orders in the business. A further round of restructuring was announced in the final quarter of the year as further national lockdowns in Spring 2021 led to customer project delays, which continued to depress order intake levels. As part of the restructuring actions, management decided to fully exit the Cambridge Technical Centre ('CaTC'), resulting in an impairment of the right-of-use asset and associated exit costs of £0.7m. In addition, £0.1m has been incurred in the current year in respect of the impairment of the right-of-use asset in Schwäbisch Gmünd Technical Centre ('SGTC'), as management was in discussions with the landlord to surrender the lease at this site at the end of the financial year (see Note 38), together with the write off of equipment relating to the Santa Clara Technical Centre ('SCTC'), which was exited in June 2020 (£0.1m).

£6.2m of reorganisation costs were recognised in the prior year, comprising £3.3m of costs in our A&I business in EMEA, including headcount reductions (£2.0m), impairment costs in relation to CaTC (£0.6m), and £0.7m of incremental contractor costs and professional fees, incurred as a result of these actions. In addition, costs of £0.9m were incurred in A&I US in relation to the SCTC exit (£0.4m) and redundancies (£0.5m, inclusive of incremental contractor costs). £1.4m of redundancy costs were incurred in Rail, plus £0.6m of redundancy costs in other segments.

In January 2021, the Board, together with Dave Shemmans, agreed that Dave would leave his role as Group Chief Executive after leading the business for sixteen years. Costs of £1.5m have been accrued within specific adjusting items, reflecting the terms of his settlement agreement, associated legal fees and the costs of a search process to appoint his successor.

In addition, in order to equalise male and female members' benefits for the effect of Guaranteed Minimum Pensions ('GMP') for historical transfers out of the pension scheme, a charge of £0.1m in FY 2020/21 was incurred.

Reconciliation of underlying profit before tax to reported profit/(loss) before tax

£m		FY 2020/21		FY 2019/20
Underlying profit before tax		**18.0**		15.6
Amortisation of acquired intangibles		**(5.0)**		(6.0)
Acquisition-related expenditure		**(2.1)**		(3.0)
Reorganisation costs:				
• *A&I US - DTC purchase and impairment*	**(1.5)**		(3.6)	
• *A&I US – Test business change in fair value of contingent consideration and loss on disposal*	**(0.5)**		(2.1)	
Asset purchases and disposals		**(2.0)**		(5.7)
• *A&I EMEA - reorganisation costs*	**(3.3)**		(3.3)	
• *A&I US – exit of SCTC and redundancy*	**(0.1)**		(0.9)	
• *Other reorganisation costs*	**-**		(2.0)	
Total other reorganisation costs		**(3.4)**		(6.2)
CEO exit costs		**(1.5)**		-
GMP equalisation		**(0.1)**		-
Reported profit/(loss) before tax		**3.9**		**(5.3)**

Research and Development ('R&D') and capital investment

The Group continues to invest in R&D and spent £10.2m (FY 2019/20: £12.5m) before government grant income of £1.2 m (FY 2019/20: £1.1m). Development costs capitalised in this period were £8.5m (FY 2019/20: £8.0m), reflecting continued investment in software products in the Performance Products segment, together with technology, tools and processes in the A&I and EE segments. Developments in the A&I segment have focused on the electric vehicle and alternative fuel spaces.

Capital expenditure on property, plant and equipment, excluding right-of-use assets, was £4.5m, reflecting targeted investment in our business operations, including the completion of a new hybrid power train test rig at the Shoreham Technical Centre ('STC'). £22.0m of capital expenditure on property, plant and equipment was incurred in FY 2019/20, which included £14.2m to purchase the DTC facility.

The total Research and Development Expenditure Credit ('RDEC') recognised in the year was £5.5m (FY 2019/20: £7.7m), with the reduction reflecting the impact of restructuring in A&I on the cost base in the UK.

Net finance costs

Finance income was £0.8m (FY 2019/20: £0.4m) and finance costs were £5.5m (FY 2019/20: £4.8m) for the year, giving net finance costs of £4.7m (FY 2019/20: £4.4m). The increased income and costs reflect the Group's decision to draw down on its Revolving Credit Facility ('RCF') to increase liquidity during the pandemic.

Taxation

The total tax charge for the year was £2.2m (FY 2019/20: £1.1m) and the total effective tax rate was 56.1% (FY 2019/20: negative at (20.8)%). The underlying effective tax rate for the year was 26.9% (FY 2019/20: 26.3%). The increase in the reported and rate reflects the impact on deferred tax of the increase in the UK tax rate from 19% to 25% from 1 April 2023 (impact: £1.1m). This has been partially offset by a £0.9m reduction in the Group's IFRIC 23 provision for uncertain tax treatments, as a result of a number of positive outcomes for the Group on international tax matters.

Deferred tax assets of £8.3m (FY 2019/20: £9.4m) include £4.9m (USD 6.5m) (FY 2019/20: £5.1m (USD 6.3m)) of R&D tax credits in the US, £0.9m (FY2019/20: nil) of UK tax losses, and £1.4m of US tax losses (FY2019/20: £2.1m). The Directors have considered the recoverability of these assets and are satisfied that it is probable that sufficient taxable profits will be generated in the foreseeable future, against which the recognised assets can be utilised.

Deferred tax liabilities of £8.2m (FY 2019/20: £5.6m) include £1.3m in respect of the defined benefit pension scheme, with moved from a deficit (on which a deferred tax asset of £1.2m was recorded in the prior year) to a surplus (on which a deferred tax liability of £1.3m has been recorded).

Earnings per share

Basic earnings per share was 2.9p (FY 2019/20: loss per share of 12.2p). The Directors consider that underlying earnings per share provides a more useful indication of underlying performance and trends over time. Underlying basic earnings per share for the year was 22.4p (FY 2019/20: 21.3p). The calculation of basic earnings per share, with a reconciliation to an underlying basic earnings per share, which excludes the impact (net of tax) of specific adjusting items, is disclosed in Note 7 to the Group financial statements.

Dividend

The Group paid its interim dividend of 1.75p per share (£1.1m) on 9 April 2021 (HY 2019/20: 6.24p, £3.3m). The Board has declared a final dividend of 5.11p per share (£3.2m) (FY 2019/20: nil), which will be paid on 25 November 2021 to holders of ordinary shares on the Company's register of members on 5 November 2021. This reflects the Board's desire to return to paying dividends to shareholders, balanced with the speed and shape of the economic recovery as we emerge from the impact of COVID-19.

Share issue

On 11 November 2020, Ricardo plc issued 8,812,030 new ordinary shares, representing 16.5% of existing issued ordinary share capital, at a price of 333 pence per share, raising gross proceeds of £29.3m (£28.2m net of £1.1m of transaction costs).

The issue took place in the three parts; "Placing shares", to certain existing shareholders and other institutional investors, via a 'cashbox' mechanism (14.95%); "Subscription shares" subscribed by certain directors of the Company for cash consideration (0.05%); and "Retail shares" offered by the Company for cash consideration (1.5%). The cashbox placing resulted in the creation of a £23.5m distributable merger reserve. Directly attributable fees were recorded against this merger reserve.

Goodwill

At 30 June 2021, the Group had total goodwill of £84.7m. The three-year plan and discounted cash flow calculations thereon provide a value-in-use ('VIU') which supports the carrying value of goodwill allocated to each cash generating unit ('CGU'), or group of CGUs, at 30 June 2021, resulting in no impairment for the year (FY 2019/20: nil). The A&I EMEA group of CGUs, which forms part of the A&I operating segment, had goodwill of £19.6m. A&I EMEA has faced challenging trading conditions, which have reduced its profitability. As a result, the excess of its VIU over its carrying value is limited. The VIU calculations include relevant cash flows from the RDEC tax credit. Sensitivity analysis indicated that a reduction of 38% in the projected operating profit levels used in the VIU calculation each year would result in the value in use being materially equal to the carrying value. Such a reduction is deemed reasonably possible due to the current and projected levels of profit in the three-year plan. If RDEC cash flows were excluded from the VIU calculation, the goodwill balance would be fully impaired. There are no concerns over the recoverability of the Group's other goodwill balances.

Net debt and banking facilities

Net debt at 30 June 2021 comprised cash and cash equivalents of £42.0m, borrowing and overdrafts, including hire purchase liabilities and net of capitalised debt issuance costs of £88.9m. Total facilities before borrowings are £215.5m. This provided total cash and liquidity of £168.6m as at 30 June 2021.

The Group's facilities are denominated in Pounds Sterling and have variable rates of interest dependent upon the Group's adjusted leverage, which range from 1.4% to 2.2% (FY 2019/20: 1.4% to 2.2%) above LIBOR. On 29 June 2021 the Group made amendments to the £200.0m committed Revolving Credit Facility ("RCF") to accommodate the forthcoming cessation of LIBOR. The Group has adopted SONIA as the risk-free rate to replace LIBOR and no other amendments to the facilities were made. The RCF continues to provide the Group with committed funding available for the remaining term through to July 2023.

The Group's Adjusted Leverage ratio (defined as net debt over EBITDA for the last twelve months, excluding the impact of specific adjusting items and IFRS 16) was 1.3x as at 30 June 2021. The Adjusted Leverage covenant was 3.75x at 30 June 2021 and will reduce to 3.0x from the next test date of 31 December 2021 onwards.

The Interest Cover ratio (defined as EBITDA for the last twelve months, excluding the impact of specific adjusting items and IFRS 16, over net finance costs), was 9.6x at 30 June 2021. The Interest Cover covenant is 4.0x.

Further details are provided in Note 24 to the Group financial statements.

Foreign exchange

On consolidation, revenue and costs are translated at the average exchange rates for 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, Australian Dollars and Chinese Renminbi. Compared to the prior year, the average value of the Pound Sterling strengthened by 7% against the US Dollar and weakened by 4% against the Australian Dollar. Sterling strengthened by 1% against the Renminbi and weakened by 1% against the Euro. On a constant currency basis, the Group's revenue would have been £356.1m in FY 2020/21, a 1% increase on FY 2019/20 revenue of £352.0m. There would have been no impact on FY 2020/21 underlying and reported profit before tax.

Pensions

The Group's defined benefit pension scheme operates within the UK. The fair value of the scheme's assets at the end of the year was £156.1m (FY 2019/20: £150.4m). Due to a combination of an increase in scheme assets and a reduction in liabilities due to changes in actuarial assumptions, the scheme moved into a pre-tax surplus, measured in accordance with IAS 19, of £6.8m (FY 2019/20: deficit of £6.7m). Ricardo paid £4.6m of cash contributions into the scheme during the year.

Operating segments review

Overview

From FY 2020/21, due to restructuring within the Group, Strategic Consulting & Software ('other') is no longer being separately reported as an operating segment.

The Strategic Consulting element of this segment is now reported within Automotive & Industrial ('A&I'). This business has a number of common customers, operates in similar markets to A&I, and is now run as a business unit within the overall A&I business. Since the start of FY 2020/21, the A&I EMEA Managing Director has overall responsibility for the Strategic Consulting service offering.

The Software element of this segment has been aggregated into the Performance Products operating segment for the purposes of segemental reporting. Whilst the Software business continues to be run as a separate business with its own leadership team, it has a number of similar characteristics to the Performance Products manufacturing business, in that it is involved in the development of niche products, requiring a high level of capital/development spend, primarily selling to automotive manufacturers.

As a result of this change, the Group is now reporting the five segments set out below. The FY 2019/20 segmental analysis has been reported on a consistent basis to aid comparability. Consistent with the prior period, Plc costs includes the costs of running the public limited company, including foreign exchange exposure on intercompany loans.

	Revenue		**Underlying[1] operating profit**		**Underlying[1] operating profit margin**	
For the year ended 30 June	**2021**	2020[2]	**2021**	2020[2]	**2021**	2020[2]
	£m	£m	**£m**	£m	**%**	%
Energy & Environment ('EE')	**57.1**	50.8	**8.5**	6.3	**14.9**	12.4
Rail	**77.7**	75.3	**8.0**	5.8	**10.3**	7.7
Automotive & Industrial ('A&I')	**102.5**	117.2	**(1.6)**	0.5	**(1.6)**	0.4
Defense	**37.9**	32.8	**5.4**	5.1	**14.2**	15.5
Performance Products ('PP')	**76.6**	75.9	**6.8**	5.1	**8.9**	6.7
Operating segments total	**351.8**	352.0	**27.1**	22.8	**7.7**	6.5
Plc costs	**-**	-	**(4.4)**	(2.8)	**-**	-
Total	**351.8**	352.0	**22.7**	20.0	**6.5**	5.7

(1) Defined in the glossary of term on page 197.

(2) Prior year comparatives have been restated to present the results of Ricardo Strategic Consulting and Ricardo Software within Automotive & Industrial and Performance Products, respectively, in line with the current year.

Energy & Environment ('EE')
See page 46

Rail
See page 48

Automotive & Industrial ('A&I')
See page 50

Defense
See page 52

Performance Products ('PP')
See page 54

Energy & Environment ('EE')

Partner of choice for solving complex environmental challenges, through industry-leading analysis, advice and data.

Financial and operational highlights

Order intake

+13%

Order book

+15%

Revenue

+12%

Underlying operating profit

+35%

Underlying operating profit margin

+2.5pp

Headcount

+19%

(*) Headcount has been restated to reflect the inclusion of head office staff

Our Energy and Environment ('EE') operating segment works across the value chain: gathering and evaluating evidence, setting policy measures, and working with our customers, partners and stakeholders to support the implementation of a wide range of solutions. We have more than 40 years of experience in addressing sustainability issues and customers value our deep understanding of energy and environmental drivers, policy development and technical excellence, along with our ability to turn challenges into business opportunities.

Customers

Governments, public agencies and businesses around the world trust Ricardo's deep expertise in solving some of the most complex environmental challenges. The client base is diversified across the public and private sectors (respectively representing about 60% and 40% of revenues), with over a third of revenues from non-UK customers.

Principal operating regions

Ricardo has long been a core supplier to UK central, devolved and local governments. However, we have been diversifying our business internationally for several years and, over the last year, we have focused especially on Spain, Australia and the Middle East – areas where we have growing teams.

Growth drivers

- Government COVID-recovery and green infrastructure investment policies and funding.
- Demand for decarbonisation and net zero solutions across sectors.
- Fast-changing and disruptive technology landscape for electrification, smart-grid solutions, hydrogen, etc.
- Resource risks and challenges across the supply chain.

Competitive strengths

- High calibre and dedicated team of scientists, economists, engineers and data specialists.
- Deep UK heritage as a trusted supplier to the UK government, supporting global growth.
- Growing international presence, utilising multi-location skilled teams to support local markets.
- Mainstreaming of digital and data-science capabilities across consultancy projects.

Performance

We delivered a strong performance in FY 2020/21. Order intake for the year was £64.1m (FY 2019/20: £56.5m), growth of 13% on the prior year. Revenue and underlying operating profit grew by 12% and 35%, respectively, and we delivered an underlying operating profit margin of 14.9%, 2.5pp higher than the prior year, reflecting strong demand for our services and good utilisation across the business.

Significant contributions were made by both the Policy business, due to increased services to the European Commission, and the Water business, which benefitted from an upsurge in water resource-management services to the UK water sector. There was also increased demand for chemical risk-management services, driven by an increased demand for resources, due to the impact of Brexit and the associated regulatory deadlines. Within Sustainability, revenues remained strong for all aspects of net zero, from strategy development to establishing targets and producing implementation plans. At the same time, there are growing opportunities to support technology solutions, particularly in connection with electricity network engineering, innovation, and the evolution of 'e-fuels' such as green hydrogen.

Contract wins during the year included major UK wins for the National UK air quality and GHG emissions inventory, the combined heat and power ('CHP') quality-assurance programme, and project work for the Gibraltar air-quality programme. Our international footprint has also continued to grow, on account of strategic expansion across multiple locations to support increased project-based work. In Europe, we secured a significant contract to deliver consultancy support services for

the operation of the European Road Safety charter. Furthermore, we also won a major project to develop an electric vehicle ('EV') financing tool and business model to enable the scaling up of EVs in Bangladesh, and consultancy work to support capacity building for an energy transition programme in South Africa.

Generally, throughout COVID-19, we have been able to function at close to normal business operations, due to the early adoption of a digital-first approach and effective homeworking. Although there has been minimal disruption, COVID-19 has impacted international projects, where travel has been severely restricted. While this has resulted in a decline in consultancy revenues outside of Europe, we have worked closely with our customers to adopt creative solutions for the remote delivery of projects.

Outlook

Our business performance generally follows trends within macro-economic growth drivers focused on global green agendas. Most relevant environmental trends include infrastructure stimulus funding (including green-technology solutions across the developed world), clean-energy solutions for transportation, the development of innovative electricity network solutions to accommodate distributed green generation, and the rise in EVs, as well as the demand for lifecycle assessment studies. Digital transformation – specifically, the digitisation of processes and solutions – is driving the development of innovative machine-learning solutions to prepare and manipulate complex data sets.

Based on these growing global trends, the positive impact on our markets, and our effective mitigation approach towards COVID-19, we remain optimistic for the year ahead. Furthermore, as climate considerations rise higher up the agenda, we are seeing a greater urgency in actions to combat the impact of climate change. COP26 provides a focal point for actions, both directly from governments and from corporations, as they seek support in committing to the delivery of their own journeys to achieve net zero.

The focus in FY 2021/22 will be prioritised toward net-zero consultancy work across a range of sectors and customers, incorporating strategic and scientifically skilled advisory services, from setting policy to project implementation. We plan to broaden our European work, building on support for the EU Green Deal, with more activity at the individual member-state level and with large businesses and trade bodies. We will continue to develop our project work in supporting governments around the world in evolving air-quality changes – notably, particulates and ozone – as well as to expand into additional areas of environmental support for the water sector. Plans are also in progress to adapt our model for international working so that it meets our customers' requirements in full, while travelling less and thereby also ensuring the reduction of Ricardo's own travel-related climate impact.

Did you know?

In the calendar year 2020, we supported 71 different governments around the world with their climate-action planning, including 34 national governments, 15 regional governments and 22 city governments.
Our EE segment was also responsible for creating the first UK greenhouse gases ('GHG') emissions inventory back in 1973.

Rail

Experts in critical and complex railway systems, we provide support in navigating the industry's operational and regulatory demands

Financial and operational highlights

Order intake

-(7)%

Order book

-(14)%

Revenue

+3%

Underlying operating profit

+38%

Underlying operating profit margin

+2.6pp

Headcount

-(6)%

(*) Headcount has been restated to reflect the inclusion of head office staff

Our Rail operating segment serves the global rail market, delivering technical and engineering consultancy services, with capabilities in all areas – from rolling stock, signalling and telecommunications to energy efficiency, safety management and operational planning – we support a client portfolio that ranges from some of the world's largest rail administrations to niche component suppliers. Along with our consultancy unit, we also operate a separate independent entity – Ricardo Certification – which performs accredited assurance services. Both divisions draw upon an international pool of around 600 rail engineers, technicians, auditors and support teams.

Customers

We work with passenger and freight operators, infrastructure managers and equipment manufacturers, as well as government bodies and regulatory authorities.

Principal operating regions

We operate predominantly in Europe, Asia, Australasia and the Middle East, and have offices in countries across these regions.

Growth drivers

- Expansion of rail transportation in major urban areas and as an alternative to short-haul air travel.
- Acceleration to cleaner energy sources and more sustainable operational practices.
- Pent-up demand for medium-term solutions to help achieve decarbonisation targets.
- Need for operational improvements through digitisation to maximise network capacity.
- Increasing demand for sophisticated digital systems to improve safety and security.

Competitive strengths

- Recognised as an established global rail consultancy with specialist technical expertise.
- Reputation for quality and safety.
- Locally responsive and agile in our approach to programmes and project-based work.
- Broader access to Ricardo's capabilities underpins our offering.

Performance

We delivered a strong performance throughout FY 2020/21. Despite COVID-19, revenue increased by £2.4m (3%), underlying operating profit increased by £2.2m (38%) and underlying operating profit margin increased by 2.6pp to 10.3%. Order intake and order book were down on the prior year by 7% and 14% respectively, reflecting the timing of large programme wins each year. The overall Rail business delivered a successful year of revenue and profit growth, but there has been a contrast in performance at a regional level, demonstrating the varying challenges experienced in specific countries.

Australia has been a flourishing market for our Rail segment, in which we have secured several major consultancy and assurance service contracts with customers in New South Wales and Queensland. Most notably, we successfully secured a contract to act as the "Shadow Operator" for the Sydney Metro, where we provide advisory services on the specific requirements for rail operations to the constructors of the new driverless extension. This represents a new service line which has the potential to open up similar opportunities across the world.

In contrast, the European market has been impacted by interruptions, delays and cancellations to continuing and new project work as the industry is forced to revise its priorities in view of lower passenger levels and government intervention.

Nevertheless, this was counterbalanced in part by the large portfolio of infrastructure assurance projects, which in several cases has leveraged the reduced levels of traffic to advance major schemes – such as the Danish re-signalling programme and the London Elizabeth Line. This, along with a robust order book for Asia and the Middle East, where we are adding to our project-based work on major construction schemes in Riyadh and Doha, has ensured that Ricardo Certification delivered a good overall performance.

As 'Shadow Operator', Ricardo is advising the construction of two extensions of Sydney's metro system about the operational needs of a fully automated railway.

The impact of the pandemic on public transport was unprecedented. Global passenger numbers fell by 40% on calendar year 2019 levels, with some commuter services seeing passenger levels fall by close to 80%. Even freight traffic, which was less affected, saw a 20% drop in 2020. Operators responded by taking measures to maintain minimum levels of service to reduce overall costs. Even so, many of the major capital programmes were unaffected and rolling-stock orders to replace ageing fleets suffered only minor delays as manufacturers realigned to social-distancing measures, while infrastructure projects took advantage of reduced traffic to complete work.

Outlook

Despite the pandemic's deep impact, the long-term forecasts for global rail-supply markets remain positive, with annual growth rates of 2.3%[(1)] anticipated throughout 2020-2025. We are unlikely to see significant growth in the European market in the short to medium term, but other markets continue to expand, notably China, Taiwan and Japan which are continuing with major investment programmes. So too is the South-East Asia region, where priorities are to continue large-scale activities for both metro and light-rail projects, and the Middle East, where world-class rail networks have only started to emerge over the past decade.

Australia is likely to continue to offer further opportunity as it is in the early stages of a boom in rail construction and is responding to accelerated growth within its major urban centres. Furthermore, the US is expanding its rail footprint and the federal government has announced plans for significant rail investment, much of which is connected to its decarbonisation priorities. Many of the country's commuter routes require rejuvenation and its stockpile of diesel-powered rail vehicles will need to be replaced or refurbished. Furthermore, high-speed railways are finally under construction, potentially opening a vast new market for what is now very mature technology.

The overall focus for us in the coming year will be prioritised around organic growth, including benefitting from the growing opportunities in Australia and South-East Asia's burgeoning market, as well as building our reputation and capabilities in the North American market.

(1) Source: https://www.unife.org/wp-content/uploads/2021/04/Forecast-2020-to-2025.pdf

Did you know?
94% of our clients choose to work with us again within two years.

Automotive & Industrial ('A&I')

Trusted global engineering-services partner for clean, efficient, integrated propulsion and energy systems

Financial and operational highlights

Order intake

-(20)%

Order book

-(10)%

Revenue

-(13)%

Underlying operating (loss)/profit

-(420)%

Underlying operating profit margin

-(2.0)pp

Headcount

-(17)%

(*) Headcount has been restated to reflect the inclusion of head office staff

For over 100 years, our Automotive and Industrial ('A&I') operating segment has been using engineering and research-and-development expertise to help global vehicle manufacturers innovate and improve the efficiency and performance of their products.

With digital engineering, efficiency and effectiveness at our core, we are able to solve the most complex mobility challenges, offering a true end-to-end service to create clean, efficient, integrated energy and propulsion systems for the future. We are recognised as a thought leader in clean propulsion, electrification and renewable fuels and we apply our experience, processes and insights to drive innovation, from the initial concept design right through to product execution.

Customers

We serve customers across the globe in key automotive and industrial segments, including all transport sectors: passenger and light vehicles, commercial vehicles, off-highway vehicles, motorcycles, marine and aerospace.

Principal operating regions

We deliver services to more than 50 countries. We have technical and engineering centres in four countries, and consulting offices across the UK, Europe, North America and Asia (primarily in China).

Growth drivers

- A rapid shift to decarbonised, sustainable transport technology.
- Bridge solutions to fill the technology gap between internal combustion engines and battery electric vehicles.
- Global acceleration to reduce time and cost of new-product development.
- Digital transformation through industry 4.0, connected intelligence and software development capabilities.

Competitive strengths

- A digital-engineering leader in clean propulsion and energy.
- Preferred partner for design and delivery of innovative and technically differentiated solutions.
- Global reach with an extensive local market footprint to provide support and flexibility in the field.
- Customer intimacy with a deep legacy in solution integration and customisation.
- Proven sustainable IP in electric-vehicle technologies.

Performance

During the year, we have undertaken significant strategic and structural changes to focus our portfolio on higher-growth services and markets, such as electrification, software, control and calibration and hydrogen. The changes reflect the global shift within the automotive industry which has been heavily impacted by COVID-19, seeing a temporary halt to passenger car purchases and deliveries across the world, as well as ongoing US-China tensions and border tariffs.

Order intake was down by 20% year-on-year, due to customers delaying critical programme decisions. The lower demand significantly affected revenue and operational efficiency. Revenue decreased by 13% compared to the prior year. The underlying operating loss was £1.6m (FY 2019/20: profit of £0.5m). The underlying operating margin decreased from 0.4% to negative 1.6%.

The impact of the above was felt more strongly by the EMEA business. In the first half of the year, we took the difficult decision to reduce headcount in the period to align the cost base to forecast demand, an extension of the process enacted in the second half of FY 2019/20. The actions taken helped to return our EMEA business to profitability in the second half of the year, but as the challenging market conditions continued, exacerbated by further national COVID-19 related lockdowns in Spring 2021, it became apparent that the order intake levels would not return to forecast levels as quickly as anticipated. This resulted in the announcement of further headcount reductions, to be enacted in the first half of FY 2021/22. We also fully exited our site in


A full-service technical partner for full-product development, Ricardo continues to support customers to plan, design and deliver world-class motorcycles and scooters.

Cambridge in June 2021, with staff moving to other UK locations. The total cash cost of these actions was £2.3m (FY 2019/20: £2.9m).

Order intake and revenue both increased year-on-year in our US business. This, together with the positive impact from the restructuring actions at the end of FY 2019/20, including the closure of facilities and the sale of the Detroit test business, resulted in a significant reduction in losses.

In China order intake and profitability both improved year-on-year, indicating that the China market is starting to recover from the impact of the pandemic.

Despite the notable impacts suffered across the automotive industry, we are continuing to secure contract wins in all our key markets. Within EMEA, major contract wins from automotive original equipment manufacturers ('OEMs') included a wide range of electrification programmes including battery-pack design, systems integration and e-motor and power-electronics projects. We secured a multi-year engineering programme with WorldAutoSteel to deliver its Steel E-Motive future vehicle concepts, which are exploring the use of steel innovation for sustainable mobility vehicles. We have won contracts with new customers across defence, marine and aerospace, including development of hydrogen fuel cells for aviation with Cranfield Aerospace Solutions and electrified propulsion units with the Blue Bears consortium. In China, cost and time to market have been a key focus for OEMs, resulting in us successfully securing numerous virtual-calibration contracts using our own software and toolchain to deliver these programmes. We have also secured a contract with a key OEM to develop an Automated Manual Transition ('AMT') for commercial vehicles. In the US, several strategic contract wins have been secured, including design, development and integration services to support a major motorcycle company with its new portfolio of electrified vehicles. Our US business has also been working with the world's second-largest carmaker to lead the adaptation and integration of its zero-carbon emissions hydrogen fuel-cell technology into medium range heavy-duty trucks.

Outlook

The COVID-19 pandemic has severely impacted our business and our customers across the world, but it has also accelerated changes across the automotive and transportation industry. Many of our customers have been forced to rationalise product plans and accelerate a number of cost savings. While markets remain depressed in many modes of transport, we now have greater clarity of legislative direction from the world's leading transport markets, which will shape A&I's future in supporting the proliferation of clean, intelligent vehicle technologies.

Our global focus within A&I will be to deliver innovative, sustainable mobility solutions to customers across the world and build resilience through continued expansion across all transport sectors. Through geographic diversification, we will ensure customer intimacy and volume supported and delivered by our network of global technical centres. Priority is to be given to four key areas for our customers across all mobility sectors: electrification, software and control, digital and advanced analytics, and hydrogen and de-fossiled fuels. This will be supported by our technology roadmap, world-leading research and development and sustainable, high-value intellectual property. Nevertheless, in the short term, we will continue to support our customers in their journey to develop environmentally sustainable products and maintain commercially sustainable businesses. We will drive innovation in the development of cleaner, more efficient conventional engines and electric-based propulsion systems, expanding the use of virtual tools and the integration of systems with digital services and software. The transport industry is changing more rapidly, and in more dimensions, than ever before. Our longstanding and intimate understanding of the segment, coupled with its clear focus on the future, mean we are ideally positioned to capitalise on this near-term volatility and drive growth in the segment.

Did you know?

The most significant breakthrough in propulsion systems for civilian and military aircraft was the invention of the jet engine and Sir Harry Ricardo assisted Sir Frank Whittle with the design of combustion chambers and fuel-control systems. Today, as governments, manufacturers and consumers across the world seek to achieve net zero emissions in air transportation, Ricardo's expertise in hydrogen fuel-cell technology means that it is once again at the forefront of technological advance by delivering the greatest innovation to the civilian and military aviation sectors since the jet engine.

Defense

Trusted expertise in delivering wide-ranging engineering programmes to drive efficiencies while optimising safety and performance.

Financial and operational highlights

Order intake

+70%

FY	£m
2020/21	49.4
2019/20	29.0

Order book

+65%

FY	£m
2020/21	25.7
2019/20	15.6

Revenue

+16%

FY	£m
2019/20	37.9
2019/20	32.8

Underlying operating profit

+6%

FY	£m
2020/21	5.4
2019/20	5.1

Underlying operating profit margin

-(1.3)pp

FY	%
2020/21	14.2
2019/20	15.5

Headcount

+11%

FY	Number
2020/21	185
2019/20	166(*)

(*) Headcount has been restated to reflect the inclusion of head office staff

Our Defense operating segment has gained significant insights into the needs of armed forces and provides solutions to meet the challenges facing our customers in the integration of logistics and field support for complex and diverse systems. Our wide range of engineering and software solutions provides system-integration engineering for the US Army's ground inventory and we are the data-replication agent for everything in the air, on the sea and under the surface for the US Navy. Connected to this, we also specialise in niche manufacturing, adapting commercial industry products to deliver innovative sector applications that protect people and infrastructure.

Customers

We work with the US armed forces and allied nations to put the safest and most capable systems into the hands of military personnel. Our key customers include the US Department of Defense ('DoD'), NASA, and the UK Ministry of Defence ('MoD').

Principal operating regions

Our operations are located in North America. We have several offices, the largest being in Michigan and California. We also work alongside our customers at their sites.

Growth drivers

- Decarbonisation and net zero planning focus within the US defense sector.
- Demand for greater connectivity, communications and mobility within the field.
- Software-driven solutions to provide functionality and systems integration.
- Continued focus on cybersecurity to protect against potential and ever-evolving threats.

Competitive strengths

- Leading capability in the design and management of procurement processes for US DoD.
- Industry expertise across the entire defence-system lifecycle support and product sustainment.
- Experts in defence acquisition strategy, policy and procedure.
- Complex-system specialists, linking all aspects of a complete system of systems.

Performance

Our Defense segment delivered a good performance in the year, with order intake of £49.4m (up 70% on the prior year), revenue of £37.9m (up 16% on the prior year), and underlying operating profit of £5.4m (up 6% on the prior year). Underlying operating profit margin decreased from 15.5% to 14.2%.

The growth in order intake reflected the receipt of the first USD 10m order from the USD 89m award of the three-year Anti-lock braking system/electronic stability control ('ABS/ESC') retrofit contract to provide critical safety upgrades for the US Army's fleet of High-Mobility Multipurpose Wheeled Vehicles ('HMMWV'). In addition, we won a significant multi-year production contract from General Motors to produce and field the US Army's new Infantry Squad Vehicle ('ISV'), together with increased work on the US Navy Systems Engineering Support contract.

The ABS operations teams celebrate the assembly and kitting of the 1,000th Retrofit kit in July 2021.

The appearance of U.S. Department of Defense (DoD) visual information does not imply or constitute DoD endorsement.

Revenue growth was driven by increased ABS/ESC volumes and continuing growth in Engineering Services. Including both retrofit and kits for new production vehicles, we delivered a total of 2,950 ABS/ESC kits in FY 2020/21, compared to 2,464 in the prior year. Our Engineering Services business continued to grow in the year, driven by the new wins above and complex system engineering and design work on various US military contracts. ABS/ESC volumes were weighted towards the second half of the financial year. This led to lower levels of profitability in the first half of the year which resulted in an overall reduction in underlying operating margins between FY 2019/20 and FY 2020/21.

In Defense, we have a deep legacy of partnering with the US military in the transition of innovative technologies from science to application. Key development projects in FY 2020/21 included the design and build of a wireless intercom integration system for secure onboard vehicle communications and advancing the development of a fielded electronic backbone to be used for present systems diagnostics, expanding into future autonomy requirements for the US Army. As global niche specialists in designing vehicle engineering solutions that improve safety and significantly reduce fuel usage and carbon emissions, we have been working closely with the US military on the application of a breakthrough, ultra-compact auxiliary power unit to greatly reduce vehicle main-engine use and to reduce fuel consumption as a common solution across US Army platforms. What is more, we are leveraging the application of the ABS/ESC system to significantly reduce brake drag and improve fuel efficiency for thousands of US Government fleet vehicles, which is resulting in a reduction of up to 20% in fuel consumption. Additionally, we have collaborated with the University of Michigan and Epic Games on DARPA research to provide innovations in simulation technologies that can either significantly reduce the cost of off-road autonomy development or help bridge the gap from simulation to the real world. In conjunction with this, we have also supported the US Army's robotic vehicle science and research by integrating innovative subsystems into surrogate vehicles in advance of final vehicle development.

As a critical supplier to the US Government, we have continued to provide services throughout the pandemic.

Outlook

With a growing emphasis on the environment, the US administration's focus is to prioritise progress on climate change, environmental and energy policies. As a result, the US DoD is shifting its priorities and funding within all its activities and risk assessments towards climate-change considerations. Growth in digital applications will also be a focus to ensure the continued security and safety of its networks, systems and infrastructure as well as offering improved efficiencies throughout its operations.

Ricardo is well positioned to continue to support the challenges facing our customers through our services and solutions and we remain positive towards FY 2021/22.

Did you know?
Approximately 30% of Ricardo Defense staff are veterans

Performance Products ('PP')

Engineering specialists in niche-volume manufacturing and software development to analyse and optimise complex physical systems

Financial and operational highlights

Order intake

-(18)%

FY	£m
2020/21	64.0
2019/20	78.0

Order book

-(20)%

FY	£m
2020/21	53.3
2019/20	66.7

Revenue

+1%

FY	£m
2019/20	76.6
2019/20	75.9

Underlying operating profit

+33%

FY	£m
2020/21	6.8
2019/20	5.1

Underlying operating profit margin

+2.2pp

FY	%
2020/21	8.9
2019/20	6.7

Headcount

-%

FY	Number
2020/21	421
2019/20	420(*)

(*) Headcount has been restated to reflect the inclusion of head office staff

Our Performance Products segment includes both the Performance Products Manufacturing ('PP') and Software business units. Our PP segment is responsible for the manufacture and assembly of niche high-quality components, prototypes and complex products, including engines, transmission and other precision and performance-critical products. Moreover, we provide industrial engineering services to enable products to move from concept to production for customers around the globe. Our Software business delivers advanced virtual-engineering tools and leading-edge simulation software, and delivers solutions that help our customers reduce costs, resources and time to market, while efficiently managing complexity and safety.

Customers

Our blue-chip customers operate in markets such as motorsport, automotive, aerospace, defence and rail. The majority of Software's revenue is influenced by customers in key segments within the automotive industry, including passenger car, two- and three-wheelers, commercial vehicles, off-highway and marine. We also provide and deliver bespoke software solutions within defence and the energy and environment sectors.

Principal operating regions

We serve customers in over 11 countries with manufacturing and operations based in the UK. Our Software business is based across the UK, Europe, the US, India and China.

Growth drivers

- Recovering premium automotive market
- Accelerated adoption of electrified powertrains
- High demand for industrial engineering services
- Decarbonisation of transportation, with increased focus on electrification and hydrogen
- Continued diversification across the broader transportation industry

Competitive strengths

- Recognised global expertise in niche-volume industrial engineering
- Developing manufacturing knowledge in high-performance battery technology
- In-depth knowledge of hybrid and electrified powertrains developed from top-flight motorsport
- Market-leading products in ICE engines, such as PISDYN, RINGPAK and WAVE-RT.
- Highly extendable product portfolio already meeting demand for electrification and fuel cells, with multiple customer-use cases

Performance

Revenue and operating profit both grew in FY 2020/21, by 1% and 33%, respectively. Underlying operating profit margin increased from 6.7% to 8.9%.

FY 2020/21 order intake was £64.0m, a reduction of £14.0m on the prior year. This reflects the timing of engine orders from McLaren and the recognition of the multi-year Porsche 992 Cup transmission order in FY 2019/20.

In line with expectations, McLaren engine volumes increased steadily during the course of FY 2020/21. Overall engine volumes were lower than FY 2019/20, driven by higher volumes in the pre-COVID first half of the prior year.

Transmission volumes increased year-on-year. Volumes sold to Bugatti (Chiron hyper-car), Porsche (992 Cup programme) and the UK Ministry of Defence (CVR(T) gearbox refurbishment) were in line with expectations. In June, PP delivered its first transmission units to Aston Martin for the Valkyrie hyper-car.

Software perpetual license sales increased in the year, driven by some large new wins in India, China and Japan. Software renewal rates remain high.

Operating profit margin improved year-on-year due to the mix and pricing of products sold.

As one of the leading specialists in designing and delivering solutions for the motorsport sector, Ricardo secured several key contracts over the year, including being selected to support

Ricardo is the four-wheel drive transmission technical partner for Hyundai Motorsport as it fights for the World Rally Championship title.

Hyundai Motorsport in the development of the all-new hybrid four-wheel drive ('4WD') transmission for its new generation World Rally Championship ('WRC') car to be used in the competition from the 2022 season, while also renewing the existing agreement under which Ricardo supplies drivelines for the current generation i20 WRC car. Our new product-introduction programmes for hydrogen fuel cell, traction battery, and E-machine solutions are supporting increased growth in sales across our entire customer base and the demand for perpetual software licences is leading to greater returns across Asia. We secured a significant contract win in India for a large-scale engine programme and were also awarded various virtual-calibration programmes for customers in China.

From the onset of COVID-19, our PP division has executed a comprehensive response plan which has minimised disruption of our supply chain to maintain business continuity and to serve our customers. Nevertheless, there were still several delays to projects, programmes, and anticipated order awards in H1 which then improved significantly with uptake in H2 FY 2020/21. Brexit was also a contributing factor, affecting the supply chain because of administration difficulties as countries struggled with new processes and systems. This has settled down slightly with noticeable improvements to delivery schedules and transit periods coming into and out of the EU.

Outlook

The forthcoming year will see a considerable increase in output at our main UK manufacturing sites – the Shoreham Technical Centre and the Midlands Technical Centre – as demand for high-performance vehicles and from the motorsport sectors continue to recover. The priority for FY 2021/22 is to ensure the successful ramp-up of operations to deliver previously contracted work following delays in orders and programmes during the pandemic.

The core automotive markets for our software solutions will remain challenging in the next financial year because of continuing delays to new business orders as a result of COVID-19. The focus will be on sector diversification and moving to cloud-based solutions and consumption-based licencing models to complement the traditional on-premises annual lease and perpetual-licence business.

Did you know?

In 2018 less than 1% of the hardware produced by our Performance Products segment was used in "electrified" vehicles, but by 2022 over a third of all products produced will be used in hybrid and fully electric vehicles.

Our 2020/21 Strategic Report, from page 1 to page 55, has been reviewed and approved by the Board of Directors on 14 September 2021

Dave Shemmans,
Chief Executive Officer

Case studies

At Ricardo, we support our clients in designing, developing, integrating and deploying technologically advanced solutions, across LAND, SEA and AIR, for a greener future.

LAND

SEA

AIR

Addressing the UK's EV battery shortage

Ricardo is looking to address a critical shortage in the UK's supply chain for niche electric vehicle (EV) batteries. It is doing so by assessing the commercial viability of a facility to assemble battery packs for UK manufacturers which produce fewer than 10,000 electrified vehicles per year.

By leveraging its expertise in niche-volume manufacturing, battery research and development (R&D), second life and recycling, complex supply chain management and strategic consultancy, Ricardo's aim is to 'level up' the supply chain in these critical components for the UK market.

Ever since the UK Government announced the ban on the future sale of new petrol and diesel vehicles from 2030, the clock has been ticking in terms of introducing technology, delivering electrification infrastructure at scale and accelerating the adoption of EVs by consumers.

Nissan's major expansion of EV production at its car plant in Sunderland, and construction of a new electric battery 'gigafactory' by its partner Envision AESC, is great news for mass-market car production in the UK. But what about prestige UK-based manufacturers that need to produce high-value, low-volume EVs every year?

Meeting the needs of prestige brands

The UK has a diverse mix of sector-leading manufacturers from automotive and off-highway through to defence and commercial vehicles plus everything in between. These vehicle manufacturers include some of the world's best-known prestige brands which create their luxury saloon cars, armoured military vehicles, mid-engine sports cars and rugged yellow goods for a customer base in the low thousands. This compares to the hundreds of thousands or millions of vehicles produced for the mass passenger-car market around the globe.

The volume requirements, pace of innovation and flexible product specifications of niche-volume manufacturers are not aligned with the high-volume outputs from emerging gigafactories. A niche-volume battery manufacturing facility will help to establish a robust supply chain for these critical electrification components while ensuring the UK remains at the forefront of these prestigious markets.

Ricardo's mission is to support the decarbonisation of the global transport and energy sectors. The company is

currently using its broad-ranging expertise in niche-volume manufacturing, battery R&D, second life and recycling, complex supply chain management and strategic consultancy to undertake commercial studies into how to meet the particular battery-hardware needs of these diverse niche manufacturers across a wide range of business sectors, by ensuring a UK supply chain in EV components. This study is supported by the Advanced Propulsion Centre's Automotive Transformation Fund (ATF) which is itself supported by the Department for Business, Energy and Industrial Strategy.

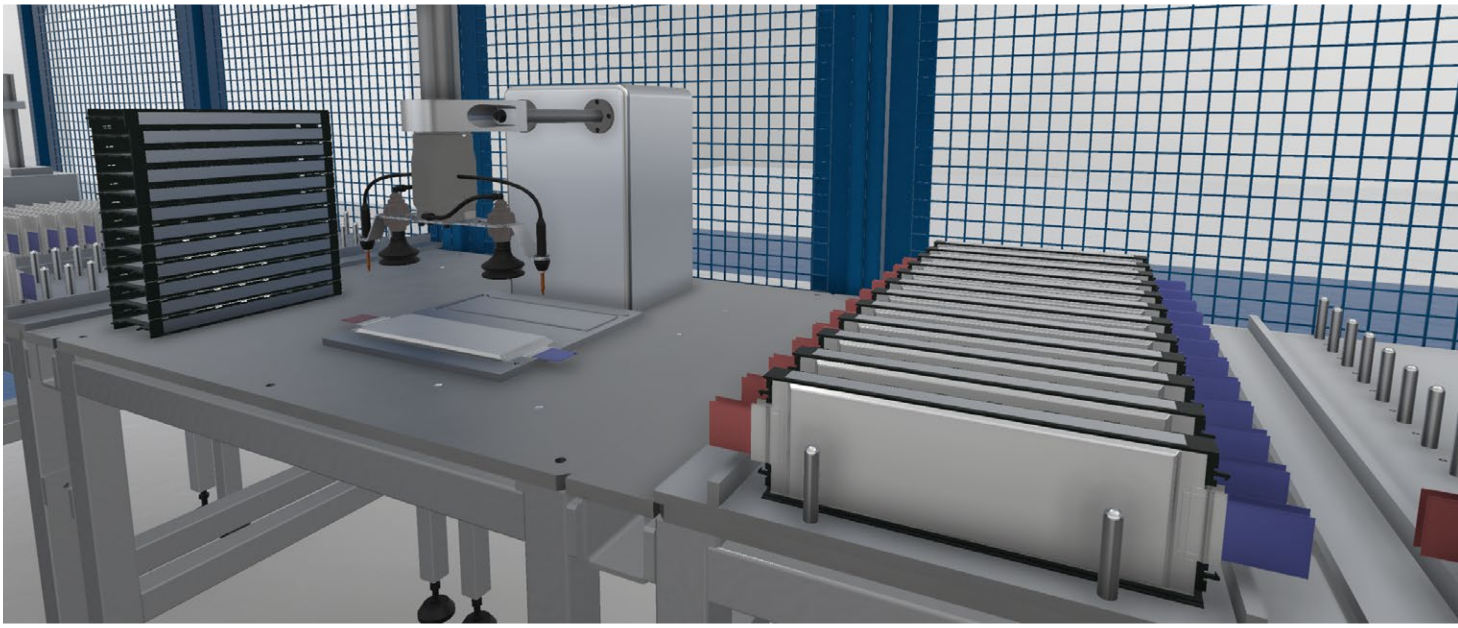
Ricardo is assessing how a proposed facility, and its associated sub-supply chain, could help minimise the risk of scaling up the innovation of new battery concepts to niche volumes.

Reducing the impact of battery-pack manufacture

The company is also harnessing its world-renowned expertise in batteries to explore opportunities to minimise the environmental impact of battery-pack manufacture through 'second life processing' and recycling of core elements from construction. This should help to 'level up' the UK supply chain in critical electric-vehicle components to support manufacturers producing fewer than 10,000 electrified vehicles per year.

In doing so, Ricardo's ambition is to deliver national competitive advantage for the UK. Such an achievement will support the adoption of electrification in all sectors and contribute to the 'green bounce back' through sustainable practices. Ricardo's future manufacturing strategy is very much aligned to this emerging need for world-leading electrified vehicle components.

Leveraging its proven track record in industrialising technology, Ricardo is delighted to have received the ATF funding which will enable the company to pursue this strategy and help the UK reach its ambitious targets in pursuit of its net zero goals.



Riding Sunbeams

A cleaner fuel source feeding directly into rail operations.


South Western Railway
SW
R

Ricardo is part of a consortium aiming to build and connect solar electricity generation directly to the railway network to provide zero-carbon power cheaper than from the grid and deliver as much as 10% of the UK Southern Region's rail power needs.

Founded by climate charities 'Possible' and 'Community Energy South', Riding Sunbeams has a vision to power railways with unsubsidised, direct-wire renewable generation while delivering positive social impact to line-side communities. Direct supply of solar power to rail traction systems has significant potential for metros, trams and railways in the UK and around the world.

Railways use different types of systems to power trains. In the UK and many other countries these are:

- Third rail: a third rail parallel to the track carrying direct current (DC) power; and
- Overhead line: cables suspended from gantries carrying alternating current (AC) or DC power.

Ricardo has been a partner working closely with Riding Sunbeams since 2019 on solutions for systems at each stage of the development of the proposition.

Overcoming technical challenges for AC connections

Using solar energy to power railways faces a number of technical challenges. Two-thirds of the UK's existing electrified routes – and all plans for new rail electrification – use AC overhead lines to power trains. Most of the electrified train lines around the world also use this technology. The technology needed to provide low-cost power conversion from renewables to AC rail-traction systems has not previously existed.

Ricardo is part of the Riding Sunbeams-led collaboration, working with Turbo Power Systems, Network Rail and the Birmingham Centre for Railway Research and Education to demonstrate the capability to create a direct connection between renewables and AC rail networks.

RIDING SUNBEAMS

With Ricardo's support, the Riding Sunbeams consortium will be able to apply it's low-cost, low-carbon traction supply model to the majority of electrified routes in the UK and around the world. This will also support low-cost electrification of some of the most challenging remaining diesel-powered lines.

Proof of capability will bolster Riding Sunbeams' attempts to enter the traction power supply market as a small and medium-sized enterprise with an innovative value proposition that can be applied in the UK and many other countries.

Making a world-first connection to DC third rail railways

In 2019, the team successfully demonstrated a direct connection between solar panels and the DC third rail traction system. That summer, a test unit of approximately 100 solar panels was installed next to the track near Aldershot, Hampshire. Named 'First Light', it was the first time in the world that renewable zero-carbon electricity had been directly supplied to an adjacent rail line.

A 30 kilowatts peak (kWp) solar test unit was connected to an ancillary transformer on the traction system of Network Rail's Wessex route, with the energy captured from the panel array used to power signalling and lights.

Ricardo provided expertise in power-generation research and experience of connecting renewable energy technologies to existing DC third rail infrastructure.

The Riding Sunbeams consortium has since been working on piloting the scheme in locations around the UK. In autumn 2020, this took two major steps forward.

First, Riding Sunbeams secured its first commercial funding from Thrive Renewables and the Friends Provident Foundation to develop a pipeline of new renewable energy projects in south-east England and south Wales.

Second, Riding Sunbeams was awarded £2.5 million from the UK Government's Getting Building Fund to build a 4 MW photovoltaic (PV) solar farm in East Sussex which will directly power the mainline railway between London and Eastbourne. This follows help from Ricardo's economic and renewable energy experts to develop the business case.

After energisation, Riding Sunbeams will launch an investment offer so that the project can be owned by local community members and rail commuters who use the network.

This will enable Riding Sunbeams to provide a commercial route to market for community energy groups looking for new projects to develop and connect them to regional or national rail network operators like Network Rail which will pay a fair price for their power.

The rail network operators can benefit from competitively priced green electricity while supporting local communities, as well as assisting the UK's efforts to achieve a net zero economy.

Ricardo contributed feasibility insights, including financial models for delivery of the 4MW solar farm, and options for the electrical connection between the solar farm and the railway.

Helping to decarbonise the railways will cut running costs and benefit local communities at the same time as tackling the climate crisis. Riding Sunbeams is demonstrating that plugging solar directly into the UK railways can be done safely and without disruption to train services. The project opens up opportunities to utilise renewable-energy technologies in ways not previously possible.

Greener together

A collaboration with Bluebox Energy to deliver innovative technology-based solutions that can drastically reduce carbon emissions.

Ricardo's carbon-capture experts are collaborating with Bluebox Energy to deliver innovative new technology solutions that support the transition to a low-carbon future. The consortium has won a national competition to design a commercial, community-scale greenhouse-gas removal system fed by waste from the forestry sector. The system will significantly reduce noxious emissions and enable waste heat and sequestered carbon products to generate revenue streams for industry and local communities and achieve negative emissions.

National government targets are helping drive both public and private sectors to develop strategies and invest in processes and technologies that will enable organisations to deliver a low-carbon future. An example of these targets is the UK's goal of achieving net zero carbon emissions by 2050. Innovation in heat and energy technologies is critical to the achievement of these objectives.

It has become widely accepted in recent years that negative-emission technologies such as biochar and biomass carbon capture and storage (BECCS) are essential for achieving net zero globally. Currently negative-emission technologies such as BECCS are only considered for large-scale emission sources such as power and industrial plants.

Ricardo's aim is to become a world leader in integrating carbon capture with pyrolysis-based combined heat and power ('CHP') systems for commercial, community-scale applications. Pyrolysis is the thermal decomposition of materials at elevated temperatures in an inert atmosphere.

The partnership with Bluebox Energy leverages Ricardo's expertise in carbon capture technologies and world-leading experience in combined heat and power and thermal and thermodynamic analysis, plus system engineering for efficient thermal energy management. It also draws on Ricardo's 100-year track record in automotive engineering, as well as its expertise in renewable and sustainable energy management for key infrastructure.

Capitalising on hot-air turbine technology

Since 2014, Hampshire-based Bluebox Energy has developed ultra-low carbon CHP solutions for business parks, communities and industrial and farming processes, including a new method to convert heat to electricity using hot-air turbine technology.

A hot-air turbine takes in filtered air and compresses it in a turbo-compressor. This air is heated using energy from a hot gas stream, such as flue gas from the combustion process. The hot

Ricardo is leading the design of the CO_2 capture system, together with concept and market definition, and economic modelling

pressurised air passes through the turbo-compressor and power turbine to produce electricity.

The electrical output from the turbine generator is converted to grid power in a dedicated inverter. The air emerging from the power turbine is still at a temperature of around 400ºC so can be used for heating, steam production or direct drying.

In 2019, Ricardo and Bluebox Energy began to explore the potential of biomass pyrolysis as an ultra-low-carbon solution. Bluebox Energy's concept of capturing 50% of CO_2 in biochar (pyrolysis combined with a hot-air turbine CHP system) with the other 50% released into the atmosphere was enhanced by Ricardo's proposition that most of the 50% emitted could also be captured using chemical absorption.

Achieving this would capture 90% of the remaining emissions and thus increase overall CO_2 capture to 95% of total emissions.

Designing a commercial greenhouse-gas removal system

In April 2021, as part of the UK's Department for Business, Energy and Industrial Strategy's Greenhouse Gas Removal Innovation Programme, the Ricardo and Bluebox Energy consortium was selected to develop the BIOCCUS technology.

Ricardo is leading the design of the CO_2 capture system, together with concept and market definition, and economic modelling.

Fed by undried, unprocessed waste wood from domestic timber production, the system will produce four key commercially marketable by-products: biochar, which can potentially be used for soil enrichment or as cattle feed in agriculture and improving anaerobic digester performance; commercial grade CO_2 for utilisation in the construction sector as means of permanent storage, such as low-carbon concrete, electricity and heat. As well as capturing up to 95% of CO_2, the system will deliver positive power and heat generation by supplying homes and businesses with renewable heat and electricity.

This first phase of the project lasts until December 2021 and could potentially lead to the consortium's being selected for Phase 2 to develop a prototype and demonstrate the technology between 2022 and 2024.

This carbon-capture research and innovation project with Bluebox Energy is a further boost to Ricardo's credentials in supporting delivery mechanisms to tackle climate change and meet national net zero targets. The proposed biochar, CO_2 capture system is ultra-low carbon with significant negative emissions: removing CO_2 from the atmosphere as biomass is carbon neutral, on top of which is the capture and permanent storage of resulting CO_2. Successful deployment following the project would mean that an organisation could use decarbonised or net-negative CHP technology to improve its environmental impacts.

Steering shipping to sustainability

Achieving a zero-carbon future for marine through the development of green ammonia as a sustainable fuel supply

Ricardo's alternative fuels and renewable energy experts worked with Ocean Conservancy to analyse the potential for the shipping industry to move to zero emissions using renewably generated hydrogen. Transitioning the shipping industry to carbon-free fuels and renewable energy will eliminate emissions approximately equivalent to those of Japan or Germany, while empowering local communities and economies. Furthermore, the decarbonisation of shipping is an opportunity to develop sustainable infrastructure in South and Central America.

Ocean Conservancy is a non-governmental organisation (NGO) striving to protect the ocean from its greatest global challenges. The organisation's shipping emissions campaign focuses on targeted policy changes and science-based solutions with the goal of reducing carbon emissions and bolstering protection for the marine environment, its living marine resources and the communities that are part of and dependent on ocean ecosystems.

In 2018, the International Maritime Organisation (IMO) set a target for the international shipping sector to reduce its greenhouse-gas emissions by at least 50% by 2050, compared to 2008 levels. Improvements in fuel efficiency will go some way towards achieving this target; however, further reductions will be required through the widespread use of fuels that emit zero CO_2 over their lifecycles. A typical vessel has a working life of 20 to 30 years, which means that the first zero-carbon ships need to be commercialised by 2030.

Studies have shown that 'electrofuels' made using renewable electricity – particularly hydrogen and ammonia – have an important role to play in decarbonising shipping. Electrofuels are synthetic fuels (that is, they are manufactured) involving electrolysis of water to produce hydrogen, which is either used as a fuel itself or combined to make other fuels. When only renewable electricity is used for the electrolysis, electrofuels are defined as being 'green'.

Building on proven technology

The technology required to produce green electrofuels is well proven. Ship builders have already started designing vessels to use these fuels, with the aim of having the first vessels in the water in the mid-2020s. Planning for the development of green electrofuel plants needs to begin immediately, so that production capacity will be ready when demand increases in the second half of the decade. First-mover countries stand to benefit from this greater demand for the fuels.

The Global Maritime Forum has estimated that the total decarbonisation of the shipping industry will cost up to USD 1.9 trillion by 2050, with more than three-quarters of this amount required to develop the onshore supply chain. This represents a substantial investment opportunity for countries with significant renewable-energy potential.

Ricardo was commissioned to conduct research into the role that electrofuels can play in transitioning the international shipping industry from being one of the largest emitters of greenhouse-gas emissions to a zero-carbon future.

The resulting report, 'Zero-Carbon for Shipping', presented South and Central American case studies which demonstrated how electrofuels and renewable energy can do much of the work required to effect this transition. South and Central America have a substantial shipping industry with total imports to and exports from the region of around USD 1 trillion. Combined with increasing wind and other renewable energy sources, South and Central America are primed to lead the shipping industry away from fossil-fuel dependency.

Identifying investment potential

A further finding of the study was that electrofuels could support decarbonisation elsewhere. Renewable energy and green electrofuels both have an important role to play in decarbonising sectors reliant on fossil fuels, such as transport, electricity and industry. Establishing an electrofuels supply chain for shipping will bring down the cost of decarbonisation through economies of scale, development of skills and the eventual maturation of supply chains.

The report highlights an example of implementation, where the adoption of electrofuels in Porto do Pecém, Brazil, would not only decarbonise the local shipping industry but could also provide a carbon-free source of fuel for local chemical and steel manufacturing. Steel-making is carbon-intensive because coal coke is usually used to produce iron from its ore, which is further processed to make steel. Due to hydrogen's high combustion temperature, it can be used instead of coal coke, thereby eliminating CO_2 emissions from the process.

In another example, Peru already generates more than half of its electricity from renewable sources (62.5% in 2018), mostly provided by large-scale hydro plants. Peru's Nationally Determined Contributions under the Paris Agreement include nine mitigation measures for transport, one of which is a target to reduce greenhouse-gas emissions from the sector by 30% by 2030. Electrofuels represent a significant opportunity for Peru to deliver on this ambition.

The countries within the South and Central America region are well coordinated on IMO policy issues, giving them a consistent voice with significant influence in the shipping sector internationally. As the investment potential of decarbonising the sector becomes increasingly apparent, governments within the region may be encouraged to use their influence to push for acceleration of the IMO's climate-related goals.

In addition, ports throughout South and Central America with renewable potential nearby are already great candidates to build electrofuel plants for their own use and, ultimately, to provide zero-carbon refuelling along busy shipping lanes.

Ocean Conservancy is using the scientifically robust pathways and case studies contained in Ricardo's 'Zero-Carbon for Shipping' report to demonstrate the feasibility of carbon reduction within the industry. The case studies further depict the investment possibilities that could be unlocked in South and Central America through adoption of electrofuels for shipping. They also indicate that, across the region, there is potential to attract considerable investment in sustainable infrastructure. This will bring benefits beyond the ports themselves, including increased energy security, creation of green jobs and support for wider decarbonisation.

Flying to net zero

A partnership to deliver the world's first truly green passenger carrying airline services using hydrogen fuel cell technology


RICARDO
Britten-Norman

Ricardo has joined the Cranfield Aerospace Solutions-led Project Fresson consortium to deliver the world's first truly green passenger-carrying airline services using hydrogen fuel-cell technology. To support the global commercial aviation sector in bouncing back greener from the COVID-19 pandemic - the worst crisis in its history - technology solutions are needed to deliver zero-carbon emissions which, crucially, are also commercially viable.

The Project Fresson consortium is seeking to exploit recent advances in hydrogen fuel-cell technology by developing a commercially viable, retrofit powertrain solution for the Britten-Norman Islander aircraft. By demonstrating that sustainable propulsion technology has a clear route to market, the project will accelerate the growth of the UK aerospace supply chain for new technologies critical to zero-emissions aircraft. Cranfield Aerospace Solutions (CAeS) is an aerospace market leader in rapid prototyping of new aerospace concepts, modifications to existing aerospace platforms and the integration of cutting-edge technologies to meet the most challenging issues facing the industry today. CAeS is the wholly owned commercial arm of Cranfield University.

Project Fresson is named after Captain Ernest Edmund 'Ted' Fresson OBE, a British engineer and aviation pioneer who died in 1963.

Identifying the right technology

CAeS and Britten-Norman both look upon Project Fresson as an aircraft challenge as well as an operator challenge: to find the right technology to demonstrate successfully that sustainable propulsion technology has a clear route to market.

Hydrogen is not a new technology for transport. It was developed as rocket fuel for the US space programme in the 1950s and is currently used in heavy-duty commercial vehicles, such as long-haul trucks and buses. This is because it offers not only zero-carbon emissions but also cost-effective solutions in terms of total cost of ownership. Yet, despite this pedigree, hydrogen has not been considered for commercial aviation until now.

Having completed a comprehensive evaluation of technologies and configurations for sustainable aircraft propulsion, the Fresson team concluded that hydrogen fuel-cell technology is the optimum solution to meet environmental, regulatory and operational requirements for this size of aircraft, enabling zero-carbon emissions and reducing operating costs. This was further justified by the improved availability of fuel cells with the right level of output and an acceleration in infrastructure to support the availability of hydrogen as a fuel. Following a rigorous assessment of hydrogen technology innovators, Ricardo and Innovatus Technologies Ltd were welcomed into the Fresson consortium.

Ricardo was selected because of its industry-leading experience in systems engineering and model-based development approaches, as well as its expertise in fuel-cell and thermodynamic or thermal systems development. The company is providing the fuel-cell system including its controller, which is the primary source of electricity on the aircraft.

Delivering performance benefits

In addition, Ricardo has developed a process to improve the balance of plant components for multiple-stack layouts for aerospace, as well as large applications requiring multiple stacks such as commercial vehicles, rail and marine. The company's hydrogen fuel-cell system development approach, with multiple stacks balance of plant, leads to an efficiency improvement of between 5% and 15% depending on duty cycle against the conventional approach of balance of plant and control development – so performance benefits are tangible.

Innovatus Technologies Ltd leads the field in next-generation, ultra-lightweight hydrogen-tank design, exploiting patented cellular-core composite techniques. Project Fresson will use its innovative Scottish Hydrogen Fuel Tank (SHyFT) technology. Latest-generation carbon-composite manufacturing techniques create multi-chamber hydrogen storage tanks which are super-lightweight, very high-pressure capable and completely formable to the application required. Aerodynamics are key, weight is paramount and hydrogen storage volume is a principal descriptor of the range of the system.

Innovatus brings this technology into the programme to carry enough hydrogen efficiently in the form factor to release the performance of the platform. This is critical to the successful integration and exploitation of hydrogen fuel-cell power systems in applications across aerospace, automotive, industrial and marine sectors.

Achieving significant savings

The commercial viability of the technology is a key objective of the project. Hydrogen produces significant cost savings compared with avgas or avtur fuel alternatives. The carriage requirements of hydrogen make it less storage-dense, but the energy density is high, so the amount of hydrogen needed is relatively small.

Operators can make a significant saving, especially for an aircraft such as the Britten-Norman Islander which has nine passenger seats. In addition, a maintenance cost saving is predicted as the elements of these technologies have fewer moving parts: this could be reduced by around 15% for the whole aircraft and up to 50% just for the propulsion system.

Project Fresson will deliver an emissions-free (zero CO_2), hydrogen fuel cell-powered flying demonstrator by September 2022. Subject to successful certification by the Civil Aviation authorities, the first flight with paying customers, which could take place with operators in the UK, will be the world's first truly green passenger-carrying airline service using hydrogen fuel-cell technology.

...the first flight with paying customers, which could take place with operators in the UK, will be the world's first truly green passenger -carrying airline service using hydrogen fuel-cell technology

Corporate governance

Board of Directors
as at 30 June 2021

Dave Shemmans
BEng
Chief Executive Officer

Dave Shemmans joined Ricardo in 1999 and resigned on 30 September 2021.

Sir Terry Morgan
CBE, FREng
Non-Executive Director and Chair of the Board

Sir Terry Morgan was appointed Non-Executive Director on 2 January 2014 and Chair on 29 October 2014.

He was previously non-executive Chair of Crossrail Limited, High Speed Two (HS2) Limited, The Manufacturing Technology Centre Limited and NSARE Limited (the National Skills Academy for Railway Engineering). Sir Terry was also previously a non-executive director of Boxwood Limited and the Department of Energy & Climate Change.

Ian Gibson
BSc, ACA
Chief Financial Officer

Ian Gibson was appointed Chief Financial Officer on 1 July 2013.

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

Mark Garrett
CEng, FIMechE, FREng
Chief Strategy Officer

Mark Garrett joined Ricardo in 1998 and resigned on 31 July 2020.

Graham Ritchie
BA (Econ), ACA
Chief Executive Officer *(incoming)*

Graham Ritchie will join Ricardo as Chief Executive Officer on 1 October 2021.

Since 2016, Graham was a member of the Executive Committee of Intertek Group plc, responsible for its operations in Europe, including Russia, and Central Asia. Prior to that role, Graham was Intertek's Group Financial Controller. Previously, Graham held senior financial positions at BT Group plc and other technology services organisations, having started his career with PwC.

Graham is a qualified Chartered Accountant and holds a BA in Economics.

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

Patricia Ryan is a qualified solicitor. She joined Ricardo's legal department in 2002 and was appointed Group General Counsel in 2005 and Company Secretary in November 2008.

Patricia holds an honours degree in law from the University of Westminster. She achieved the Certificate of Investor Relations from the Investor Relations Society in February 2017.

Russell King

Non-Executive Director, Chair of the Remuneration Committee

Russell King was appointed Non-Executive Director on 5 September 2019.

Russell is Chair of Hummingbird Resources plc, and an independent non-executive of BDO LLP. Russell served as Chief Strategy Officer at Anglo American plc where he had global responsibility for strategy, business development, government relations, safety and sustainable development. He was also a member of its executive committee for eight years. Additionally, Russell was Senior Independent Director and remuneration committee Chair of Spectris plc from 2010 to 2020 and Senior Independent Non-Executive Director and Remuneration Committee Chair of Aggreko plc, from 2007 to 2017.

Malin Persson

MSc

Non-Executive Director, Senior Independent Director

Malin Persson was appointed Non-Executive Director on 4 January 2016 and Senior Independent Director on 14 November 2019.

Malin held a number of senior executive roles during her employment by the Volvo Group between 1995 and 2012. She is an elected member of the Royal Swedish Academy of Engineering Sciences and has an MSc in Industrial Engineering and Management from the Chalmers University of Technology in Gothenburg. Malin is also currently a non-executive director of Peab AB, Getinge AB, Hexpol AB and OX2 AB.

Jack Boyer OBE

OBE, BA (Hons), MSc, MBA

Non-Executive Director

Jack Boyer OBE was appointed Non-Executive Director on 5 September 2019.

Jack Boyer OBE was appointed Non-Executive Director on 5 September 2019. Jack is a non-executive director and Senior Independent Director of TT Electronics plc where he is a member of the Audit, Remuneration and Nominations committees. Jack is a non-executive director, Senior Independent Director and Chair of Remuneration Committee of Elcogen Group plc. He chairs the Board of Trustees of the University of Bristol and is a non-executive director of the Henry Royce Institute for Advanced Materials. He recently chaired AIM listed companies; Seeing Machines and Ilika plc and was previously a non-executive director at FTSE 250 companies Mitie plc and Laird plc after a background in engineering and biosciences. He was until recently a board member of the Engineering and Physical Sciences Research Council and co-chaired the Advanced Materials Leadership Council at the department for Business, Energy and Industrial Strategy. Jack was awarded an OBE in 2015 for services to Science and Engineering.

Laurie Bowen

BSc, MBA

Non-Executive Director, Chair of Nomination Committee

Laurie Bowen was appointed Non-Executive Director on 1 July 2015.

She has over 30 years of international leadership experience at IBM, British Telecom, Tata Group, Telecom Italia Sparkle and Cable & Wireless Communications. She was appointed non-executive director of Chemring Group plc on 1 August 2019. Laurie has an MBA, a BSc in Electrical Engineering and a BSc in Computer Science from Washington University in St. Louis, Missouri.

Bill Spencer

BSc, FCMA, MCT

Non-Executive Director and Chair of the Audit Committee

Bill Spencer was appointed Non-Executive Director on 24 April 2017 and Chair of the Audit Committee on 8 November 2017.

For 15 years until 2010 he was the CFO of Intertek Group plc. Since then he has developed a varied non-executive career. His former NED roles where he also chaired the Audit Committee include UK Mail plc Exova Group plc and Northgate plc. Currently Bill is a Non-Executive Director and the Audit Committee Chair at The Royal Mint. He is a Chartered Management Accountant and Corporate Treasurer and has a BSc in Management Sciences from the University of Manchester.

Sir Terry Morgan
Chair

Corporate governance statement

Chair's overview

The Board is committed to ensuring that the highest standards of governance are maintained throughout the Group.
This report sets out the ways in which we comply with good corporate governance principles. It describes how the Board and its Committees work, and also outlines our approach to risk management and internal control.
The Board recognises the importance of considering the Company's responsibilities and duties to both its shareholders and its broader stakeholder group, and this has been at the heart of our culture and decision-making process for many years.
The Board spends time listening to and understanding the views of its key stakeholders. When discussing matters at Board meetings these views form an integral part of its decision-making. In support of the requirements of section 172 of the Companies Act 2006, we set out on pages 88 to 89 how the Board has considered the material issues of the Group's stakeholders and how we have engaged with these stakeholders on these issues. As required by the Code, the Board considers that its non-executive directors, including the Senior Independent Director, have a good level of understanding of the issues and concerns of major shareholders.

Sir Terry Morgan CBE

UK Corporate Governance Code

The Board confirms that the Company has complied with the provisions of the UK Corporate Governance Code 2018 ("the Code") throughout the year ended 30 June 2021.

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

1. Board Leadership and Company Purpose
2. Division of Responsibilities
3. Composition, Succession and Evaluation
4. Audit, Risk and Internal Control
5. Remuneration

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

1.Board Leadership and Company Purpose

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

Our values and leadership behaviours are a vital part of our culture to ensure that through our conduct and decision-making we do the right thing for the business and our stakeholders.

The Board recognises that it is accountable to stakeholders for ensuring that the Group is appropriately managed and achieves its objectives in a way that is supported by the right culture and behaviours.

Our values underpin our purpose and are recognised across the Group as the basis of our culture. The Board sets the strategy for the Group to align with our purpose. It oversees the implementation of that strategy to ensure that the Group is suitably resourced to deliver on its strategic objectives.

The Board holds an annual strategic-planning session to support the long-term direction of the Group. During the year under review, the Board commissioned McKinsey & Company to undertake an external strategy review. Following the review, the Board accepted a number of the recommendations including a renewed focus on disposals and acquisitions for the Group.

Throughout the year, the Board receives regular updates on these areas to ensure the delivery of strategy in line with our purpose.

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 (above a certain size).

- Annual budgets.
- Capital expenditure (above a certain amount).
- Financial results.
- Overseeing systems of internal control, governance and risk management.
- Dividends.
- Appointment and removal of Directors and the Company Secretary.

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

Our Code of Conduct, which defines the standards and behaviours expected of colleagues, is a fundamental part of our culture and supports our values. The Code of Conduct is supported by Group policies and mandatory training, which includes anti-bribery and corruption, whistleblowing and data protection.

In addition, an independent and confidential whistleblowing telephone hotline allows colleagues to raise concerns regarding misconduct and any breaches of the Code of Conduct. The Audit Committee routinely receives reports of any matters raised through the whistleblowing hotline. Updates on any investigations undertaken and any corrective actions are provided to the Board.

The Board in FY 2020/21

	Board meetings	Committee meetings		
		Audit	Remuneration	Nomination
Number of scheduled meetings in the year	7	4	4	1
Number attended by each member:				
Dave Shemmans	7	0	0	1
Ian Gibson	7	0	0	0
Mark Garrett*	0	0	0	0
Sir Terry Morgan CBE	7	4	4	1
Jack Boyer OBE	7	4	4	1
Bill Spencer	7	4	4	1
Laurie Bowen	7	4	4	1
Malin Persson	7	4	4	1
Russell King	7	4	4	1

*Mark Garrett resigned from the Board and the Company on 31 July 2020.

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

If any Director is unable to attend a meeting, they discuss their views and comments with the relevant Chair in advance, so that their position can be represented at the meeting.

Board meetings focus on driving Ricardo's strategy, developing strong leadership, succession planning, reviewing financial business performance, monitoring risks and protecting the strength of our relationships with clients, employees and other stakeholders. The Board has a detailed programme that ensures operational and financial performance, risk, governance, strategy, culture and stakeholder engagement are discussed at the appropriate time.

Our forward planner gives Board members visibility of what is on future agendas for their consideration. A number of the key matters considered by the Board during the year under review are set out in the table below:

Meeting in FY 2020/21	Significant matters under review
July 2020	• FY 2020/21 budget approval • Dividend policy • Strategy development • Board Evaluation
September 2020	• Preliminary results and Annual Report • Dividend options • ESG update • Annual General Meeting ('AGM')
November 2020	• Strategy
January 2021	• Treasury liquidity • Acquisition performance
February 2021	• Interim results and Interim Report • Interim dividend • Key performance indicators • Health, safety and environment ('HSE')
April 2021	• Treasury and Financing Facilities • Communications strategy
June 2021	• FY 2021/22 divisional budget presentations • Employee survey • Insurance

In each meeting, the Board receives reports from the Chief Executive Officer and the Chief Financial Officer together with reports and updates on health and safety as well as potential acquisition and disposal activities. The Board challenges management to ensure that the flow and quality of information to the Board is of a high standard.

In addition, the Board reviewed the Group's financial facilities and in November 2020 approved the issue of 8,812,030 new ordinary shares of 25 pence, representing 16.5% of the existing issued ordinary share capital of the Company. They were issued at a price of 333 pence per share, being a discount of 9.76% to the closing mid-price on 10 November 2020, raising gross proceeds of £29.3m. The issue was carried out in order to reduce leverage, strengthen the balance sheet and provide adequate working capital for the business.

The issue took place in the three parts; "Subscription shares" subscribed by certain directors of the company for cash consideration; "Placing shares" placed via Liberum Capital Limited and Investec Bank plc, to certain existing shareholders and other institutional investors, in exchange for preference shares in Project Star Funding Limited; and "Retail shares" offered by the Company for cash consideration.

The Placing shares were issued via a 'cashbox' structure, whereby Ricardo plc shares were issued in exchange for preference shares in Project Star Funding Limited, a special purpose vehicle. Section 565 of the Companies Act 2006 allows new shares to be issued for non-cash consideration under exception from the pre-emption requirements of section 561 of the Companies Act 2006.

Project Star Funding Limited ('PSFL') was incorporated in Jersey on 4 September 2020. Prior to the placing, Ricardo plc held 89% of the ordinary share capital of PSFL, with the other 11% held by Liberum Capital Limited.

On 11 November 2020, PSFL issued preference share capital of £26.6m (with no par value) to Liberum Capital Limited. Liberum Capital Limited and Investec Bank plc placed shares to certain existing shareholders and other institutional investors, the proceeds of which were used to settle the consideration for the preference share capital. Ricardo plc allotted new ordinary shares in consideration for the transfer of all of Liberum Capital Limited's preference and ordinary shares in PFSL. The issue created an additional £2.0m of share capital. The premium on issuance of these shares was £23.5m, net of directly attributable costs of £1.0m. Since the premium arose from an issuance the purpose of which was to acquire more than 90% of the equity of PSFL, under s612 of the Companies Act 2006 the associated premium is therefore accounted for as a merger reserve.

On the 18 November, PSFL redeemed its preference shares, and PSFL was dissolved on 24 November 2020. See also Note 28 to the Group financial statements.

2.Division of Responsibilities

The Board is collectively responsible for the long-term success of the Group, ensuring that it operates within a framework of effective controls.

The operations of the Board are underpinned by the collective experience of the Directors and the diverse skills and experience which they possess. This experience ensures that leadership and decision-making are focused and balanced, and approached with independent thought and judgement. Accordingly, decisions are taken for the benefit of the Company as a whole, with due consideration for all stakeholders that may be affected.

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

The Chair

Sir Terry Morgan is primarily responsible for leading the Board and ensuring its effectiveness. Sir Terry sets the Board agenda in consultation with the Chief Executive, other Board members and the Company Secretary. Sir Terry promotes effective communication between the Executive and Non-Executive Directors and ensures all Directors effectively contribute to discussions and feel comfortable in engaging in healthy debate and constructive challenge.

Sir Terry ensures all directors receive accurate, timely and clear information to assist them to make their decisions and ensures appropriately tailored induction programmes are delivered for new Directors.

Chief Executive Officer

The Chief Executive Officer 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. He plays a key role in devising and reviewing Group strategies for discussion and approval by the Board. The Chief Executive Officer is tasked with providing regular operational updates to the Board on all matters of significance relating to the Group's business or reputation and for ensuring effective communication with shareholders and other key stakeholders.

The Chief Executive Officer chairs the Executive Committee, which meets regularly throughout the year. The Executive Committee is primarily responsible for developing and implementing our corporate strategy and policies.

Senior Independent Director

The responsibilities of the Senior Independent Director are also documented and include the provision of an additional channel of communication between our Chair 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 such contacts are inappropriate.

The Senior Independent Director meets with the Non-Executive Directors at least annually when leading the Non-Executive Directors appraisal of the performance of the Chair.

Malin Persson was appointed Senior Independent Director at the close of the AGM on 14 November 2019.

Non-Executive Directors

Russell King has been the Chair of the Remuneration Committee throughout the year under review. Bill Spencer has been the Chair of the Audit Committee throughout the year under review. Laurie Bowen has been the Chair of the Nomination Committee throughout the year under review. Malin Persson has been the Senior Independent Director throughout the year under review.

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

The Non-Executive Directors bring insight and experience to the Board. They have responsibility for constructively challenging the strategies proposed by the Executive Directors, scrutinising the performance of management in achieving agreed goals and objectives and play leading roles in the functioning of the Board Committees, bringing an independent view to the discussion. They meet with the Senior Independent Director to review the Chair's performance and other matters.

Workforce Engagement Director

Malin Persson is the designated as the Non-Executive Director responsible for overseeing Workforce Engagement. Ricardo has a structured engagement plan with its people, including Pulse presentations, Town Halls, Works Councils and biennial Group employee surveys together with divisional surveys on a more regular basis. Before COVID-19, Ricardo had designated a number of senior executives who travel extensively and regularly, consulting with teams while in overseas territories and providing feedback. Due to the restrictions imposed by the pandemic, Malin has been provided with direct access to colleagues through the use of video-conferencing facilities and other means of technology. Although the 2020 schedule for workforce engagement was limited by not being able to conduct site visits, the Board is reassured by the level of interaction that took place remotely. Malin met small groups with a representative subset of team members including:

- Senior management.
- Junior and new team members.
- Senior and long-term team members.
- Team members in different direct/indirect roles.
- Team members from different sites and countries.
- Workers Council/Interest Group members.

Through these meetings, Malin has been able to provide the Board with further context to support the view that the Company was undertaking the appropriate workforce-related activities, and to also provide feedback to the Board as a whole on the feedback from the workforce. During FY 2021/22, it is proposed to hold broader and more in-depth meetings across the organisation and - if safe to do so, the intention is to conduct site visits. In addition, a series of interactive discussions will be set up between the non-executive directors and the workforce at regular intervals. It is hoped that this will broaden the channels of communication between the Board and the workforce and provide further understanding for the Board of employee interests and better inform its decision-making process.

Company Secretary

Patricia Ryan is secretary to the Board. Her responsibilities include ensuring the Board has the information, time and resources it needs in order to discharge its duties and function effectively and efficiently.

The Company Secretary advises the Board on all governance matters and facilitates induction programmes for new directors and provides briefings and guidance on governance, legal and regulatory matters. The appointment and removal of the Company Secretary is a matter reserved for the Board as a whole.

Time commitment

Regular Board and Committee meetings are scheduled throughout the year, ensuring that directors allocate sufficient time to discharge their duties effectively. During the year, the Board held seven scheduled meetings and additional strategy days, which included presentations by senior management on each of the business areas.

In addition to scheduled meetings, the Board held additional meetings to consider the impact of the COVID-19 pandemic on its global operations. Directors are expected to attend all Board and relevant Committee meetings. The table on page 83 shows the record of attendance at the scheduled Board and Committee meetings.

The nature of the Non-Executive Director role makes it impossible to be specific about the maximum time commitment. However, it is anticipated that at least 20 days per annum after the induction phase are required, plus additional time to devote to preparation ahead of each meeting.

It is recognised that at certain times it may be necessary to convene additional Board, Committee or shareholder meetings.

Prior to appointment, the Nomination Committee assesses the commitments of a proposed candidate, including other directorships, to ensure they have sufficient time to devote to the role.

Conflicts of interest

Directors are required to report actual or potential conflicts of interest to the Board for consideration and, if appropriate, authorisation. If such conflicts exist, directors excuse themselves from consideration of the relevant matter. The Company maintains a register of authorised conflicts of interest, which is reviewed annually.

Details of the Directors' service contracts and terms of appointment, together with their interests in the Company's shares, are shown in the Directors' remuneration report on pages 96 to 121. If Directors have concerns about the Company or a proposed action which cannot be resolved, it is recorded in the Board minutes.

All Directors have access to the advice of the Company Secretary and, in appropriate circumstances, may obtain independent professional advice at the Company's expense. No such requests were made in FY 2019/20. A Directors' and Officers' Liability Insurance policy is maintained for all Directors and each Director has the benefit of a Deed of Indemnity.

3. Composition, Succession and Evaluation

Diversity and inclusion

Our Board sets the tone for inclusion and diversity across the Group and believes it is important to have an appropriate balance of skills, knowledge, experience and diversity on the Board and at senior management level to ensure good decision-making. The Board recognises the need to create conditions that foster talent and encourage all colleagues to achieve their full potential. The Board and Nomination Committee receive regular updates on the progress of diversity initiatives across the Group.

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

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

The composition of the Board includes 25% female representation.

The Board remains committed to promotion of diversity at all levels within the Group and will report on this further in future years.

Details of female representation elsewhere within the Group are set out on page 20.

As set out in their biographies on pages 80 to 81, each member of the Board offers a range of core skills and experience that is relevant to the successful operation of the Group, providing a strong independent element to the Board and a solid foundation for good corporate governance, as well as fulfilling the vital role of corporate accountability. The oversight each of the Directors provides is balanced with individuals contributing a broad range of skills, diverse experience and knowledge, demonstrating independence and constructive challenge.

Non-Executive Directors' independence.

The Nomination Committee considers whether each of the Non-Executive Directors is continuing to maintain his or her independence of character and judgement in line with the definition set out in the Code. The Non-Executive Directors met with the Chair without the Executive Directors being present on a number of occasions and, at least annually, Directors meet with the Senior Independent Director to review the Chair's performance and other matters.

Appointment, induction and development

Non-Executive Directors are initially appointed for a three-year term, with an expectation that they will continue for at least a further three years. Directors are nominated by the Nomination Committee and are subsequently approved by the Board for election or re-election annually by shareholders at the Company's AGM. After three years' service the performance of a Non-Executive Director is rigorously assessed by the Nomination Committee. Any development needs identified are discussed by the Chair with the Non-Executive Director.

All Directors will submit themselves for re-election at the forthcoming AGM in November 2021. Upon appointment, all new Directors receive a comprehensive induction programme over a number of months, which is designed to facilitate their understanding of the business and is tailored to their individual needs. The Chair and the Company Secretary are responsible for delivering the programme covering the Company's core purpose and values, strategy, key areas of the business and corporate governance. The new director induction programme is delivered through meetings with senior managers across the Group as well as via a number of advisors, attendance at Committee meetings, site visits and access to a library of reference materials. In support of the ongoing development of Directors, technical updates are provided at Board and Committee meetings to ensure that Directors remain up to date with key developments in the business environment.

Directors are encouraged to attend training sessions to ensure their knowledge is up to date on relevant legal, regulatory and financial developments or changes. The Board receives presentations on each of the business areas to understand the market conditions and challenges in the different countries the Group operates in. Directors have spent time individually and collectively exploring specific operational activities in detail through presentations, meetings and site visits, giving them the opportunity to meet with local senior management to gain an insight of the business operations. The Board visits our overseas business functions on a regular basis to gain a greater understanding of the market conditions that the business operates in and to understand the challenges they face. This provides in-depth knowledge for the Directors, enabling them to share their own experiences and challenge the business. Unfortunately, due to COVID-19, no overseas trips were undertaken during the year under review.

Board evaluation

The Board undertakes a formal review of its own performance and that of its committees each year. Following the recommendation of the Nomination Committee, an externally facilitated review was commissioned during the year under consideration and the evaluation was reported back to the Board towards the latter part of the year. Condign Consulting undertook the review and concluded that the Board was strong and effective, with each Director actively contributing to the effectiveness of the Board and the Committees of which he or she was a member during the year. Following the external review, the Board set itself improvement actions and objectives, including, among other things: gaining a deeper insight into shareholder views and seeking additional engagement; review of the board schedule and agenda planning; further review of diversity goals and workforce engagement; review of strategic priorities and succession planning.

4. Audit, Risk and Internal Control

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

Audit Committee and auditors

The Board has delegated oversight of the relationship with the Group's and the Company's external auditors to the Audit Committee. Their work is outlined in the Audit Committee report on pages 92 to 95.

Risk management and internal control

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

Overall responsibility for systems of internal control rests with the Board. The Board's arrangements for the application of risk management and internal control principles are detailed on page 34.

Financial and business reporting

The Statement of Directors' Responsibilities for preparing the Annual Report, the Directors' Remuneration Report and the financial statements in accordance with applicable law and regulations are set out on page 125.

The Group's business model is set out within the Strategic Report on pages 12 to 13.

The Directors' statement relating to going concern and the Viability Statement are set out on pages 141 and 38 to 39, respectively.

5. Remuneration

Please refer to the Directors' Remuneration Report on pages 96 to 121 for further information, and in particular:

Level and components of remuneration

Please refer to pages 98 to 111.

Procedure

Please refer to pages 112 to 121.

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

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

No Director is involved in deciding their own fees.

Directors' duty under section 172 of Companies Act 2006

The Board, in line with its duties under section 172 of the Companies Act 2006, must act in a way that gives due regard, among other matters, to: the likely consequences of any decisions in the long term; the interests of the company's employees; the need to foster the company's business relationships with suppliers, customers and others; the impact of the company's operations on the community and environment; the desirability of the company maintaining a reputation for high standards of business conduct; and the need to act fairly between members of the company. Further information about how these duties have been applied can be found throughout the FY 2020/21 Annual Report, as set out in the following table.

Further details on how the Company and Board engage with stakeholders are found on pages 88 to 89. Details of key decisions taken by the Board and how stakeholders were considered are provided on page 90.

s172 duties	Key examples	Page
Consequences of decisions in the long term	Chief executive's review > strategy update	8
	Our strategy > sustainable business growth, risk mitigation	14
	Principal risks and uncertainties	35-37
	Going concern and viability statement	38-39
	Board activity FY 2020/21	90
Interests of the company's employees	Our people	20-23
	Our strategy > world-class talent	14
Company's business relationships with suppliers, customers and others	Our end-markets	4
	Our business model > what we do, the value that we create	12-13
	Our strategy > customer value	14
Impact of the company's operations on the community and environment	Our business model > what we do, the value that we create	12-13
	Our strategy > operational excellence	14
	Innovation	17-19
	Sustainability and ESG	24-33
Maintaining a reputation for high standards of business conduct	Our business model > what we do, the value that we create	12-13
Act fairly between members of the company	Our shared values	5
	Our business model > what we do, the value that we create	12-13
	Engaging with stakeholders	88-89

Ricardo's Annual General Meeting

Ricardo plc will be holding its Annual General Meeting ('AGM') at 10.00am on Thursday 11 November 2021. In view of the continuing risk posed by COVID-19, we are pleased to be able to provide a facility for shareholders to follow the AGM remotely. This can be done by accessing the AGM section of our website www.ricardo.com/AGM2021 and following the link to the audiocast. Full details of the AGM (including how to participate in this year's AGM) and the resolution that will be put to shareholders are set out in the Notice of Annual General Meeting (Notice) which can be viewed on our webpage at www.ricardo.com/AGM2021.

The Notice of Meeting sets out the resolutions being proposed at the AGM on 11 November 2021 at 10:00am and shareholders can vote separately on each proposal.

Last year, all resolutions were passed with votes ranging from 94.79% to 99.99%.

The AGM in November 2020 was a closed meeting attended by the Chief Executive Officer and the Company Secretary, both shareholders of the Company. As a matter of policy the level of proxy votes (for, against and vote withheld) lodged on each resolution is declared at the meeting and displayed on the Company's website. Ricardo's website, www.ricardo.com, contains a wealth of information, including:

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

The Corporate Governance Statement was approved by the Board of Directors on 14 September 2021 and signed on its behalf by:

Sir Terry Morgan CBE
Chair

Our stakeholders

Engaging and building trust with our diverse range of stakeholders with whom we interact regularly is key to our long-term success. Effective engagement starts with our shared values – respect, integrity, innovation and passion – which guide our way of work and are reflected in how we collaborate with our colleagues and how we treat and interact with our customers. In a year dominated by the pandemic, we have not lost sight of the importance of our stakeholders or of how critical active engagement is at every level. We have worked harder than ever to ensure that we understand and consider our stakeholders' views, allowing us to make more informed decisions that ensure the very best outcomes for the business and its stakeholders.

In support of the requirements of section 172 of the Companies Act 2006, the information below sets out how we engage Group-wide and at board level on the key issues that matter the most to our stakeholders and our response to those issues. As required by the UK Corporate Governance Code 2018, the board considers that its non-executive directors have a good understanding of the key areas of interest and concern to our major shareholders.

Stakeholder group	Key areas of interest	How we engage company-wide	How we engage at board level	How we respond
CUSTOMERS				
At Ricardo, our customers are the cornerstone of everything that we do. We are committed to delivering service excellence and building lasting customer relationships that provide not only enhanced service levels but also ensure the future sustainability of the Ricardo Group.	• Delivery of innovative solutions. • Lasting customer relationships. • Technical expertise. • Maintain consistent and high service levels. • Sustainable services to meet evolving customer requirements around global green agendas.	• Dedicated marketing and sales teams across disciplines. market sectors, and territories • Product management responsible for sustainable solution design. • Sector specialist knowledge to build tailored solutions in response to customer needs.	• Regular feedback from the Voice of Customer reviews, reported monthly. • Strategic-review process provides information on the customer landscape across all the markets in which we operate.	• We ensure that all investment in R&D is focused on areas that prioritise net zero and decarbonisation. • We responded to COVID as a Group by focusing on our "Digital First" strategy to ensure continuous service to our customers across the globe.
COLLEAGUES				
The experience and expertise of our colleagues is essential for the delivery of our strategy. We ensure that, as a business, we promote an open culture that is diverse and inclusive, and which fosters good engagement that allows us to deliver value to our customers.	• Remuneration. • Development and progression opportunities. • Being a part of a diverse and inclusive culture • Feeling understood and valued. • Workplace wellbeing and flexibility. • Health and safety.	• Continuous learning and development opportunities. • Colleague networks within the divisions help to drive our diversity and inclusion programme. • Good policy and procedures in place, including an ethics helpline. • Annual performance review and development process. • Group-wide employment engagement survey.	• Diversity updates are provided to the board on various initiatives under the Diversity, Equality, and Inclusion work programmes. • The Group-wide annual employee engagement survey provides valuable insight to the board on workforce-related issues. • The board provides active support to senior leaders through a mentoring programme. • The board plans an active role in monitoring senior leader successor plans.	• We have prioritised the health, safety, and wellbeing of our colleagues throughout the pandemic. • We increased dialogue with colleagues through the use of Teams with live calls with our MDs and we set up interactive forums. • We have been agile in our approach to flexible working practices across the divisions. • Actively building a Ricardo culture through the promotion of our values and the launch of our very own choir.

Stakeholder group	Key areas of interest	How we engage company-wide	How we engage at board level	How we respond
COMMUNITIES				
As a global company with operations in over 20 countries, we play an active role in helping our local communities thrive by contributing both socially and economically. We are duty bound to operate in a responsible and sustainable way and we do so by always aligning our decisions and actions according to our values and our ESG commitments.	• Protecting society. • Environmental impacts through indirect and direct actions. • Clear ESG policies that commit to making our operations more energy efficient. • Support local initiatives and charitable causes.	• Encourage local engagement to promote positive change through participation in charitable and social events. • Actively support academic institutions in promoting events related to engineering and sustainability programmes.	• The board regularly reviews ESG-related matters and supports all related initiatives to realise our net zero 2030 ambitions. • Periodic reports providing updates on key community and sustainability matters are also prepared by the Chief Executive Officer and submitted to the board for review.	• We have enhanced our ESG reporting within our annual report and accounts. • We have supported our operating segments with the production and supply of personal protective equipment during the pandemic which has been distributed within our local communities. • We continuously work with organisations such as the IET (Institute of Engineering and Technology) to promote education in engineering within local communities.
SHAREHOLDERS				
We are committed to delivering value to our shareholders. Our shareholders provide us with the financial liquidity that we need to continue to operate, and it is our responsibility to build a transparent and open engagement to ensure they are well informed and understand the decision-making processes that guide our business to a profitable and sustainable future.	• Financial health and operating performance. • Strategic direction. • Long-term viability • Growth drivers. • M&A. • ESG objectives and ongoing commitments.	• We maintain regular contact with our shareholders, principally through investor roadshows, investor events and the AGM. • The Chief Financial Officer meets lenders on a regular basis to ensure a good understanding of favourable rates and active financial planning.	• The board receives regular updates on the investor-relations programme, including investor feedback and surveys following the results presentations. • The chair, the senior independent director, the chair of the remuneration committee and the chair of the audit committee are available for discussion with major shareholders if required.	• Since the pandemic, all results presentations and meetings have been successfully conducted virtually, with a view to incorporate virtual conferences into our ongoing investor-relations programme. • Regular updates through our website, which acts as the main gateway for results statements, trading updates and press release distribution. • Regular reviews are conducted to gain a better understanding of the views of our major shareholders.
SUPPLIERS				
Ricardo has an extensive global network of suppliers that provide us with services and products that are needed for us to deliver according to customer requirements. For this reason, we actively engage with our suppliers to build trusted relationships to ensure our operational success across our operating segments.	• Sustainable procurement. • Uphold ethical standards. • Competitiveness. • Potential disruption of the supply chain. • Single-sourcing decisions made with our customers.	• We ask our suppliers to operate according to our codes of conduct and other policies and to behave responsibly at all times. This is firmly embedded in our terms and conditions. • We conduct initial and periodic due diligence and expect our suppliers to operate according to professional standards to assure good performance.	• The Chief Executive Officer reports to the to board periodically on significant supplier contracts and arrangements.	• We review our major-suppliers list consistently to ensure our suppliers are conducting themselves in an ethical and responsible manner at all times. • We encourage our landlords and suppliers to maximise the use of renewable energy. • Supply-chain management is closely managed to ensure minimal disruptions as a result of Brexit.

Board activity

Some of the ways in which the Board considered stakeholders in principal decisions it made during the year under review are set out below.

Key matters	Matters considered and outcome	Stakeholders considered
People and culture	**Regular updates on workforce matters throughout the COVID-19 pandemic:** The actions taken by management and the Board in relation to the pandemic placed the health and wellbeing of our people at the centre of our decision-making processes. Difficult decisions were made that impacted our stakeholders, such as implementing the furlough scheme for some of our colleagues and not recommending a final dividend in respect of FY 2019/20 – this decision was made with full consideration of our shareholders in order to mitigate the economic impact of the pandemic on the Group, which if damaged, would have adversely affected stakeholders and the long-term health of the business. At our half year results, as a result of the strength of our balance sheet (see below), the Board was delighted to be able to recommend an interim dividend. This was only considered after the Board decided to repay the UK government for any furlough payments received since November 2020 and bring people back to work where possible. **Employee engagement through the employee survey:** The Group People, Team & Organisation Director presented a thorough review of the survey results both from a Group and divisional perspective and the Board approved a number of follow-up actions which will be monitored for progress. **Regular CEO reports:** concerning management of customers, suppliers and operations.	SHAREHOLDERS COLLEAGUES CUSTOMERS SUPPLIERS COMMUNITIES
Financial performance	**Regular updates to the Board on the Group's financial performance:** Including its cash management and conversion, profits and costs, plus: • Approval of the FY 2019/20 Results and FY 2020/21 Interim Results; • Approval of the FY 2020/21 Business Plans; and • Update on the Group's Treasury strategy from the Chief Financial Officer and Head of Treasury. In November 2020, the Board approved a share placing, raising £28.2m, to reduce leverage and reset the capital structure of the business. The Board determination for the share placing included an issue in three parts for certain directors of the Company, certain existing shareholders and other institutional shareholders and a retail offering. The Board considered that this placing was in the interests of all of our stakeholders and the long-term health of the business.	SHAREHOLDERS COLLEAGUES CUSTOMERS SUPPLIERS COMMUNITIES
Strategy review	**Oversight of M&A activity:** Including updates on acquisition and divestiture activities at each scheduled Board meeting. Following a review of the Group's strategy by external consultants, the Board decided to prioritise investment on decarbonisation and the net zero agenda with a focus on electrification and hydrogen, whilst continuing to support the transition away from fossil fuel-based internal combustion engines. The Board plans to achieve this through a combination of organic growth and a programme of focused acquisitions. The Board considers that this renewed focus on strategy will positively impact all of our stakeholders and the long-term health of the business.	SHAREHOLDERS COLLEAGUES CUSTOMERS SUPPLIERS COMMUNITIES
Succession planning	**CEO exit:** In January 2021 the Company announced that the Board and Dave Shemmans had jointly agreed that he would be leaving his role as Ricardo's Chief Executive Officer, after 16 years in the role. Dave will resign on 30 September 2021. After a thorough and rigorous search process, the Nomination Committee recommended to the Board the appointment of Graham Ritchie as Ricardo's Chief Executive Officer. The Board unanimously approved the appointment and Graham will join Ricardo on 1 October 2021. Graham has significant business experience and the drive to help take Ricardo to the next level of growth and development. The Board considers that the appointment of Graham will positively impact all of our stakeholders and the long-term health of the business.	SHAREHOLDERS COLLEAGUES CUSTOMERS SUPPLIERS COMMUNITIES

Laurie Bowen
Chair of the Nomination Committee

Nomination Committee report

Chair's Overview

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

This year has been particularly busy for the Nomination Committee. The key focus area being CEO succession planning. In the forthcoming year we will be updating talent management and succession planning for Board and senior management positions.

Laurie Bowen

Composition

On 14 November 2019 I was appointed Chair of the Nomination Committee, and during the year under review the Nomination Committee comprised the independent Non-Executive Directors Sir Terry Morgan, Russell King, Malin Persson, Bill Spencer and Jack Boyer, together with the Chief Executive Officer. 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 to fulfil each role are prepared for each appointment. 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 Nomination Committee was delighted with the quality of the candidates considered for the role and after careful consideration and, as announced on 26 August 2021, the Nomination Committee recommended the appointment of Graham Ritchie as Chief Executive Officer.

Graham has a proven track record in leading large divisions within listed companies and is well placed to ensure the strong execution of Ricardo's strategy. Since 2016, Graham was a member of the Executive Committee of Intertek Group plc, responsible for its operations in Europe, including Russia, and Central Asia. Prior to that role, Graham was Intertek's Group Financial Controller. Previously, Graham held senior financial positions at BT Group plc and other technology services organisations, having started his career with PwC. Graham is a qualified Chartered Accountant and holds a BA in Economics.

The search for the new Chief Executive Officer during the year was managed with the assistance of recruitment consultants, Heidrich & Struggles, who have signed up to the voluntary Code of Conduct for executive search firms. The new Chief Executive Officer will undertake an extensive induction programme to ensure a rounded understanding of the business and our ambitions. Heidrich & Struggles has no other connection with the Company.

When an appointment of a Non-Executive Director is made, a formal letter is sent clearly setting out the expected time commitments for the board, committee membership and involvement outside of board meetings. Chosen candidates are required to disclose to the Board any other significant commitments before appointments can be ratified.

Non-Executive Directors, including the Chair, 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 (years)
Dave Shemmans	To resign on 30 September 2021	16
Ian Gibson	July 2013	8
Mark Garrett	Resigned July 2020	12
Sir Terry Morgan CBE	January 2014	7
Laurie Bowen	July 2015	6
Malin Persson	January 2016	6
Bill Spencer	April 2017	5
Jack Boyer OBE	September 2019	2
Russell King	September 2019	2
Graham Ritchie	October 2021	-

The Committee also discussed talent management and succession planning for the top-performing senior managers within the business.

Bill Spencer

Chair of the Audit Committee

Audit Committee report

Chair's overview

As Chair of the Audit Committee, I am pleased to present to you my report for the year ended 30 June 2021.

On behalf of the Board, the Audit Committee has been actively engaged in risk management to provide appropriate challenge and guidance throughout the year. Particular attention has been given to ensuring the continued integrity of the Group internal control environment, financial reporting and viability as it emerges from the impact of the COVID-19 pandemic, as well as the development of our co-source internal audit relationship with PwC.

Throughout the year, management has carefully considered the risks impacting the Group and maintained close contact with the operating divisions. The Board has received regular updates on key issues and I have remained in regular contact with management, together with the internal and external audit teams. I am pleased with the way that management and both audit teams have adapted and been able to conduct effective audits while working remotely.

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

Bill Spencer

Composition

I chair the Audit Committee. In line with the requirements of the UK Corporate Governance Code, during the year the Committee also comprised the independent Non-Executive Directors, Laurie Bowen, Malin Persson, Jack Boyer and Russell King. There was no change in membership during the year.

As the Committee's Chair and as is considered desirable by the Financial Reporting Council's Guidance on Audit Committees, I have recent and relevant financial experience and a professional accountancy qualification.

As set out on page 95, the performance of the Audit Committee has been evaluated and is considered to be effective.

The Committee convenes four scheduled meetings each year and other ad hoc meetings, as required. Details of attendance at meetings held during the financial year are set out on page 83. The Chair, Executive Directors, the Group's Head of Internal Audit, PwC (our internal audit co-source partners) and the Company's external auditors all have standing invitations to attend all Committee meetings. Due to the restrictions put in place by the COVID-19 pandemic, these meetings were held via video conference. I am pleased with the way that the Committee has continued to operate effectively under these circumstances.

Key areas of focus

The UK Corporate Governance Code requires the committee to report on the significant matters considered during the year. During the year, I consider that the most important matters were:

- Evaluating the effectiveness of the internal control environment to ensure the integrity of the Group's financial reporting.
- Developing our co-source internal audit relationship with PwC, which in addition to engaging them to perform specific divisional internal audit reviews, included Group-wide reviews of key topics.
- Ensuring robust assessments of trading performance and the Group's continuing viability as it emerges from the impact of the COVID-19 pandemic.

Responsibilities

The Committee is established by, and is responsible to, the Board. As authorised by the Board, the Committee has obtained all necessary documentation and information it required from officers or employees of the Company, as well as external professional advice. In order to carry out its responsibilities during the year, the Committee undertook the following activities:

Accounting, tax and financial reporting

- Considered separate reports prepared by the Chief Financial Officer and external auditors on financial reporting and internal control matters as part of the interim review and annual audit processes.
- Assessed the results, on behalf of the Board, of the application of agreed assumptions to re-confirm the continued operational and financial viability of the Group for a period of three years from the date of this report.
- Reviewed the significant financial reporting matters, judgements and estimates, and changes in accounting policies applicable in the preparation of both the Group's interim and year-end consolidated financial statements, prior to submission to the Board for approval.
- Evaluated the content of the Annual Report & Accounts as a whole and assessed the processes in place to assure its integrity, to advise the Board on whether the information presented is fair, balanced and understandable, and whether it contains the information necessary for shareholders to assess the Group's position and performance, business model and strategy.

Risk management and internal controls

- Monitored the Group's risk management processes and internal control systems as part of its role on behalf of the Board to oversee the Group's approach to risk management and with due consideration to the principal risks and uncertainties facing the Group;
- Assessed the Group's risk profile, as well as its appetite for risk on behalf of the Board, and evaluated the effectiveness of the Group's risk management and internal control systems, together with the policies and procedures in relation to ethics, whistleblowing, fraud and bribery prevention;
- Monitored the key risks to the Group in respect of data and cyber security and evaluated the effectiveness of its control environment;
- Considered significant matters arising from internal audits performed during the year, evaluated the effectiveness of the internal audit function, and reviewed the scope and available resource for the internal audit plan in the following year to ensure that it is appropriate; and
- Reviewed management's initial consideration of the implications of the potential Brydon reforms on the Group and the timing of their implementation.

External audit

- Reviewed the scope and planning of the external audit, and evaluated the external auditors' remuneration, effectiveness, independence and objectivity, including consideration of the provision of non-audit services; and
- Assisted with the transition of Jeremy Hall as the Group's external audit engagement partner, following the rotation of Michael Harper.

Significant financial reporting matters

The Committee received and considered reports from the Chief Financial Officer in relation to the critical accounting judgements and key sources of estimation uncertainty. Following discussions with senior management and the external auditors, the Committee approved the disclosure as set out in Note 1(c) to the Group financial statements.

The Committee considered the following significant financial reporting matters, judgements and estimates in approving the Group financial statements for the year ended 30 June 2021:

Revenue recognition on fixed-price contracts

The issue: The Group recognises a significant proportion of its consulting revenue from the supply of services under fixed-price contracts, which may span a number of reporting periods. Changes in these estimates may impact revenue recognition and the actual outcome may differ from the estimate made at the reporting date. The identification and separate accounting of distinct performance obligations within the context of a contract is a critical judgement in recognising revenue, as set out in more detail in Note 1(c) to the Group financial statements.

The role of the Committee: A summary of the judgements and estimates taken by management to assess the extent to which these contract assets are recoverable was reviewed by the Committee at the February and September meetings.

Comments and conclusions: The Committee is satisfied that the Group's policies and procedures have been followed to reflect management's best estimate of revenue recognised at the reporting date and that no individual judgement or estimate is expected to have a materially different outcome.

Defined benefit pension obligation

The issue: The Company operates the defined benefit Ricardo Group Pension Fund ('RGPF'). The accounting basis of the RGPF is exposed to changes in the value of its assets and liabilities. The economic uncertainty caused by the COVID-19 pandemic has resulted in a period of significant short-term volatility in markets and therefore in the value of the scheme's assets and liabilities. The liabilities of the RGPF are also sensitive to changes in actuarial assumptions, on which management takes professional advice. Further detail is set out in the financial statements in Note 33 to the Group financial statements.

The role of the Committee: The Committee reviewed the papers presented to the Board at the February and September meetings and considered the impact of the changes in assumptions on the pension obligation.

Comments and conclusions: The Committee is satisfied that the assumptions were reviewed by senior management and that the values of the RGPF's assets and liabilities reflect the best estimate at the reporting date.

Carrying value of goodwill

The issue: As at 30 June 2021, the Group had goodwill of £84.7m on its consolidated balance sheet, of which £19.6m related to the Group's Automotive & Industrial ('A&I') business in EMEA. Given the performance of this business, which under-performed its budget due to the combination of the impact of COVID-19 and market pressures, the carrying value of A&I EMEA goodwill was subject to detailed review at both the half year and full year to ensure the carrying value was appropriate. In addition, due to reorganisation within the Group, from the start of FY 2020/21 the results of the former Ricardo Strategic Consulting ('RSC') business were included within the A&I EMEA group of cash generating units ('CGUs') for impairment testing. This reflects the synergies between the two business which have resulted from the integration of RSC into A&I EMEA as a service line under the ultimate leadership of the A&I EMEA Managing Director. The impairment testing did not result in any impairment of goodwill based on the Board-approved FY 2021/22 budget and three-year plan, adjusted for known risks, but the excess of the value in use over the carrying value was limited.

The role of the committee: The Committee reviewed and challenged the assumptions made by management which underpinned its impairment testing, considering the appropriateness of the CGUs, along with the assumptions and estimates used in the modelling, including the Board-approved FY 2021/22 budget and three-year plan. The Committee also considered the opinion of the external auditor on the assumptions underpinning management's estimates and conclusions.

Comments and conclusions: The Committee was satisfied that the assumptions and estimates used in the impairment testing were appropriate and reflected a reasonable degree of risk in the A&I EMEA projections. The Committee was also satisfied with the inclusion of the results of RSC within the A&I EMEA Group of CGUs. The Committee noted that headroom against the carrying value was limited and discussed and agreed with management the appropriate level of disclosure to highlight the impact of reasonable sensitivities to the projections on the carrying value of goodwill in the Annual Report and Accounts.

Considerations of the risk and impact of COVID-19

The issue: Management's perception of the risks associated with COVID-19 has been considered as part of the Committee's bi-annual risk-profile review. The risks, their potential impacts and the mitigating actions taken are set out in the Group's Principal Risks and Uncertainties on pages 35 to 37. Throughout the course of the financial year, the Group's profitability has improved as restrictions have started to lift across the world. With the exception of Automotive & Industrial, all operating segments have delivered an increase in underlying operating profit year on year. The potential ongoing risks of COVID-19 on the business are still uncertain but are considered much less severe than the prior year. Consideration has been given to risks and possible outcomes within the severe but plausible downside scenarios modelled in the assessment of the Group's continued viability.

The role of the Committee: The Committee reviewed the impact of COVID-19 on the internal controls and internal audit programme and noted that the core internal control elements of all planned internal audits were undertaken, and that the timing of lockdown did not impact these elements of the test methods of the larger audits. The Committee also reviewed and challenged the assumptions underpinning the Viability Statement.

Comments and conclusions: The committee noted that management had maintained all elements of its internal control environment during the lockdown and restart periods. The Committee is satisfied that appropriate considerations of the perceived ongoing risks associated with COVID-19 have been made in the Viability Statement modelling, together with reasonable actions taken to mitigate those risks, where appropriate.

Change in operating segments

The issue: Following a restructuring of its Automotive & Industrial operations in Europe, the Group announced its intention to stop reporting its 'all other segments' segment, which comprised the results of Ricardo Strategic Consulting and Software. The Strategic Consulting element of this segment is now reported within Automotive & Industrial, as it is now run as a business unit within the overall A&I business. The software element of this segment has been aggregated into the Performance Products operating segment for reporting. Whilst the software business continues to be run as a separate business with its own leadership team, it has a number of similar characteristics to the Performance Products manufacturing business, in that it is involved in the development of niche products, requiring a high level of capital/development spend, primarily selling to automotive manufacturers. As a result of this change, the Group is now reporting the five segments.

The role of the Committee: The Committee reviewed the segmental structure presented in the interim and year-end Group financial statements, together with the narrative provided and considered these in light of the results presented on a monthly basis to the Board.

Comments and conclusions: The committee considered the presentation of the segmental information and the revised segmental reporting structure and concluded that these appropriately reflect the management and decision-making structure adopted by the Group from 1 July 2020.

Internal audit

The internal audit function is accountable to the Committee and is considered to be a key function for effective risk management.

Historically, internal audit has been led and resourced by suitably skilled and experienced staff of the Group's head office or parts of the Group independent from the business or function being audited. During the year, we have continued to develop our co-source internal audit arrangement with PwC, which started in the year ended 30 June 2020. During this financial year, in addition to a number of divisional audits, PwC was engaged to carry out Group-wide audits of key topics. The co-source arrangement with PwC has given the Group access to specialist internal audit staff for deployment on higher risk, more complex audits and independent subject matter expertise. Responsibility for the internal audit process and setting the internal audit plan has remained with the Group's Head of Internal Audit, who has independently reviewed and scrutinised the work performed by PwC. The approach ensures independence in the internal audit process and the identification of relevant findings and recommendations, and combines external experience with the sharing of best practice around the Group.

All internal audit reports submitted during the year were reviewed by the Committee, and the status of each remedial action is tracked to completion to ensure appropriate resolution. Meetings are held with the Group's Head of Internal Audit without the presence of management.

The Committee also monitored the effectiveness of the Group's internal audit function including the approval of the scope and resources required to carry out work to be performed, and received an external perspective on internal audit development from PwC.

External audit

KPMG LLP were reappointed for the audit of the Group's results to 30 June 2021 at the Group's AGM on 12 November 2020.

During the year, Mike Harper rotated from his role as Group audit partner. He was replaced by Jeremy Hall for the audit of the year end 30 June 2021. We thank Mike for his contribution and insight during his time as Group audit partner.

Non-audit services

The Board's policy is that the provision of permissible non-audit services may only be undertaken by KPMG in limited circumstances and is subject to a cumulative cap. In order to remove the possibility of a perceived conflict of auditor objectivity and independence, KPMG has agreed with the Committee that no permissible non-audit services will be provided to Ricardo other than those closely related to the audit of the Group, such as the interim review.

Fees for non-audit services paid to the external auditors during the year were 11% of KPMG's audit fee (FY 2019/20: 5%). The ratio of audit and non-audit fees and the nature of non-audit fees are disclosed in Note 10 to the Group financial statements. Given the nature and scale of the services provided by KPMG, the Committee concluded that these services did not cause any concerns regarding KPMG's objectivity or independence.

There are limited instances where Ricardo enters into business relationships or joint arrangements with KPMG to pursue commercial opportunities, either as a prime contractor, sub-contractor or as part of a consortium, with either party or a third party being the project manager. These business relationships are considered acceptable to the extent that they remain immaterial to both organisations and do not compromise the auditors' independence

Independence and effectiveness

Both the Board and KPMG have safeguards in place to ensure the auditors' objectivity and independence cannot be compromised. The Committee supports KPMG in having the necessary professional scepticism in its role. KPMG also provides the Committee with information about policies and processes for maintaining its independence.

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

During the year, the Committee carried out its annual effectiveness review of the external auditor, which primarily focused on the 2021 audit. This assessment was completed at the end of the 2021 audit and was based upon KPMG's audit findings and responses to questions from the Committee, together with input from senior management and finance personnel. The Committee also met with the audit partner without management being present. There were no significant findings following the review and it was concluded that the audit process was effective. The Committee recommended to the Board that their re-appointment be proposed to shareholders at the 2021 AGM.

Russell King
Chair of the Remuneration Committee

Directors' remuneration report

PART 1 – REMUNERATION COMMITTEE CHAIR'S OVERVIEW AND ANNUAL STATEMENT

Dear Shareholder,

This is Ricardo's second year of managing the business in the context of the continuing challenges of the pandemic and its effects in all our markets across the world. The health and welfare of our employees and of our clients has remained paramount. The Chair and the Chief Executive Officer have both praised the contribution of Ricardo's employees throughout the year. Thanks to everyone in Ricardo, our performance for the year has been creditable. With the exception of Automotive & Industrial, all segments have delivered increased revenues and profits, with particularly strong performances from Energy & Environment and Rail. Order intake has been steady, albeit down on last year, and we have had some significant successes, including Ricardo Defense which took receipt of the first USD 10m from the USD 89m award of the three-year contract to deliver vehicle critical safety improvements to the US military. The placing of new shares during the year raised £28.2 million to reset the capital structure of the Group, with five Directors, including Dave Shemmans and Ian Gibson, subscribing for new shares. Adjusted PBT is 15% up on last year, our cash flow performance has been excellent and, although Group PBT was below the target we set for the annual bonus plan, we shall be recommending the payment of a final dividend of 5.11 pence.

In the first part of the year, Ricardo participated in the Coronavirus Job Retention Scheme and furloughed some of our employees. We were able to repay the funding we received from the UK Government from November and hence were not in receipt of UK Government funding in the second half of the year.

The Remuneration Committee (the 'Committee') was grateful to receive such strong support last year for both the Directors' Remuneration Policy and the Directors' Remuneration Report (95% and 98% respectively). Our sincere thanks also go to both Dave Shemmans and Ian Gibson, Ricardo's Chief Executive Officer and Chief Financial Officer, who have once again made an enormous contribution to Ricardo over the year.

The management of succession for the Chief Executive Officer and his departure terms

We announced in January that the Board and Dave Shemmans, our Chief Executive Officer, had jointly agreed that Dave, after 16 years in the role, would step down from the Board at the end of September. Ricardo is a professional services business and it was particularly important to us to do everything we could to ensure the stability of the business following the decision that Dave would be leaving and at an already very challenging time. As soon as we reached agreement that Dave would step down, we announced his departure, as required by the Listing Rules. This was before the succession process had been initiated. In our view, it was in the interests of our shareholders and our employees to do everything we could to ensure that Dave remained fully motivated and engaged until he left the Group. We agreed with him, therefore, that he would remain in employment and not under notice as Chief Executive Officer until 30 September 2021 or when his successor commenced employment, if this were to be before the end of September. Because we asked Dave to be flexible on the date of his leaving, and to ensure that he remained fully dedicated to leading Ricardo, we agreed that his notice period of twelve months would commence from the date that he would leave the business. In the light of his considerable contribution to Ricardo over many years, he will be treated as a good leaver for the purposes of his share awards. Clawback and malus provisions remain in force for two years after the end of the applicable performance period or, in the case of his existing deferred awards, three years following the date of grant. He will also remain bound by his restrictive covenants for a period of six months following the cessation of his employment.

As he remained in service for the full financial year, Dave Shemmans' annual bonus for FY 2020/21 will be paid in October 2021 and one third of the annual bonus will be deferred into shares. The Committee set clear and measurable individual goals for Dave Shemmans in July 2020 and added a requirement relating to continuing sound leadership of the business after the change in leadership was announced.

The appointment and remuneration of the new Chief Executive Officer

Following the announcement of his appointment on 26 August 2021, Graham Ritchie joins Ricardo as its new CEO on 1 October 2021. His annual base salary will be £470,000.

Graham's maximum annual bonus opportunity is 125% of salary and this will be prorated for the period of FY 2021/22 that he serves. One-third of his annual bonus will be deferred into Ricardo shares for a period of three years. He has a maximum opportunity under the LTIP of 150% of salary, and an award at this level will be made under the 2021/22 LTIP cycle.

His other terms and conditions are also in accordance with the Directors' Remuneration Policy.

Pay outcomes and performance for FY 2020/21 and downward discretion

Salaries

Base salaries for the Executive Directors were not increased from 1 January 2021 in line with employees across the Group.

Annual bonus

Underlying Group PBT was £18.0m for the year and, although up 15% on the previous year, was below the threshold set at the start of the year for the purposes of the bonus plan. Adjusted cash conversion was 98% which resulted, under the bonus formula, in a bonus pay out at maximum for this element.

The Committee's assessment of performance against the strategic objectives set at the start of the financial year for the Executive Directors – see pages 104 and 105 – resulted in an overall score of 90% for the both the Chief Executive Officer and the Chief Financial Officer. The overall outcome would have resulted in bonus payments of 38% of maximum.

On a rounded assessment of the financial year and reflecting that the profit target was not met, and also taking into account the macro-economic environment and the shareholder experience, the Committee exercised its discretion and reduced the bonuses of the Executive Directors. The final bonus payments amounted to 22.6% and 13.7% of maximum for the CEO and CFO respectively. One third of the bonuses paid will be deferred into shares in the usual way.

Long-term incentives

In October 2020, awards under the LTIP granted in November 2017 lapsed on the basis of underlying EPS and TSR performance over the relevant performance periods.

Operation of remuneration policy

The Committee is satisfied that the current remuneration policy has operated as intended during FY 2020/21 and, in light of the LTIP performance condition assessment and the bonus payout adjustments described above, incentive outcomes are in line with Company performance.

Long Term Incentive Plan ('LTIP') awards in 2020

As we disclosed in the 2020 Directors' Remuneration Report, we postponed setting the target range for Earnings Per Share ('EPS') which determines the vesting of two thirds of the shares under award. The target range, which was disclosed when we announced the interim results, is as follows:

- No part of the EPS portion will vest if the Company's underlying EPS for the final year in the performance period is lower than 28.5p;
- 15% of this portion will vest where the final year underlying EPS is 28.5p;
- 100% of this portion will vest where the final year underlying EPS is greater than or equal to 40.7p; and
- Vesting will take place on a straight-line basis between 28.5p and 40.7p.

Remuneration for FY 2021/22

We expect to make awards under the LTIP in October 2021 on the same basis as 2020. The targets are described on page 111.

Ricardo's employees and engagement on pay

During the year, a new Group People, Teams & Organisation Director was appointed and her observations and insights on how the Board can engage with Ricardo's employees globally have been valuable. This year, despite the constraints placed on us by COVID-19 we have benefited from the work of Ricardo's Workforce Engagement Director who is a member of the Committee. Malin Persson has shared with the Committee what she has heard from the focus groups which have taken place during the year – see page 85. Their own remuneration and development and progression are two areas which – see page 23 – employees have wanted to talk to her about. The Directors' Remuneration Report is central to our engagement with both shareholders and our employees to show how the Committee ensures that executive pay is aligned to the remuneration of employees across the Group. We shall continue in the coming months to develop ways to engage effectively on executive pay and to balance this with making sure we focus on the areas employees want to talk about.

Conclusion

This year the Committee has been concerned to facilitate a robust succession process focused on the continued sound performance of the business for the good of our shareholders and employees. The continued recovery of the business, employee engagement and the constructive relationship between the Board and the executive leadership suggests that, on balance, we got some difficult decisions right.

I hope all our stakeholders are supportive of the approach we have taken on remuneration this year. If you have any questions or comments on the Directors' Remuneration Report please do contact me through Patricia Ryan, Ricardo's Group Legal Counsel and Company Secretary, at patricia.ryan@ricardo.com.

Russell King
Chair of the Remuneration Committee

SUMMARY OF THE KEY ELEMENTS OF EXECUTIVE DIRECTORS' PAY IN FY 2020/21

	Dave Shemmans CEO	Ian Gibson CFO
Base salary (unchanged from 01/01/2020)	£530,484	£344,816
Other benefits	• Company car allowance: £17,500; • Private fuel; • Private medical insurance; and • Life assurance.	• Company car allowance: £12,000; • Private fuel; • Private medical insurance; and • Life assurance.
Pension[(1)]	21.2% of salary (over Lower Earnings Limit)	20% of salary (over Lower Earnings Limit)
Annual bonus with deferral of one-third of any bonus earned	• Maximum opportunity of 125% of salary. • Based on PBT (60%), cash conversion (20%) and personal targets (20%). • One-third of any bonus to be deferred into shares for three years.	• Maximum opportunity of 100% of salary. • Based on PBT (60%), cash conversion (20%) and personal targets (20%). • One-third of any bonus to be deferred into shares for three years.
Long-term Incentive Plan shares[(2)]	150% of salary	130% of salary
Share ownership and retention policy	• In-post: a minimum of 200% of base salary; • Post-cessation: a minimum of 200% of salary (or actual holding if lower) for first 12 months and half of this for second 12-month period;[(3)] • Net value of 50% of vested shares under LTIP/DBP to be retained until holding met; and • Year-end holding is 94% of base salary.[(4)]	• In-post: a minimum of 200% of base salary; • Post-cessation: a minimum of 200% of salary (or actual holding if lower) for first 12 months and half of this for second 12-month period;[(3)] • Net value of 50% of vested shares under LTIP/DBP to be retained until holding met; and • Year-end holding is 77% of base salary.[(4)]

(1) As set out on page 114, pension contributions for Executive Directors will be aligned with wider workforce levels on 1 January 2022. Arrangements for any new Executive Directors are shown on page 119.

(2) Face value of award of long-term incentive plan shares granted in October 2020 was 150% and 130% of salary for the CEO and CFO respectively:
a. Subject to three-year performance conditions: two-thirds underlying EPS growth, one-third TSR vs. FTSE Small Cap Index (excluding financial services companies and investment trusts);
b. Once vested, the awards will be subject to a holding period of two years; and
c. 50% of vested shares (net of tax) to be retained until share ownership requirement met.

(3) Only share plan awards made following the shareholder approval of the revised Directors' Remuneration Policy in 2020 will be subject to these post-cessation restrictions.

(4) Calculated by reference to the number of beneficially owned shares, a share price of 410.0p per share (2020: 419.0p) and salaries as at 30 June 2021, including unvested shares not subject to performance conditions and any vested shares subject to a holding period, on a net-of-tax basis.

As disclosed in the 2020 Directors' remuneration report, Mark Garrett ceased to be employed by the Group on 31 July 2020 and therefore has been excluded from the table above.

PART 2 – ANNUAL REPORT ON REMUNERATION

This section of the report explains how Ricardo's Directors' Remuneration Policy, which was approved in November 2020, has been implemented during the financial year ended 30 June 2021. The paragraphs that have been audited in this Annual Report on Remuneration are indicated.

The Remuneration Committee

During the year under review, the Committee was chaired by Russell King. The Committee also comprised Sir Terry Morgan, Laurie Bowen, Malin Persson, Bill Spencer and Jack Boyer.

The Non-Executive Directors serving on the Committee have no personal financial interest (other than as shareholders) in matters to be decided, no potential conflicts of interest arising from cross-directorships and no day-to-day involvement in running the business. Biographical details of the members of the Committee are shown on pages 80 and 81; details of attendance at the meetings of the Committee during the year ended 30 June 2021 are shown on page 83.

Advisors to the Remuneration Committee

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

FIT Remuneration Consultants' fees for this work amounted to £40,010 (calculated based on a mixture of fixed fees and time spent). Shepherd and Wedderburn's fees for advising the Committee amounted to £57,024 (also calculated based on a mixture of fixed fees and time spent). Shepherd and Wedderburn also advises Ricardo on the design, implementation and operation of its various share incentive plans.

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

The Committee also seeks internal support from Group Human Resources and the Group General Counsel & Company Secretary, as appropriate. The Chief Executive Officer attends the Committee's meetings by invitation and is consulted in respect of certain proposals. The Chief Financial Officer may also be invited to attend meetings to address specific matters. Neither the Chief Executive Officer nor the Chief Financial Officer is consulted or involved in any discussions in respect of their own remuneration.

Voting outcome at AGM

The AGM for the financial year ended 30 June 2020 was held on 12 November 2020. The remuneration policy in operation during the year was also approved by shareholders at the 2020 AGM. The results of the votes on the remuneration report and remuneration policy are set out below.

	Annual report on remuneration approved at 2020 AGM		Directors' Remuneration Policy approved at 2020 AGM	
Votes[1]	%	Number	%	Number
For, including discretion	97.63	38,289,524	94.79	37,176,754
Against	2.37	927,939	5.21	2,043,567
Total votes cast	100.00	39,217,463	100.0	39,220,321
Withheld[1]		5,007		2,148

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

Performance at a glance in FY 2020/21 compared with FY 2019/20

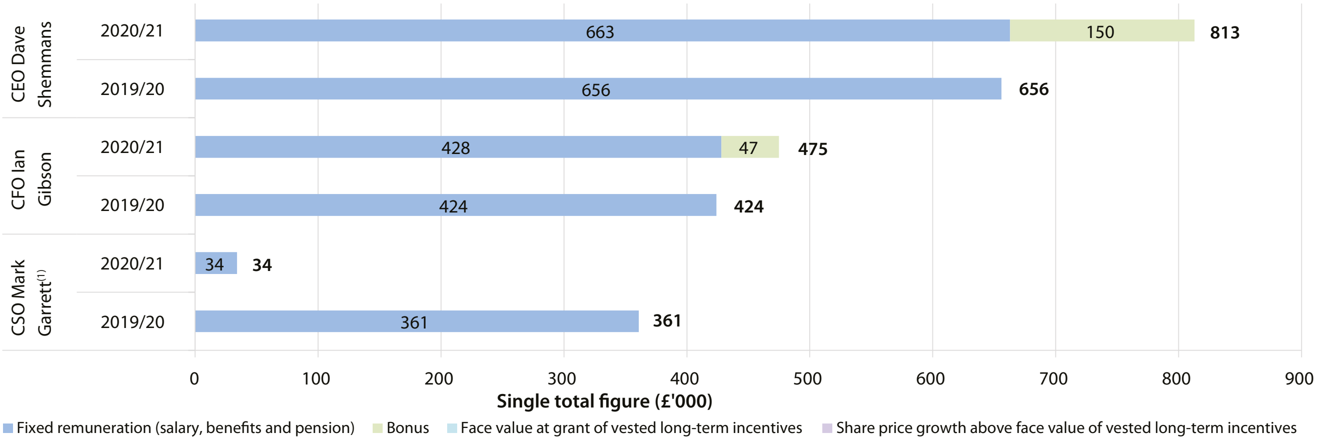
Bonus performance outcomes		Long-term incentive performance outcomes in respect of awards vesting in 2020	
Underlying PBT (adjusted)	**Cash conversion (adjusted)[1]**	**Underlying EPS (adjusted)[2]**	**3-year TSR growth**
£18.0m **(FY 2020/21)** *£15.3m (FY 2019/20)*	**98%** **(FY 2020/21)** *Previously a net debt target*	**22.4p** **for year to 30 June 2020** **(below threshold vesting level)** *Overall (12.4)% to 30 June 2019 based on 3-year underlying EPS growth in excess of RPI* *(below threshold vesting level)*	**(51.4)%** **(below median to October 2020)** *(31.2)%* *(below median to October 2019)*

(1) As disclosed in last year's Directors' Remuneration Report, the Committee introduced a cash conversion measure as it was, and continues to be, a key and more effective indicator of ongoing operational cash efficiency. Please see page 103 for further information.

(2) As explained in the 2017 Directors' Remuneration Report, for awards granted in FY 2017/18 and subsequent years, the Committee decided to move away from expressing targets as growth percentages in excess of RPI. The reason for this change was to simplify and enhance the 'line of sight' for participants and to recognise the international scope of Ricardo.

The closing mid-market price of the Company's shares on 30 June 2021 was 410.0p per share (2020: 419.0p). The highest closing price during the year was 489.0p per share and the lowest closing price during the year was 310.0p per share.

Pay at a glance in FY 2020/21



(1) Mark Garrett resigned as Director on 31 July 2020.

(2) The long-term incentive awards granted in November 2017 lapsed in full in FY 2020/21. As a result, the face value at grant of these awards and any share price appreciation has not been shown in the above table.

Single total figure of remuneration table (audited)

The table below sets out the remuneration received by the Executive Directors and Non-Executive Directors during the year.

		Fixed remuneration			Short-term variable remuneration			Long-term variable remuneration: 3-year performance periods			Totals		
	Financial year	Base salary and fees £'000	Benefits[1] £'000	Pension £'000	Bonus (cash element)[2] £'000	Bonus (deferred element) £'000	Total £'000	Bonus-linked shares[3] £'000	LTIP[4] £'000	Total £'000	Total £'000	Total Fixed Remuneration £'000	Total Variable Remuneration £'000
EXECUTIVE DIRECTORS													
Dave Shemmans	**2020/21**	**530**	**22**	**111**	**100**	**50**	**150**	**-**	**-**	**-**	**813**	**663**	**150**
	2019/20	523	23	110	-	-	-	-	-	-	656	656	-
Ian Gibson	**2020/21**	**345**	**15**	**68**	**31**	**16**	**47**	**-**	**-**	**-**	**475**	**428**	**47**
	2019/20	340	17	67	-	-	-	-	-	-	424	424	-
Mark Garrett[5]	**2020/21**	**25**	**4**	**5**	**-**	**-**	**-**	**-**	**-**	**-**	**34**	**34**	**-**
	2019/20	292	12	57	-	-	-	-	-	-	361	361	-
NON-EXECUTIVE DIRECTORS													
Sir Terry Morgan CBE	**2020/21**	**159**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**159**	**159**	**-**
	2019/20	157	1	-	-	-	-	-	-	-	158	158	-
Russell King[6]	**2020/21**	**60**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**60**	**60**	**-**
	2019/20	46	1	-	-	-	-	-	-	-	47	47	-
Laurie Bowen[7]	**2020/21**	**51**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**51**	**51**	**-**
	2019/20	50	35	-	-	-	-	-	-	-	85	85	-
Malin Persson[8]	**2020/21**	**59**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**61**	**61**	**-**
	2019/20	55	4	-	-	-	-	-	-	-	59	59	-
Bill Spencer	**2020/21**	**60**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**60**	**60**	**-**
	2019/20	59	1	-	-	-	-	-	-	-	60	60	-
Jack Boyer[9]	**2020/21**	**51**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**51**	**51**	**-**
	2019/20	42	1	-	-	-	-	-	-	-	43	43	-
	2020/21	**1,340**	**43**	**184**	**131**	**66**	**197**	**-**	**-**	**-**	**1,764**	**1,567**	**197**
Total	2019/20	1,589	96	234	-	-	-	-	-	-	1,919	1,919	-

(1) Further information on benefits for the Executive Directors can be found on page 103. The benefits for Non-Executive Directors represent reimbursement of expenses incurred (including any associated personal tax charges) while travelling for business and Committee meetings.

(2) Further details of the annual bonus can be found from page 103.

(3) Further details of the lapse of the bonus-linked shares in FY 2020/21 can be found on page 105. As no bonus-linked shares vested in the year, share price appreciation had no impact on the relevant figure included in the above table.

(4) Further details of the lapse of the LTIP awards in FY 2020/21 can be found on page 105. As no LTIP shares vested in the year, share price appreciation had no impact on the relevant figure included in the above table.

(5) Mark Garrett resigned as Director on 31 July 2020. He was permitted to retain the use of his company car for a further 18 days following his cessation of employment, which is reflected in the benefits column above.

(6) Russell King was appointed as a Director on 5 September 2019 and Chair of the Remuneration Committee on 14 November 2019.

(7) Laurie Bowen's benefits for 2019/20 largely consisted of travel expenditure to and from the United States.

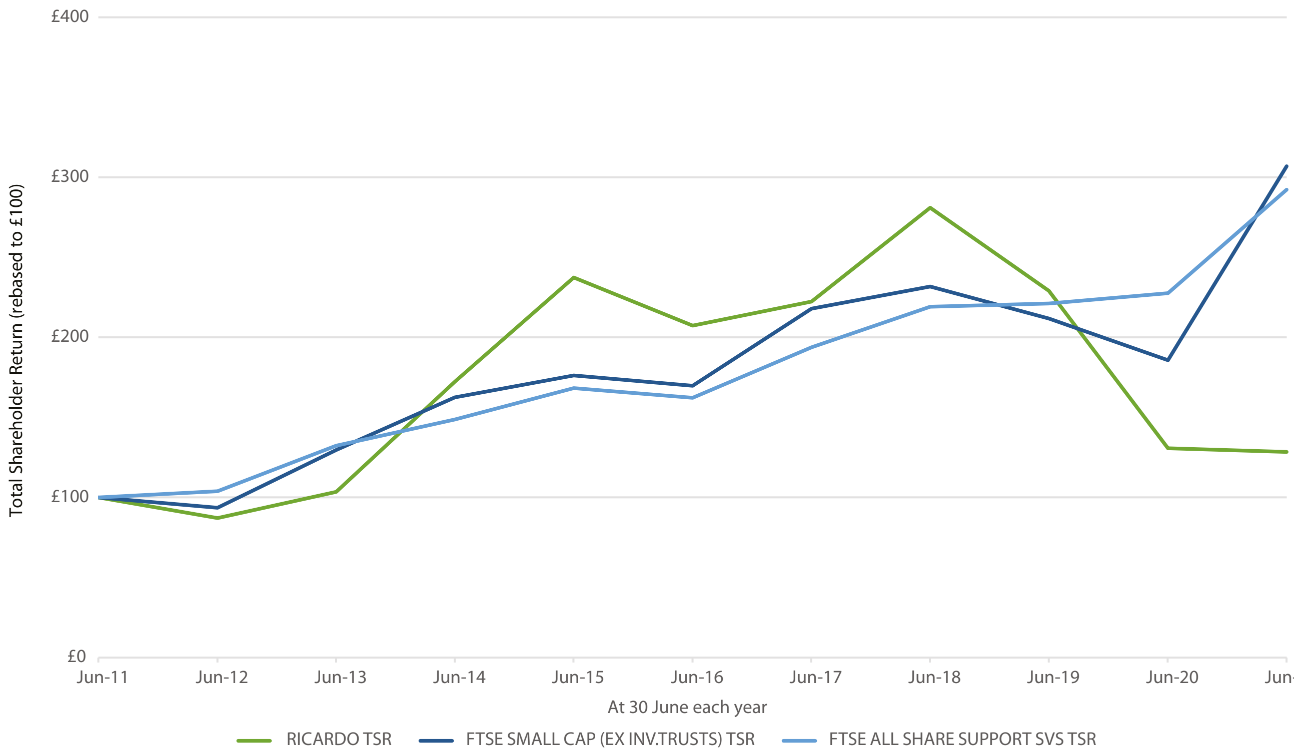
(8) Malin Persson's benefits consisted of travel expenditure.

(9) Jack Boyer was appointed as a Director on 5 September 2019.

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

Pay for performance – TSR performance graph and CEO pay history

TSR for the ten years to 30 June 2021



Source: Datastream

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

Financial year	Single figure of CEO's total remuneration £'000	Annual variable element award rates against maximum opportunity %	Long-term incentive vesting rates against maximum opportunity %
2020/21	813	23	-
2019/20	656	-	-
2018/19	998	25	40
2017/18	1,411	43	74
2016/17	1,612	-	100
2015/16	2,291	63	100
2014/15	1,367	59	67
2013/14	760	38	N/A(1)
2012/13	1,546	75	77
2011/12	979	58	35

(1) The performance period for awards made in November 2011 ended in October 2014 and so their vesting rate is included in the 2014/15 row of the table above. The vesting rate is 'N/A' for the 2013/14 row because the performance period for awards made in October 2010 ended in June 2013 and so the applicable vesting rate for those grants is included in the 2012/13 row of the table above.

Directors' remuneration compared to employees

The table below shows the percentage change in each Directors' salary / fees, taxable benefits and annual bonus between:

- the year ended 30 June 2020 and 30 June 2021; and
- the year ended 30 June 2019 and 30 June 2020,

and the percentage change in the same remuneration elements over the same periods in respect of all employees of the Group on a full time equivalent basis.

	Between FY 2019/20 and FY 2020/21			Between FY 2018/19 and FY 2019/20		
	% change in base salary and fees	% change in taxable benefits[1]	% change in annual bonus[2]	% change in base salary and fees	% change in taxable benefits	% change in annual bonus[2]
All Employees[3]	-	-	N/A[5]	3	-	(100)
EXECUTIVE DIRECTORS						
Dave Shemmans (CEO)	1	(4)	N/A[5]	3	-	(100)
Ian Gibson (CFO)	1	(9)	N/A[5]	3	-	(100)
Mark Garrett (CSO)[4]	(92)	(67)	N/A[5]	3	-	(100)
NON-EXECUTIVE DIRECTORS						
Sir Terry Morgan CBE	1	(100)	N/A	3	-	N/A
Russell King[6]	28	(100)	N/A	N/A	N/A	N/A
Laurie Bowen	1	(100)	N/A	3	(39)	N/A
Malin Persson[7]	7	(57)	N/A	14	(52)	N/A
Bill Spencer	1	(100)	N/A	3	-	N/A
Jack Boyer[8]	21	(100)	N/A	N/A	N/A	N/A

(1) The reduction in taxable benefits for the Non-Executive Directors reflects a lower level of travel and associated costs compared to the prior year.

(2) The Non-Executive Directors are not eligible to participate in the bonus scheme.

(3) This reflects that no generic salary increases were applied across the Group in FY 2020/21.

(4) Mark Garrett resigned as Director on 31 July 2020.

(5) The year-on-year change in bonus for all employees and the Executive Directors cannot be shown as no annual bonus was paid out in respect of FY 2019/20.

(6) Russell King was appointed as a Director and Chair of the Remuneration Committee on 14 November 2019.

(7) The higher percentage change in Malin Persson's fees between FY 2018/19 and FY 2019/20 reflects her appointment as Senior Independent Director on 14 November 2019. This is also reflected in the higher percentage change in Malin's fees between FY 2019/20 and FY 2020/21 since her fees for part of the prior year included a period before her appointment as Senior Independent Director.

(8) Jack Boyer was appointed as a Director on 5 September 2019.

Pay ratio information in relation to Chief Executive Officer's remuneration

Year	Method of calculation adopted	25th percentile pay ratio (CEO : UK employees)	Median pay ratio (CEO : UK employees)	75th percentile pay ratio (CEO : UK employees)
2021	Option A	25 : 1	18 : 1	12 : 1
2020	Option A	19 : 1	14 : 1	10 : 1

Pay data for the Chief Executive Officer is taken from the single total figure of remuneration table on page 100. The median, 25th percentile and 75th percentile figures used to determine the above ratios were calculated by reference to the full-time equivalent annualised remuneration (comprising salary, benefits, pension, annual bonus and long term incentives) of all UK based employees of the Group as at 30 June 2021 (i.e. "Option A" under the applicable regulations). The Committee selected this calculation methodology as it was felt to produce the most statistically accurate result available to it.

The Committee considers that the median pay ratio for 2021 is consistent with the pay, reward and progression policies for the Company's UK employees taken as a whole. Ricardo's approach to paying the CEO is consistent with the views of our shareholders and market practice and the Executive Directors have a much greater proportion of their overall pay subject to performance and in particular the performance of Ricardo's share price than is the case for Ricardo's employees generally. Accordingly, the ratio may prove volatile from year to year. The Committee considers the pay of all Ricardo's employees to ensure the alignment of the Executive Directors' pay with pay across the Group. The ratio of the CEO's total remuneration to Ricardo's median total remuneration is higher than last year's ratio because the performance of the Group this year merited certain annual bonus payments and as noted above variable remuneration represents a greater proportion of the CEO's overall pay. This was not the case for the previous financial year. In other words, the CEO's total realised pay is higher than last year's although lower this year than for each of the preceding five years.

Pay details (on a full-time equivalent annualised basis where appropriate) for the individuals whose FY 2020/21 remuneration is at the median, 25th percentile and 75th percentile amongst UK based employees are as follows:

2021	25th percentile	Median	75th percentile
Salary	£28,315	£40,993	£55,682
Total pay and benefits	**£33,083**	**£44,359**	**£66,567**

Relative importance of pay spend

The following table sets out the total amounts spent on remuneration for all employees, the dividends declared and other significant distributions to shareholders in FY 2019/20 and FY 2020/21.

	FY 2020/21	FY 2019/20	% change
Total remuneration spend (£m)	**182.0**	188.5	(3)
Key management remuneration as a percentage of total remuneration spend[1] (%)	**3.3**	2.7	22
R&D expenditure[2] (£m)	**10.2**	12.5	(18)
Distributions to shareholders[3] (£m)	**4.3**	3.3	30

(1) The key management personnel are the Board of Directors, together with the Managing Directors who have the authority and responsibility for planning, directing and controlling the Group's activities and resources within the market sectors in which the Group operates. Further details on key management remuneration can be found on page 181. This measure was chosen in order to give greater context for the scale of key management remuneration within Ricardo.

(2) Further details on R&D expenditure can be found on pages 16 and 43. This measure was chosen because of the importance to Ricardo's business of developing its R&D portfolio.

(3) The only distributions made by the Company over these years were in the form of dividends.

Detailed breakdown of pay in FY 2020/21

Base salary

As described in the policy section on page 114, a number of factors are taken into account when salaries are reviewed, principally: market levels of total pay for comparable roles in companies of a similar size, complexity and sector; the individual's experience, scope of responsibilities and performance; and the salary increases for employees across the Group. The current salary levels for the Executive Directors are shown in the table below. In line with the wider Group workforce, there were no salary increases from 1 January 2021.

Executive Director	Salary (unchanged from 1 January 2020)
Dave Shemmans (CEO)	£530,484
Ian Gibson (CFO)	£344,816

Other benefits (audited)

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

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

Pension (audited)

(a) The defined benefit scheme is closed and there are no active members. During the year ended 30 June 2021, the transfer value in respect of the Chief Executive Officer decreased. The transfer value at 30 June 2021 was £711,021 a decrease of £10,574 from the prior year.

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

(b) With respect to defined contribution pension schemes:

	Employer contributions payable in the year £'000	Cash in lieu £'000
Dave Shemmans (CEO)	-	111
Ian Gibson (CFO)	-	68
Mark Garrett (CSO)[1]	-	5

(1) Mark Garrett ceased employment with the Group on 31 July 2020, therefore the table reflects employer contributions and cash in lieu in relation to his employment to that date.

Annual performance-related bonus (audited)

Introduction

For the year ended 30 June 2021, the maximum annual performance-related bonus opportunity was 125% of salary for the Chief Executive Officer and 100% of salary for any other Executive Director. To determine the amount of bonus payable for the year, the Committee assessed the level of achievement against the financial measures and targets set in respect of:

- Group underlying profit before tax (60%);
- Cash conversion (20%); and
- The achievement of specified individual objectives (20%).

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.

As disclosed in last year's Directors' Remuneration Report, the Committee introduced a cash conversion measure as it was and continues to be regarded as a key and more effective indicator of ongoing operational cash efficiency.

Cash conversion is defined as underlying cash generated from operations (excluding defined benefit pension scheme payments) divided by underlying EBITDA. *"Underlying"* excludes specific adjusting items, which comprise amortisation of acquired intangible assets, acquisition-related expenditure and reorganisation costs.

On-target performance (50% pay-out) is set at the budgeted cash conversion, i.e. budgeted underlying cash from operations ÷ budgeted underlying EBITDA. Threshold and maximum cash conversion targets are calculated based on performance below and above budget respectively.

Detailed breakdown of pay in FY 2020/21 (continued)

Annual performance-related bonus (audited) (continued)

Details of financial targets

The financial targets for FY 2020/21 (details of which are provided in the following table along with confirmation of their respective weightings) were set by the Committee after taking into account several factors such as the business plan, management's expectations and brokers' forecasts.

Measure	Weighting (% of maximum opportunity) CEO	CFO	Performance required Threshold	On-target	Maximum	Actual performance outturn
Underlying profit before tax	60	60	£22.5m	£24.5m	£26.5m	£18m
Adjusted underlying cash conversion	20	20	65%	73%	77%	98%

A sliding scale of targets for each financial measure of the Group was also set at the start of FY 2020/21:

Performance achieved	Element payable
Threshold	-
On-target	50%
Maximum	100%
Between any two performance levels	Sliding scale between the above percentages

Details of personal objectives

The personal objectives of the Executive Directors were different for each individual and were ascribed different weightings. The Committee, supported by the Chair of the Board in the case of Dave Shemmans, and supported by Dave Shemmans in the case of Ian Gibson and members of the leadership team, sets the personal objectives at the start of the year. The Committee usually identifies 'strategic areas' which each Executive Director is asked to focus on and seeks to ensure that all personal objectives are specific, measurable and are indirect drivers of financial performance and value creation. They usually set five objectives and weight them in accordance with their relative importance. At the end of the year, based on a formal and qualitative assessment of performance against each objective (at half year and full year), the Committee decides how well each individual has performed overall.

The targets set by the Committee take into account a number of issues shown in the table below but also include an assessment against other strategic and business critical issues which are planned, or occur during the year, but are not declared as they are business sensitive. Mark Garrett has been excluded from the table below on the basis that, as he resigned as an Executive Director with effect from 31 July 2020, he was not eligible to receive any bonus for FY 2020/21.

	Personal objectives FY 2020/21	Examples of performance outcomes against personal objectives	Overall achievement (%)
Dave Shemmans (CEO)	• Build the Executive Committee into a collegiate, collaborative, high performing and tight leadership team which will develop a pool of succession talent. Work with the team to further develop and execute the Group strategy with a focus on ESG ensuring high levels of interaction and involvement from the members. Maintain strong customer relationships that the departing CSO had developed. • Embed the changes following the departure of the Chief Strategy Officer and complete the recruitment of the Group Marketing lead, as well as looking at recruiting for the position as head of ESG in order to ensure that agenda is pushed internally and externally. • Return the focus to delivering the acquisition strategy with a view of building sustainable revenue. Aiming to maintain a balance of the business increasing geographic coverage of certain divisions with developing the competency for a digital world across all divisions. • Promote and communicate the high value added parts of the business and ESG agenda with the object of increasing the rating of the business. Continue to focus on employee engagement activities around "creating a world fit for the future" mission. Drive the Diversity and Inclusion agenda and lead the promotion of the Ricardo value of 'Respect', which ensures that no discrimination occurs in any business, processes or practices. • Complete US turn around programme. Develop the office / footprint strategy and execute where possible to reduce footprint / costs across the Group, in support of a model where "work from home" will play a part. Develop the strategy for a "shared services" model to support other divisions beyond EMEA. • Manage the COVID-19, BREXIT and economic backdrop as it transitions to the next phase, including return to site, keeping performance up, cash tight, team healthy and secure business – all in balance. Continue to ensure transparent and frequent communication with all stakeholders.	• Executive Committee has become a collegiate and tight group which together has navigated an extremely busy, diverse and volatile year. • Customer relations have been maintained following the exit of the CSO and all aspects of the CSO's work have been absorbed and continued. • Gender diversity in the Executive Committee improved during the year. The ESG and net zero agenda is embedded in Ricardo's marketing and strategy with a major bias on the green and electrified aspects of the business. • The digitalisation agenda has continued across the Company with a number of important developments during the year. • Successful focus on health and safety including mental health impacts of isolated working. Volume and frequency of communications has been radically stepped up. A big focus on the 'Respect' agenda has been undertaken. Employee engagement scores have increased. Planning to return to site was completed. • Improvement in the US with all key metrics better than prior year. • Significant progress in reducing office footprint globally to enable a lower cost base, increased office sharing and an element of home working in the future employment model. • The business has continued to perform and adapt through this period with most divisions growing. BREXIT was managed despite the challenges.	90%

Detailed breakdown of pay in FY 2020/21 (continued)
Annual performance-related bonus (audited) (continued)

Ian Gibson (CFO)	• Maintain focus on cash and ensure financial liquidity of the business. • Support Finance Directors in managing the impact of the COVID-19 economic challenges on their divisions, including delivery of a robust external audit and look to improve the focus and efficiency of the internal audit. • Maintain tight control of central costs and develop the plan for cost-efficient back office shared services strategy of the Group. • Maintain analyst / shareholder relationships and dialogue during the COVID-19 period ensuring all relevant parties are informed of progress. • Progress the finance team development, ensuring career progression, retention and diversity, and succession planning.	• Supported the Managing Directors and Finance Directors in the 3-year plan process, providing coaching and guidance. Successful fundraise and good cash management. • A focus on audit both internally and externally has supported decision-making, reliance and robustness in managing a second COVID-19 impacted trading year. • Maintained tight spend of central functions including IT. • Good achievement and relationship management giving confidence to Ricardo's key stakeholders and investors. • Existing senior team has been stretched through in-role learning experiences. Overall finance functional capability across Group and Divisions matches organisation requirements.	90%

Committee's assessment of achievement levels and determination of bonuses payable

The performance of the Group over the year included a 15% increase in underlying profit before tax to £18.0m (2020: £15.6m). The Group profit performance at £18.0m is below the lower threshold of £22.5m and therefore no bonus is payable in respect of Group underlying profit before tax. The Group underlying cash conversion was 87%. The Group cash from operations was adjusted by £4.6m to remove pension deficit payments, in line with the Group's bonus principles, to give an adjusted underlying cash conversion of 98%. The Group cash conversion measure was achieved at 100%.

The Committee carried out a detailed and rigorous review of the achievement of personal objectives and determined that these had been achieved at a level of 90% for both the Chief Executive Officer and the Chief Financial Officer.

Despite the outstanding performance against the cash conversion targets and the personal objectives, the Committee decided that bonus payments amounting to 38% of maximum should not be paid. They reduced the bonus payments on a discretionary basis taking into account the accomplishments during the year, the macro-economic environment and how shareholders and employees have fared. They decided that, having taken a rounded view of performance, bonuses should be paid but they should be considerably reduced to 22.6% and 13.7% of maximum respectively for the CEO and CFO (28.3% and 13.7% of salary). The bonus for the CEO reflects his significant leadership contribution to the Group throughout the last year.

One third of any bonus paid to an Executive Director is subject to a policy of compulsory deferral into ordinary shares, via the deferred share bonus plan ('DBP').

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

Awards under the LTIP and bonus-linked awards under the DBP made in November 2017 lapsed in November 2020 on the basis of underlying EPS and TSR performance measured over specified periods, the last of which ended in October 2020. For the avoidance of doubt, the Committee did not exercise any discretion in relation to these awards.

The performance conditions applicable to these awards are summarised below:

Relative TSR portion (50%)	
Relative TSR performance against the FTSE Small Cap (exc. financial services companies and investment trusts)	**Vesting level (%)**
Below median	-
Median	25
Upper quartile (or above)	100
Between median and upper quartile	Sliding scale between the above percentages

Underlying EPS (50%)	
Underlying EPS (adjusted)	**Vesting level (%)**
Less than 65p	-
65p	25
Equal to or greater than 75p	100
Between 65p and 75p	Sliding scale between the above percentages

Over the three-year performance period, Ricardo was ranked below the median of the TSR comparator group, giving a zero vesting level for this portion of the award. Ricardo's TSR over the period was (51.4)% against a median of (19.5)%. The adjusted EPS for the year was 22.4p with the result that the adjusted EPS target was not achieved. Therefore, the overall vesting level for this award was zero and the shares under the awards lapsed in full.

The number of shares which lapsed in November 2020 in respect of awards granted to each of the Executive Directors in November 2017 are set out on pages 107 and 108 of this report.

Detailed breakdown of pay in FY 2020/21 (continued)

The Chair of the Board's and Non-Executive Directors' fees

In line with the Executive Directors and wider Group workforce, there were no fee increases for the Chair of the Board and Non-Executive Directors from 1 January 2021. The Chair's and Non-Executive Directors' fees, unchanged from 1 January 2020, are as follows.

	£'000
Chair's fee	159
Non-Executive Directors' fees:	
Basic fee	51
Additional fee for Audit and Remuneration Committee Chairs	9
Additional fee for the Senior Independent Director	8

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

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

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

LTIP awards were granted on 27 November 2020 under the rules of the new Ricardo plc 2020 Long Term Incentive Plan to the Executive Directors on the basis set out below.

	Type of award	Basis of award (% of salary)	Number of shares	Face value of award (£)[1]	Threshold level of vesting (%)	End of performance period
Dave Shemmans (CEO)	Performance shares[2]	150	224,274	795,724	15% for EPS portion of awards and 25% for TSR portion of awards	35 days after release of preliminary results announcement for FY 2022/23 (expected to be October 2023)
Ian Gibson (CFO)	Performance shares[2]	130	126,341	448,258	15% for EPS portion of awards and 25% for TSR portion of awards	35 days after release of preliminary results announcement for FY 2022/23 (expected to be October 2023)

(1) The face value of the award is based on the average of the share prices over the five days up to and including 26 November 2020 (354.8p).

(2) As the LTIP awards are granted in the form of performance share awards, no 'exercise price' is payable in order to receive any vested shares. This position has not changed since the awards were granted.

The vesting of these awards will be based on Ricardo's underlying EPS growth (two-thirds) and three-year relative TSR (one-third) performance summarised in the table below. The relative TSR measure was chosen by the Committee to link the remuneration of Executive Directors to the performance experienced by shareholders and to further align their interests. The underlying EPS measure was chosen to reward sustained profit growth and align with one of our key performance indicators.

In addition, no part of an award will vest unless the Committee is satisfied that the achievement against the TSR and underlying EPS performance conditions is a genuine reflection of the underlying performance of the Group over the performance period. The Committee will consider all relevant factors when the awards vest in November 2023 and may reduce vesting levels to ensure that recipients do not benefit from windfall gains. These factors will include the timing and extent of the recovery of the share price of the Company, the indices on which it is listed, the overall performance of the Company during the period 2020 - 2023 and any other considerations that the Committee deems relevant.

As previously disclosed, the Committee decided to tilt the balance away from an equal weighting between TSR and underlying EPS growth to signal the importance of increasing Ricardo's profitability as measured by underlying EPS and to give the management team a stronger incentive to drive profitable performance which should in turn lead to increased shareholder value.

As disclosed in last year's Directors' Remuneration Report, the Committee delayed setting the specific targets for the EPS portion of the FY 2020/21 awards until such time as there was greater clarity around the long-term impact of the pandemic on the Company's business and the various markets in which it operates. The targets were set by the Committee in February of this year and full details of the selected measures (which are also set out below) were set out in the RNS announcement released to the market on 25 February 2021.

Relative TSR portion (one-third)

Relative TSR performance against the FTSE Small Cap (excl. financial services companies and investment trusts)	Vesting level (%)
Below median	-
Median	25
Upper quartile (or above)	100
Between median and upper quartile	Sliding scale between the above percentages

Adjusted EPS portion (two-thirds)

Adjusted underlying EPS for the final year in the performance period (FY 2021/22)	Vesting level (%)
Less than 28.5p	-
28.5p	15
Equal to or greater than 40.7p	100
Between 28.5p and 40.7p	Sliding scale between the above percentages

Detailed breakdown of pay in FY 2020/21 (continued)

Performance target setting and those applying to awards outstanding during FY 2020/21

As shown in previous Directors' Remuneration Reports, the Committee has a track record of setting stretching underlying EPS targets which are carefully calibrated to deliver maximum pay-outs only where Ricardo has outperformed the business plan and market expectations. Full vesting of the shares linked to relative TSR performance only occurs where Ricardo's performance is in the upper quartile of the FTSE Small Cap Index (excluding financial services companies and investment trusts).

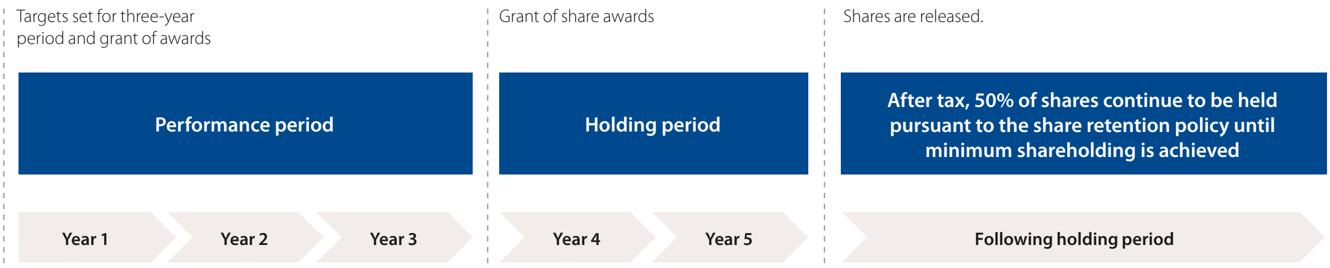
The EPS performance targets applicable to LTIP and, if applicable, the bonus-linked share awards outstanding during the year are as follows:

	FY 2017/18	FY 2018/19	FY 2019/20
Threshold vesting (25%)	65p	60p	60.1p
Maximum vesting	75p	69p	69.1p

The performance condition applicable to the TSR portion of awards has remained constant through this period and is the same as set out on page 106 for awards granted in the year ended 30 June 2021. The number and value of shares which were awarded to each of the Executive Directors in the year ended 30 June 2021 are set out in the table on page 106. The performance conditions applicable to the above awards have not been adjusted to take into account the impact of COVID-19.

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

The following chart sets out in graphical form how the Company's LTIP was operated in FY 2020/21:



For details of the share retention policy, see page 109.

Awards granted prior to November 2020 under the rules of the previous Ricardo plc 2014 Long Term Incentive Plan are not subject to the two-year holding period.

As at 30 June 2021, the Directors' interests in shares provisionally awarded under the LTIP were as follows:

			Number of provisional shares						
	Award date[1]	Share price at award date in pence	At 1 July 2020	Awarded[2]	Lapsed	Vested	At 30 June 2021[3]	Vesting date	Holding period ends
Dave Shemmans (CEO)	Nov 17	830.00	57,927	-	(57,927)	-	-	08/11/2020	-
	Oct 18	756.00	66,141	-	-	-	66,141	25/10/2021	-
	Oct 19	623.60	82,590	-	-	-	82,590	24/10/2022	-
	Nov 20	354.80	-	224,274	-	-	224,274	27/11/2023	27/11/2025
Ian Gibson (CFO)	Nov 17	830.00	20,510	-	(20,510)	-	-	08/11/2020	-
	Oct 18	756.00	23,418	-	-	-	23,418	25/10/2021	-
	Oct 19	623.60	29,526	-	-	-	29,526	24/10/2022	-
	Nov 20	354.80	-	126,341	-	-	126,341	27/11/2023	27/11/2025

(1) Awards granted between 2017 and 2019 were made under the rules of the Ricardo plc 2014 Long Term Incentive Plan. The awards granted in November 2020 were made under the rules of the Ricardo plc 2020 Long Term Incentive Plan. Performance conditions applicable to all awards are as outlined on pages 106 and 107.

(2) The face value at the date of grant of the awards made in November 2020 was £795,724 for Dave Shemmans; and £448,258 for Ian Gibson.

(3) The mid-market closing price of the Company's shares on 30 June 2021 was 410.0p per share (2020: 419.0p).

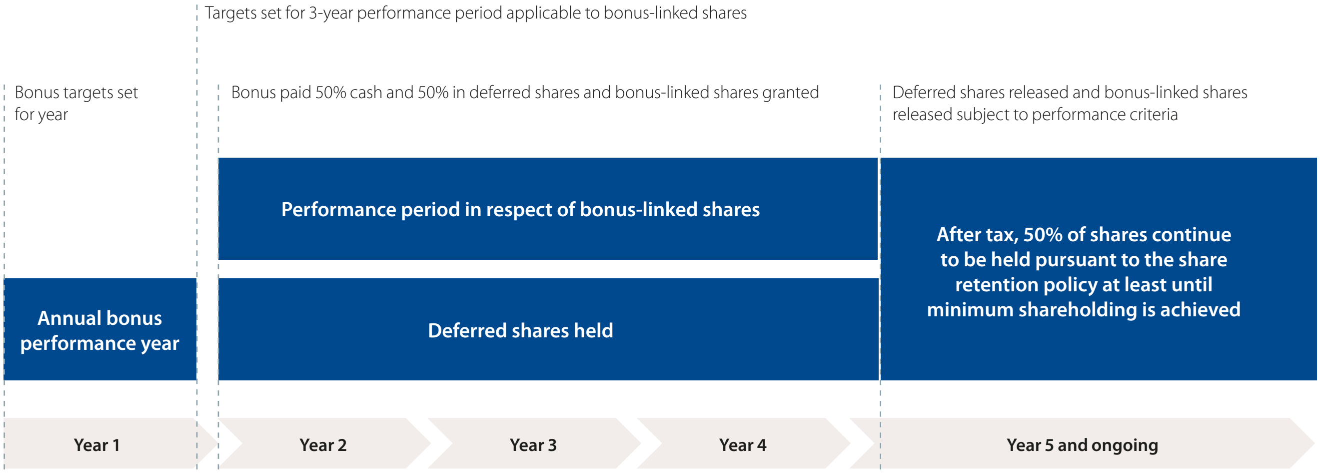
As disclosed in last year's Directors' Remuneration Report, Mark Garrett ceased employment with the Group on 31 July 2020 and all LTIP awards held by him immediately lapsed in full and therefore are not shown in the table above.

The November 2017 awards that were due to vest in November 2020 lapsed in full because the performance conditions as set out on page 105 were not satisfied.

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

As previously disclosed, no performance bonus was payable in respect of FY 2019/20. As a result, no deferred awards were granted under the DBP during FY 2020/21.

The following chart sets out in graphical form how the DBP was operated in earlier years and continues to operate in respect of currently outstanding DBP awards (set out in the table below):



For details of the share retention policy, see page 109.

Following the adoption of the new Directors' Remuneration Policy in November 2020, Executive Directors will no longer be entitled to future bonus-linked share awards and a third (rather than half) of any bonus payable will be deferred in shares.

As at 30 June 2021, the Directors' interests in shares provisionally awarded under the DBP were as follows:

					Number of provisional shares					
	Type of Award	Award date	Deferral / performance period	Share price at award date in pence	At 1 July 2020	Awarded[1]	Dividend shares[2]	Lapsed	Vested	At 30 June 2021[3]
Dave Shemmans (CEO)	Deferred	Oct 18	3 years	756.00	18,821	-	72	-	-	18,893
	Bonus-linked shares[4]	Oct 18	3 years	756.00	17,568	-	-	-	-	17,568
	Deferred	Oct 19	3 years	623.60	13,492	-	52	-	-	13,544
	Bonus-linked shares[4]	Oct 19	3 years	623.60	12,969	-	-	-	-	12,969
Ian Gibson (CFO)	Deferred	Oct 18	3 years	756.00	10,377	-	39	-	-	10,416
	Bonus-linked shares[4]	Oct 18	3 years	756.00	9,686	-	-	-	-	9,686
	Deferred	Oct 19	3 years	623.60	7,120	-	27	-	-	7,147
	Bonus-linked shares[4]	Oct 19	3 years	623.60	6,844	-	-	-	-	6,844

(1) As no bonus was payable in respect of FY 2019/20, no deferred bonus awards were awarded in FY 2020/21.

(2) Amounts allocated include shares equivalent to dividends on provisional deferred award shares.

(3) The mid-market closing price of the Company's shares on 30 June 2021 was 410.0p (2020: 419.0p).

(4) Bonus-linked shares awarded under the rules of the Ricardo plc 2011 Deferred Bonus Plan: performance conditions as outlined on pages 106 and 107.

As disclosed in last year's Directors' Remuneration Report, Mark Garrett ceased employment with the Group on 31 July 2020 and all DBP awards held by him immediately lapsed in full and therefore he has been excluded from the above table.

Share retention policy

In-post

In order to foster greater alignment between our Executive Directors and our shareholders, the Board currently operates a share retention policy with the intention that each Executive Director will own shares in the Company with a value equal to at least two times annual base salary with the requirement that 50% of any vested LTIP / DBP shares (net of tax) are held until this is met. In line with the Investment Association's Principles of Remuneration, vested shares subject to a holding period (i.e. vested LTIP awards under the new 2020 LTIP) and unvested shares that are not subject to performance conditions (i.e. DBP deferred awards) will count towards this shareholding requirement on a net-of-tax basis.

Post-cessation

The retention requirement described opposite will continue post-cessation of employment with shares worth two times annual base salary (or, if lower, the shareholding as at the date of cessation) to be held for the initial 12 month period and half of this amount required to be held for the second 12 month period. This will apply to share plan awards granted after the 2020 Directors' Remuneration Policy was approved by shareholders.

In order to facilitate the post-cessation retention requirements, vested shares that are released will be held in a nominee structure.

Directors' shareholdings (audited)

The interests of Directors and their connected persons in ordinary shares as at 30 June 2021, including any shares provisionally awarded under the LTIP and DBP, are presented in the table below. At 14 September 2021, the interests in shares of the Directors who were still in office were unchanged from those at 30 June 2021.

	No. of shares held	Share awards not subject to performance conditions(1)	Share awards subject to a holding period	Shareholding for purposes of share retention policy(2)	Shareholding (% of base salary)(3)	Share awards subject to performance conditions(4)
EXECUTIVE DIRECTORS						
Dave Shemmans (CEO)	104,088	32,437	-	121,279	94	403,542
Ian Gibson (CFO)	55,334	17,563	-	64,642	77	195,815
Mark Garrett (CSO)(5)	59,723	-	-	-	-	-
NON-EXECUTIVE DIRECTORS						
Sir Terry Morgan CBE	26,111	-	-	-	-	-
Russell King	5,105	-	-	-	-	-
Laurie Bowen	6,000	-	-	-	-	-
Malin Persson	1,500	-	-	-	-	-
Bill Spencer	10,402	-	-	-	-	-
Jack Boyer	-	-	-	-	-	-

(1) Deferred awards granted pursuant to the rules of the Ricardo plc 2011 Deferred Bonus Plan.

(2) This includes the number of beneficially owned shares, unvested shares not subject to performance conditions and any vested shares subject to a holding period, on a net-of-tax basis (i.e. 53% of the shares shown in the adjacent "share awards not subject to performance conditions" and "share awards subject to a holding period" columns).

(3) For Executive Directors only (i.e. those who are subject to the share retention policy). Calculated by reference to the number of shares shown in the adjacent "shareholding for purposes of share retention policy" column, a share price of 410.0p per share (2020: 419.0p) and salaries as at 30 June 2021.

(4) Bonus-linked awards granted pursuant to the rules of the Ricardo plc 2011 Deferred Bonus Plan and LTIP awards granted pursuant to the rules of the Ricardo plc 2014 Long Term Incentive Plan and the Ricardo plc 2020 Long Term Incentive Plan.

(5) Shareholding as at 31 July 2020, being the date Mark Garrett ceased employment with the Group. None of the shares that he held on cessation were subject to any post-cessation share retention policy. This policy was only adopted by Ricardo in November 2020.

Dilution limits

The number of shares that may be issued in any ten-year rolling period will be restricted to:

- 10% of the issued ordinary share capital of the Company in respect of all Ricardo employee share plans; and
- (included within the above limit) 5% of the issued ordinary share capital of the Company for Ricardo's discretionary employee share plans.

At the end of the year under review, the Company's overall share plan dilution was 4.33%, of which 3.95% related to discretionary employee share plans. The Company operates an employee benefit trust which has principally been used to facilitate the operation of the LTIP and DBP arrangements. Any new shares issued to the trust are, however, included in the dilution limits noted above.

Executive Directors and their Board positions with other companies during FY 2020/21

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

On 1 September 2014, the Company's Chief Executive Officer was appointed as a non-executive director of Sutton and East Surrey Water plc. He is permitted to retain the associated fees which, for the year from 1 July 2020 to 30 June 2021 (inclusive), amounted to £36,206.

On 25 November 2016, the Company's former Chief Strategy Officer, Mark Garrett, was appointed as the non-executive Chair of Secured By Design Limited (now SBD Automotive Ltd). He was permitted to retain the associated fees which, for the period from 1 July 2020 to his cessation of employment on 31 July 2020 (inclusive), amounted to £1,750.

Departure of Mark Garrett

As the Company announced on 12 May 2020 and as disclosed in Directors' Remuneration Report in respect of FY 2019/20, Mark Garrett resigned as an Executive Director of Ricardo and ceased employment with the Group on 31 July 2020. The Committee considered the treatment of Mark's remuneration as a result of his departure, in accordance with the Directors' Remuneration Policy, his service contract, the relevant incentive plan rules and good practice.

The Committee determined that no bonus was payable in respect of FY 2019/20 and, in accordance with the LTIP and DBP rules, all outstanding awards held by Mark Garrett lapsed in full immediately on the cessation of his employment with the Group.

No payments for loss of office have been or will be made to Mark Garrett and, save for any applicable pension benefits, no further payments will be made to Mark Garrett in any future financial year.

Departure of Dave Shemmans

Dave steps down from the Board on 30 September 2021. In line with his service agreement, he will receive a payment in lieu of notice equal to 12 months' basic salary, pension entitlement and contractual benefits, half paid shortly after the date employment ceases and the balance in monthly instalments commencing 6 months following his departure. His restrictive covenants will continue to apply for six months following the date employment ceases. He will also receive a payment in respect of accrued but untaken holiday entitlement. Dave was treated as a good leaver for the purposes of his awards under the DBP and the LTIP on the basis of his committed service to Ricardo as its Chief Executive Officer for the last sixteen years and taking into account his willingness to be flexible on his leaving date. His outstanding deferred awards will continue and will vest on the normal timescales. His outstanding LTIP and bonus-linked shares will be pro-rated for time and will vest on the normal timescales, subject to the achievement of the relevant performance conditions. One third of any pro-rated bonus payable for FY 2021/22 will be deferred into shares. Malus and clawback provisions will continue to apply for two years following the end of the applicable performance period or, in the case of his existing or future deferred share awards, three years following the date of grant.

Implementation of Directors' Remuneration Policy in FY 2021/22

As anticipated that the implementation of the 2020 Directors Remuneration Policy (the '2020 Policy') in FY 2021/22 will be similar to that of FY 2020/21.

The Committee will:

- Review base salary levels for the Executive Directors with effect from 1 January 2022;
- Set and review the performance targets for the FY 2021/22 annual bonus and the LTIP awards to be made in 2021 to ensure continued alignment to strategy;
- Make awards under the Ricardo plc 2020 Long Term Incentive Plan (the '2020 LTIP'); and
- Make awards under the new Ricardo plc 2021 Deferred Bonus Plan (the '2021 DBP'), subject to shareholders' approval at the 2021 AGM, where necessary.

To determine the amount of bonus payable for FY 2021/22, the Committee will assess the level of achievement against the financial measures and targets set in respect of:

- Group underlying profit before tax (60%);
- Cash conversion (20%); and
- The achievement of specified individual objectives (20%).

Owing to concerns about commercial sensitivity, we do not believe it is in shareholders' interests to disclose any further details of these targets on a prospective basis. However, the Company is committed to adhering to principles of transparency and will, provided disclosure of targets is not then deemed to be commercially sensitive, make appropriate and relevant levels of disclosure of bonus targets and performance against these targets for the FY 2021/22.

2021 LTIP Awards

The Committee has so far considered the performance measures to apply to the LTIP awards to be granted in October 2021. The Committee believes that TSR and underlying EPS continue to be appropriate measures for the Company's long-term incentive arrangements as they are strongly aligned to shareholder value creation.

The targets applicable to the TSR portion of these awards will be the same as those which applied to awards granted last year. Threshold performance (i.e. median ranking in the comparator group, for which 25% of this portion will vest) is generally intended to align to the anticipated performance of the relevant market and our competitors. If the maximum performance is achieved (i.e. upper quartile ranking in the comparator group), we would expect to have significantly outperformed the relevant market and our competitors.

In order to ensure that the target range for the EPS portion of the awards remains challenging in light of market expectations of the Company's underlying EPS performance to the year ending 30 June 2024, the Committee has determined that:

- No part of the underlying EPS portion of these awards will vest if the Company's underlying EPS for the final year in the performance period is lower than 29.7p;
- 15% of this portion will vest where the final year underlying EPS is 29.7p;
- 100% of this portion will vest where the final year underlying EPS is greater than or equal to 50.2p; and
- Vesting will take place on a straight-line basis between 29.7p and 50.2p.

The proposed range is based on a similar rationale for the LTIP awards granted in 2020 and continues to include a wider EPS range than previously used due to the continued uncertainty around the timing and shape of COVID-19 recovery.

Where the underlying EPS performance period ends before 30 June 2024 (the final year of the performance period), the Committee retains the discretion to amend these targets and the corresponding vesting levels accordingly.

It should also be noted that, in terms of the 2020 Policy, the Committee will have the ability to adjust the formulaic outcomes from performance conditions where appropriate and the Committee will ensure that outcomes reflect Company and executive performance as well as the experience of shareholders and other stakeholders. The Committee will also use its discretion to reduce vesting outcomes where it determines that windfall gains have been received.

Other points

The Committee considered, and will continue to consider, the impact on the Company's incentive arrangements of the introduction of IFRS 15 *Revenue from Contracts with Customers* on 1 July 2018 and IFRS 16 *Leases* on 1 July 2019. It will make any adjustments when assessing the performance outcomes to outstanding long-term incentive awards to ensure that performance measurements are carried out on a like for like basis and are fair to both shareholders and plan participants.

PART 3 – DIRECTORS' REMUNERATION POLICY
Introduction

This part of the Directors' Remuneration Report provides an overview of the Company's policy on Directors' pay that is designed to align with and support Ricardo's strategic plan and will operate over the three years from the AGM held on 12 November 2020 (the '2020 AGM') until the AGM to be held in 2023 (the '2020 Policy'). The previous policy that was approved by shareholders at the AGM held on 8 November 2017 (the '2017 Policy') continued to operate until the 2020 AGM and indeed the 2020 Policy permits the execution of remuneration arrangements that were agreed when the 2017 Policy was in effect. The 2017 Policy was most recently reproduced in the Annual Report and Accounts 2019 with the originally approved text being included in the *Annual Report and Accounts 2017*, both of which are available on our website at: www.ricardo.com. There have been no changes of substance to the text of the 2020 Policy that was approved at the 2020 AGM. We have, however, updated the 'remuneration outcomes' chart on page 118, some of the wording (particularly relating to time) and page references for ease of use. A copy of the originally approved text is in the *Annual Report & Accounts 2020*, which is also available at www.ricardo.com.

In accordance with the requirements of the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 (as amended) (the 'Regulations'), the 2020 Policy was subject to a binding vote at the 2020 AGM and took effect immediately upon receipt of such approval from shareholders.

The Remuneration Committee – what we do

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

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

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

Taking shareholders' views into account

When considering Ricardo's remuneration policy and its implementation, the Committee is always keen to ensure that it takes into account the views and opinions of all the relevant stakeholders in the business. In particular, when preparing its policy for approval at the 2020 AGM, the Committee undertook a programme of engagement with the Company's largest institutional investors and their representative bodies in order to better understand their perspective on our previous pay practices and the then proposed policy for 2020-2023. Shareholders were given an early opportunity to provide feedback and in finalising the proposals this was taken into account. As a result of the feedback received through this consultation programme:

- Incumbent Executive Directors will be aligned to the pension provision levels of the UK workforce by 1 January 2022 (in addition to any new appointees being capped at this level from the date of joining) – further details are included in the 2020 Policy table on page 114;
- One-third of any bonus paid will be deferred into shares for three years; and
- Extension of share ownership guideline to two years' post-cessation of employment (reducing from two times salary in the first year to one times salary in the second year).

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

Consideration of employment conditions elsewhere in the Company

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

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

The Committee also looks at the differential between the Chief Executive Officer's pay and Ricardo average employee earnings over time.

Overview of Ricardo's remuneration policy for 2020 – 2023

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

Changes to the 2017 Directors' Remuneration Policy

The changes to the 2017 Policy were as follows:

- Pension provision for new joiners and incumbents alike will be aligned with the UK workforce;
- One third of any bonus will be deferred into shares and ordinarily delivered at the expiry of a three year period from grant;
- To simplify our long-term incentive arrangements, the ability to receive bonus-linked shares was removed and the limits under the LTIP were increased in order to compensate;
- A two-year post vesting holding period under the LTIP was introduced for future grants to Executive Directors; and
- A 200% share ownership requirement for all Executive Directors was introduced with a requirement that 50% of any gains from any share awards (vesting of LTIP or deferred bonus) be retained until the increased level is met. This will continue post-cessation of employment for two years (with the holding requirement reducing by 50% for the second year).

Overview of the decision making process that was followed for the determination of the new policy

As explained in the Chair's introduction on page 102 of the *Annual Report & Accounts 2020*, the new 2020 Policy which shareholders approved at the 2020 AGM was developed by the Remuneration Committee following a thorough review of the pre-existing executive remuneration arrangements; it also involved the Committee undertaking a consultation exercise with our major shareholders and the Chief Executive Officer and Chief Financial Officer.

In its deliberations, the Committee received support and advice from FIT Remuneration Consultants and Shepherd and Wedderburn, its independent external advisors (see page 99 for details).

Although the Executive Directors provided the Committee with a level of input in relation to the formulation of the new policy, the final decisions around its structure were taken by the Committee alone in order to avoid any conflicts of interest arising.

Corporate Governance

When determining the 2020 Policy, the Committee was mindful of its obligations under Provision 40 of the Corporate Governance Code to ensure that the policy and other remuneration practices were clear, simple, predictable, proportionate, safeguarded the reputation of the Company and were aligned to Company culture and strategy. Set out below are examples of how the Committee addressed these factors:

Clarity

- Remuneration policy and arrangements are clearly disclosed each year in the Annual Report.
- The Company invited its principal shareholders and shareholder representative groups to consult on the updated remuneration policy and received good feedback. Changes were made to the proposals following input from this process.
- The Committee is regularly updated on workforce pay and benefits across the Group during the course of its activity.

Simplicity

- Our remuneration structure is comprised of fixed and variable remuneration, with the performance conditions for variable elements clearly communicated to, and understood by, participants in order to ensure they are effective.
- The proposed 2020 Policy has received positive feedback from stakeholders in relation to its simplicity. The bonus-linked shares have been removed to result in a simpler structure.

Risk

- The rules of the 2020 LTIP provide discretion to the Committee to reduce award levels and awards are subject to malus and clawback provisions.
- The total pay of the Executive Directors is considered by the Committee as well as pay ratios with the wider workforce and shareholder returns.

Predictability

- The range of possible rewards for the Executive Directors is considered in the scenario charts on page 118.
- The Committee has a range of discretions in relation to variable pay awards, new joiner and leavers which are identified and explained in the Remuneration Policy section.

Proportionality

- As shown in the scenario charts on page 118, variable performance-related elements represent a significant proportion of the total remuneration opportunity for our Executive Directors.
- The Committee considers the appropriate financial and personal performance measures each year to ensure that there is a clear link to strategy. For example, for FY 2020/21 the cash conversion measure was introduced under the annual bonus.
- Discretions are available to the Committee to reduce awards if necessary to ensure that outcomes do not reward poor performance.

Alignment to culture

- The Committee remains confident that the incentive schemes operated under the Remuneration Policy are aligned with the Company's purpose, values and strategy.
- The use of metrics in both the annual bonus and LTIP measure how we perform against our financial and non-financial KPIs.

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

Pay element and link to strategy	Maximum	Operation	Framework for assessing performance
Base salary *To provide a core level of remuneration to enable the Company to attract and retain skilled, high-calibre executives to deliver its strategy.*	Base salary increases will not ordinarily be more than 10% p.a. with exceptional increases over the normal maximum limit capped at 25% p.a. However, generally speaking, increases will be in line with salary increases for employees across the Group.	Salary levels are normally reviewed annually in January each year. Pay is set by considering: • Market levels of total pay for comparable roles in companies of similar size, complexity and sector; • Each individual Director's experience, scope of responsibilities and performance; and • The salary increases for employees across the Group. Ricardo places a strong emphasis on internal succession planning. This emphasis may mean that talented individuals are promoted rapidly. In such circumstances, the Committee's policy is to set a relatively low base salary initially and then increase this to a market competitive level for the role over time. This may mean relatively high annual salary increases as the individual gains experience in the new role. We will notify shareholders where this is the case.	None
Other benefits *To provide market-competitive benefits.*	The total value of benefits will not exceed 10% of base salary p.a., save in the case of relocation.	The Company provides other cash benefits and benefits in kind to Executive Directors in line with market practice. These include a company car or cash alternative, private fuel, private medical insurance, life assurance and permanent health and disability insurance. The benefits arrangements are reviewed on an annual basis. The Committee reserves the right to provide further benefits where this is appropriate in the individual's particular circumstances (for example, costs associated with relocation as a result of the Director's role with the Company). Certain other employees are eligible for the same or similar benefits described above depending on their role, seniority and geographical location.	None
Pension *To offer market-competitive retirement benefits.*	Until 31 December 2021 the maximum pension contribution is 20% of salary over the Lower Earnings Limit. From 1 January 2022 this reduces to match the pension provision level of the UK workforce from time to time (currently 7%). In addition, in line with payments given to all employees who were previous members of the old defined benefit scheme operated by the Company, the current Chief Executive Officer is entitled to an additional 1.2% of salary pension contribution. This will continue throughout the 2020 Policy period.	The Company operates a defined contribution scheme (the 'Pension Scheme'). The policy for Executive Directors (save for the Chief Executive Officer's legacy pension arrangements described opposite) continues to be a pension contribution of 20% of base salary over the Lower Earnings Limit. From 1 January 2022 (again, save for the Chief Executive Officer's additional 1.2% legacy entitlement), this will be aligned with the pension provision levels of the UK workforce from time to time (currently 7%). To the extent that any contributions have used up the adjusted annual allowance limit, any additional payment will be cash in lieu of pension. Executive Directors may only choose to opt out of the Pension Scheme where they are close to or have exceeded the pension lifetime allowance and have applied for fixed protection from HMRC. Under such circumstances, Executive Directors will receive a cash payment in lieu of pension. On death in service, all Executive Directors, subject to the medical requirements of the insurance company, are entitled to a lump sum of four times annual salary at date of death. Early retirement is available with the consent of the Company and the pension scheme trustees if the individual is over 55 or retiring due to ill health. All UK employees are entitled to receive Company pension contributions. While levels vary, the majority of UK employees receive a 7% of salary employer pension contribution into the Pension Scheme. For new Executive Director appointments regardless of appointment date, pension contribution will be aligned with the contribution available to the wider workforce.	None

THE STRUCTURE OF OUR DIRECTORS' REMUNERATION PACKAGE – THE POLICY TABLE (continued)

Pay element and link to strategy	Maximum	Operation	Framework for assessing performance
Pay for performance: **Annual bonus** *To reward the annual delivery of financial and operational targets.*	Maximum opportunity of 125% of base salary for the Chief Executive Officer and 100% of base salary for other Executive Directors.	**Bonuses are awarded by reference to performance against specific targets measured over a single financial year.** Two thirds of any bonus paid to an Executive Director will be paid out in cash shortly after the assessment of the performance targets has been completed. The remaining one third of the bonus will be compulsorily deferred into ordinary shares, the vesting of which is normally subject to continued employment for a three-year period from the award date. The cash element of the bonus is not payable unless the individual remains in employment at the payment date. The principal purpose of this bonus deferral mechanism is to: • Provide for further alignment of executives' and shareholders' interests; • Provide an additional retention element; and • Encourage Executive Directors to build up a shareholding in accordance with our share retention policy. Dividends and dividend equivalents for each deferral period may also be paid in respect of shares under award to the extent that shares have vested in the relevant participants. Bonus arrangements exist for certain other employees throughout the Group on terms that are applicable to their role, seniority and geographical location, although typically at lower levels of maximum opportunity to reflect that a greater proportion of Executive Directors' remuneration is performance-based. **Malus and clawback:** Annual bonuses (including any element deferred into shares) may be subject to malus and clawback provisions if certain events occur in the period of three years from the end of the financial year to which they relate. These events include the Committee becoming aware of: • A material misstatement of the Company's financial results; • An error in the calculation of performance conditions; or • An act committed by the relevant participant that could have resulted in summary dismissal by reason of gross misconduct or which has caused significant reputational damage to the Group. The mechanism through which malus and clawback can be implemented enables the Committee to take various actions including: • Reducing outstanding incentive awards; and • Requiring a cash payment to be made by participants.	The measures and targets applicable to the annual bonus scheme (and the different weightings ascribed to them) are set annually by the Committee in order to ensure they are relevant to participants and take account of the most up-to-date business plan and strategy. A significant majority (at least 50%) of the bonus opportunity will normally be determined by reference to performance against Group KPIs such as: • Underlying Profit Before Tax; and • Cash conversion. Any remaining part of an Executive Director's bonus will normally be based on the achievement of personal objectives which relate to delivery of the business strategy. See page 104 and 105 for examples. A payment scale for different levels of achievement against each performance target is specified by the Committee at the outset of each year – this ranges from zero for below-threshold performance up to 100% for full satisfaction of the relevant target. Bonus payments will also be subject to the Committee considering whether the proposed awards, calculated by reference to performance against the targets, appropriately reflect the Company's overall performance and shareholders' experience. If the Committee does not believe this to be the case, it retains the discretion to adjust the bonus outturn accordingly.

THE STRUCTURE OF OUR DIRECTORS' REMUNERATION PACKAGE – THE POLICY TABLE (continued)

Pay element and link to strategy	Maximum	Operation	Framework for assessing performance
***Pay for performance:* Long-term incentives** Performance shares under the Long-Term Incentive Plan ('LTIP') *To focus motivation on the long-term performance of the Group and reward shareholder value creation.* *To encourage share ownership and alignment with shareholders.*	Maximum opportunity of 150% of base salary for the Chief Executive Officer, 130% for other Executive Directors.	**LTIP – performance measured over a three-year period:** Performance share awards under the LTIP are made on an annual basis to the Executive Directors and a small group of other senior managers. From time to time a number of employees below board level are granted non-performance based share awards to reflect exceptional performance. **Holding Period** Vesting of awards will generally take place on the third anniversary of grant or, if later, the date on which the performance conditions are assessed by the Committee. Executive Directors' awards that vest will normally be subject to a holding period in terms of which the relevant shares will only be released after a further period of at least two years has expired from the vesting date. **Dividends and equivalents** Dividends and dividend equivalents for each performance / holding period may also be paid in respect of shares under award to the extent that shares have vested in the relevant participants. **Malus and clawback:** Long-term incentive awards may be subject to malus and/or clawback provisions if certain events occur after their grant but before the expiry of the period of two years from the end of the relevant performance period. These events include the Committee becoming aware of: • A material misstatement of the Company's financial results; • An error in the calculation of performance conditions; or • An act committed by the relevant participant that has (or could have) resulted in summary dismissal by reason of gross misconduct or which has caused significant reputational damage to the Group. The mechanism through which malus and clawback can be implemented enables the Committee to take various actions including: • Reducing outstanding incentive awards; and • Requiring a cash payment to be made by participants.	The vesting of long-term incentive awards is subject to both continued employment and the extent to which performance conditions measured over a specified three-year period are met. The measures and targets applicable to the long-term incentive awards will consist of challenging shareholder return, financial and strategic measures. The particular measures and targets to apply (and the different weightings ascribed to them) will be set annually by the Committee in order to ensure they are relevant to participants, challenging to achieve and take account of the most up-to-date business plan and strategy. The initial weightings between the two long-term incentive measures that were granted after the 2020 AGM were 67% EPS performance and 33% TSR performance; however, our policy is simply for financial and shareholder return targets to make up at least 50% of awards. A maximum of 25% of each element of an award will vest for achieving the threshold performance target with 100% of the awards being earned for maximum performance (with straight-line vesting between these points). Further details of the performance conditions applicable to awards to be made in FY 2021/22 are set out on page 111. Formulaic outcome of all LTIP performance measures will also be subject to the Committee considering whether the proposed vesting levels, calculated by reference to performance against the targets, appropriately reflect the Company's overall performance and shareholders' experience. If the Committee does not believe this to be the case, it retains the discretion to adjust the LTIP outturn accordingly.
Chairman and other Non-Executive Directors *Helps recruit and retain high-quality experienced individuals.* *Reflects time commitment and role.*	Company's Articles of Association place a limit on the aggregate annual level of Non-Executive Directors' and Chairman's fees (currently £500,000).	The fees for Non-Executive Directors are set in line with prevailing market conditions and at a level that will attract individuals with the necessary experience and ability to make a significant contribution to the Group's affairs. Non-Executive Directors receive an annual basic fee plus an additional fee for acting as the Chairman of the Audit or Remuneration Committee or the Senior Independent Director. An additional fee may be paid for membership of the Technical Exploitation Board ('TEB'). No Non-Executive Director is currently a member of the TEB. The Chairman of the Board receives an annual fee payable monthly with no additional fees for chairing Board committees. They also receive reimbursement for travel and incidental costs (including any associated personal tax charges) incurred in furtherance of Company business.	None

Notes to the 2020 Policy table:

1. Where maximum amounts for elements of remuneration have been set within the 2020 Policy, these will operate simply as caps and are not indicative of any aspiration.
2. A description of how the Company intends to implement the 2020 Policy set out in the tables on pages 114 to 116 during the financial year to 30 June 2022 is provided on pages 110 and 111.
3. A general overview of how each remuneration element applies to other employees of the Group is included under the relevant section of the policy table.
4. The Committee reserves the right to make any remuneration payments and payments for loss of office (including exercising any discretions available to it in connection with such payments) notwithstanding that they are not in line with the 2020 Policy (as set out on pages 114 and 116) where the terms of the payment were agreed:

a. before 29 October 2014 (the date the Company's first shareholder-approved Directors' Remuneration Policy came into effect);

b. before the 2020 Policy came into effect, provided that the terms of the payment were consistent with the shareholder-approved Directors' Remuneration Policy in force at the time they were agreed; or

c. at a time when the relevant individual was not a Director of the Company and, in the opinion of the Committee, the payment was not in consideration for the individual becoming a Director of the Company.

For these purposes payments include the Committee satisfying awards of variable remuneration and, in relation to an award over shares, the terms of the payment are 'agreed' at the time the award is granted.

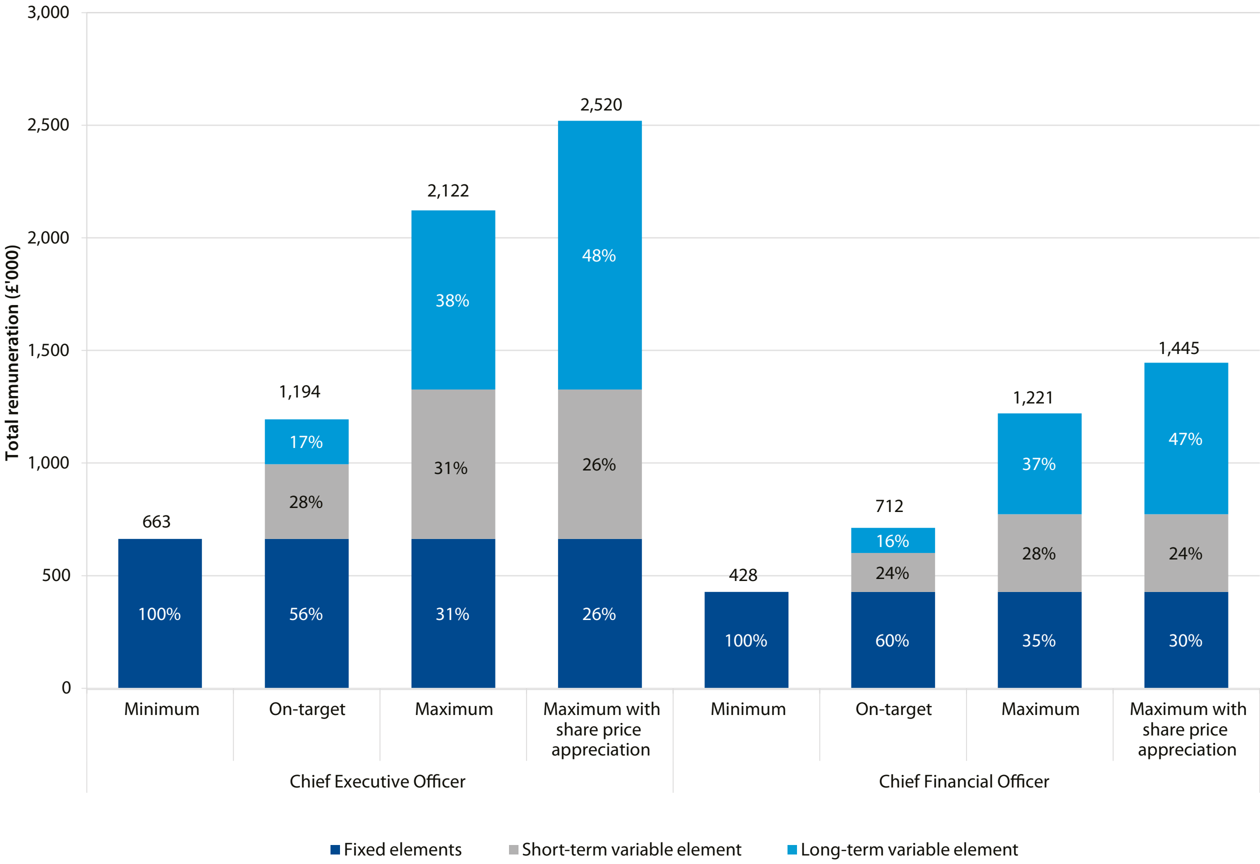
5. The 'framework for assessing performance' column of the tables on pages 114 to 116 provide information on choosing the particular performance measures and target setting in relation to them.
6. Ricardo's variable pay may have any performance conditions applicable to the relevant element amended or substituted by the Committee if an event occurs which causes the Committee to determine that an amended or substituted performance condition would be more appropriate and not materially less difficult to satisfy. The Committee may make adjustments, where these are fair and reasonable, to measures or targets to take account of, for example, the implications of acquisitions and disposals.
7. Long-term incentive awards can be granted in a variety of forms such as performance shares, nil-cost options or forfeitable shares and the Committee reserves the right to grant long-term incentive awards with the same economic effect but in any of these different contractual forms (including in cash). Long-term incentive awards can also be adjusted in the event of any variation of the Company's share capital or any demerger, delisting, special dividend or other event that may affect the Company's share price.
8. Under the terms of long-term incentive award performance conditions, where any company becomes unsuitable as a member of the comparator group as a result of, for example, a change of control or delisting, the Committee has the discretion to treat that company in such manner as it deems appropriate (including replacing it with another organisation).
9. In the event of a change of control, long-term incentive awards will normally vest at that time, taking into account, amongst other things, the extent to which any performance criteria have been met (over the shortened performance periods) and the time elapsed since grant.

All-employee share plans

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

Illustrative remuneration outcomes at different performance levels

Ricardo's pay policy seeks to ensure the long-term interests of Executive Directors are aligned with those of shareholders. The remuneration packages for each Executive Director and their fixed and variable elements are reviewed annually. The scenario chart below presents remuneration outcomes for the 2020 Policy under minimum, on-target, maximum and maximum with share price appreciation scenarios.



The target scenario broadly illustrates the remuneration level when budgeted performance is achieved. A further column has also been included which illustrates the impact on the figures contained in the maximum scenario of an assumed share price appreciation for the LTIP award of 50% over the relevant performance period. The disclosures in the chart above reflect FY 2020/21 data on the basis of the assumptions set out below.

- Fixed elements comprise current base salary, pension and other benefits. For example, for the Chief Executive Officer, fixed elements comprise base salary of £530,484, pension (cash in lieu) of 21.2% of base salary above the Lower Earnings Limit and benefits equal to those received in FY 2020/21;
- For minimum performance, Executive Directors receive only the fixed elements of pay;
- For target performance, an assumption of 50% of bonus pay-out and threshold vesting (25%) in respect of long-term incentives has been applied;
- For maximum performance, an assumption of maximum bonus pay-out and maximum vesting in respect of long-term incentives has been applied;
- Save for the "maximum with share price appreciation column", no share price increase has been assumed for the above and this means that the single total figure in any year may be higher than the maximum shown above; and
- For maximum with share price growth performance, share price appreciation of 50% over the relevant performance period has been assumed for the LTIP awards.

Recruitment remuneration policy

New Executive Directors will be appointed on remuneration packages with the same structure and elements as described in the policy table starting on page 114. Annual bonus and long-term incentive awards will be within the limits described in the policy table for the particular role. The limits for any new Executive Director roles will be set by the Committee taking into account the particular responsibilities of the role, but will not exceed those that apply to the current Chief Executive Officer. Pension contribution levels will be aligned to those applicable to the wider workforce.

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

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

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

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

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

Termination remuneration policy

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

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

Unvested share-based awards will lapse unless the individual concerned leaves for one of a number of specified 'good leaver' reasons which are: death; injury, illness or disability; redundancy; or retirement. The Committee retains the discretion to prevent such 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 will vest on their originally anticipated vesting date with the new holding period also continuing to apply (although the Committee retains the discretion to allow vesting and/or release from the holding period at cessation, depending on the circumstances under the applicable rules). These awards will also usually be subject to a time pro-rating reduction to reflect the unexpired portion of the performance or deferral period concerned, although the Committee will retain the discretion to disapply this pro-rating. Awards that are subject to performance conditions will usually only vest to the extent that these conditions are satisfied.

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

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

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

Executive Directors' service contracts

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

Provision	Detailed terms
Remuneration	• Salary, pension and benefits; • Company car or cash allowance; • Private health insurance for Director and dependants; • Life assurance and death in-service benefits; • Permanent health and disability insurance; • Director's liability insurance; • 30 days' paid annual leave; • Participation in annual bonus plan, subject to plan rules and at the discretion of the Committee; and • Eligible to participate in share plans, subject to plan rules and at the discretion of the Committee.
Duration	• Indefinite subject to termination by either party in certain circumstances including serving notice as set out below.
Notice period	• 6 months' notice by the Director and 12 months' notice by the Company.
Termination payment	• See separate general disclosure on page 110. The service contract entered into with Dave Shemmans permits any payment in lieu of notice to also include an amount in respect of benefits which he would have been entitled to receive during the notice period. It also permits Dave Shemmans to receive a sum in respect of any accrued bonus to the date of termination notwithstanding that he may not be in employment on the payment date of the bonus.
Restrictive covenants	• During employment and for 6 months after leaving.[1]

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

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

Non-Executive Directors – fees and letters of appointment

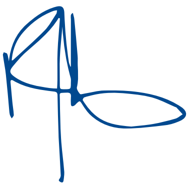
The Committee determines the Chairman's fees. The Chairman and the Executive Directors determine the fees to other Non-Executive Directors. No Director is present for any discussion or decision about his or her own remuneration. The fees are reviewed each January.

The Non-Executive Directors do not participate in any of the Company's employee share plans, pension schemes or bonus arrangements, nor do they have service agreements.

The Non-Executive Directors 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 2021, are:

Non-Executive Director	Unexpired terms of appointment (months)
Sir Terry Morgan CBE	18
Russell King	14
Laurie Bowen	4
Malin Persson	16
Bill Spencer	21
Jack Boyer	14

The Directors’ remuneration report, comprising the Chair’s Overview and Annual Statement in Part 1, the Annual Report on Remuneration in Part 2 and the Directors’ Remuneration Policy in Part 3 was approved by the Board on 14 September 2021 and signed on its behalf by:



Russell King
Chair of the Remuneration Committee

Patricia Ryan
Group General Counsel and
Company Secretary

Directors' report

The Directors present their report and the audited consolidated financial statements of Ricardo plc for the year ended 30 June 2021.

Dividends

On 9 April 2021 an interim dividend of 1.75p (HY 2019/20: 6.24p) was paid to shareholders. The Directors recommend the payment of a final ordinary share dividend of 5.11 pence per ordinary share on 25 November 2021 to shareholders who are on the register of members at the close of business on 5 November 2021, which together with the interim dividend paid on 9 April 2021 makes a total of 6.86 pence (FY 2019/20: 6.24 pence) per ordinary share for the year.

Acquisitions and disposals

No acquisitions or disposals were undertaken during the year under review.

Events after the reporting date

On 31 July 2021, the Group terminated its lease for the Schwäbish Gmünd Technical Centre, incurring a termination fee of £0.3m (€0.4m). At this date, the related right of use asset of £1.1m was derecognised, £0.1m of leasehold improvements were impaired, the £1.5m lease liability balance was released. The net impact to the income statement was nil.

Research & Development

The Group continues to devote effort and resources to the research and development of new technologies. Costs of £10.2m have been incurred, of which £8.5m has been capitalised and £0.5m has been charged to the income statement, net of £1.2m of government grant income, during the year.

Board of Directors

The current Directors of the Company at the date of this report appear on pages 80 and 81. Mark Garrett resigned from the Board on 31 July 2020. On 25 January 2021 the Company announced that the Board and Dave Shemmans had jointly agreed that he would leave his role as Chief Executive Officer. Dave Shemmans resigned from the Board on 30 September 2021. Graham Ritchie has been appointed as Chief Executive Officer with effect from 1 October.

Directors' interests in shares

Directors' interests in shares and share options are detailed on pages 107 to 108 of the Directors' Remuneration Report

Directors' indemnities

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

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

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

Employee information

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

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

Change of control provisions

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

Management report

The management report required by the provisions of the Disclosure and Transparency Rules is included within the Strategic Report and has been prepared in consultation with management.

Share capital

As at 19 August 2021, the Company's share capital is divided solely into 62,218,280 ordinary shares of 25 pence each, all of which are fully paid. The ordinary shares are listed on the London Stock Exchange.

All ordinary shares rank equally for all dividends and distributions that may be declared on such shares. At general meetings of the Company, each member who is present (in person, by proxy or by representative) is entitled to one vote on a show of hands and, on a poll, to one vote per share.

With respect to shares held on behalf of participants in the all-employee Share Incentive Plan, the trustees are required to vote as the participants direct them to do so in respect of their plan shares. There are no restrictions on voting rights and no securities carry special voting rights with regard to the control of the Company.

Awards granted under the Company's share plans are satisfied either by shares held in the employee benefit trust or by the issue of new shares when awards vest. The Remuneration Committee monitors the number of awards made under the various share plans and their potential impact on the relevant

Based on the Company's issued share capital as at 30 June 2021, the overall dilution was 4.33% (i.e. below the 10% limit for all plans in any rolling 10-year period) and 3.95% for discretionary employee share plans (i.e. below the 5% limit for discretionary employee share plans in any rolling 10-year period).

The Company was given authority to purchase up to 15% of its existing ordinary share capital at the 2020 AGM. That authority will expire at the conclusion of the 2021 AGM unless renewed. Accordingly, a special resolution to renew the authority will be proposed at the forthcoming AGM.

The existing authority for Directors to allot ordinary shares will expire at the conclusion of the 2021 AGM unless renewed. Accordingly, an ordinary resolution to renew this authority will be proposed at the forthcoming AGM. In addition, it will be proposed to give the Directors further authority for a period of one year to allot ordinary shares in connection with a rights issue in favour of ordinary shareholders. This is in accordance with guidance issued by the Association of British Insurers. If the Directors were to use further authority in the year following the 2021 AGM, all Directors wishing to remain in office would stand for re-election at the 2022 AGM.

Details of these resolutions are included with the Notice of AGM.

Resolutions at the Annual General Meeting

The Company's AGM will be held on 11 November 2021. The Notice of AGM 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

As at 19 August 2020, the Company has been notified of the following material interests in the voting rights of the Company under the provisions of the Disclosure and Transparency Rules.

Rank	Shareholder	Shares	% IC
1	Aviva Investors	4,117,659	6.62
2	JO Hambro Capital Mgt	3,987,291	6.41
3	Tellworth Investments	3,431,811	5.52
4	Royal London Asset Mgt	3,060,457	4.92
5	Invesco	2,809,391	4.52
6	Canaccord Genuity Wealth Mgt	2,800,000	4.5
7	Gresham House	2,533,231	4.07
8	Schroder Investment Mgt	2,475,475	3.98
9	Janus Henderson Investors	2,239,138	3.6
10	Montanaro Asset Mgt	1,911,965	3.07

Donations

During the year the Group made various charitable donations, which are summarised in the Environmental, Social and Governance Report on page 33. The Group made no political donations nor incurred any political expenditure during the year to 30 June 2021.

Independent auditors

Following shareholder approval at the 2020 AGM, KPMG LLP were re-appointed as independent auditors of the Group and Company for the year ended 30 June 2021.

In accordance with Section 489 of the Companies Act 2006, a resolution to re-appoint KPMG LLP as independent auditors of the Group and Company will be proposed at the 2021 AGM.

Going concern

Having assessed the principal risks and the other matters discussed in connection with the Viability Statement on pages 38 and 39, the Directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements.

Branches outside the UK

The Company has no overseas branches outside the UK. A number of the Group's subsidiaries have overseas branches outside the UK, which are disclosed in their local statutory financial statements, where required.

Additional information

Certain information that is required to be included in the Directors' Report can be found elsewhere in this document as referred to below, each of which is incorporated into the Directors' Report by cross-reference:

An indication of the likely future developments in the Group's business can found in the Strategic Report, on pages 7, 11, 47, 49, 51, 53 and 55.

Information on greenhouse-gas emissions, in the Sustainability and ESG report on page 30.

Information on engagement with suppliers, customers and others in a business relationship with the company in Our stakeholders on pages 88 and 89.

Disclosure of information to auditor in the Statement of Directors' responsibility on page 125.

The Group's statement on corporate governance in the Corporate Governance Statement on pages 82 to 87.

The Group's financial risk management objectives and policies in relation to its use of financial instruments and its exposure to capital, liquidity, credit and market risk, to the extent they are material, in Note 27 to the Group financial statements.

The Directors' Report was approved by order of the Board on 14 September 2021 and signed on its behalf by:

Patricia Ryan

Patricia Ryan
Group General Counsel & Company Secretary

Registered office
Ricardo plc
Shoreham Technical Centre
Shoreham-by-Sea
West Sussex
BN43 5FG

Statement of Directors' responsibility

in respect of the Annual Report and the financial statements

The directors are responsible for preparing the Annual Report and the Group and parent Company financial statements in accordance with applicable law and regulations.

Company law requires the directors to prepare Group and parent Company financial statements for each financial year.

Under that law they are required to prepare the Group financial statements In preparing these financial statements, the Company applies the recognition, measurement and disclosure requirements of international accounting standards in conformity with the requirements of the Companies Act 2006, but makes amendments where necessary in order to comply with Companies Act 2006 and have elected to prepare the parent Company financial statements in accordance with UK accounting standards, including FRS 101 Reduced Disclosure Framework.

Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and parent Company and of their profit or loss for that period. In preparing each of the Group and parent Company financial statements, the directors are required to:

- Select suitable accounting policies and then apply them consistently.
- Make judgements and estimates that are reasonable, relevant, reliable and prudent.
- For the Group financial statements, state whether they have been prepared in accordance with IFRSs as adopted by the EU;
- For the parent Company financial statements, state whether applicable UK accounting standards have been followed, subject to any material departures disclosed and explained in the parent company financial statements.
- Assess the Group and parent Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern.
- Use the going concern basis of accounting unless they either intend to liquidate the Group or the parent Company or to cease operations, or have no realistic alternative but to do so.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the parent Company's transactions and disclose with reasonable accuracy at any time the financial position of the parent Company and enable them to ensure that its financial statements comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the Group and to prevent and detect fraud and other irregularities.

Under applicable law and regulations, the directors are also responsible for preparing a Strategic Report, Directors' Report, Directors' Remuneration Report and Corporate Governance Statement that complies with that law and those regulations.

The directors are responsible for the maintenance and integrity of the corporate and financial information included on the company's website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Responsibility statement of the directors in respect of the annual financial report

We confirm that to the best of our knowledge:

The financial statements, prepared in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the company and the undertakings included in the consolidation taken as a whole;

The strategic report includes a fair review of the development and performance of the business and the position of the issuer and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face; and

As at the date of this report there is no relevant audit information of which the Company's auditor is unaware. Each Director has taken all the steps he or she should have taken as a Director in order to make himself or herself aware of any relevant audit information and to establish that the Company's auditor are aware of that information

We consider the annual report and accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the group's position and performance, business model and strategy.

Dave Shemmans
Chief Executive Officer

Ian Gibson
Chief Financial Officer

14 September 2021

Financial statements

Independent auditor's report

to the members of Ricardo plc

1. Our opinion is unmodified

We have audited the financial statements of Ricardo plc ("the Company") for the year ended 30 June 2021 which comprise the consolidated income statement, consolidated statement of comprehensive income, consolidated statement of financial position, consolidated statement of changes in equity, consolidated cash flow statement, company statement of financial position, company statement of changes in equity, and the related notes, including the accounting policies in note 1.

In our opinion:

— 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 2021 and of the Group's profit for the year then ended;

— the Group financial statements have been properly prepared in accordance with international accounting standards in conformity with the requirements of the Companies Act 2006;

— the parent Company financial statements have been properly prepared in accordance with international accounting standards in conformity with the requirements of, 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 to the extent applicable.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities are described below. We believe that the audit evidence we have obtained is a sufficient and appropriate basis for our opinion. Our audit opinion is consistent with our report to the audit committee.

We were first appointed as auditor by the shareholders on 15 November 2018. The period of total uninterrupted engagement is for the three financial years ended 30 June 2021. We have fulfilled our ethical responsibilities under, and we remain independent of the Group in accordance with, UK ethical requirements including the FRC Ethical Standard as applied to listed public interest entities. No non-audit services prohibited by that standard were provided.

Overview		
Materiality: group financial statements as a whole	£1.2m (2020:£1.3m) 5.3% (2020: 5.0%) of normalised profits and losses that make up Group profit before tax	
Coverage	88% (2020:83%) of normalised profits and losses that make up Group profit before tax	
Key audit matters		**vs 2020**
Recurring risks	Valuation of defined benefit pension obligation	◄►
	Revenue recognition of fixed price contracts	▼
Financial performance	**New:** Goodwill Impairment A&I EMEA Division	▲

2. Key audit matters: our assessment of risks of material misstatement

Key audit matters are those matters that, in our professional judgement, were of most significance in the audit of the financial statements and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by us, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. We summarise below the key audit matters, in decreasing order of audit significance, in arriving at our audit opinion above, together with our key audit procedures to address those matters and, as required for public interest entities, our results from those procedures. These matters were addressed, and our results are based on procedures undertaken, in the context of, and solely for the purpose of, our audit of the financial statements as a whole, and in forming our opinion thereon, and consequently are incidental to that opinion, and we do not provide a separate opinion on these matters.

	The risk	Our response
Group and parent Company: Valuation of defined benefit pension obligation (£149.3m; 2020: £157.1m) *Refer to page 93 (Audit Committee Report), page 147 (accounting policy) and page 182 (financial disclosures).*	**Subjective estimate:** A significant level of estimation is required in order to determine the valuation of the gross liability of the Defined Benefit Obligation. Small changes in the key assumptions (in particular, discount rates, inflation & mortality rates) can have a material impact on the gross liability. A triennial valuation for the pensions scheme's year ended 5 April 2020 is currently ongoing. This require a new set of membership data be provided to the actuary which is also used by the Group in calculating the total defined benefit obligation, with roll forward assumptions applied to 30 June 2021 in line with accepted valuation techniques. Due to the volume of members both joining and moving categories (i.e between active, deferred and pensioner), errors in the membership records could result in a material misstatement if not completely and accurately included in the calculation of the gross liability. The effect of these matters is that, as part of our risk assessment, we determined that the valuation of the defined benefit obligation has a high degree of estimation uncertainty, with a potential range of reasonable outcomes greater than our materiality for the financial statements as a whole, and possibly many times that amount. The financial statements (Note 33) disclose the sensitivity estimated by the Group and Parent Company.	We performed the detailed tests below rather than seeking to rely on any of the company's controls because the nature of the balance is such that we would expect to obtain audit evidence primarily through the detailed procedures described. Our procedures included: — **Benchmarking assumptions:** We challenged key assumptions applied (discount rate, inflation rate, and mortality rate) with the support of our own actuarial specialists, including a comparison of key assumptions against external market data; — **Assessing base data:** We have confirmed the data used in the current year valuation is consistent with that prepared at the triennial valuation as at 31 March 2020. We used our actuarial specialists to challenge the methodology used to roll forward the results of the triennial valuation as at 5 April 2020 to 30 June 2021. — **Assessing transparency:** We considered the adequacy of the Group and Company's disclosures in respect of the sensitivity of the deficit to changes in key assumptions. **Our results** — We found the valuation of the defined benefit pension obligation to be acceptable. (2020: acceptable)

2. Key audit matters: our assessment of risks of material misstatement (continued)

	The risk	Our response
Goodwill Impairment A&I EMEA Division (£19.6m; 2020: £20.6m) *Refer to page 94 (Audit Committee Report), page 145 (accounting policy) and page 160 (financial disclosures).*	**Forecast-based assessment:** Goodwill is significant and at risk of irrecoverability due to reduced demand and trading losses. The estimated recoverable amount is subjective due to the inherent uncertainty involved in forecasting and discounting future cash flows. The effect of these matters is that, as part of our risk assessment, we determined that the value in use of goodwill has a high degree of estimation uncertainty, with a potential range of reasonable outcomes greater than our materiality for the financial statements as a whole, and possibly many times that amount. The financial statements (note 14) disclose the sensitivity estimated by the Group.	We performed the detailed tests below rather than seeking to rely on any of the company's controls because the nature of the balance is such that we would expect to obtain audit evidence primarily through the detailed procedures described. Our procedures included: — **Our sector experience:** Evaluating assumptions used, in particular those relating to forecast revenue growth and managements expectations of cashflows expected to arise from internal combustion engine related revenues and non-internal combustion related revenues; — **Benchmarking assumptions:** Comparing the group's assumptions to externally derived data in relation to key inputs such as projected economic growth and discount rates; — **Sensitivity analysis:** Performing breakeven analysis on the assumptions noted above and considered reasonably possible changes in key inputs that had the greatest judgment and their impact on the valuation; — **Assessing transparency:** Assessing whether the group's disclosures about the sensitivity of the outcome of the impairment assessment to changes in key assumptions reflect the risks inherent in the valuation of goodwill. **Our results** — We found the group's conclusion that there is no impairment of goodwill to be acceptable.

2. Key audit matters: our assessment of risks of material misstatement (continued)

	The risk	Our response
Revenue recognition on fixed price contracts (£210.8m; 2020: £189.5m) *Refer to page 93 (Audit Committee Report), page 143 (accounting policy) and page 153 (financial disclosures).*	**Accounting application:** For fixed price contracts the Group recognises the majority of revenue and profit on the stage of completion based on the proportion of contract costs incurred for the work performed to the balance sheet date, relative to the estimated total forecast costs of the contract at completion. Fixed price contracts is an area which we have the most allocation of resources in the audit and directing the efforts of the engagement team due to the volume of contracts and the amount of the fixed price contracts revenue. A large part portfolio comprises contracts that individually have low estimation uncertainty. The highest value, highest risk, most technically complex and financially challenging contracts to deliver are categorised as 'Red CAT 4' contracts, which are subject to more frequent and senior levels of management review. The financial statements (note 1c) disclose the range of possible financial outcomes estimated by the Group on 'Red CAT 4' contracts. The judgments impacting the recognition of revenue include: - The identification of distinct performance obligations. - Assessment of stage of completion and costs to complete - The recognition of variations We have considered this risk is lower than the prior year based on our experience of the audit.	Our procedures included: — **Control observation:** We attended the 'Red CAT 4' review meetings in January and July 2021 at which performance of these contracts was discussed with the Chief Financial Officer and divisional Managing and Finance Director; — **Test of detail:** We selected a sample of costs incurred in the year and agreed to supporting documentation which included, for example; invoices and timesheets; — We inspected a sample of correspondence with customers and instances where contractual variations had arisen to inform our assessment of the revenue and costs recorded up to the balance sheet date. We also agreed the variations to relevant invoicing schedules and payment plans and the subsequent cash receipts, where possible; — **Historical comparisons:** We assessed the reasonableness of the Group's forecasts by comparing with the comparative year forecasts and the financial performance; — **Independent reperformance:** We recalculated the stage of completion on the basis of actual costs and the Group's latest forecast to inform our assessment of the appropriate amount of revenue and profit to recognise and compared this to the amounts recorded by the Group; — **Assessing transparency:** We considered the adequacy of the Group's disclosures about the degree of estimates involved in estimating the stage of completion for determining the revenue amounts for fixed price contracts; **Our results** — We found revenue recognition on fixed price contracts to be acceptable. (2020: acceptable)

We continue to perform procedures over Going Concern. However, following the improved performance of the Group and issue of new ordinary shares during the year, we have not assessed this as one of the most significant risks in our current year audit and, therefore, it is not separately identified in our report this year.

3. Our application of materiality and an overview of the scope of our audit

Materiality for the group financial statements as a whole was set at £1.2m (2020: £1.3m), determined with reference to a benchmark of group profit before tax, normalised to exclude exceptional acquisition related expenditure, asset purchases and disposals and other reorganisation costs as disclosed in note 6 and by averaging over the last four (2020: three) years due to the impact of the COVID-19 pandemic on the results of the Group, of which it represents 5.3% (2020: 5:0%).

Materiality for the parent company financial statements as a whole was set at £0.3m (2020: £0.5m), determined with reference to a benchmark of company total assets, of which it represents 0.1% (2020: 0.2%).

In line with our audit methodology, our procedures on individual account balances and disclosures were performed to a lower threshold, performance materiality, so as to reduce to an acceptable level the risk that individually immaterial misstatements in individual account balances add up to a material amount across the financial statements as a whole.

Performance materiality was set at 75% (2020: 75%) of materiality for the financial statements as a whole, which equates to £0.9m (2020: £1.0) for the group and £0.2m (2020: £0.4m) for the parent company. We applied this percentage in our determination of performance materiality because we did not identify any factors indicating an elevated level of risk.

We agreed to report to the Audit Committee any corrected or uncorrected identified misstatements exceeding £0.06m (2020: £0.07m), in addition to other identified misstatements that warranted reporting on qualitative grounds.

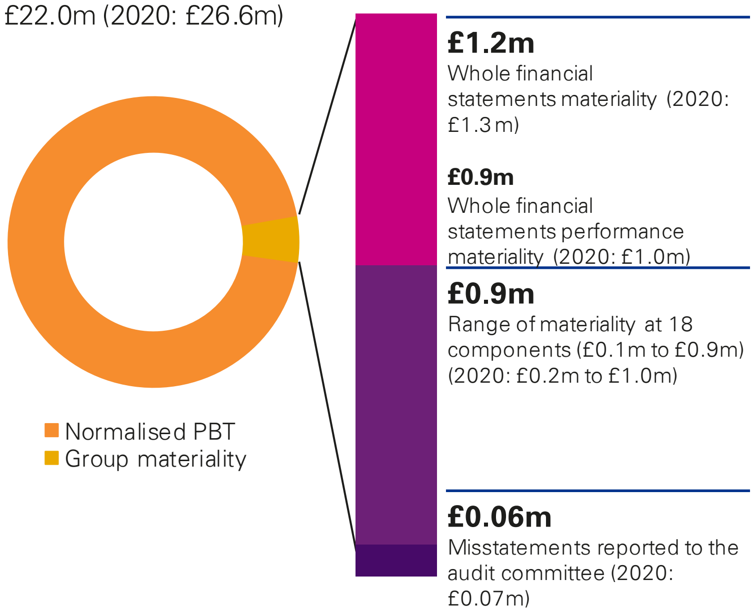
Of the group's 57 (2020: 59) reporting components, we subjected 16 (2020: 10) to full scope audits for group purposes and 6 (2020: 9) to specified risk-focused audit procedures including; revenue, inventory, capitalised development and cash journals. The latter were not individually financially significant enough to require a full scope audit for group purposes, but did present specific individual risks that needed to be addressed.

The components within the scope of our work accounted for the percentages illustrated opposite.

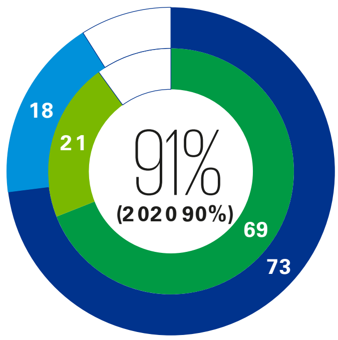
The remaining 9% (2020: 10%) of total group revenue, 12% (2020: 17%) of group profit before tax and 9% (2020: 10%) of total group assets is represented by 35 (2020: 40) reporting components, none of which individually represented more than 2.4% (2020: 6.5%) of any of total group revenue, group profit before tax or total group assets. For the residual components, we performed analysis at an aggregated group level to re-examine our assessment that there were no significant risks of material misstatement within these.

Normalised group profit before tax
£22.0m (2020: £26.6m)

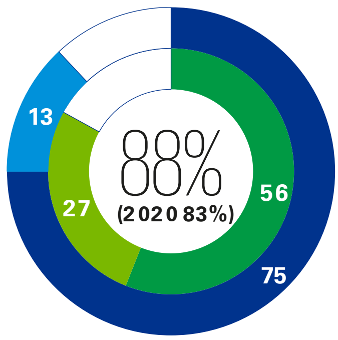
Group materiality
£1.2m (2020: £1.3m)



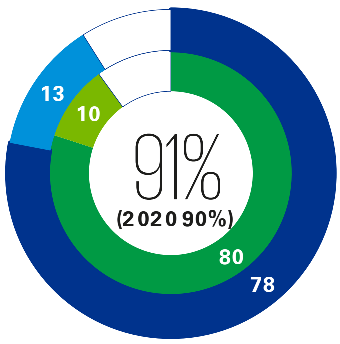
Group revenue



Group profit before tax



Group total assets



Full scope for group audit purposes 2021
Specified risk-focused audit procedures 2021
Full scope for group audit purposes 2020
Specified risk-focused audit procedures 2020
Residual components

3. Our application of materiality and an overview of the scope of our audit (cont.)

The Group team instructed component auditors as to the significant areas to be covered, including the relevant risks detailed above and the information to be reported back. The Group team approved the component materialities, which ranged from £0.1m to £0.9m (2020: £0.2m to £1.0m), having regard to the mix of size and risk profile of the Group across the components. The work on 8 of the 22 components (2020: 6 of the 19 components) was performed by component auditors and the rest, including the audit of the parent company, was performed by the Group team. The group team performed procedures on the items excluded from normalised group profit before tax.

The Group team visited 0 (2020: 0) component locations in to assess the audit risk and strategy. No sites were visited by the Group team in the current year due to travel restrictions caused by the COVID-19 pandemic and instead video and telephone conference calls were held with all component auditors. At these meetings, the findings reported to the Group team were discussed in more detail, and any further work required by the Group team was then performed by the component auditor.

4. Going concern

The Directors have prepared the financial statements on the going concern basis as they do not intend to liquidate the Group or the Company or to cease their operations, and as they have concluded that the Group's and the Company's financial position means that this is realistic. They have also concluded that there are no material uncertainties that could have cast significant doubt over their ability to continue as a going concern for at least a year from the date of approval of the financial statements ("the going concern period").

We used our knowledge of the Group, its industry, and the general economic environment to identify the inherent risks to its business model and analysed how those risks might affect the Group's and Company's financial resources or ability to continue operations over the going concern period. The risks that we considered most likely to adversely affect the Group's and Company's available financial resources and metrics relevant to debt covenants over this period were:

- challenges impacting the automotive industry and a further decline in trading results for this segment;
- Automotive project delays resulting in reduced revenue for the period

We considered whether these risks could plausibly affect the liquidity or covenant compliance in the going concern period by assessing the Directors' sensitivities over the level of available financial resources and covenant thresholds indicated by the Group's financial forecasts taking account of severe, but plausible adverse effects that could arise from these risks individually and collectively.

Our procedures also included:

- Critically assessing assumptions in base case and downside scenarios relevant to liquidity and covenant metrics, in particular in relation to the Automotive and Industrial division by comparing to the recent downward trend during the pandemic and overlaying knowledge of the entity' plans based on approved budgets and our knowledge of the entity and the sector in which it operates.
- We also compared past budgets to actual results to assess the directors' track record of budgeting accurately.
- We inspected the confirmation from the lender of the level of committed financing, and the associated covenant requirements.

Our conclusions based on this work:

— we consider that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate;

— we have not identified, and concur with the directors' assessment that there is not, a material uncertainty related to events or conditions that, individually or collectively, may cast significant doubt on the Group's or Company's ability to continue as a going concern for the going concern period;

— we have nothing material to add or draw attention to in relation to the directors' statement in note 1 to the financial statements on the use of the going concern basis of accounting with no material uncertainties that may cast significant doubt over the Group and Company's use of that basis for the going concern period, and we found the going concern disclosure in note 1 to be acceptable; and

— the related statement under the Listing Rules set out on page 125 is materially consistent with the financial statements and our audit knowledge.

However, as we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the above conclusions are not a guarantee that the Group or the Company will continue in operation.

5. Fraud and breaches of laws and regulations – ability to detect

Identifying and responding to risks of material misstatement due to fraud

To identify risks of material misstatement due to fraud ("fraud risks") we assessed events or conditions that could indicate an incentive or pressure to commit fraud or provide an opportunity to commit fraud. Our risk assessment procedures included:

- Enquiring of directors, the audit committee, internal audit and inspection of policy documentation as to the Group's high-level policies and procedures to prevent and detect fraud, including the internal audit function, and the Group's channel for "whistleblowing", as well as whether they have knowledge of any actual, suspected or alleged fraud.
- Reading Board and audit committee minutes.

We communicated identified fraud risks throughout the audit team and remained alert to any indications of fraud throughout the audit. This included communication from the group to full scope component audit teams of relevant fraud risks identified at the Group level and request to full scope component audit teams to report to the Group audit team any instances of fraud that could give rise to a material misstatement at group.

As required by auditing standards, and taking into account possible pressures to meet profit targets and our overall knowledge of the control environment, we perform procedures to address the risk of management override of controls, in particular the risk that Group and component management may be in a position to make inappropriate accounting entries. On this audit we do not believe there is a fraud risk related to revenue recognition because of the relatively low estimation risk across the contract portfolio, the historical accuracy of forecasting and the strength of the control environment in place.

We also identified a fraud risk related to inappropriate capitalisation of development costs in response to possible pressures to meet profit targets.

We performed procedures including:

- Identifying journal entries to test for all full scope components based on risk criteria and comparing the identified entries to supporting documentation. These included those posted to cash and capitalised development costs where applicable to check for unexpected journal pairings.
- the vouching a sample of timesheet entries recorded directly with employees to confirm the accuracy.

Identifying and responding to risks of material misstatement due to non-compliance with laws and regulations

We identified areas of laws and regulations that could reasonably be expected to have a material effect on the financial statements from our general commercial and sector experience, through discussion with the directors and other management (as required by auditing standards), and discussed with the directors and other management the policies and procedures regarding compliance with laws and regulations.

As the Group is regulated, our assessment of risks involved gaining an understanding of the control environment including the entity's procedures for complying with regulatory requirements.

We communicated identified laws and regulations throughout our team and remained alert to any indications of non-compliance throughout the audit. This included communication from the group to full scope component audit teams of relevant laws and regulations identified at the Group level, and a request for full scope component auditors to report to the group team any instances of non-compliance with laws and regulations that could give rise to a material misstatement at group.

The potential effect of these laws and regulations on the financial statements varies considerably.

Firstly, the Group is subject to laws and regulations that directly affect the financial statements including financial reporting legislation (including related companies legislation), distributable profits legislation, taxation legislation and pensions legislation and we assessed the extent of compliance with these laws and regulations as part of our procedures on the related financial statement items.

Secondly, the Group is subject to many other laws and regulations where the consequences of non-compliance could have a material effect on amounts or disclosures in the financial statements, for instance through the imposition of fines or litigation. We identified the following areas as those most likely to have such an effect: health and safety, anti-bribery, employment law, road and motor vehicle regulations, competition laws, regulatory capital and liquidity and certain aspects of company legislation recognising the regulated nature of the Group's activities and its legal form. Auditing standards limit the required audit procedures to identify non-compliance with these laws and regulations to enquiry of the directors and other management and inspection of regulatory and legal correspondence, if any. Therefore if a breach of operational regulations is not disclosed to us or evident from relevant correspondence, an audit will not detect that breach.

Context of the ability of the audit to detect fraud or breaches of law or regulation

Owing to the inherent limitations of an audit, there is an unavoidable risk that we may not have detected some material misstatements in the financial statements, even though we have properly planned and performed our audit in accordance with auditing standards. For example, the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely the inherently limited procedures required by auditing standards would identify it.

In addition, as with any audit, there remained a higher risk of non-detection of fraud, as these may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls. Our audit procedures are designed to detect material misstatement. We are not responsible for preventing non-compliance or fraud and cannot be expected to detect non-compliance with all laws and regulations.

6. We have nothing to report on the other information in the Annual Report

The directors are responsible for the other information presented in the Annual Report together with the financial statements. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except as explicitly stated below, any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether, based on our financial statements audit work, the information therein is materially misstated or inconsistent with the financial statements or our audit knowledge. Based solely on that work we have not identified material misstatements in the other information.

Strategic report and directors' report

Based solely on our work on the other information:

— we have not identified material misstatements in the strategic report and the directors' report;

— in our opinion the information given in those reports for the financial year is consistent with the financial statements; and

— in our opinion those reports have been prepared in accordance with the Companies Act 2006.

Directors' remuneration report

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

Disclosures of emerging and principal risks and longer-term viability

We are required to perform procedures to identify whether there is a material inconsistency between the directors' disclosures in respect of emerging and principal risks and the viability statement, and the financial statements and our audit knowledge.

Based on those procedures, we have nothing material to add or draw attention to in relation to:

— the directors' confirmation within the viability statement on page 38 that they have carried out a robust assessment of the emerging and principal risks facing the Group, including those that would threaten its business model, future performance, solvency and liquidity;

— the Principal risks and uncertainties disclosures describing these risks and how emerging risks are identified, and explaining how they are being managed and mitigated; and

— the directors' explanation in the viability statement of how they have assessed the prospects of the Group, over what period they have done so and why they considered that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

We are also required to review the viability statement, set out on page 38 under the Listing Rules. Based on the above procedures, we have concluded that the above disclosures are materially consistent with the financial statements and our audit knowledge.

Our work is limited to assessing these matters in the context of only the knowledge acquired during our financial statements audit. As we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the absence of anything to report on these statements is not a guarantee as to the Group's and Company's longer-term viability.

Corporate governance disclosures

We are required to perform procedures to identify whether there is a material inconsistency between the directors' corporate governance disclosures and the financial statements and our audit knowledge.

Based on those procedures, we have concluded that each of the following is materially consistent with the financial statements and our audit knowledge:

— the directors' statement that they 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 position and performance, business model and strategy;

— the section of the annual report describing the work of the Audit Committee, including the significant issues that the audit committee considered in relation to the financial statements, and how these issues were addressed; and

— the section of the annual report that describes the review of the effectiveness of the Group's risk management and internal control systems.

We are required to review the part of the Corporate Governance Statement relating to the Group's compliance with the provisions of the UK Corporate Governance Code specified by the Listing Rules for our review. We have nothing to report in this respect.

7. We have nothing to report on the other matters on which we are required to report by exception

Under the Companies Act 2006, we are required to report to you if, in our opinion:

- adequate accounting records have not been kept by the parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the parent Company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in these respects.

8. Respective responsibilities

Directors' responsibilities

As explained more fully in their statement set out on page 125, the directors are responsible for: the preparation of the financial statements including being satisfied that they give a true and fair view; such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error; assessing the Group and parent Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and using the going concern basis of accounting unless they either intend to liquidate the Group or the parent Company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue our opinion in an auditor's report. Reasonable assurance is a high level of assurance, but does not guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

A fuller description of our responsibilities is provided on the FRC's website at www.frc.org.uk/auditorsresponsibilities.

9. The purpose of our audit work and to whom we owe our responsibilities

This report is made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's members, as a body, for our audit work, for this report, or for the opinions we have formed.

Jeremy Hall (Senior Statutory Auditor)

for and on behalf of KPMG LLP, Statutory Auditor

Chartered Accountants

15 Canada Square

London

E14 5GL

14 September 2021

Group primary statements

Consolidated income statement
for the year ended 30 June

		2021			2020		
		Underlying	Specific adjusting items(*)	Total	Underlying	Specific adjusting items(*)	Total
	Note	£m	£m	£m	£m	£m	£m
Revenue	4 & 5	351.8	-	351.8	352.0	-	352.0
Cost of sales		(234.1)	-	(234.1)	(236.9)	-	(236.9)
Gross profit		117.7	-	117.7	115.1	-	115.1
Administrative expenses		(96.2)	(14.1)	(110.3)	(96.4)	(20.9)	(117.3)
Other income		1.2	-	1.2	1.3	-	1.3
Operating profit/(loss)	3 & 4	22.7	(14.1)	8.6	20.0	(20.9)	(0.9)
Finance income	9	0.8	-	0.8	0.4	-	0.4
Finance costs	9	(5.5)	-	(5.5)	(4.8)	-	(4.8)
Net finance costs	9	(4.7)	-	(4.7)	(4.4)	-	(4.4)
Profit/(loss) before taxation		18.0	(14.1)	3.9	15.6	(20.9)	(5.3)
Income tax (expense)/credit	11	(4.8)	2.6	(2.2)	(4.1)	3.0	(1.1)
Profit/(loss) for the year		13.2	(11.5)	1.7	11.5	(17.9)	(6.4)
Profit/(loss) attributable to:							
- Owners of the parent		13.2	(11.5)	1.7	11.4	(17.9)	(6.5)
- Non-controlling interests		-	-	-	0.1	-	0.1
		13.2	(11.5)	1.7	11.5	(17.9)	(6.4)

Loss per ordinary share attributable to owners of the parent during the year		2021	2020
Basic	7	2.9p	(12.2)p
Diluted	7	2.9p	(12.2)p

* 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. Further details are given in Note 2 and Note 6.

Consolidated statement of comprehensive income
for the year ended 30 June

	Note	2021 £m	2020 £m
Profit/(loss) for the year		1.7	(6.4)
Other comprehensive Income/(expense)			
Items that will not be reclassified to profit or loss:			
Remeasurements of the defined benefit pension scheme	33	9.1	(2.7)
Deferred tax on remeasurements of the defined benefit pension scheme	20	(2.0)	1.1
Total items that will not be reclassified to profit or loss		7.1	(1.6)
Items that may be subsequently reclassified to profit or loss:			
Currency translation on foreign currency net investments	29	(2.9)	0.5
Fair value losses on foreign currency cash flow hedges	26	-	(0.1)
Total items that may be subsequently reclassified to profit or loss		(2.9)	0.4
Total other comprehensive Income/(expense) for the period (net of tax)		4.2	(1.2)
Total comprehensive income/(expense) for the year		5.9	(7.6)
Income/(expense) attributable to:			
- Owners of the parent		5.9	(7.7)
- Non-controlling interests	31	-	0.1
		5.9	(7.6)

The notes on pages 141 to 188 form an integral part of these consolidated financial statements.

Consolidated statement of financial position

As at 30 June

	Note	2021 £m	2020 £m
Assets			
Non-current assets			
Goodwill	14	**84.7**	87.8
Other intangible assets	15	**33.9**	39.9
Property, plant and equipment	16	**46.9**	45.4
Right-of-use assets	17	**19.5**	23.9
Retirement benefit surplus	33	**6.8**	-
Other receivables	22	**2.3**	3.2
Deferred tax assets	20	**8.3**	9.4
		202.4	209.6
Current assets			
Inventories	21	**16.9**	20.1
Trade, contract and other receivables	22	**126.9**	115.6
Derivative financial assets	26	**0.9**	3.9
Current tax assets		**1.5**	5.7
Cash and cash equivalents	24	**42.0**	66.3
		188.2	211.6
Non-current assets held for sale	18	**-**	5.3
		188.2	216.9
Total assets		**390.6**	426.5
Liabilities			
Current liabilities			
Borrowings	24	**12.8**	10.6
Lease liabilities	17	**5.5**	6.7
Trade, contract and other payables	23	**76.6**	72.0
Current tax liabilities		**1.4**	7.5
Derivative financial liabilities	26	**1.0**	6.5
Provisions	19	**4.0**	3.2
		101.3	106.5
Net current assets		**86.9**	110.4
Non-current liabilities			
Borrowings	24	**76.1**	129.1
Lease liabilities	17	**18.8**	22.6
Trade, contract and other payables	23	**-**	3.6
Retirement benefit obligations	33	**-**	6.7
Deferred tax liabilities	20	**8.2**	5.6
Provisions	19	**3.4**	3.3
		106.5	170.9
Total liabilities		**207.8**	277.4
Net assets		**182.8**	149.1
Equity			
Share capital	28	**15.6**	13.4
Share premium	28	**16.8**	14.3
Other reserves	29	**38.0**	17.4
Retained earnings	30	**112.2**	103.5
Equity attributable to owners of the parent		**182.6**	148.6
Non-controlling interests	31	**0.2**	0.5
Total equity		**182.8**	**149.1**

The notes on pages 141 to 188 form an integral part of these consolidated financial statements.

Approved by the Board of Ricardo plc on 14 September 2021 and signed on its behalf by:

Dave Shemmans
Chief Executive Officer

Ian Gibson
Chief Financial Officer

Consolidated statement of changes in equity

for the year ended 30 June

	Note	Attributable to owners of the parent						
		Share capital	Share premium	Other reserves	Retained earnings	Total	Non-controlling interests	Total equity
	Note	£m	£m	£m	£m	£m	£m	£m
At 1 July 2019		13.4	14.3	16.9	123.1	167.7	0.5	168.2
Loss for the year		-	-	-	(6.5)	(6.5)	0.1	(6.4)
Other comprehensive income/(expense) for the year		-	-	0.5	(1.7)	(1.2)	-	(1.2)
Total comprehensive income/(expense) for the year		-	-	0.5	(8.2)	(7.7)	0.1	(7.6)
Equity-settled transactions	*34*	-	-	-	0.6	0.6	-	0.6
Purchases of own shares to settle awards		-	-	-	(0.5)	(0.5)	-	(0.5)
Ordinary share dividends	*8*	-	-	-	(11.5)	(11.5)	(0.1)	(11.6)
At 30 June 2020		13.4	14.3	17.4	103.5	148.6	0.5	149.1
At 1 July 2020		**13.4**	**14.3**	**17.4**	**103.5**	**148.6**	**0.5**	**149.1**
Profit for the year		**-**	**-**	**-**	**1.7**	**1.7**	**-**	**1.7**
Other comprehensive (expense)/income for the year		**-**	**-**	**(2.9)**	**7.1**	**4.2**	**-**	**4.2**
Total comprehensive (expense)/income for the year		**-**	**-**	**(2.9)**	**8.8**	**5.9**	**-**	**5.9**
Issue of ordinary share capital	*28*	**2.2**	**2.5**	**23.5**	**-**	**28.2**	**-**	**28.2**
Reduction in share capital	*8*	**-**	**-**	**-**	**-**	**-**	**(0.2)**	**(0.2)**
Equity-settled transactions	*34*	**-**	**-**	**-**	**1.0**	**1.0**	**-**	**1.0**
Ordinary share dividends	*8*	**-**	**-**	**-**	**(1.1)**	**(1.1)**	**(0.1)**	**(1.2)**
At 30 June 2021		**15.6**	**16.8**	**38.0**	**112.2**	**182.6**	**0.2**	**182.8**

The notes on pages 141 to 188 form an integral part of these consolidated financial statements.

Consolidated cash flow statement
for the year ended 30 June

	Note	2021 £m	2020 £m
Cash flows from operating activities			
Profit/(loss) before taxation		**3.9**	(5.3)
Adjustments for:			
- Share-based payments	*34*	**1.4**	0.6
- Fair value losses on derivative financial instruments	*26*	**0.7**	0.3
- Profit on disposal of property, plant and equipment	*3*	**(0.3)**	(1.0)
- Net finance costs	*9*	**4.7**	4.4
- Depreciation, amortisation and impairment	*15, 16, 17 & 18*	**26.6**	30.3
Operating cash flows before movements in working capital		**37.0**	29.3
Changes in:			
- Inventories	*21*	**2.9**	(5.6)
- Trade, contract and other receivables	*22*	**(7.5)**	25.4
- Trade, contract and other payables	*23*	**4.1**	(12.3)
- Provisions		**1.1**	1.0
Defined benefit pension scheme payments in excess of past service costs	*33*	**(4.6)**	(4.6)
Cash generated from operations		**33.0**	33.2
Net interest paid		**(4.2)**	(4.2)
Income tax paid		**(2.9)**	(5.3)
Net cash from operating activities		**25.9**	23.7
Cash flows from investing activities			
Acquisitions of subsidiaries, net of cash acquired	*6 & 13*	**(5.2)**	(4.3)
Purchases of property, plant and equipment	*16*	**(4.5)**	(22.0)
Proceeds from disposal of property, plant and equipment	*16*	**0.3**	2.8
Purchases of intangible assets and capitalised development costs	*15*	**(8.9)**	(9.2)
Net cash used in investing activities		**(18.3)**	(32.7)
Cash flows from financing activities			
Proceeds from issuance of ordinary shares	*28*	**28.2**	-
Purchases of own shares to settle awards		**-**	(0.6)
Principal element of lease payments	*17*	**(6.5)**	(5.6)
Principal element of lease receivables	*17*	**0.2**	0.2
Proceeds from borrowings	*24*	**5.0**	140.3
Repayment of borrowings	*24*	**(57.9)**	(90.7)
Dividends paid to shareholders	*8*	**(1.4)**	(11.6)
Net cash (used in)/from financing activities		**(32.4)**	32.0
Effect of exchange rate changes on cash and cash equivalents		**(1.7)**	0.4
Net (decrease)/increase in cash and cash equivalents	*24*	**(26.5)**	23.4
Net cash and cash equivalents at 1 July		**55.8**	32.4
Net cash and cash equivalents at 30 June		**29.3**	55.8
At 1 July			
Cash and cash equivalents		**66.3**	36.3
Bank overdrafts		**(10.5)**	(3.9)
Net cash and cash equivalents at 1 July		**55.8**	32.4
At 30 June			
Cash and cash equivalents	*24*	**42.0**	66.3
Bank overdrafts	*24*	**(12.7)**	(10.5)
Net cash and cash equivalents at 30 June		**29.3**	55.8

The notes on pages 141 to 188 form an integral part of these consolidated financial statements.

Notes to the consolidated financial statements

1. Principal accounting policies

This section describes the critical accounting judgements and estimates that management has identified as having a potentially material impact on the Group's consolidated financial statements and sets out our significant accounting policies. Where an accounting policy is generally applicable to a specific note to the financial statements, the policy is cross referenced. We have also detailed below the new accounting pronouncements that we will adopt in future years and our current view of the impact they will have on our financial reporting.

Ricardo plc, a public company limited by shares, is listed on the London Stock Exchange and incorporated and domiciled in the United Kingdom. The address of its registered office is Shoreham Technical Centre, Shoreham-by-Sea, West Sussex, BN43 5FG, England, United Kingdom, and its registered number is 222915.

a) Basis of preparation

These consolidated financial statements of the Ricardo plc Group ('Group') have been prepared in accordance with international accounting standards in conformity with the requirements of the Companies Act 2006. The financial statements have been prepared on a going concern basis under the historical cost convention, as modified by financial assets and financial liabilities which are measured at fair value through profit or loss. Derivative instruments are measured at fair value through other comprehensive income for the effective element of the hedge, with the ineffective element being charged to the profit or loss.

The principal accounting policies applied in the preparation of these financial statements have been consistently applied to the years ended 30 June 2020 and 30 June 2021.

Going concern

In the context of the challenging economic environment in the Automotive sector, exacerbated by the economic uncertainty caused by the ongoing COVID-19 pandemic, the Board of Ricardo plc has undertaken an assessment of the ability of the Group and Company to continue in operation and meet its liabilities as they fall due over the period of its assessment. In doing so, the Board considered events throughout the period of their assessment, including the availability and maturity profile of the Group's financing facilities and covenant compliance. These financial statements have been prepared on the going concern basis which the Directors consider appropriate for the reasons set out below.

The Group funds its operations through cash generated by the Group and has access to a £200m Revolving Credit Facility ("RCF") which is linked to two covenants: Adjusted Leverage (defined as net debt divided by underlying EBITDA, excluding the impact of IFRS 16, for the last twelve months); and Interest Cover (defined as underlying EBITDA, excluding the impact of IFRS 16, for the last twelve months divided by net finance costs). These covenants are tested at 30 June and 31 December each year until the debt matures in July 2023.

On 5 May 2020 the Group exercised £50m of the accordion option of its banking facilities, thereby increasing the Revolving Credit Facility to £200m. At the same time, the Directors successfully negotiated a relaxation of the Adjusted Leverage covenant, increasing the threshold from 3.0x to 3.75x for the next test date of 31 December 2020. On 9 September 2020, this covenant was further relaxed as the calculation was amended to be based on two times the six-month underlying EBITDA to December 2020. It was also agreed that the June 2021 covenant would be relaxed to 3.75x based on underlying EBITDA for the last twelve months. The covenant will return to 3.0x at the next test date of 31 December 2021. The Interest Cover covenant has remained at 4.0x for each test date.

On 11 November 2020 the Group raised £28.2m of proceeds, net of fees, by way of an equity placing. The placing was carried out to reduce leverage, strengthen the balance sheet and provide adequate working capital for the Group. Further details on the placing are provided in Note 28.

As at 30 June 2021, Adjusted Leverage was 1.3x and Interest Cover was 9.6x. As at the date of approval of these financial statements, the amount of RCF undrawn and available to the Group was c.£123m with total borrowing, including overdrafts, of c.£88m and cash and cash equivalents of c.£41m.

The Directors have prepared a cash flow forecast which covers the period from the date of approval of these financial statements for a period of at least 12 months from the date of approval of the financial statements. In this forecast, the Directors have considered the impact of a decline in Automotive & Industrial revenues and lower than budgeted growth in non-Automotive segments on the Group's results, operations and financial position in a severe but plausible Downside Scenario, which results in a 25% decline in the Group's underlying EBITDA (excluding IFRS 16) in FY 2021/22, including the following key assumptions:

- A 15% reduction in Automotive & Industrial revenue in FY 2021/22, with a larger reduction in EMEA (in line with the decline seen in FY 2020/21) partially offset by lower than budgeted growth in the US and China. Revenue is modelled to increase by 5% in FY 2022/23 (with no growth in Europe). In addition, external Software revenue has been reduced by 10% in FY 2021/22.
- Delays in the ramp up of production volumes in Performance Products and Defense on key programmes.
- Half the budgeted revenue growth in Rail and Energy & Environment.
- No improvement in the Group's working capital days.

The modelled scenario incorporates mitigating actions which are within the control of the Group, such as the non-payment of discretionary bonuses, a reduction in non-essential capital expenditure, and setting appropriate levels of dividends.

Although headroom under the Group's banking covenants is reduced under this downside scenario, the Group and Company is expected to operate within its committed facilities and covenant requirements during the forecast period.

Following this assessment, the Directors are confident that the Group and Company will have sufficient funds to continue to meet its liabilities as they fall due for at least 12 months from the date of approval of the financial statements and therefore have prepared the financial statements on a going concern basis. Further information on the going concern of the Group can be found on page 38 in the Viability Statement.

b) Basis of consolidation

The financial statements of the Group consolidate the results of the Company and its subsidiary entities, and include its share of its joint ventures' results accounted for under the equity method. Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group and are deconsolidated from the date that control ceases. Intercompany transactions and balances are eliminated on consolidation.

The Group applies the acquisition method of accounting for business combinations. The consideration transferred for an acquisition is the fair value of the assets acquired and the liabilities assumed. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Changes in fair value of contingent consideration are included within specific adjusting items. Contingent consideration dependent upon the employment or retention of specific individuals is expensed over the specified period and included within specific adjusting items. Identifiable assets acquired, together with

1. Principal accounting policies (continued)

b) Basis of consolidation (continued)

liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. Acquisition-related expenditure is expensed as incurred and recognised within specific adjusting items.

c) Management judgements and key accounting estimates

The preparation of financial statements under IFRS requires the Group's management to make judgements and estimates that affect the application of accounting policies and the reported amounts of assets, liabilities, revenues and costs. These judgements and estimates are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Critical judgements in applying the Group's accounting policies

The following are the critical judgements, apart from those involving estimations (which are dealt with separately below), that the Directors have made in the process of applying the Group's accounting policies and that have the most significant effect on the amounts recognised in the financial statements:

Specific adjusting items: Reorganisation costs – Note 2 and Note 6

Reorganisation costs relate to non-recurring expenditure incurred as part of fundamental restructuring activities; significant impairments of property, plant and equipment and leased assets; significant losses on disposal of assets; and other items deemed to be one-off in nature. These costs are presented within specific adjusting items in the income statement. The classification and presentation of these items require significant judgement to determine the nature and intention of the transaction. Details of the Group's alternative performance measures and specific adjusting items are included in Note 2 and Note 6.

Carrying value of Goodwill: CGUs – Note 14

Significant judgement is applied in order to allocate goodwill to cash-generating units ('CGU's), or a group of CGUs, as a change in the allocation of goodwill would impact the result of the impairment review. As set out in Note 1(k), for the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the CGUs, or groups of CGUs, that is expected to benefit from that business combination, at the lowest level at which goodwill is monitored for internal management purposes. The Rail segment comprises several CGUs which have been grouped for impairment testing purposes as they are expected to benefit from the synergies of the relevant combinations.

Carrying value of Goodwill: Inclusion of Research and Development Expenditure Credits – Note 14

Certain UK-based CGUs benefit from Research and Development Expenditure Credits ('RDEC'), which are an enhanced tax relief on qualifying research and development expenditure. These cashflows are material to the A&I EMEA group of CGUs and have been included in the value-in-use calculations on the basis that there is no indication that the UK government will change this benefit. Note 14 sets out the impact of the inclusion of RDEC in the value-in-use calculation.

Recoverability of capitalised development costs – Note 15

Judgement is required as to when development costs meet the criteria to be recognised as intangible assets. The majority of capitalised development costs relate to the development of software, products and other technology, tools and processes. These costs are recognised as an asset once it has been determined that the attributable expenditure can be measured reliably, that there is an intention and the necessary resources to complete development 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.

Impairment of financial assets – Note 22

Management has applied judgement to rebut the presumption of IFRS 9 *Financial Instruments* that default does not occur later than a financial asset is 90 days past due. This is based upon the Group's assessment of these specific debts The default rate used for each overdue period is reassessed annually and is based upon the Group's historic ageing profile, adjusted for forward looking information.

Key sources of estimation uncertainty

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods. The areas involving significant risk of a material adjustment to the carrying amounts of assets and liabilities within the next financial year are as follows:

Revenue recognition on fixed price contracts - Note 5

The majority of the Group's revenue in is earned from contracts for the provision of consultancy services that are typically awarded on a fixed price basis. A small number of similar contracts are also entered into by Performance Products to design and set up production lines and supply chains. Services provided under a fixed price contract generally have a single distinct performance obligation, or a single distinct series of performance obligations, which is satisfied over time. For each distinct performance obligation recognised over time, revenue is recognised using an input method, based on total costs incurred to date as a percentage of total estimated costs to satisfy each performance obligation.

The identification of and separate accounting for distinct performance obligations within the context of a contract is considered to be a critical judgement. Fixed price contracts often have multiple performance obligations that are indistinct from one another within the context of the contract. This is due to a homogeneous pattern of transfer of control to the customer who is unable to benefit from the performance of less than all of the promises set out in the contract. This is particularly the case where any intellectual property created is stipulated as not being owned by the customer until the full transaction price has been paid.

The percentage of completion basis of revenue recognition is determined as actual costs incurred as a proportion of total forecast contract costs to complete. This method places importance on the accuracy of uncertain estimates, including total costs to complete, the outcome of contract and technical risks, as well as the extent to which variation requests are recognised for proposed changes to the agreed schedule, price or scope of a contract under negotiation with a customer at the reporting date. Changes in these estimates may impact revenue recognised at the reporting date with the revenue recognition in the reporting period appropriately adjusted as required.

The actual outcome of wholly or partially unsatisfied performance obligations may differ to the estimate made at a reporting date and it is reasonably possible that outcomes on these contracts within the next reporting period could differ, adversely or favourably, in aggregate to those estimated. It is not possible to fully quantify the expected impact of this, but the estimated costs to complete reflect management's best estimate at that point in time and no individual estimate is expected to have a materially different outcome.

As set out further on pages 36 and 93, management undertakes a process to assess the risks on inception of all fixed price contracts, then monitors and reviews the risks and performance of contracts as they progress to completion. The highest value, highest risk, most technically complex and financially challenging contracts to deliver, as measured against a number of quantitative and qualitative factors, are categorised as 'Red Category

1. Principal accounting policies (continued)

c) Management judgements and key accounting estimates (continued)

4' contracts, which are subject to more frequent and senior levels of management review.

As at 30 June 2021, the number of live consulting contracts within the portfolio was in excess of 2,500 (2020: 2,400), with a total value in excess of £750m (2020: £750m). Of this portfolio of contracts, 9 contracts (2020: 6) were categorised as Red Category 4. At 30 June 2021, £3.6m (2020: £7.8m) of revenue had been recognised in respect of work performed on these plus two other contracts where outcomes were subject to negotiation with customers. Management has made a specific judgement over the ability to recover each of the amounts under negotiation and has recognised provisions of £1.7m (2020: £2.9m) against this revenue, resulting in a net exposure of £1.9m (2020: £4.9m). The possible financial outcomes from these negotiations range from an upside of £2.2m, if management recovers the full £3.6m of revenue and potential negotiation upside, to a downside of £1.9m, if management is unsuccessful in recovering any of the £3.6m.

Carrying value of Goodwill – Note 14

In performing the impairment assessment of the carrying amount of goodwill, the recoverable amounts of the CGUs, or groups of CGUs, to which goodwill has been allocated are determined using value-in-use ('VIU') calculations (see Note 1(k)).

The recoverable amount of each CGU, or group of CGUs, is calculated by assessing its value-in-use, which is determined by performing discounted future pre-tax cash flow calculations for a three-year period and projected into perpetuity. Significant judgements are used to estimate the operating cash flows, growth rates and pre-tax discount rates applied in computing the recoverable amounts of different CGUs, or groups of CGUs. The sensitivity of estimates used to calculate the value in use of each CGU, or group of CGUs, are discussed in Note 14.

Defined benefit obligation – Note 33

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 discount rates and actuarial assumptions related to mortality. The sensitivity of the defined benefit obligation to changes in the principal assumptions is set out in Note 33.

d) Research and development expenditure – Note 3

Research and development expenditure is recognised as an administrative expense in the income statement in the year in which it is incurred. Where the activity is performed for customers the cost is recognised as a cost of sale. Directly attributable development expenditure that meets the criteria for recognition as an intangible asset is described in Note 15.

e) Government grants – Note 3

The Group receives income-related grants from various national and supranational government agencies, principally for credits in respect of qualifying research and development expenditure, together with funding of research and development and capital projects. The Group also receives employment-related grants, and other grants intended to mitigate the financial impact of COVID-19 on the business. A grant is recognised in the income statement when 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 cost of the asset and reflected in depreciation throughout its useful life.

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, contract and other payables either as payments received in advance on contracts or as deferred revenue.

f) Revenue – Note 5

Principle approach

The Group principally earns revenue through the provision of consultancy services and bespoke products and recognises revenue based on the satisfaction of performance obligations in contracts with its customers. The core principle is that revenue is recognised in a manner that depicts the transfer of promised goods and services to customers in an amount that reflects the consideration to which the Group expects to be entitled in exchange for those goods and services.

A contract with a customer is considered to exist when the Group is in possession of documentation to provide an agreed scope of goods or services on mutually understood terms and conditions that are acceptable to the Group which, subject to the successful execution of the contract, is expected to be invoiced against and paid for by the customer. Each contract with a customer is assessed to identify the promises to transfer distinct goods or services, or a series of distinct goods or services, that are substantially the same and have the same pattern of transfer to the customer. Goods and services are distinct and accounted for as separate performance obligations if they are separately identifiable in the contract and if the customer can benefit from them, either on their own or together with other readily available resources.

The total transaction price for a contract is estimated as the amount of consideration to which the Group expects to be entitled in exchange for transferring the promised goods or services to the customer, excluding sales taxes. Where multiple distinct performance obligations are identified within a contract with a customer, the total transaction price is allocated to each of the distinct performance obligations in proportion to their relative stand-alone selling prices. Given the bespoke nature of many of the Group's products and services, which are designed or manufactured under contract to the customer's individual scope and specifications, there are typically no observable stand-alone selling prices. Instead, stand-alone selling prices are typically estimated based on expected costs plus contract margin.

Costs of fulfilling performance obligations on existing contracts with customers are expensed as incurred. Costs incurred in advance of obtaining a new contract or an anticipated contract that directly relate to the fulfilment of specific performance obligations are initially recognised as an asset and subsequently expensed once the new contract is obtained or obtaining the contract is no longer anticipated. Incremental costs incurred to obtain new contracts with customers are recognised as an asset and amortised consistently with the recognition of revenue over the contract term, providing: the contract term is greater than one year; the costs are only incurred as a direct result of the new contract being obtained; and the costs do not directly relate to the fulfilment of specific performance obligations. Costs incurred to obtain new contracts with customers are expensed when those costs are incurred irrespective of whether a contract is obtained from a customer.

Revenue is recognised as distinct performance obligations are satisfied, and as control of the goods or services is transferred to the customer. For each distinct performance obligation within a contract, the Group determines whether they are satisfied over time or at a point in time. Performance obligations are considered to be satisfied over time if the goods or services provided have no alternative use to the Group and there is an enforceable right to payment for performance completed to date, or the customer simultaneously receives and consumes the goods or services as the Group provides them.

Services provided under fixed price contracts

The majority of the Group's revenue is earned from contracts for the provision of consultancy services that are typically awarded on a fixed price basis. A small number of similar contracts are also awarded to Performance Products to design and set up production lines and supply chains. Services provided under a fixed price contract generally have a single distinct performance obligation, or a single distinct series of

1. Principal accounting policies (continued)

f) Revenue – Note 5 (continued)

Services provided under fixed price contracts (continued)

performance obligations, which is satisfied over time. For each distinct performance obligation recognised over time, revenue is recognised using an input method, based on total costs incurred to date as a percentage of total estimated costs to satisfy each performance obligation.

Revenue and attributable margin are calculated by reference to reliable estimates of transaction price and total expected costs, after making suitable allowances for technical and other risks. Revenue and associated margin are therefore recognised progressively as costs are incurred, and estimated costs to complete are updated regularly as anticipated risks are mitigated or unanticipated risks materialise. The Group has determined that this method faithfully depicts the Group's performance in transferring control of the services to the customer.

The transaction price generally does not include consideration resulting from contract modifications of distinct performance obligations, such as variation orders, until they have been approved by the customer. Variable consideration, such as for the achievement of performance targets or variation requests under negotiation with the customer at the reporting date, can be included in the transaction price together with the estimated costs to perform the associated obligations. These estimates of the expected value or most likely amount are recognised to the extent that it is highly probable that there will not be a significant reversal in the amount of cumulative revenue recognised in a future reporting period.

Changes in transaction price from contract modifications that do not create separate distinct performance obligations are added to the transaction price of pre-existing performance obligations to which the modification relates. Contract modifications for goods or services that do create separate distinct performance obligations are accounted for separately from pre-existing performance obligations, together with the expected costs to satisfy those separate distinct performance obligations.

Contract assets arising from the recognition of revenue as and when performance obligations are satisfied are initially recognised as accrued revenue or amounts recoverable on contracts ('AROC') within trade, contract and other receivables, and transferred to trade receivables when invoiced. Contract liabilities arising from amounts received from customers for services not yet performed are initially recognised as deferred revenue or payments received in advance on contracts ('POA') within trade, contract and other payables, and transferred to revenue as and when performance obligations are satisfied.

A loss on a distinct performance obligation is recognised immediately when it becomes probable that the total estimated directly attributable costs to satisfy the distinct performance obligation will exceed the transaction price allocated to that distinct performance obligation. Monthly reviews of contracts by local management, in conjunction with reviews by senior management of contracts deemed to be of higher risk, ensure that the Group identifies and immediately recognises expected losses on fixed price performance obligations within a contract.

Services provided under time and materials contracts

Certain contracts for the provision of consultancy services may be awarded on a time and materials basis. Services provided under a time and materials basis typically have a single distinct performance obligation to provide a variable amount of labour to the customer at an agreed set of time-based labour rates, which represents the sales value. Revenue is therefore recognised over time based upon the agreed sales value of the time worked and costs incurred to date, as the customer simultaneously receives and consumes these services as the Group provides them.

Services provided under subscription and software support contracts

Other contracts primarily relate to annual subscriptions by customers to emergency response and support services for chemical incidents and crisis management. Subscription services are considered to be a single distinct performance obligation for which revenue is recognised at the agreed transaction price on a straight-line basis over the period of subscription.

Software maintenance and support services revenue is recognised separately from the supply of software products on a straight-line basis over the period of maintenance and support. Revenue derived from the supply of ad hoc software-related services, such as training and application engineering, is recognised at the agreed transaction price on a straight-line basis over a typically short period during which the obligation is performed.

Supply of manufactured or assembled products

The majority of the Group's revenue in Performance Products and Defense is earned from the supply of manufactured or assembled high-performance products, some of which are supplied with assurance-type warranties. Revenue for the supply of these products is measured at the agreed transaction price per unit that is expected to flow to the Group, and is recognised at the point in time that the Group has transferred control of the products to the customer, which is typically on delivery or collection. The point in time at which revenue is recognised can vary based on the specific incoterms present in a contract with a customer.

Revenue recognised from bill-and-hold arrangements occurs when all performance obligations have been satisfied and there is a substantive reason for the arrangement, which is typically that the customer has requested the products to be held by the Group until such times as delivery or collection is required by the customer. Revenue is recognised and billed under usual payment terms when the customer formally agrees to accept control of the bespoke products which cannot be sold to another customer and provided that the products have been separately identified and made available for delivery or collection.

Supply of software products

The Group's software products are standard version-controlled computer aided design, engineering and analysis tools, available for general sale and are primarily sold through Performance Products. The majority of revenue is derived from new and renewed licences of these software products, for which the customer has the right to access the product during the licence period, including rolling releases of the latest functionality. A new or renewed licence is considered to be a single distinct performance obligation for which revenue is recognised at the agreed transaction price on a straight-line basis over the licence period.

Perpetual licence sales provide the customer with an indefinite right to use the product, excluding rolling releases of the latest functionality. Rolling releases are provided through the separate provision of maintenance and support services. The transaction price of these two distinct performance obligations are separately identifiable within a contract. Revenue is recognised for perpetual licence sales when the performance obligation is satisfied, being the point of delivery of the licence key to the customer.

g) Specific adjusting items – Note 6

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. These items comprise the amortisation of acquired intangible assets, acquisition-related expenditure, reorganisation costs and other non-recurring items that are included due to the significance of their nature or amount. Acquisition-related expenditure includes the costs of acquisitions, deferred and contingent consideration fair value adjustments (including the unwinding of discount factors), transaction-related fees and expenses, and post-deal integration costs. Reorganisation costs include costs arising from major restructuring activities, profits or losses on the disposal of businesses, and significant impairments of property, plant and equipment.

h) Dividends – Note 8

Dividends are recognised as a liability in the year in which they are fully authorised. Interim dividends are recognised when paid.

1. Principal accounting policies (continued)

i) Net finance costs – Note 9

Finance income and finance costs are recognised in the income statement in the period in which they are incurred using the effective interest method.

j) Income tax expense – Note 11

The tax expense 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. The current tax charge is the expected tax payable on taxable income for the year, calculated using the average rate applicable for the year on the basis of the tax laws enacted or substantively enacted at the reporting date in the countries where the Group operates. The current tax charge also includes any adjustment to tax payable in respect of previous years.

Management periodically evaluates uncertain positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation and establishes provisions where appropriate on the basis of amounts expected to be paid to the relevant tax authorities. The Group submits annual claims in respect of the UK Government's Research and Development Expenditure Credit ('RDEC') scheme. RDEC is taxable income and is a form of government grant that effectively gives corporation tax relief on qualifying research and development ('R&D') expenditure. In accordance with IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance*, credits receivable under the RDEC scheme are offset against the associated qualifying R&D expenditure incurred, both of which are included within operating profit.

The Group have provided for uncertain positions taken in the tax returns with respect to situations in which applicable tax regulation is subject to interpretation and establishes provisions where appropriate on the basis of amounts expected to be paid to the relevant tax authorities.

Uncertain tax positions relate primarily to risks around transfer pricing and on-going tax audits. The Group's provision is based on experience of dealing with Tax Authorities in certain jurisdictions in which it operates and an estimate of the most likely outcomes in each territory.

k) Goodwill – Note 14

Goodwill arises on the acquisition of subsidiaries and represents the excess of the consideration transferred and the fair value of contingent consideration, over the fair value of the identifiable assets acquired and liabilities assumed. Goodwill arising on acquisitions denominated in foreign currencies 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 CGUs, or group 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 and is not larger than an operating segment before aggregation.

The Group's impairment review compares the carrying value of the goodwill to the recoverable amount of the CGU, or group of CGUs, to which the goodwill has been allocated. The recoverable amount is the higher of the value in use or the fair value less costs of disposal. Estimating the value in use requires the Directors to perform an assessment of the discounted future cash flows that the CGU, or group of CGUs, is able to generate. See Note 1(c) for discussion of the critical estimates involved in this assessment.

An impairment is deemed to have occurred where the recoverable amount of a CGU, or group of CGUs, is less than the carrying value of the allocated goodwill. Any impairment is recognised immediately in the income statement within specific adjusting items 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.

l) Other intangible assets – see Note 15

Acquired intangible assets

Acquired 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, together with acquired software and technology. The fair value of acquired intangible assets is determined by use of appropriate valuation techniques.

Software

Purchased software is capitalised on the basis of the purchase price of the software product plus any external and internal costs subsequently incurred that are directly attributable to bring the software product to the condition necessary for it to be capable of operating in the manner intended.

Development costs

Directly attributable costs which are incurred in the development of certain assets are capitalised and amortised over their finite useful lives once the Group has determined that it has the intention and the necessary resources to complete the relevant project, that it is probable the resulting asset will generate economic benefits for the Group and the attributable expenditure can be reliably measured.

Amortisation

Amortisation is typically calculated using the straight-line method to allocate the cost of intangible assets over their estimated useful lives, as follows:

• Acquisition-related intangible assets:	
- Customer contracts and relationships	Between 3 and 9 years
- Software and technology	Between 5 and 7 years
• Software	Between 2 and 10 years
• Development costs	Between 3 and 5 years

For certain assets classified as development costs in the Group's Defense operating segment, amortisation is charged on a units of production basis, as this is considered to more accurately reflect the expected pattern of consumption of the future economic benefits embodied in the assets. Assets under construction are carried at cost less any impairment in value, and are included in the relevant asset category. Amortisation of these assets commences when they are available for their intended use or sale.

m) Property, plant and equipment – see Note 16

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 bring 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 cost of the asset and reflected in depreciation throughout its useful life.

Depreciation is typically calculated using the straight-line method to allocate the cost of items of property, plant and equipment less any residual value, over their estimated useful lives, as follows:

• Freehold land	Not depreciated
• Freehold buildings including improvements	Between 25 and 50 years
• Leasehold property improvements	Over the term of the lease
• Plant and machinery	Between 4 and 25 years
• Fixtures, fittings and equipment	Between 2 and 10 years

The residual values and useful lives of assets are reviewed, and adjusted if appropriate, at the end of each reporting period. For certain assets classified as plant and machinery in the Group's Defense operating

1. Principal accounting policies (continued)

m) Property, plant and equipment (continued)

segment, depreciation is charged on a units of production basis, as this is considered to more accurately reflect the expected pattern of consumption of the future economic benefits embodied in the assets.

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 or sale.

Government Grants

Grants contributing to the cost of an asset are deducted from the cost of the asset and reflected in its depreciation throughout its useful life.

n) Leases – see Note 17

The Group's policy for leases is as follows:

Definition of a lease

Under IFRS 16, a contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration.

Lessee accounting

At the lease commencement date, a right-of-use asset is recognised for the leased item with a corresponding lease liability for any payments due. The right-of-use asset is initially measured at cost, being the present value of the lease payments paid or payable (net of any incentives received from the lessor), plus any initial direct costs and/or restoration costs.

Right-of-use assets are depreciated on a straight-line basis from the commencement date of the lease to the earlier of the end of the asset's useful life or the end of the lease term. The lease term is the non-cancellable period of the lease plus any periods for which the Group is 'reasonably certain' to exercise any extension options. If right-of-use assets are considered to be impaired, the carrying value is reduced accordingly.

For assets where the lessor transfers ownership of the underlying asset to the Group by the end of the lease term, or where the lease contains a purchase option at a nominal/notional value, then these assets will be initially classified as property, plant and equipment, and subsequently follow the depreciation rules set out in Note 1(m).

The lease liability is initially measured at the value of future lease payments, discounted using the interest rate implicit in the lease. Where this rate is not determinable, the Group's incremental borrowing rate is used, which is then adjusted to reflect an estimate of the interest rate the Group would have to pay to borrow the amount necessary to obtain an asset of similar value, in a similar economic environment, and with similar terms and conditions.

After initial recognition, the lease liability is recorded at amortised cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate (e.g. an inflation related increase) or if the Group's assessment of the lease term changes. Any change in the lease liability as a result of these changes also results in a corresponding change in the recorded right-of-use asset.

Payments in respect of short-term and/or low-value leases are charged to the income statement on a straight-line basis over the lease term.

Lessor accounting

The Group determines at inception of the lease whether the lease is a finance or an operating lease. When a lease transfers substantially all the risks and rewards of ownership of the underlying asset to the lessee then the lease is classified as a finance lease; otherwise, the lease is classified as an operating lease. Where the Group is an intermediate lessor, the interest in the head lease and the sub-lease is accounted for separately and the lease classification of a sub-lease (finance or operating) is determined by reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset.

Other sub-leased assets are all classified as operating leases, where payments received (net of any incentives granted by the Group) are recognised in the income statement on a straight-line basis over the lease term.

o) Non-current assets classified as held for sale – see Note 18

Non-current assets are classified as held for sale when their carrying amount is expected to be recovered principally through a sale transaction, rather than through continuing use, and a sale is considered highly probable within twelve months of their classification as held for sale. They are stated at the lower of their carrying amount and fair value less costs to sell. An impairment loss is recognised in the income statement for any initial or subsequent write-down of the assets to fair value less costs to sell. A gain is recognised in the income statement for any subsequent increases in fair value less costs to sell an asset, but not in excess of any cumulative impairment losses previously recognised. If these criteria are no longer met, the asset ceases to be classified as held for sale and is measured at the lower of: its carrying value prior to classification as held-for-sale, adjusted for any depreciation, amortisation or revaluations that would have been recognised had the asset not been classified as held for sale; and its recoverable amount at the date at which the criteria were no longer met.

A gain or loss not previously recognised by the date of the sale of the non-current assets is recognised in the income statement at the date of derecognition. Non-current assets are not depreciated or amortised while they are classified as held for sale and are presented separately from other non-current assets.

p) Provisions for liabilities and charges – see Note 19

Provisions are required for restructuring costs and employment-related benefits when the Group has a present legal or constructive obligation at the reporting date as a result of a past event and it is probable that settlement will be required of an amount that can be reliably estimated. Provisions for warranty costs are recognised at the date of sale of the relevant products, at the Directors' best estimate of the expenditure required to settle the Group's probable liability.

Other provisions reflect the Directors' best estimate of future obligations relating to legal claims and litigation, together with dilapidation costs for the maintenance of leasehold properties arising from past events such as lease renewals or terminations. These estimates are reviewed at the reporting date and updated as necessary.

q) Deferred tax – Note 20

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. Deferred tax liabilities are not recognised if they arise from the initial recognition of goodwill. Deferred tax is not accounted for if it arises from the initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit and differences relating to investments in subsidiaries to the extent that it is not probable that they will reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the reporting date.

Deferred tax assets are recognised only to the extent that it is probable that taxable profits will be available in the foreseeable future against which the asset can be utilised. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realised within the foreseeable future.

r) Inventories – Note 21

Inventories are stated at the lower of cost, including attributable overheads allocated on the basis of normal operating capacity, and net realisable value. Cost is calculated using the 'weighted average' method across the Group apart from Performance Products and Defense which are on a 'first-in, first-out' method.

1. Principal accounting policies (continued)

s) Trade, contract and other receivables – Note 22

Trade receivables are stated net of impairment and for the purposes of impairment testing includes the non-financial contract assets of amounts recoverable on contracts ('AROC') and accrued revenue. These assets are assessed for impairment using the 'simplified approach' to the 'expected credit loss' ('ECL') model, which applies a 'default rate' at the point of origination that increases as the unpaid asset ages. The 'simplified approach' of IFRS 9 applies a 'default rate' to trade receivables and contract assets, which considers both past experience and future expectations of credit losses. Although past experience of significant credit losses on these assets has been negligible, the impairment assessment considers both past experience and future expectations of credit losses. As a result of this assessment, the Group considers the risk of expected credit losses on contract assets to be immaterial.

For the requiring an assessment of the ECL over the lifetime of the asset using a historical provision matrix to create a group wide 'default rate' which together with past events is also adjusted for current conditions and forecasts of future economic conditions. To calculate the Group default rates a weighted average default rate for each division was taken. It is the Group's judgement that it is appropriate for Ricardo to use one set of default rates across the Group as our international credit rating and geographical profile is sufficiently similar across the globe. The customer base across the Group is sufficiently homogenous as each division's customers are primarily comprised of large corporations and historical provision matrixes are sufficiently homogenous.

Trade receivables and contract assets are provided in full and subsequently written off when there is no reasonable expectation of recovery. Indicators that there may be no reasonable expectation of recovery could include, amongst others, evidence that the customer has entered administration or liquidation proceedings, or the persistent failure of a customer to enter into or adhere to a repayment plan. The 'general approach' is applied to the impairment of other financial assets, the amount of which is based on whether there has been a significant deterioration in the credit risk of a financial asset.

t) Trade, contract and other payables – Note 23

Trade payables are not interest-bearing and are stated at their nominal value.

u) Net debt and borrowings – Note 24

Cash and cash equivalents in the Consolidated cash flow statement comprise cash balances and bank overdrafts repayable on demand. Bank overdrafts are shown within borrowings in current liabilities and bank loans and finance leases are shown within borrowings in either current liabilities or noncurrent liabilities depending on the maturity date.

Financial liabilities are classified as either amortised cost or fair value through profit and loss. Borrowings are recognised initially at fair value net of direct issue costs and subsequently at amortised cost. Differences between initial value and redemption value are recorded in the income statement over the period of the loan. The fair value of borrowings due for repayment after more than one year approximates to the carrying value as they are primarily floating rate loans where payments are reset to market rates at regular short-term intervals

v) Fair value of financial assets and liabilities – Note 26

The Group uses derivative financial instruments, including foreign exchange contracts, to mitigate currency exposures on trading transactions. Fair values of derivative financial instruments are based on the market values of similar instruments at the reporting date.

The Group uses the fair value of foreign currency swap contracts on intercompany loans as hedging instruments. The initial fair value is determined with reference to the relevant spot market exchange rate. The differential between the contracted strike rate and the discounted spot market exchange rate is defined as the movement in fair value. The movement of the hedge's fair value gains and losses on the remeasurement of cash flow derivatives are recognised in retained earnings through the income statement.

The Group hedges the entire carrying value of all intercompany loans denominated in foreign currencies, on which credit risk is considered to be immaterial. Changes in fair value of foreign currency swap, forward and option contracts that relate to hedged items are recognised in retained earnings through the income statement, together with the change in the fair value of the related hedge at the reporting date.

Where intercompany loans denominated in a foreign currency are neither planned nor likely to be settled in the foreseeable future, they are considered to form part of the net investment in the borrowing entity, and foreign exchange differences are recognised through other comprehensive income.

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 amount 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 on the reporting date. 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 of the fair value hierarchy within IFRS 13 *Fair Value Measurement*). Measurement of all derivative financial instruments was taken to the income statement.

w) Retirement benefits – Note 33

The Group operates one defined benefit and several defined contribution pension schemes, the assets of which are held in separately administered funds. The defined benefit pension scheme is closed to new entrants and the accrual of future benefit for active members ceased at the end of February 2010. Payments to defined contribution pension schemes are charged as an expense as they fall due. Differences between contributions payable in the year and contributions actually paid are included in either accruals or prepayments. Payments to state-managed pension schemes are dealt with as payments to defined contribution pension schemes as the Group's obligations under the schemes are similar in nature.

For the defined benefit pension scheme, the cost of providing benefit is determined using the projected unit credit method, with actuarial valuations being carried out at each reporting date. Remeasurements are recognised in other comprehensive income except where they result from settlements or curtailments, in which case they are reported in the income statement.

Where necessary, past service costs are recognised immediately in the income statement at the earlier of when the plan amendment or curtailment occurs and when the related restructuring costs or termination benefit are recognised. The defined benefit obligation recognised represents the present value of the pension scheme liabilities net of 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 interest cost on the net defined benefit obligation for the year is determined by applying the discount rate used to measure the defined benefit obligation at the beginning of the year to the net defined benefit obligation at the end of the year and is included in finance costs.

1. Principal accounting policies (continued)

x) Share-based payments – Note 34

Equity-settled share-based payments are measured at fair value at the date of grant. The fair value determined at the grant date is expensed on a straight-line basis over the vesting period. The amount expensed is adjusted over the vesting period for changes in the estimate of the number of shares that will eventually vest, save for changes resulting from any market-related performance conditions.

Cash-settled share-based payments are measured at fair value at the date of grant and expensed over the vesting period until the vesting date with the recognition of a corresponding liability. The liability is remeasured to fair value at each reporting date up to and including the settlement date, with changes in fair value recognised in the income statement for the year. The amount expensed is adjusted over the vesting period for changes in the estimate of the number of shares that will eventually vest. Fair value is measured by using the Monte Carlo and Black Scholes models. The expected life used in the models are adjusted for the effects of exercise restrictions and behavioural considerations.

y) Foreign currency

Transactions

The functional currency of the Company and the presentation currency of the Group is Pounds Sterling. The functional currency of each subsidiary is the currency of the primary economic environment in which the entity operates. Transactions in currencies other than the functional currency are recorded at prevailing exchange rates. At each reporting date, monetary assets and liabilities denominated in foreign currencies are retranslated at the rates prevailing on the reporting date. Non-monetary assets and liabilities denominated in foreign currencies are translated at the rates prevailing at the date when the transaction occurred. Gains and losses arising on retranslation and settlements are included in the 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. Revenues and costs 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 and the translation reserve within equity. On disposal of an operation the related cumulative translation differences are recognised in the income statement as a component of the gain or loss arising on disposal.

z) Recent accounting developments

Adopted by the Group

The following other standards, interpretations and amendments to existing standards became effective for periods commencing on or after 1 January 2020 and were adopted by the Group from 1 July 2020 and have not had a material impact on the Group:

	Effective date (period commencing)	Endorsed by EU
Amendments and Interpretations to IFRS		
- IFRS 16 *Leases:* COVID-19 Related Rent concessions	1 Jun 2020	Yes
- IFRS 3 *Business Combinations:* Definition of a business	1 Jan 2020	Yes
- IFRS 9 *Financial Instruments*, IAS 39 *Financial Instruments: Recognition and Measurement* and IFRS 17 *Insurance Contracts:* Interest Rate Benchmark Reform.	1 Jan 2020	Yes
- IAS 1 *Presentation of Financial Statements and* IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors: Definition of Material*	1 Jan 2020	Yes
- Amendments to References to the Conceptual Framework in IFRS Standards	1 Jan 2020	Yes

Issued standards, amendments and interpretations not yet effective

The following other standards, interpretations and amendments to existing standards have been issued but were not yet mandatory for the Group for the accounting period commencing on 1 July 2020 and are not expected to have a material impact on the Group:

	Effective date (period commencing)	Endorsed by EU
Issued IFRS		
- IFRS 17 *Insurance Contracts*	1 Jan 2023	No
Amendments and Interpretations to IFRS		
- IFRS 9 *Financial Instruments*, IAS 39 *Financial Instruments*, IAS 7 *Statement of Cash Flows*, IFRS 4 *Insurance Contracts*, IFRS 16 *Property, Plant and Equipment*: Interest Rate Benchmark Reform phase 2	1 Jan 2021	Yes
- IFRS 4 *Insurance Contracts: Deferral if IFRS 9*	1 Jan 2021	Yes
- IFRS 3 *Business Combinations;* IAS 16 *Property, Plant and Equipment*; IAS 37 *Provisions, Contingent Liabilities and Contingent Assets:* Annual Improvements 2018-2020	1 Jan 2021	Yes
- IAS 1 *Presentation of Financial Statements:* Classification of Liabilities as Current or Non-Current	1 Jan 2023	No
- IAS 1 *Presentation of Financial Statements:* IFRS Practice Statement 2, Disclosure of Accounting Estimates	1 Jan 2023	No
- IAS 8 *Accounting policies:* Changes in Accounting Estimates and Errors, Definition of Accounting Estimates	1 Jan 2023	No
- IAS 12 *Income Taxes:* Deferred Tax related to Assets and Liabilities arising from a Single Transaction	1 Jan 2023	No

2. Alternative Performance Measures

Throughout this document the Group presents various alternative performance measures ('APMs') in addition to those reported under IFRS. The measures presented are those adopted by the Chief Operating Decision Maker ('CODM', deemed to be the Chief Executive Officer), together with the main Board, and analysts who follow us in assessing the performance of the business. Explanations of how they are calculated and how they are reconciled to an IFRS statutory measure are set out below.

a) Group profit and earnings measures

Underlying profit before tax ('PBT') and underlying operating profit: These measures are used by the Board to monitor and measure the trading performance of the Group. They exclude certain items which the Board believes distort the trading performance of the Group. These include the amortisation of acquired intangibles, acquisition-related expenditure, reorganisation costs, and other specific adjusting items.

The Group's strategy includes geographic and sector diversification, including targeted acquisitions and disposals. By excluding acquisition-related expenditure from underlying PBT and underlying operating profit, the Board has a clearer view of the performance of the Group and is able to make better operational decisions to support its strategy.

Acquisition-related expenditure includes the costs of acquisitions, deferred and contingent consideration fair value adjustments (including the unwinding of discount factors), transaction-related fees and expenses, and post-deal integration costs.

Reorganisation costs arising from major restructuring activities, profits or losses on the disposal of businesses, and significant impairments of property, plant and equipment, are excluded from underlying PBT and underlying operating profit as they are not reflective of the Group's trading performance in the year, as are any other specific adjusting items deemed to be one-off in nature.

The related tax effects on the above and other tax items which do not form part of the underlying tax rate are also taken into account. Items are treated consistently year-on-year, and these adjustments are also consistent with the way that performance is measured under the Group's incentive plans and its banking covenants. A reconciliation is shown below. Further details of the nature of the specific adjusting items are given in Note 6.

Reconciliation of underlying profit before tax to reported profit/(loss) before tax	2021 Underlying £m	2021 Specific adjusting items £m	2021 Total £m	2020 Underlying £m	2020 Specific adjusting items £m	2020 Total £m
Revenue	**351.8**	**-**	**351.8**	352.0	-	352.0
Cost of sales	**(234.1)**	**-**	**(234.1)**	(236.9)	-	(236.9)
Gross profit	**117.7**	**-**	**117.7**	115.1	-	115.1
Administrative expenses and other income	**(95.0)**	**-**	**(95.0)**	(95.1)	-	(95.1)
Amortisation of acquired intangibles	**-**	**(5.0)**	**(5.0)**	-	(6.0)	(6.0)
Acquisition-related expenditure	**-**	**(2.1)**	**(2.1)**	-	(3.0)	(3.0)
Reorganisation costs	**-**	**(5.4)**	**(5.4)**	-	(11.9)	(11.9)
CEO exit costs	**-**	**(1.5)**	**(1.5)**	-	-	-
GMP equalisation	**-**	**(0.1)**	**(0.1)**	-	-	-
Operating profit/(loss)	**22.7**	**(14.1)**	**8.6**	20.0	(20.9)	(0.9)
Net finance expense	**(4.7)**	**-**	**(4.7)**	(4.4)	-	(4.4)
Profit/(loss) before taxation	**18.0**	**(14.1)**	**3.9**	15.6	(20.9)	(5.3)
Income tax (expense)/credit	**(4.8)**	**2.6**	**(2.2)**	(4.1)	3.0	(1.1)
Profit/(loss) for the year	**13.2**	**(11.5)**	**1.7**	11.5	(17.9)	(6.4)

Underlying earnings attributable to the owners of the parent: The Group uses underlying earnings attributable to the owners of the parent as the input to its adjusted EPS measure. This profit measure excludes the amortisation of acquired intangibles, acquisition-related expenditure, reorganisation costs and other specific adjusting items, but is an after-tax measure. The Board considers underlying EPS to be more reflective of the Group's trading performance in the year. A reconciliation between earnings attributable to the owners of the parent and underlying earnings attributable to the owners of the parent is shown in Note 7.

Organic growth/decline: Organic growth/decline is calculated as the growth/decline in the result for the current year compared to the prior year, after adjusting for the impact of acquisitions or disposals, to include the results of those acquisitions or disposals for an equivalent period in each financial year. As set out in Note 13, the Group acquired the entire issued share capital of PLC Consulting Pty Ltd ('PLC Consulting') on 31 July 2019. Had PLC Consulting been acquired and consolidated from 1 July 2019, the impact on the Group would not have been material.

Constant currency growth/decline: The Group generates revenues and profits in various territories and currencies because of its international footprint. Those results are translated on consolidation at the foreign exchange rates prevailing at the time. Constant currency growth/decline is calculated by translating the result for the current year using foreign currency exchange rates applicable to the prior year. This provides an indication of the growth/decline of the business, excluding the impact of foreign exchange.

2. Alternative Performance Measures (continued)

Headline trading performance	Revenue	Underlying Operating profit	Underlying Profit before tax	Reported Operating profit/(loss)	Reported Profit/(loss) before tax
2021 (£m)	**351.8**	**22.7**	**18.0**	**8.6**	**3.9**
2020 (£m)	352.0	20.0	15.6	(0.9)	(5.3)
Growth (%)	**-**	**14**	**15**	**1,056**	**174**
Constant currency growth (%)	**1**	**14**	**15**	**1,056**	**174**

Segmental underlying operating profit: This is presented in the Group's segmental disclosures and reflects the underlying trading of each segment, as assessed by the main Board. This excludes segment-specific amortisation of acquired intangibles, acquisition-related expenditure and other specific adjusting items, such as reorganisation costs. It also excludes unallocated Plc costs, which represent the costs of running the public limited company and specific adjusting items which are outside of the control of segment management. A reconciliation between segment underlying operating profit, the Group's underlying operating profit and operating profit is presented in Note 4.

b) Cash flow measures

Cash conversion: A key measure of the Group's cash generation is the conversion of profit into cash. This is the reported cash generated from operations (defined as operating cash flow, less movements in net working capital and defined benefit pension deficit contributions) divided by earnings before interest, tax, depreciation, impairment and amortisation ('EBITDA'), expressed as a percentage.

Underlying cash conversion: This is underlying cash generated from operations (defined as reported cash generated from operations, adjusted for the cash impact of specific adjusting items) divided by underlying EBITDA (defined as reported EBITDA, adjusted for the impact of specific adjusting items). A reconciliation between the two is shown below.

Cash conversion	2021 Underlying £m	2021 Specific adjusting items £m	2021 Total £m	2020 Underlying £m	2020 Specific adjusting items £m	2020 Total £m
Operating profit/(loss)	**22.7**	**(14.1)**	**8.6**	20.0	(20.9)	(0.9)
Depreciation, amortisation and impairment	**19.7**	**1.9**	**21.6**	17.6	6.7	24.3
Amortisation of acquired intangibles	**-**	**5.0**	**5.0**	-	6.0	6.0
EBITDA	**42.4**	**(7.2)**	**35.2**	37.6	(8.2)	29.4
Movement in working capital	**(2.3)**	**2.9**	**0.6**	4.5	4.0	8.5
Pension deficit payments	**(4.6)**	**-**	**(4.6)**	(4.6)	-	(4.6)
Profit on disposal of assets	**(0.3)**	**-**	**(0.3)**	-	(1.0)	(1.0)
Share based payments	**1.0**	**0.4**	**1.4**	0.6	-	0.6
Fair value losses on derivative financial instruments	**0.7**	**-**	**0.7**	0.3	-	0.3
Cash generated from/(used in) operations	**36.9**	**(3.9)**	**33.0**	38.4	(5.2)	33.2
Cash conversion	**87.0%**		**93.8%**	102.1%		112.9%

Net debt: is defined as current and non-current borrowings less cash and cash equivalents, including hire purchase agreements, but excluding any impact of other IFRS 16 lease liabilities. Management believes this definition is the most appropriate for monitoring the indebtedness of the Group and is consistent with the treatment in the Group's banking agreements.

c) Tax measures

Underlying effective tax rate ('ETR'): The Group reports one adjusted tax measure, which is the tax rate on underlying profit before tax. This is the tax charge applicable to underlying profit before tax expressed as a percentage of underlying profit before tax.

Financial performance

The following disclosures provide further information about the drivers of the Group's financial performance in the year. This includes analysis of the respective contribution of the Group's reportable segments along with information about its operating cost base, net finance costs and tax. In addition, disclosure on earnings per share and the dividend is provided.

3. Operating profit

Research and development expenditure accounting policy – *Note 1(d)*
Government grants accounting policy – *Note 1(e)*

The following items have been charged/(credited) to operating profit	Note	2021 £m	2020 £m
Depreciation of property, plant and equipment	*16*	**5.7**	5.7
Impairment of property, plant and equipment	*16*	**0.3**	5.6
Depreciation of right-of-use assets	*17*	**5.7**	5.4
Impairment of right-of-use assets	*17*	**0.2**	0.5
Amortisation of other intangible assets	*15*	**13.2**	12.0
Impairment on held for sale assets	*18*	**1.5**	1.1
Repairs and maintenance on property, plant and equipment		**12.1**	12.9
Net impairment expense on trade receivables	*22*	**0.3**	1.3
Profit on disposal of property, plant and equipment		**(0.3)**	(1.0)
Research and Development Expenditure Credits ('RDEC')		**(5.5)**	(7.7)
Research and development expenditure		**1.7**	4.6
Government grant income in respect of research and development expenditure		**(1.2)**	(1.1)
Government grant income in respect of COVID-19		**(1.3)**	(1.8)

Government grant income in respect of COVID-19 above includes £0.4m (2020: £1.2m) in respect of the UK Government Coronavirus Job Retention Scheme, which is intended to support continuing employment for businesses affected by COVID-19. It also includes £0.6m (2020: £0.4m) of grant income in respect of the Netherlands NOW scheme.

4. Financial performance by segment

The segmental analysis helps explain the business in the way that it is monitored by management.

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 information reported includes financial performance but does not include the financial position of assets and liabilities. The operating segments were identified by evaluating the Group's products and services, processes, types of customers and delivery methods.

From FY 2020/21, due to restructuring within the Group, Strategic Consulting & Software ('other') is no longer being separately reported as an operating segment.

The Strategic Consulting element of this segment is now reported within Automotive & Industrial ('A&I'). This business has a number of common customers, operates in similar markets to A&I, and is now run as a business unit within the overall A&I business. Since the start of FY 2020/21, the A&I EMEA Managing Director has overall responsibility for the Strategic Consulting service offering.

The Software element of this segment has been aggregated into the Performance Products operating segment for the purposes of segmental reporting. Whilst the Software business continues to be run as a separate business with its own leadership team, it has a number of similar characteristics to the Performance Products manufacturing business, in that it is involved in the development of niche products, requiring a high level of capital/development spend, primarily selling to automotive manufacturers.

As a result of this change, the Group is now reporting the five segments set out below. Prior year comparatives have been restated to present the results of Ricardo Strategic Consulting and Ricardo Software within Automotive & Industrial and Performance Products, respectively, in line with the current year. Consistent with the prior period, Plc costs includes the costs of running the public limited company, including foreign exchange exposure on intercompany loans.

The following summarises the operations in each of the Group's reportable segments:

- Energy & Environment ('EE') – EE generates revenue from the provision of environmental consultancy services to customers across the world. Customers include governments, public agencies and private businesses;
- Rail – Rail generates revenue from through two separate operations: a consultancy unit that provides technical advice and engineering services; and a separate, independent entity, Ricardo Certification, that performs accredited assurance services;
- Automotive & Industrial ('A&I') – A&I generates revenue through the provision of engineering, strategic consulting, and design, development and testing services, focused on hybrid and electric systems, electrification, engines, driveline and transmissions, testing, and vehicle engineering. Customers include businesses in the automotive, aerospace, defence, energy, off-highway and commercial, marine, motorcycle and light-personal transport, and rail markets;
- Defense – Defense provides engineering services, software and products to customers in the US defence market, aimed and protecting life and improving the operation, maintenance and support of complex systems; and
- Performance Products ('PP') manufactures, assembles and develops niche high-quality components, prototypes and complex products, including engines, transmissions and other precision and performance-critical products and software. Its customers manufacture low-volume, high-performance products in markets such as motorsport, automotive, aerospace, defence and rail.

4. Financial performance by segment (continued)

The operations of the Group have been categorised into these segments due to the nature of their services, market sectors, client bases and distribution channels and operating across markets requiring adherence to regulatory frameworks that are similar in nature.

Measurement of performance

Management monitors the financial results of its operating segments separately for the purpose of making decisions about allocating resources and assessing performance. Segmental performance is measured based on underlying operating profit, as this measure provides management with an overall view of how the different operating segments are managing their total cost base against the revenue generated from their portfolio of contracts.

There are varying levels of integration between the segments. The segments use EE for their specialist environmental knowledge. A&I and PP have various shared projects. There are also shared service costs between the segments. Inter-segment transactions are eliminated on consolidation. Inter-segment pricing is determined on an arm's length basis in a manner similar to transactions with third parties.

Included within Plc costs in the following tables are costs arising from a central Group function, including the costs of running the public limited company, which are not recharged to the other operating segments. Comparative figures for the year ended 30 June 2020 have been restated, reflecting the impact of the changes the Group made to its operating segments during the year ended 30 June 2021. The operating segment section of this Annual Report provides further detail on the segments' performance (see page 45 to 55).

For the year ended 30 June 2021	EE £m	Rail £m	A&I £m	Defense £m	PP £m	Plc £m	Total £m
Total segment revenue	57.9	77.7	105.7	37.9	78.5	-	357.7
Inter-segment revenue	(0.8)	-	(3.2)	-	(1.9)	-	(5.9)
Revenue from external customers	57.1	77.7	102.5	37.9	76.6	-	351.8
Segment underlying operating profit	8.5	8.0	(1.6)	5.4	6.8	-	27.1
Plc costs	-	-	-	-	-	(4.4)	(4.4)
Underlying operating profit/(loss)	8.5	8.0	(1.6)	5.4	6.8	(4.4)	22.7
Specific adjusting items (*)	(0.9)	(3.6)	(5.6)	(0.4)	-	(3.6)	(14.1)
Operating profit/(loss)	7.6	4.4	(7.2)	5.0	6.8	(8.0)	8.6
Net finance costs							(4.7)
Profit before taxation							3.9
Depreciation and amortisation	3.3	6.1	10.2	1.8	3.9	1.3	26.6
Capital expenditure:							
- Other intangible assets	1.4	-	3.6	0.5	3.1	0.3	8.9
- Property, plant and equipment	0.4	0.2	2.3	0.6	0.8	-	4.3
- Right-of-use assets	0.2	0.8	0.6	0.8	-	-	2.4

For the year ended 30 June 2020	EE £m	Rail £m	A&I £m	Defense £m	PP £m	Plc £m	Total £m
Total segment revenue	51.7	75.4	119.8	32.8	78.3	-	358.0
Inter-segment revenue	(0.9)	(0.1)	(2.6)	-	(2.4)	-	(6.0)
Revenue from external customers	50.8	75.3	117.2	32.8	75.9	-	352.0
Segment underlying operating profit	6.3	5.8	0.5	5.1	5.1	-	22.8
Plc costs	-	-	-	-	-	(2.8)	(2.8)
Underlying operating profit/(loss)	6.3	5.8	0.5	5.1	5.1	(2.8)	20.0
Specific adjusting items (*)	(1.7)	(5.5)	(10.4)	(0.5)	(0.3)	(2.5)	(20.9)
Operating profit/(loss)	4.6	0.3	(9.9)	4.6	4.8	(5.3)	(0.9)
Net finance costs							(4.4)
Loss before taxation							(5.3)
Depreciation and amortisation	3.7	6.5	14.1	1.4	3.3	1.3	30.3
Capital expenditure:							
- Other intangible assets	0.9	0.1	3.6	0.5	3.4	0.7	9.2
- Property, plant and equipment	0.3	0.2	19.8	0.3	1.0	0.4	22.0
- Right-of-use assets	-	0.1	4.5	0.4	0.1	-	5.1

* - See Note 6

Revenue from one customer represents approximately 12% (2020: 13%) of the Group's external revenue, which is primarily reported in the PP segment.

5. Revenue

This note explains how the Group derives its revenue.

Revenue accounting policy – *Note 1(f)*

Key sources of estimation uncertainty: Revenue on fixed price contracts – *Note 1(c)*

Disaggregation of revenue	2021 £m	2020 £m
a) Revenue stream		
Service provided under:		
- fixed price contracts	**210.8**	189.5
- time and materials contracts	**65.9**	73.3
- subscription and software support contracts	**6.6**	6.7
Goods supplied:		
- manufactured and assembled products	**61.8**	74.3
- software products	**6.7**	7.2
Intellectual property	**-**	1.0
Total	**351.8**	352.0
b) Customer location		
United Kingdom	**118.9**	124.6
Europe	**76.2**	80.4
North America	**69.5**	59.9
China	**24.1**	22.6
Rest of Asia	**25.7**	31.4
Australia	**27.3**	21.4
Rest of the World	**10.1**	11.7
Total	**351.8**	352.0
c) Timing of recognition		
Over time	**289.6**	276.4
At a point in time	**62.2**	75.6
Total	**351.8**	352.0

See Note 22 for disclosure of impairment losses recognised on receivables and contract assets arising from the Group's contracts with customers. Note 22 also provides details of the opening and closing balances of receivables and contract assets, together with the Group's order book which comprises the value of all unworked purchase orders and contracts received from customers at the reporting date and provides an indication of revenue that has been secured and will be recognised in future accounting periods.

See Note 23 for the opening and closing balances of contract liabilities from contracts with customers.

6. 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. These items comprise the amortisation of acquired intangible assets, acquisition-related expenditure, reorganisation costs and other non-recurring items that are included due to the significance of their nature or amount. Acquisition-related expenditure is incurred by the Group to effect a business combination, including the costs associated with the integration of acquired businesses. Reorganisation costs relate to non-recurring expenditure incurred as part of fundamental restructuring activities, significant impairments of property, plant and equipment, and other items deemed to be one-off in nature.

Specific adjusting items accounting policy - *Note 1(g)*
Critical judgement on specific adjusting items: Reorganisation costs – *Note 1(c)*

	2021 £m	2020 £m
Amortisation of acquired intangibles	**5.0**	6.0
Acquisition-related expenditure	**2.1**	3.0
Reorganisation costs		
- Purchases and disposals	**2.0**	5.7
- Other reorganisation costs	**3.4**	6.2
CEO exit costs	**1.5**	-
Guaranteed Minimum Pensions ('GMP') equalisation	**0.1**	-
Total before tax	**14.1**	20.9
Tax credit on specific adjusting items	**(2.6)**	(3.3)
Tax charge on prior year specific adjusting item	**-**	0.3
Total after tax	**11.5**	17.9

Amortisation of acquired intangible assets

On acquisition of a business, the purchase price is allocated to assets such as customer contracts and relationships. Amortisation occurs on a straight-line basis over its useful economic life, which is between 3 and 9 years. During the year, certain "customer contracts and relationships" intangible assets reached the end of their economic life, resulting in a decrease in amortisation charges compared to the prior period.

Acquisition-related expenditure

The current year acquisition-related expenditure comprises £1.6m (2020: £2.8m) of earn-out and employee retention costs, accrued in relation to Transport Engineering Pty Ltd (now Ricardo Rail Australia - 'RRA'), acquired in May 2019, and PLC Consulting Pty Ltd (now Ricardo Energy Environment and Planning - 'REEP'), acquired in July 2019. Further details are provided in Note 13. The current year charge also includes £0.5m of external fees incurred in relation to two strategic projects in the year.

The prior period charge included £0.4m of costs incurred in relation to the post-deal integration of RRA and REEP, and £0.9m costs incurred on acquisition processes (including REEP and other aborted processes), comprising external fees and the costs of running an internal acquisitions department to effect the acquisition processes. Offsetting these, £1.1m of income was recognised in relation to a gain on a foreign exchange option contract, which was taken out to hedge an aborted overseas transaction.

The above items have been classified as specific adjusting items as they meet the Group's definition of acquisition-related expenditure. The prior year gain on the option contract was classified as a specific adjusting item due to its non-recurring nature and the significance of the amount.

Reorganisation costs

Purchases and disposals

The current year charge includes a £1.5m impairment charge as a result of a decrease in the fair value of the Detroit Technology Campus ('DTC') South building, reflecting its market value at the balance sheet date. The property has been held-for-sale since its purchase in August 2019. It was purchased to remove the business from a long-term lease commitment which ran to October 2037 and comprised a North building, which housed testing operations, and a South office building. The campus was originally purchased for £14.2m (USD 17.3m), and immediately written down, resulting in an impairment charge of £2.5m (net of the extinguishment of an associated IFRS 16 lease liability) in the prior year as the purchase price was predicated on its tenancy. The North building and its associated test assets were sold in the second half of FY 2019/20 (see below) and the South building was impaired by a further £1.1m (USD 1.3m). The current year impairment charge reflects the impact of COVID-19 on the property market, with a significantly lower demand for office space depressing prices in the DTC area. These costs have been classified as specific adjusting items as they are significant in value and would distort the underlying trading performance of the Group if included. On 18 January 2021, as offers received were lower than expected, management decided to retain the use of the property. The property is continuing to be marketed for sale, but management no longer considers a sale within the next twelve months to be highly probable – see Note 18.

The DTC North building and its associated test assets were sold on 3 June 2020 for up-front consideration of £2.8m (USD 3.5m), with up to an additional £1.5m (USD 2.0m) contingent on volume of testing work placed into the facility by Ricardo over the next two years. A loss of £2.1m (USD 2.7m), after taking into account the fair value of contingent consideration, was recognised on the disposal in the prior year. A charge of £0.5m (USD 0.8m) has been recognised in the current year, representing a reduction in the fair value of contingent consideration based on management's latest assessment of the testing volumes to be placed into the facility over the next twelve months. Ricardo received £0.2m (USD 0.3m) of contingent consideration in FY 2020/21.

6. Specific adjusting items (continued)

Other reorganisation costs

Redundancy costs: The current period charge reflects a total of £2.5m of redundancy costs from headcount reductions in the Group's A&I business in EMEA. This was caused by a continuation of the challenging trading conditions seen throughout the year and the impact of COVID-19 on order intake levels as clients reduced levels of outsourcing and delayed major programmes. The A&I EMEA business previously incurred £2.0m of costs from headcount reductions in the second half of FY 2019/20, driven by impact of the outbreak of COVID-19 on trading conditions. Due to the continuing depressed economic conditions and various national lockdowns in Autumn 2020, further heads were removed from the business in the first half of this year at a cost of £1.3m. Order intake showed signs of improvement in the third quarter of the financial year, but further national lockdowns in Spring 2021 led to more project delays, which contributed to a decline in order intake in the fourth quarter. In June 2021, management announced a plan to take additional heads out of the business, recognising a £1.2m redundancy provision. These actions are deemed necessary to right-size the business based on current order intake levels and realign capabilities with changing customer demands. These costs have been included within specific adjusting items as they are significant in quantum and would otherwise distort the underlying trading performance of the Group.

In the prior year, in addition to the £2.0m of redundancy costs for A&I in EMEA, £1.4m of redundancy costs were incurred in Rail (the completion of a process which commenced in FY 2018/19), together with £1.0m of redundancy costs across A&I US, Performance Products, Software and Strategic Consulting (now part of A&I EMEA). £0.8m of incremental professional fees and external, non-revenue generating contractor costs were incurred, directly linked to the restructuring actions taken.

Property exit costs: As part of the restructuring actions, A&I in EMEA announced its decision to fully exit the Cambridge Technical Centre ('CaTC') at the end of June 2021, recognising a charge of £0.7m in respect of impairment of the lease right-of-use asset and leasehold improvements, dilapidations costs, and service fees through to the break date of June 2022. The treatment of these costs as specific adjusting items is consistent with the prior year, when an element of the building was vacated due to a reduction in headcount, resulting in a charge of £0.6m. In addition, £0.1m has been incurred in the current year in respect of the impairment of the right-of-use asset in Schwäbish Gmünd Technical Centre ('SGTC'), as management was in discussions with the landlord to surrender the lease at this site (on which Ricardo has a very limited presence) at the year-end (see Note 38), together with £0.1m for the write off of equipment relating to the Santa Clara Technical Centre ('SCTC'), which was exited in June 2020. A charge of £0.4m was recognised in the prior year in respect of right-of-use and other asset impairments at SCTC and incremental contractor costs.

CEO exit costs

In January 2021, the Board announced that CEO Dave Shemmans will be leaving the Group, after sixteen years in the role. Costs of £1.5m have been accrued, covering his settlement, external legal fees, and external recruitment fees to find a successor. The costs have been recognised as specific adjusting items due to their non-recurring nature and quantum.

Guaranteed Minimum Pensions ('GMP') equalisation

In October 2018, the High Court issued a judgement confirming that pension schemes are required to equalise male and female members' benefits for the effect of Guaranteed Minimum Pensions ('GMP'), which resulted in a £1.3m charge in FY 2018/19. A further ruling in November 2020 confirmed that historical transfers out of the scheme, between May 1990 and October 2018 would also need to be equalised for GMP. This has resulted in an additional £0.1m charge in the current year, which has been classified as a specific adjusting items due to it being non-recurring in nature. The treatment is consistent with the treatment of the original GMP equalisation charge.

Tax charge on prior year specific adjusting items

During FY 2019/20, a tax charge of £0.3m was recognised in relation to adjustments to the prior year tax charge arising on the sale of the Germany test business in June 2018.

7. Earnings per share

Basic earnings per share is calculated by dividing the earnings attributable to ordinary shareholders by the weighted average number of shares outstanding during the year, excluding those held by an employee benefit trust for the Long-Term Incentive Plan ('LTIP') and by the Share Incentive Plan ('SIP') for the free share scheme which are treated as cancelled for the purposes of the calculation.

For diluted earnings per share, the weighted average number of ordinary shares in issue is adjusted to assume conversion of all dilutive potential ordinary shares. These include potential awards of LTIP shares and options granted to employees. The assumed proceeds from these is regarded as having been received at the average market price of ordinary shares during the year.

Reconciliations of the earnings and the weighted average number of shares used in the calculations are set out below. Underlying earnings per share is also shown because the Directors consider that this provides a more useful indication of underlying performance and trends over time.

	2021 £m	2020 £m
Earnings/(loss) attributable to owners of the parent	**1.7**	(6.5)
Add back the net-of-tax impact of:		
- Amortisation of acquired intangibles	**3.9**	4.5
- Acquisition-related expenditure	**2.0**	2.9
- Asset purchases and disposals	**1.5**	4.8
- Other reorganisation costs	**2.7**	5.4
- CEO exit costs	**1.3**	-
- Guaranteed Minimum Pensions ('GMP') equalisation	**0.1**	-
- Tax charge on prior year specific adjusting item	**-**	0.3
Underlying earnings attributable to owners of the parent	**13.2**	11.4

	2021 Number of shares millions	2020 Number of shares millions
Basic weighted average number of shares in issue	**58.9**	53.4
Effect of dilutive potential shares	**-**	-
Diluted weighted average number of shares in issue	**58.9**	53.4

Earnings/(loss) per share	**2021 pence**	2020 pence
Basic	**2.9**	(12.2)
Diluted	**2.9**	(12.2)

Underlying earnings per share	**2021 pence**	2020 pence
Basic	**22.4**	21.3
Diluted	**22.4**	21.3

8. Dividends

Dividends are one type of shareholder return, historically paid to our shareholders in April and November.

Dividend accounting policy – *Note 1(h)*

	2021 £m	2020 £m
Final dividend for prior period: 0.00p per share (2020: 15.28p) per share	**-**	8.2
Interim dividend for current period: 1.75p per share (2020: 6.24p) per share	**1.1**	3.3
Equity dividends paid	**1.1**	11.5

A dividend of £0.1m (2020: £0.1m) was issued during the year by a subsidiary of the Group to a non-controlling party of that subsidiary. A return of capital of £0.2m (2020: Nil) was made during the year by a subsidiary of the Group to a non-controlling party of that subsidiary.

9. Net finance costs

Net finance costs accounting policy – *Note 1(i)*

	Note	2021 £m	2020 £m
Finance income:			
Bank interest receivable		**0.4**	0.3
Other interest receivable		**0.2**	-
Interest income on finance lease receivables	*17*	**0.2**	0.1
Total finance income		**0.8**	0.4
Finance costs:			
Bank interest payable on borrowings		**(4.4)**	(3.5)
Interest expense on lease liabilities	*17*	**(1.0)**	(1.2)
Defined benefit pension financing costs	*33*	**(0.1)**	(0.1)
Total finance costs		**(5.5)**	(4.8)
Net finance costs		**(4.7)**	(4.4)

10. Auditor's remuneration

This note includes all amounts paid to the Group's auditors, KPMG, whether in relation to their audit of the Group or otherwise. During the year the Group (including its subsidiaries) obtained the following services from the Group auditors and its associates:

Fees payable for services provided by the Company's auditors and its associates

	2021 £'000	2020 £'000
Statutory audit of the Company and its consolidated financial statements	**322**	353
Statutory audit of the Company's subsidiaries and their financial statements	**380**	373
Total audit fees	**702**	726
Audit-related assurance services provided to the Company	**42**	42
Audit-related assurance services provided to the Company's subsidiaries	**43**	-
Total non-audit fees	**85**	42

Fees payable during the year to the Company's auditors and its associates for audit-related assurance services related to independent reviews, agreed-upon procedures and other services closely related to the audit of the Company and its subsidiaries.

Total non-audit fees payable to the external auditors for audit-related assurance services and other non-audit services for the financial year were 12.1% (2020: 5.8%) of total audit fees. These non-audit services comprised the Group's interim review and other audit-related assurance services.

11. Tax expense

This note explains how our Group's current tax charge arises.

Tax expense accounting policy – *Note 1(j)*

	2021 £m	2020 £m
Current income tax		
UK corporation tax	-	0.4
Adjustments in respect of prior years	0.1	(0.3)
Total UK tax	0.1	0.1
Foreign corporation tax	0.9	2.8
Adjustments in respect of prior years	0.1	0.6
Total foreign tax	1.0	3.4
Total current tax	1.1	3.5
Deferred tax		
Charge/(credit) for the year	0.1	(2.3)
Adjustments in respect of prior years	(0.1)	(0.1)
Impact of change in UK tax rate	1.1	-
Total deferred tax	1.1	(2.4)
Total taxation	2.2	1.1
Tax on items recognised in other comprehensive income	2.0	(1.1)

Tax on items recognised in other comprehensive income relate to the tax impact of remeasurements of the defined benefit pension scheme and changes in tax rate. Tax on items recognised directly in equity relate to equity-settled share-based payment transactions.

The main rate of UK corporation tax for the year ending 30 June 2021 is 19%. The Finance Act 2020 reversed the decision to reduce the main rate from 19% to 17% from 1 April 2020. The Finance Act 2021, which was substantially enacted on 10 June 2021, announced that the main UK corporation tax rate will increase to 25% with effect from 1 April 2023. Deferred taxes in the UK have been measured at the corporation tax rate expected to apply to the reversal of the timing difference, resulting in a charge to the income statement of £1.1m. Overseas deferred taxes at the reporting date have been measured and reflected in these financial statements by using the enacted rate within each jurisdiction. The tax charge for the year is higher (2020: higher) than the standard rate of corporation tax in the UK. The differences are set out below:

	2021 £m	2020 £m
Profit/(loss) before taxation	3.9	(5.3)
Multiplied by the standard rate of corporation tax in the UK of 19% (2020: 19%)	0.7	(1.0)
Effects of:		
Expenses not deductible for tax purposes	0.4	1.2
Government tax incentives[1]	(0.3)	(0.3)
Other overseas taxes[2]	0.6	0.5
Adjustment to the IFRIC 23 provision	(0.9)	-
Adjustments in respect of prior years	0.2	0.3
Deferred tax - change in UK rate	1.1	-
Changes in corporation tax rates	0.4	0.4
Total taxation	2.2	1.1

(1) Primarily relates to R&D tax credits.

(2) Primarily relates to withholding taxes.

The Group operates in a number of countries, and is subject to taxation in numerous jurisdictions. Legislation related to taxation is complex and management are required to make judgements based on appropriate professional advice, and amounts provided are accrued based on management's interpretation of country-specific tax laws. In particular, management applies judgement in respect of ongoing tax audits around the Group, which can take a significant amount of time to be agreed with Tax Authorities. The Group estimates and accrues taxes that will ultimately be payable when reviews or audits by Tax Authorities of tax returns are completed. These estimates include judgements about the position expected to be taken by each Tax Authority.

Management judgement has also been required to ensure that appropriate transfer pricing is applied on all intra-group transactions, and in determining the amounts that would be undertaken on an arm's length basis. As a result, actual liabilities could differ from the amounts provided which could have a consequent impact on the results and net position of the Group.

None of the amounts are individually material and therefore there is not a significant risk of material differences in future periods.

Capital base

12. Non-current assets by geographical location (excluding deferred tax assets)

	Note	2021 £m	2020 £m
Asset location			
United Kingdom		**100.9**	115.0
Netherlands		**17.6**	20.1
North America		**22.4**	20.1
Australia		**26.6**	29.6
Rest of the World		**26.6**	14.5
Total		**194.1**	199.3
Goodwill	*14*	**84.7**	87.8
Other intangible assets	*15*	**33.9**	39.9
Property, plant and equipment	*16*	**46.9**	45.4
Right-of-use assets	*17*	**19.5**	23.9
Retirement benefit surplus	*33*	**6.8**	-
Other receivables	*22*	**2.3**	2.3
Total		**194.1**	199.3

13. Acquisitions

(a) Acquisitions in the prior period - PLC Consulting

On 31 July 2019, the Group acquired the entire issued share capital of PLC Consulting Pty Ltd ('PLC Consulting') for initial cash consideration of £4.2m (AUD 7.4m), which includes an adjustment for cash and normalised net working capital of £0.3m (AUD 0.4m), paid in November 2019.

PLC Consulting is an Australian firm with a strong technical advisory capability across the project life cycle in infrastructure, environment and planning, including supporting the environmental requirements of master-planning, business cases, procurement, design, construction and operation. PLC Consulting was renamed Ricardo Energy Environment and Planning ('REEP') on 5 August 2019. The following tables set out the fair value of cash consideration payable to acquire PLC Consulting, together with the fair value of net assets acquired.

	Note	£m
Fair value of cash consideration		
Initial cash consideration		**4.2**
Total fair value of cash consideration		**4.2**
Fair value of identifiable net assets acquired		
Customer contracts and relationships	*15*	**1.3**
Trade contract and other receivables		**0.5**
Cash and cash equivalents		**0.4**
Trade, contract and other payables		**(0.2)**
Deferred tax liabilities	*20*	**(0.4)**
Fair value of identifiable net assets acquired		**1.6**
Goodwill	*14*	**2.6**
Total fair value of cash consideration		**4.2**

13. Acquisitions (continued)

On acquisition the maximum contingent cash payable was £1.4m (AUD 2.5m). The amounts payable are based on the achievement of a range of annual performance targets measured against the earnings before interest, tax, depreciation and amortisation of PLC Consulting across a two-year earn-out period. These payments are dependent upon the continuing employment of the sellers in the business and are not considered to be consideration. As year one performance targets were achieved, £0.7m (AUD 1.3m) was paid in October 2020 in respect of the year one earn out. An accrual of £0.5m (AUD 0.9m), representing the fair value of the expected year two payment, has been included within the current year results. Whilst performance targets have been achieved in the year to 30 June 2021, the maximum contingent cash is not payable as one of the sellers left the business during the year. In both years, the costs have been included within specific adjusting items (see Note 6).

Adjustments were made for the recognition of customer-related intangible assets separable from goodwill amounting to £1.3m (AUD 2.4m). £0.4m of amortisation on these acquired intangibles has been charged to the income statement for the year ended 30 June 2021 (FY 2019/20: £0.4m). This is included within specific adjusting items in Note 6.

The fair value of the contingent cash consideration and identifiable net assets acquired were identified in accordance with the requirements of IFRS 3 Business Combinations and the sale and purchase agreement.

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 on consolidation is expected to be deductible for tax purposes.

The net assets acquired of £1.6m (AUD 3.0m) included trade receivables of £0.5m (AUD 0.9m), all of which were collected.

Acquisition-related expenditure of £0.2m representing costs incurred to integrate the business post-acquisition, was charged to the income statement for the year ended 30 June 2020 and was included within specific adjusting items in Note 6.

(b) Acquisition made in the year to 30 June 2019

On 31 May 2019, the Group acquired the entire issued share capital of Transport Engineering Pty Ltd ('Transport Engineering') for initial cash consideration payable of £21.7m (AUD 39.5m) which included an adjustment for cash and normalised net working capital of £0.5m (AUD 0.9m) paid in August 2019, together with the accrued fair value of contingent cash consideration payable of £5.1m (AUD 9.4m). Transport Engineering is a leading rail technical services consultancy based in Australia. It expands the Group's existing capabilities within the growing Asia-Pacific rail market and provides a footprint for other Ricardo businesses in Australia. Transport Engineering was renamed Ricardo Rail Australia ('RRA') on 11 June 2019. The Group also acquired all of Transport Engineering's shareholding in its associate, Wamarragu Transport Services Pty Ltd, the financial results of which are immaterial to the Group.

The maximum contingent cash consideration payable is £8.1m (AUD 15.0m). The fair value of the contingent cash consideration is considered to be Level 3 of the fair value hierarchy within IFRS 13 Fair Value Measurement. The fair value is valued based on a financial forecast using the Group's own data, with a probability applied for the likely outcome. Significant unobservable inputs are order intake, pipeline of opportunities and historical performance. The stronger these inputs, the higher the estimated fair value. The amounts payable are based on the achievement of annual performance targets measured against the profit before tax of Transport Engineering across a two-year earn-out period. Each earn-out is only payable in full if the performance target is achieved.

As year one performance targets were achieved, £4.3m (AUD 7.8m) was paid in October 2020 in respect of the year one earn out. As year two performance targets have also been achieved, an accrual of £4.0m (AUD 7.2m), representing the fair value of the expected year two payment, has been included in the current year results within current liabilities. The increase in the fair value of the contingent consideration between 30 June 2020 and 30 June 2021 of £1.1m (AUD 1.9m), including the unwind in the discount rate, has been charged to the income statement within specific adjusting items in Note 6. A charge of £1.9m (AUD 3.5m) was recognised within specific adjusting items in the prior year for the change in fair value during the year ended 30 June 2020.

Adjustments were made to identifiable net assets acquired to reflect their fair value. These included the recognition of customer-related intangible assets separable from goodwill amounting to £9.7m (AUD 17.8m). £1.9m of amortisation on these acquired intangibles has been charged to the income statement for the year ended 30 June 2021 (FY 2019/20: £1.9m). This is included within specific adjusting items in Note 6.

The fair value of the contingent cash consideration and identifiable net assets acquired were identified in accordance with the requirements of IFRS 3 Business Combinations and the sale and purchase agreement.

14. Goodwill

Goodwill, which arises when we acquire a business and pay a higher amount than the fair value of its net assets primarily due to the synergies we expect to create, is not amortised but is subject to annual impairment reviews.

Goodwill accounting policy – *Note 1(k)*
Critical judgement on carrying value of Goodwill: CGUs – *Note 1(c)*
Key sources of estimation uncertainty on carrying value of Goodwill – *Note 1(c)*

Movement in goodwill	Note	2021 £m	2020 £m
At 1 July		**87.8**	84.2
Acquisition of business	13	**-**	2.6
Exchange adjustments		**(3.1)**	1.0
At 30 June		**84.7**	87.8

14. Goodwill (continued)

The carrying value of goodwill and key assumptions used in determining the recoverable amount of each CGU, or group of CGUs, are as follows:

	Carrying value		Pre-tax discount rate		Long-term growth rate	
	2021	2020	**2021**	2020	**2021**	2020
	£m	£m	**%**	%	**%**	%
Rail	**44.9**	46.6	**10.8%**	13.0%	**3.6%**	4.0%
Automotive and Industrial ('A&I') - EMEA(1)	**19.6**	20.6	**13.2%**	12.0%	*	3.0%
Energy and Environment ('EE')(2)	**15.9**	15.9	**12.5%**	13.0%	**4.7%**	2.0%
Defense	**3.2**	3.6	**14.3%**	13.0%	**3.4%**	4.0%
Performance Products ('PP')	**1.1**	1.1	**12.9%**	12.0%	**0.4%**	2.0%
At 30 June	**84.7**	87.8				

(1) As described in Note 4, the Strategic Consulting unit of what was previously the Strategic Consulting and Software segment is now run as a service line within the A&I EMEA business, with the A&I EMEA Managing Director having overall responsibility for the Strategic Consulting service offering. As such the strategic consulting business is considered to form part of the group of CGUs to which A&I EMEA goodwill is allocated.

(2) As set out in further detail in Note 13(a), the Group acquired PLC Consulting Pty Ltd on 31 July 2019, adding goodwill of £2.6m to the EE CGU. PLC Consulting is an Australian firm with a strong technical advisory capability across the project life cycle in infrastructure, environment and planning, including supporting the environmental requirements of master-planning, business cases, procurement, design, construction and operation.

* See key assumptions below

Key assumptions

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, or group of CGUs, at 30 June 2021, resulting in no impairment for the year (2020: Nil). The three-year cashflow forecasts are based on the budget for the following year (year one) and the business plans for years two and three (the three-year plan). The three-year plan is prepared by management, and is reviewed and approved by the Board. The three-year plan reflects past experience, management's assessment of the current contract portfolio, contract wins, contract retention, price increases, gross margin, as well as future expected market trends (including the impact of COVID-19), adjusted to meet the requirements of IAS 36 Impairment of Assets.

Cash flows beyond year three are projected into perpetuity using a long-term growth rate, which is determined as being the lower of the planned compound annual growth rate in each CGU, or group of CGU,'s three-year plan and external third party forecasts of the prevailing inflation and economic growth rates for each of the territories in which each CGU, or group of CGUs, primarily operates. A&I EMEA (part of the A&I operating segment) cashflows were analysed into cashflows expected to arise directly from internal combustion engine ('ICE') related revenues and those related to non-ICE technologies. Due to regulatory and other changes in the market relating to ICE, a long-term decrease of 15% p.a. has been applied to ICE-related cashflows, and a long-term growth rate of 4.3% p.a., based on prevailing inflation and economic growth by territory, has been applied to the remaining non-ICE cashflows.

The cash flows are discounted at a 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.

Research and Development Expenditure Credits ('RDEC') cashflows are included in the value-in-use calculations for A&I EMEA, PP and EE. They are material to the A&I EMEA group of CGUs and have been included on the basis that there is no indication that the UK government will change this benefit.

Sensitivities

The value-in-use calculations were assessed for sensitivity to reasonably possible changes to these estimates. With the exception of A&I EMEA, the sensitivities assessed include a 10% reduction in operating pro¬fit, a 10% increase in working capital movement, a 1% increase in the pre-tax discount rate and a 1% decrease in the long-term growth rate, together with a further scenario whereby all sensitivities were combined together. The above changes in key estimates do not cause the recoverable amount for any CGU or group of CGUs to be materially lower than the carrying amount.

The A&I EMEA group of CGUs has faced challenging trading conditions in the current and prior financial years, which have significantly reduced its profitability. The A&I EMEA three-year plan projects growth in revenue and operating profit, which is to be delivered through a combination of diversification into new innovative green technologies and markets, together with improving efficiency as a result of restructuring actions, including those which started to be implemented at the end of FY 2020/21. Therefore, it was considered appropriate to carry out further sensitivity analysis. For goodwill allocated to the A&I EMEA group of CGUs, at 30 June 2021, the recoverable amount exceeds the carrying value of the CGU by £35.8m. Sensitivities determined were as follows:

- A reduction of 38% in the operating profit levels would result in the recoverable amount being materially equal to the carrying value. A reduction in operating profit of this magnitude is considered reasonably possible, given the current and projected levels of profitability in the plan.
- If RDEC cash flows were excluded from the value-in-use calculation, then the goodwill balance would be fully impaired
- Individually, a 2% increase in the pre-tax discount rate, a 2% decrease in the long-term growth rate, a 10% increase in planned working capital movements do not cause the recoverable amount for the group of CGUs to be materially lower than the carrying amount.
- A scenario with a combination of a 1% increase in the pre-tax discount rate, a 1% decrease in the long-term growth rate, a 10% decrease in operating profit and a 10% increase in working capital movement does not cause the recoverable amount for the group of CGUs to be materially lower than the carrying amount.
- A scenario with a combination a 2% increase in the pre-tax discount rate, a 2% decrease in the long-term growth rate, a 10% decrease in operating profit and a 10% increase in working capital movement would result in an impairment of £10.0m.

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15. Other intangible assets

Other intangible assets accounting policy – *Note 1(l)*

Critical judgement on recoverability of capitalised development costs – *Note 1(c)*

	Note	Acquired intangible assets: Customer contracts and relationships £m	Acquired intangible assets: Software and technology £m	Software £m	Development costs £m	Total £m
Cost						
At 1 July 2019		37.6	2.2	25.9	28.1	93.8
Acquisition of business	*13*	1.3	-	-	-	1.3
Additions		-	-	1.2	8.0	9.2
Disposals		-	-	(2.8)	(0.1)	(2.9)
Reclassifications		-	-	(0.6)	0.6	-
Exchange rate adjustments		0.3	-	0.2	0.6	1.1
At 30 June 2020		39.2	2.2	23.9	37.2	102.5
At 1 July 2020		**39.2**	**2.2**	**23.9**	**37.2**	**102.5**
Additions		**-**	**-**	**0.4**	**8.5**	**8.9**
Disposals		**-**	**-**	**(0.8)**	**(0.2)**	**(1.0)**
Reclassifications		**-**	**-**	**0.3**	**(0.2)**	**0.1**
Exchange rate adjustments		**(1.2)**	**(0.1)**	**(0.2)**	**(2.1)**	**(3.6)**
At 30 June 2021		**38.0**	**2.1**	**23.6**	**43.2**	**106.9**
Accumulated amortisation						
At 1 July 2019		17.7	1.7	20.0	13.4	52.8
Charge for the period		5.5	0.4	1.9	4.2	12.0
Disposals		-	-	(2.8)	-	(2.8)
Reclassifications		-	-	(0.5)	0.5	-
Exchange rate adjustments		0.3	-	-	0.3	0.6
At 30 June 2020		23.5	2.1	18.6	18.4	62.6
At 1 July 2020		**23.5**	**2.1**	**18.6**	**18.4**	**62.6**
Charge for the period		**5.0**	**0.1**	**1.6**	**6.5**	**13.2**
Disposals		**-**	**-**	**(0.8)**	**(0.2)**	**(1.0)**
Reclassifications		**-**	**-**	**0.3**	**0.1**	**0.4**
Exchange rate adjustments		**(0.7)**	**(0.2)**	**(0.2)**	**(1.1)**	**(2.2)**
At 30 June 2021		**27.8**	**2.0**	**19.5**	**23.7**	**73.0**
Net book value						
At 1 July 2019		19.9	0.5	5.9	14.7	41.0
At 30 June 2020		15.7	0.1	5.3	18.8	39.9
At 30 June 2021		**10.2**	**0.1**	**4.1**	**19.5**	**33.9**

Customer contracts and relationships were primarily identified as part of the previous acquisitions LR Rail and Transport Engineering (see Note 13(b)). The assets specific to these acquisitions have carrying values of £3.8m (2020: £5.6m) and £5.7m (2020: £7.8m) and have remaining amortisation periods of two and three years, respectively. Customer contracts and relationships were also identified as part of the acquisition in the prior year of PLC Consulting (see Note 13(a)) which has a carrying value of £0.5m and a remaining amortisation period of one year.

Software which is not acquired through business combinations primarily comprises costs that have been capitalised in respect of an internally developed ERP system. The ERP system has a carrying value of £1.0m (2020: £1.4m) and has a remaining amortisation period of three years. Software includes £0.7m (2020: £1.6m) in respect of assets under construction which are not being amortised until the assets are made available for use.

Development costs are incurred to develop and regularly update a suite of simulation and analysis software tools used in the Automotive sector, but also with applications in other sectors. The suite of assets have a carrying value of £5.9m (2020: £6.2m) and an amortisation period of three years is applied to each annual update when released. Development costs also include a patented system that combines anti-lock braking and electronic stability control ('ABS brake kits') to mitigate rollover fatalities commonly associated with the High Mobility Multipurpose Wheeled Vehicle ('HMMWV' or 'Humvee'). The asset has a carrying value of £2.3m (2020: £2.6m). £0.3m of additional development expenditure was added to the asset during the year for the development of variance of the ABS brake kit to be fitted on other versions of the HMMWV. Development costs also include £0.9m (2020: £1.3m) for a plug-in hybrid demonstration vehicle which highlights the latest technology to vehicle manufactures.

In addition, development costs include £2.6m (2020: £3.9m) in respect of assets under construction which are not being amortised until the assets are made available for use. Development costs under construction include assets such as engineering software updates under development, together with new technology, tools and processes in the A&I and EE segments.

The amortisation charge of £13.0m (2020: £12.0m) is comprised of £4.3m (2020: £3.3m) included within cost of sales and £8.7m (2020: £8.7m) included within administrative expenses in the income statement, of which £5.0m (2020: £6.0m) relates to acquired intangible assets and is presented within specific adjusting items, as set out in Note 6.

16. Property, plant and equipment

Property, plant and equipment accounting policy – *Note 1(m)*

	Note	Freehold land and buildings £m	Leasehold properties £m	Plant and machinery £m	Fixtures, fittings and equipment £m	Total £m
Cost						
At 1 July 2019		20.4	5.7	80.7	23.4	130.2
Additions		14.6	0.1	5.4	1.9	22.0
Disposals		-	(1.6)	(1.7)	(1.7)	(5.0)
Assets held for sale	18	(14.2)	-	(1.1)	-	(15.3)
Reclassifications		0.3	0.2	(1.2)	0.7	-
Exchange rate adjustments		-	-	0.2	0.1	0.3
At 30 June 2020		21.1	4.4	82.3	24.4	132.2
At 1 July 2020		**21.1**	**4.4**	**82.3**	**24.4**	**132.2**
Additions		**-**	**0.3**	**2.8**	**1.2**	**4.3**
Disposals		**-**	**(0.8)**	**(1.0)**	**(1.7)**	**(3.5)**
Assets classified from held for sale	18	**10.7**	**-**	**-**	**-**	**10.7**
Reclassifications		**0.3**	**0.5**	**(1.6)**	**0.7**	**(0.1)**
Exchange rate adjustments		**(0.1)**	**(0.1)**	**(0.3)**	**(0.5)**	**(1.0)**
At 30 June 2021		**32.0**	**4.3**	**82.2**	**24.1**	**142.6**
Accumulated depreciation and impairment						
At 1 July 2019		4.6	3.1	59.7	18.2	85.6
Charge for the period		0.5	0.3	2.9	2.0	5.7
Impairment loss		5.6	-	-	-	5.6
Disposals		-	(1.4)	(1.8)	(1.7)	(4.9)
Assets classified as held for sale	18	(5.6)	-	-	-	(5.6)
Reclassifications		(0.2)	0.1	-	0.1	-
Exchange rate adjustments		-	0.1	0.2	0.1	0.4
At 30 June 2020		4.9	2.2	61.0	18.7	86.8
At 1 July 2020		**4.9**	**2.2**	**61.0**	**18.7**	**86.8**
Charge for the period		**0.4**	**0.4**	**3.0**	**1.9**	**5.7**
Impairment loss		**-**	**0.3**	**-**	**-**	**0.3**
Disposals		**-**	**(0.8)**	**(1.0)**	**(1.7)**	**(3.5)**
Assets classified from held for sale	18	**7.4**	**-**	**-**	**-**	**7.4**
Reclassifications		**0.9**	**0.3**	**(1.1)**	**(0.5)**	**(0.4)**
Exchange rate adjustments		**(0.1)**	**-**	**(0.1)**	**(0.4)**	**(0.6)**
At 30 June 2021		**13.5**	**2.4**	**61.8**	**18.0**	**95.7**
Net book value						
At 1 July 2019		15.8	2.6	21.0	5.2	44.6
At 30 June 2020		16.2	2.2	21.3	5.7	45.4
At 30 June 2021		**18.5**	**1.9**	**20.4**	**6.1**	**46.9**

The carrying value of assets under construction included in property, plant and equipment amounts to £6.4m (2020: £8.4m). Property, plant and equipment under construction includes a hybrid powertrain rig with a carrying value of £5.1m (2020: £4.4m). Depreciation is expected to commence in the next financial year.

At 30 June 2021, the Group had plant and machinery financed through a hire-purchase agreement and secured on the asset (see Note 24) with a carrying value of £0.6m (2020: £0.6m). As disclosed in Note 35, a guarantee was provided to the Ricardo Group Pension Fund ('RGPF') of £2.8m in respect of certain contingent liabilities that may arise, which have been secured on freehold land and buildings with a carrying value of £0.6m (2020: £0.6m).

At 30 June 2021, contracts had been placed for future capital expenditure, which have not been provided for in the financial statements, amounting to £2.4m (2020: £1.2m).

In the prior year, on 21 August 2019 the Group purchased the freehold property of DTC, comprising the north building, which housed test cell assets, and the south office building, for £14.2m (USD 17.3m), which is included in freehold land and buildings above. Subsequently, the Group commenced a process to market the newly acquired freehold property, together with the DTC test cell assets. The freehold property was immediately written down to £8.6m (USD 10.5m) as part of being classified as held for sale (see Note 18), as the purchase price was predicated on Ricardo's long-term tenancy, crystallising an impairment charge of £5.6m as disclosed in the table above. The net book value of £8.6m was transferred to non-current assets held for sale. The impairment charge was partially offset by the write-off of a £3.1m (USD 4.0m) net lease liability under IFRS 16. In June 2020, whilst being treated as held for sale, the north building, together with the test assets, were sold and a further £1.1m (USD 1.3m) impairment was recognised, as disclosed in Note 18.

16. Property, plant and equipment (continued)

Due to the nature and significance of the amount the impairment charges (together with the balance of the lease liability) were recognised in the income statement within specific adjusting items. They were included within the A&I segment and within administrative expenses in the reported result.

On 18 January 2021, the south building was reclassified to property, plant and equipment. It is no longer being classified as held for sale. Management decided to retain the use of the DTC south building as offers received for the property were lower than expected. As at 30 June 2021, the property continues to be marketed for sale, but management no longer considers a sale within the next twelve months to be highly probable.

At the point at which the property was reclassified, its recoverable amount was assessed. Its recoverable amount was deemed to be £3.3m, being the property's fair value, less costs to dispose, which was higher than its value in use.. This recoverable amount was lower than the carrying amount at the point which the property was designated as held for sale, after adjustments for subsequent depreciation, and resulted in an impairment charge of £1.5m being recognised in the income statement for the year ended 30 June 2021, recognised within specific adjusting items, as disclosed in Note 18. Since its reclassification to property, plant and equipment, £0.1m of depreciation has been charged on the building in the underlying result in the current year.

17. Right-of-use assets, lease liabilities and lease receivables

Leases accounting policy – *Note 1(c)*

(a) Leasing activities as lessee

The Group leases various office premises and technical centres, vehicles and other equipment.

Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants. Leased assets may not be used as security for borrowing purposes.

Property lease terms range from thirteen months to 21 years, with an average of seven years, and may have extension or termination options. The impact of exercising these options, where not currently considered reasonably certain, is quantified below. There are several property subleases within the Group - see Note 17(b) below. Other lease terms range from one to five years, with an average of three years. Where leases are short-term and/or leases of low-value items, the Group has elected not to recognise right-of-use assets and lease liabilities for these leases.

Information about leases for which the Group is a lessee is presented below.

(i) Right-of-use assets

	Property £m	Plant and machinery £m	Fixtures, fittings and equipment £m	Total £m
Cost				
At 1 July 2019	52.4	0.6	0.4	53.4
Additions	5.3	0.4	-	5.7
Disposals	(10.3)	-	-	(10.3)
Remeasurements	(13.3)	-	-	(13.3)
Exchange rate adjustments	0.5	-	-	0.5
At 30 June 2020	34.6	1.0	0.4	36.0
At 1 July 2020	**34.6**	**1.0**	**0.4**	**36.0**
Additions	**2.0**	**0.2**	**0.2**	**2.4**
Disposals	**(1.5)**	**(0.2)**	**-**	**(1.7)**
Remeasurements	**(0.4)**	**(0.1)**	**-**	**(0.5)**
Exchange rate adjustments	**(0.8)**	**-**	**-**	**(0.8)**
At 30 June 2021	**33.9**	**0.9**	**0.6**	**35.4**
Accumulated depreciation and impairment				
At 1 July 2019	16.3	-	-	16.3
Charge for the period	4.9	0.4	0.1	5.4
Impairment loss	0.5	-	-	0.5
Disposals	(10.3)	-	-	(10.3)
Exchange rate adjustments	0.2	-	-	0.2
At 30 June 2020	11.6	0.4	0.1	12.1
At 1 July 2020	**11.6**	**0.4**	**0.1**	**12.1**
Charge for the period	**5.2**	**0.4**	**0.1**	**5.7**
Impairment loss	**0.2**	**-**	**-**	**0.2**
Disposals	**(1.5)**	**(0.2)**	**-**	**(1.7)**
Exchange rate adjustments	**(0.4)**	**-**	**-**	**(0.4)**
At 30 June 2021	**15.1**	**0.6**	**0.2**	**15.9**
Net book value				
At 1 July 2019	36.1	0.6	0.4	37.1
At 30 June 2020	23.0	0.6	0.3	23.9
At 30 June 2021	**18.8**	**0.3**	**0.4**	**19.5**

17. Right-of-use assets, lease liabilities and lease receivables (continued)

An impairment charge of £0.1m was recognised in respect of the decision to exit the Cambridge Technical Centre, and £0.1m was recognised in relation to the planned surrender of the Schwäbisch Gmünd site (Note 38). In the prior period an impairment charge of £0.3m was recognised in respect of the vacant portion of the Cambridge Technical Centre, and £0.2m was recognised in relation to the exit of the Santa Clara Technical Centre (Note 6). These costs are recognised within administrative expenses and included in "Reorganisation costs: Other reorganisation costs" within specific adjusting items (Note 6).

In the prior year, the purchase of the freehold of the Detroit Technology Campus, previously leased by the Group, resulted in a disposal and remeasurement which reduced the lease liability and the right-of-use asset by £14.2m and £11.1m respectively. The £3.1m excess of the lease liability over the carrying value of the right-of-use assets was recognised as income within administrative expenses, and included in "Reorganisation costs: Purchases and disposals" within specific adjusting items (Note 6).

Other reassessments of lease terms resulted in a remeasurements which decreased both right-of-use assets and lease liabilities by £0.5m (2020: £2.4m).

The net book value of Property above is shown net of £0.9m (2020: £1.0m) in respect of consideration received as part of a historical sale and leaseback transaction, deemed to be an incentive for extending the lease term.

The lessee's incremental borrowing rate applied to lease liabilities recognised in the statement of financial position at the date of initial application vary due to length and geographical location and are as follows:

- Property – 1.8% to 4.8%
- Plant and machinery – 2.0% to 4.2%
- Fixtures, fittings and equipment – 2.0% to 4.0%

The following amounts are included in the income statement relating to short-term and low value leases:

	2021 £m	2020 £m
Short-term leases	0.5	1.2
Low-value leases (not including short-term leases above)	0.1	0.1
Total	**0.6**	1.3

As at 30 June 2021, potential future cash outflows of £9.6m (undiscounted) (2020: £9.8m) have not been included in the lease liability because it is not reasonably certain that the leases will be extended, or not terminated.

(ii) Lease liabilities

Movement in lease liability	Note	2021 £m	2020 £m
At 1 July		29.3	45.6
New leases		2.6	5.7
Interest	9	1.0	1.2
Payments		(7.3)	(6.8)
Disposals		-	(13.6)
Remeasurements		(0.5)	(3.0)
Exchange rate adjustments		(0.8)	0.2
At 30 June		**24.3**	29.3

Maturity of lease liability	2021 £m	2020 £m
Current liabilities - maturing within one year	5.5	6.7
Non-current liabilities - maturing after one year	18.8	22.6
At 30 June	**24.3**	29.3

The maturity analysis of this liability is shown Note 27(c).

17. Right-of-use assets, lease liabilities and lease receivables (continued)

(b) Leasing activities as lessor

The Group subleases out several parts of its leased property. All subleases are classified as operating leases from a lessor perspective with the exception of one sublease, which the Group has classified as a finance sublease.

Information about leases for which the Group is a lessor is presented below.

(i) Finance Lease

During the year, the Group recognised finance income of £0.2m (2020: £0.1m) relating to its lease receivable.

The following table sets out the movements in the lease receivable balance during the year.

	Note	2021 £m	2020 £m
At 1 July		**2.3**	2.3
Interest	*9*	**0.2**	0.1
Receipts		**(0.2)**	(0.2)
Exchange rate adjustments		**(0.3)**	0.1
At 30 June		**2.0**	2.3

The following table sets out a maturity analysis of lease receivable, showing the undiscounted lease payments to be received after the reporting date:

Maturity of lease receivable	2021 £m	2020 £m
Less than one year	**0.2**	0.2
One to two years	**0.2**	0.2
Two to three years	**0.2**	0.2
Three to four years	**0.2**	0.2
Four to five years	**0.2**	0.2
More than five years	**1.7**	2.2
Total undiscounted lease receivable	**2.7**	3.2
Unearned finance income	**(0.7)**	(0.9)
Net investment in the lease	**2.0**	2.3

This is a back-to-back lease with a right-of-use asset. As a finance lease this is included in other receivables. See Note 22.

(ii) Operating lease

During the year, the Group recognised rental income of £1.1m (2020: £1.1m) relating to operating leases.

The following table sets out a maturity analysis of lease payments, showing the undiscounted lease payments to be received after the reporting date.

Operating lease	2021 £m	2020 £m
Less than one year	**0.6**	1.7
One to two years	**0.3**	1.2
Two to three years	**0.3**	0.7
Three to four years	**0.3**	0.7
Four to five years	**0.1**	0.6
More than five years	**1.6**	0.3
Total	**3.2**	5.2

18. Non-current assets held for sale

Non-current assets held for sale accounting policy – *Note 1(o)*

Movement in held for sale	Note	Freehold land and buildings £m	Plant and machinery £m	Total £m
At 1 July 2019		-	2.9	2.9
Transferred from property, plant and equipment	16	8.6	1.1	9.7
Disposals		(2.1)	(4.0)	(6.1)
Impairment loss		(1.1)	-	(1.1)
Exchange rate adjustments		(0.1)	-	(0.1)
At 30 June 2020		5.3	-	5.3
At 1 July 2020		**5.3**	**-**	**5.3**
Impairment loss		**(1.5)**	**-**	**(1.5)**
Transferred to property, plant and equipment	16	**(3.3)**	**-**	**(3.3)**
Exchange rate adjustments		**(0.5)**	**-**	**(0.5)**
At 30 June 2021		**-**	**-**	**-**

Freehold land and buildings held for sale above consist of the DTC freehold property.

The DTC north building was sold on 3 June 2020, as discussed below. As at 30 June 2020, the DTC south building was still being marketed and remained held for sale. On 18 January 2021, it was reclassified to property, plant and equipment. Consistent with the treatment in the prior year, the impairment charge of £1.5m was recognised within specific adjusting items. It was included within the A&I segment and within administrative expenses in the reported result. See Note 16 for further details.

Plant and machinery: In January 2019, the Directors made a decision to commence a process to market actively its test cell assets at DTC for sale, which had a net book value of £2.9m (USD 3.7m) at 1 July 2019. During the prior year, the Group continued to invest in these assets to improve their desirability, increasing the held for sale net book value to £4.0m (USD 4.9m). These assets were sold on 3 June 2020, as discussed below.

Detroit test cell business and north building of Detroit Technology Campus	£m
Fair value of cash consideration	
Initial cash consideration	**2.8**
Provisional fair value of contingent cash consideration:	
- Less than one year	**0.5**
- More than one year	**0.7**
Total fair value of cash consideration	**4.0**
Carrying value of property, plant and equipment disposed	
Leasehold property	**(2.1)**
Plant and machinery	**(4.0)**
Total carrying value of property, plant and equipment disposed	**(6.1)**
Loss on disposal before tax	**(2.1)**

In June 2020, the Group sold the test cell assets and the DTC north building to a non-competitive strategic partner for an initial cash consideration of £2.8m (USD 3.5m), which could increase to a maximum of £4.3m (USD 5.5m), depending on the volume of testing work placed into the facility by Ricardo over the next two years. The total fair value of cash consideration was £4.0m (USD 4.9m), which included the accrued provisional fair value of contingent cash consideration payable of £1.2m (USD 1.5m). A loss of £2.1m (USD 2.6m) was recognised on the sale. Due to the nature and significance of the amount, the loss on disposal was recognised in the income statement within specific adjusting items.

Testing volumes were lower than anticipated in FY 2020/21, with £0.2m (USD 0.3m) of contingent consideration received in the year. Based on testing work placed into the facility in the year, management's order book and the latest probability-weighted pipeline, a charge of £0.5m (USD 0.7m), representing a reduction in the fair value of contingent consideration, was recognised in the income statement in the year. In line with the Group's policy, this charge has been recognised within specific adjusting items.

19. Provisions for liabilities and charges

Provisions for liabilities and charges accounting policy – *Note 1(p)*

	Warranty £m	Restructuring costs £m	Employment-related benefits £m	Other £m	Total £m
Cost					
At 1 July 2019	2.9	0.7	1.4	0.4	5.4
Charged to the income statement	1.3	1.5	0.4	-	3.2
Utilised in the period	(1.0)	(0.5)	(0.1)	-	(1.6)
Released in the period	(0.4)	-	(0.1)	-	(0.5)
At 30 June 2020	2.8	1.7	1.6	0.4	6.5
At 1 July 2020	**2.8**	**1.7**	**1.6**	**0.4**	**6.5**
Charged to the income statement	**1.2**	**3.2**	**0.4**	**0.2**	**5.0**
Utilised in the period	**(0.4)**	**(2.9)**	**(0.1)**	**(0.1)**	**(3.5)**
Released in the period	**(0.2)**	**(0.1)**	**-**	**-**	**(0.3)**
Exchange rate adjustments	**-**	**(0.2)**	**(0.1)**	**-**	**(0.3)**
At 30 June 2021	**3.4**	**1.7**	**1.8**	**0.5**	**7.4**

	2021 £m	2020 £m
Current	**4.0**	3.2
Non-current	**3.4**	3.3
At 30 June	**7.4**	6.5

The **warranty provision** reflects management's best estimate of the cost required to fulfil the Group's assurance-type warranty obligations within a number of contracts. Subsequent to their initial recognition, warranty provisions are utilised or released over the periods of the various warranty obligations, which are expected to be less than five years.

The provision for **restructuring costs** included amounts payable to former employees who have been made redundant, primarily as part of the reorganisation of our A&I segments, as set out in further detail in Note 6. The element of the provision relating to redundancy costs was partially utilised during the year with the remaining balance expected to be utilised in less than one year. Provisions for service charge costs of the remaining lease period on onerous lease contracts is also included above.

Employment-related benefits are statutory provisions which include long-service awards and termination indemnity schemes. The timing of the cash outflows is dependent upon the retirement or attrition of employees, but is predominantly expected to be more than five years.

Other provisions comprise expected costs of legal claims and litigation, together with dilapidation and restoration costs for leasehold property. The associated cash outflows for legal claims and litigation are predominantly expected to be less than one year. Dilapidation and restoration costs reflect management's best estimate of future obligations relating to the maintenance and restoration of leasehold properties arising from past contractual commitments to new, extended or terminated lease agreements. Restoration costs expected at the commencement of the lease are included within the right-of-use asset value (see Note 17(a)). The timing of the cash outflows is dependent upon the remaining term of the associated leases and are subject to negotiation.

20. Deferred tax

This note explains how our Group deferred tax charge arises and also provides information on our expected future tax charges and sets out the tax assets held across the Group together with our view on whether or not we expect to be able to make use of these in the future.

Deferred tax accounting policy – *Note 1(q)*

	2021 £m	2020 £m
Non-current		
Assets	**8.3**	9.4
Liabilities	**(8.2)**	(5.6)
At 30 June	**0.1**	3.8

Net (liabilities)/assets	Accelerated capital allowances £m	Defined benefit obligation £m	Tax losses and credits £m	Unrealised capital gains £m	Other £m	Total £m
Cost						
At 1 July 2019	(4.8)	1.4	5.6	(0.4)	(1.3)	0.5
Arising on acquisition	-	-	-	-	(0.4)	(0.4)
Credited to the income statement	0.2	(1.2)	2.0	-	1.4	2.4
Credited to other comprehensive income	-	1.0	-	-	0.1	1.1
Exchange rate adjustments	-	-	-	-	0.2	0.2
At 30 June 2020	(4.6)	1.2	7.6	(0.4)	-	3.8
At 1 July 2020	**(4.6)**	**1.2**	**7.6**	**(0.4)**	**-**	**3.8**
Reclassification	**-**	**-**	**-**	**-**	**(1.9)**	**(1.9)**
Credited to the income statement	**0.6**	**(0.9)**	**0.1**	**(0.3)**	**2.4**	**1.9**
Charged to other comprehensive income	**-**	**(2.0)**	**-**	**-**	**-**	**(2.0)**
Impact of change in tax rate	**(1.5)**	**0.4**	**-**	**-**	**-**	**(1.1)**
Exchange rate adjustments	**-**	**-**	**-**	**-**	**(0.6)**	**(0.6)**
At 30 June 2021	**(5.5)**	**(1.3)**	**7.7**	**(0.7)**	**(0.1)**	**0.1**

At 30 June 2021, a deferred tax liability of £0.5m is recognised on temporary differences associated with the undistributed earnings of subsidiaries. The Group controls the timing of payment of these undistributed earnings and would suffer a withholding tax charge on these, when remitted to the United Kingdom.

The Finance Act 2020 reversed the decision to reduce the main rate from 19% to 17% from 1 April 2020. The Finance Act 2021, which was substantially enacted on 10 June 2021, announced that the main UK corporation tax rate will increase to 25% with effect from 1 April 2023. Deferred taxes in the UK have been measured at the corporation tax rate expected to apply to the reversal of the timing difference, resulting in a charge to the income statement of £1.1m (see also Note 11).

A deferred tax asset continues to be recognised in the United States as at 30 June 2021 in respect of historic research and development claims ('R&D credits') that can be utilised against future taxable profits. These R&D credits carry a 20-year statute of limitation and must be utilised within that period. The carrying value of the R&D credits recognised at 30 June 2021 is £4.9m (USD 6.5m) (2020: £4.8m (USD 6.3m)). A deferred tax asset is also recognised in the United States on net trading losses of £1.4m (USD 1.9m) (2020: £2.2m (USD 2.7m)) at the US tax rate. These losses can be carried back against the previous five years of taxable profit or carried forward against future taxable profits.

The Directors have performed an assessment and consider that it is probable that future taxable profits will be available in the United States against which the carrying value of the recognised deferred tax asset (for both R&D credits and trading losses) can be utilised in the foreseeable future. This assessment was based on a review of the projected annual profit before tax of the consolidated tax group in the United States, based upon the latest Board-approved budgets and business plans for the next three years, together with long-term growth assumptions based on prevailing inflation and economic growth rates. Based on the 'base case' assumptions, the entire deferred tax asset is forecast to be predominantly utilised by 30 June 2022. The assessment was subject to reverse-stress testing, the results of which did not change management's view of the recoverability of the asset.

In addition, a deferred tax asset is recognised in the United Kingdom of £0.9m (2020: Nil) on trading losses incurred in the year ending 30 June 2021. The Directors have made a decision to carry these losses forward to offset against future taxable profits in the UK. Based on an assessment carried out by the Directors it probable that future taxable profits will be available in the United Kingdom against which the carrying value of the recognised deferred tax asset can be utilised in the foreseeable future. This assessment has been based on projected annual profit before tax of the consolidated tax group in the United Kingdom based upon the latest Board-approved budgets and business plans for the next three years, together with long-term growth assumptions based on prevailing inflation and economic growth rates. The trading losses have no expiry date.

The deferred tax asset not recognised in respect of losses incurred in Germany as at 30 June 2021 amounts to £12.0m (EUR 11.9m) (2020: £10.7m (EUR 11.9m)). Due to the restructuring in Germany and the reduction in activity in Germany in recent years, the Directors consider it unlikely that sufficient future taxable profits will be available in Germany in the foreseeable future against which the carrying value of the brought forward deferred tax asset can be utilised. In July 2021, the Group reached an agreement on a tax audit in Germany which is likely to result in an adjustment to the unrecognised losses. It is estimated that this adjustment will result in a £0.9m (EUR 1.1m) decrease to the unrecognised deferred tax value for tax losses.

Working capital

21. Inventories

Inventories accounting policy – *Note 1(r)*

	2021 £m	2020 £m
Raw materials and consumables	**10.8**	13.6
Work in progress	**4.4**	4.6
Finished goods	**1.7**	1.9
At 30 June	**16.9**	20.1

Inventories of £50.6m (2020: £51.5m) were recognised as an expense during the year and included in cost of sales. During the year £0.4m (2020: £0.3m) of inventory was written down and also included in cost of sales.

22. Trade, contract and other receivables

Trade, contract and other receivables mainly consist of amounts owed to us by customers and amounts that we pay to our suppliers in advance. The note also includes contract assets, which represent an asset for accrued revenue in respect of goods or services delivered to customers for which a trade receivable does not yet exist.

Trade, contract and other receivables accounting policy – *Note 1(s)*
Critical judgements - Impairment of financial assets – *Note 1(c)*

	Note	2021 £m	2020 £m
Trade receivables		**62.6**	43.8
Less: provision for impairment of trade receivables		**(3.3)**	(3.8)
Trade receivables - net		**59.3**	40.0
Contract assets:			
- Amounts recoverable on contracts ('AROC')		**49.2**	53.3
- Accrued revenue		**0.5**	0.7
Prepayments		**8.2**	10.7
Lease receivable	*17*	**2.0**	2.3
Other receivables		**10.0**	11.8
At 30 June		**129.2**	118.8
Current		**126.9**	115.6
Non-current		**2.3**	3.2
At 30 June		**129.2**	118.8

Contract assets arise from the recognition of revenue as and when performance obligations are satisfied, initially recognised as accrued revenue or amounts recoverable on contracts ('AROC'). The carrying amount of AROC at year-end has reduced from £53.3m to £49.2m due to a change in the mix of projects of different sizes and at different stages of completion. AROC is presented net of a provision for impairment of contract assets of £1.7m (2020: £4.0m). Amounts are transferred to trade receivables when the right to consideration becomes unconditional. Typically this is once specified billing milestones are approved by the customer. Payment terms typically range from immediate payment to 90 days after the invoice date, and standard payment terms are 30 days after the invoice date. AROC has decreased The net revenue recognised in the year from wholly or partially satisfied distinct performance obligations in previous years is £17.8m (2020: £21.9m). This is primarily due to the net impact of variation orders and cancellations for changes in scope and transaction price on contracts. Information about the Group's exposure of its trade receivables to credit and market risk is included in Notes 27(d) and 27 (e).

Included within prepayments are £1.5m (2020: £2.0m) of assets recognised from the costs to obtain or fulfil an expected contract with a customer. No revenue has been recognised on these costs. An asset has been recognised because the costs directly related to an anticipated contract, they will be used in satisfying performance obligations in the future and the cost are expected to be recoverable.

The £2.3m (2020: £3.2m) non-current asset relates to other receivables. £1.9m (2020: £2.3m) of this relates to the IFRS 16 lease receivable as disclosed in Note 17. Nil (2020: £0.7m) is included within prepayments and is the non-current element of the contingent consideration on the disposal of the DTC test asset business as disclosed in Note 18. £0.4m (2020: £0.2m) relates to other receivables.

22. Trade, contract and other receivables (continued)

Provision for impairment of trade receivables	Note	2021 £m	2020 £m
At 1 July		**3.8**	2.8
Net impairment/(reversals) to the income statement	*3*	**0.3**	1.3
Amounts utilised		**(0.7)**	(0.3)
Exchange rate adjustments		**(0.1)**	-
At 30 June		**3.3**	3.8

Order book

Order book comprises the value of all unworked purchase orders and contracts received from customers at the reporting date and provides an indication of the amount of revenue that has been secured and will be recognised in future accounting periods. Order book represents the transaction price allocated to wholly and partially unsatisfied distinct performance obligations, as defined by IFRS 15 Revenue from Contracts with Customers. The periods from 30 June in which the distinct performance obligations are expected to be satisfied are as follows:

	2021 £m	2020 £m
Less than 6 months	**142.8**	125.8
6 to 12 months	**71.5**	76.9
Over 12 months	**79.2**	111.3
At 30 June	**293.5**	314.0

23. Trade, contract and other payables

Trade, contract and other payables mainly consist of amounts owed to suppliers that have been invoiced or are accrued and contract liabilities relating to consideration received from customers in advance. They also include taxes and social security amounts due in relation to the Group's role as an employer.

Trade, contract and other payables accounting policy – *Note 1(t)*

	2021 £m	2020 £m
Trade payables	**16.1**	9.6
Contract liabilities:		
- Payments received in advance on contracts ('POA')	**15.3**	22.0
- Deferred revenue	**6.6**	6.8
Tax and social security payable	**8.3**	9.5
Accruals	**26.4**	27.3
Other payables	**3.9**	0.4
At 30 June	**76.6**	75.6
Current	**76.6**	72.0
Non-current	**-**	3.6
At 30 June	**76.6**	75.6

Revenue recognised in the year from contract liabilities at the beginning of the year was £19.7m (2020: £22.5m). Contract liabilities primarily relate to the Group's obligation to perform services, which are paid by customers in advance of those services being provided. Contract liabilities have decreased due to changes in the mix of contracts containing upfront payment terms. Non-current amounts include accruals for the provisional fair value of contingent cash consideration payable for Transport Engineering of Nil (AUD Nil) (2020: £2.1m (AUD 3.8m)), as set out in Note 13(b), which is conditional on performance for the year to 30 June 2021.

Net debt and financial risk management

24. Net debt and borrowings

The objectives when managing capital are to safeguard the ability to continue as a going concern in order to provide returns for shareholders, benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital. Capital is monitored on the basis of the gearing ratio, which is calculated as net debt divided by total capital.

The majority of the Group's cash is held in bank deposits. The Group's sources of borrowing for funding and liquidity purposes come from the Group's £200.0m multi-currency revolving credit facility and through short-term overdraft facilities.

Accounting policy – *Note 1(u)*

The disclosures in this note include certain Alternative Performance Measures ('APMs'). For more information on the APMs used by the Group, including definitions, please refer to Note 2.

(a) Gearing ratio

	2021 £m	2020 £m
Net debt	**46.9**	73.4
Total equity	**182.8**	149.1
Total capital	**229.7**	222.5
At 30 June	**20.4%**	33.0%

(b) Net debt

Analysis of net debt	2021 £m	2020 £m
Current assets - cash and cash equivalents		
- Cash and cash equivalents	**42.0**	66.3
Total cash and cash equivalents	**42.0**	66.3
Current liabilities - borrowings		
- Bank overdrafts repayable on demand	**(12.7)**	(10.5)
- Hire purchase liabilities maturing within one year	**(0.1)**	(0.1)
Total current borrowings	**(12.8)**	(10.6)
Non-current liabilities - borrowings		
- Hire purchase liabilities maturing after one year	**(0.3)**	(0.4)
- Bank loans maturing after one year	**(75.8)**	(128.7)
Total non-current borrowings	**(76.1)**	(129.1)
At 30 June	**(46.9)**	(73.4)

Total cash and cash equivalents at 30 June	**42.0**	66.3
Total borrowings at 30 June	**(88.9)**	(139.7)
At 30 June	**(46.9)**	(73.4)

Movement in net debt	2021 £m	2020 £m
At 1 July	**(73.4)**	(47.4)
Net (decrease)/increase in cash and cash equivalents and bank overdrafts	**(26.5)**	23.4
Repayments of hire purchase	**0.1**	0.2
Proceeds from bank loans	**(5.0)**	(140.3)
Repayments of bank loans	**57.9**	90.7
At 30 June	**(46.9)**	(73.4)

24. Net debt and borrowings (continued)

At the year-end, the Group had current hire-purchase liabilities of £0.1m and non-current hire-purchase liabilities of £0.3m. This hire-purchase agreement has an implicit rate of interest of 2.4%. The future undiscounted minimum lease payments due within one year is £0.1m and due after one year is £0.3m.

At the year-end, the Group held total banking facilities of £215.5m (2020: £216.6m), which included committed facilities of £200.0m (2020: £200.0m). The committed facility consists of a £200.0m multi-currency Revolving Credit Facility ('RCF') which provides the Group with committed funding through to July 2023. In addition, the Group has uncommitted facilities including overdrafts of £15.5m (2020: £16.6m), which mature throughout this and the next financial year and are renewable annually.

Non-current bank loans comprise committed facilities of £75.8m (2020: £128.7m), net of direct issue costs, which were drawn primarily to fund acquisitions and general corporate purposes. These are denominated in Pounds Sterling and have variable rates of interest dependent upon the Group's adjusted leverage, which range from 1.4% to 2.2% (2020: 1.4% to 2.2%) above LIBOR. On 29 June 2021 the Group made amendments to the £200.0m committed Revolving Credit Facility ("RCF") to accommodate the forthcoming cessation of LIBOR. The Group has adopted SONIA as the risk-free rate to replace LIBOR. No other amendments to the facilities were made.

Adjusted leverage is defined in the Group's banking documents as being the ratio of total net debt to adjusted EBITDA. Adjusted EBITDA is further defined as being operating profit before interest, tax, depreciation, impairment and amortisation, excluding the impact of IFRS 16, adjusted for any one-off, non-recurring, exceptional costs and acquisitions or disposals during the relevant period. At the reporting date, the Group has an adjusted leverage of 1.3x which attracts a rate of interest of LIBOR plus 1.8% (2020: LIBOR plus 1.4%). The Group has banking facilities for its UK companies which together have a net overdraft limit, but the balances are presented on a gross basis in the financial statements.

25. Reconciliation of movements of liabilities to cash flows arising from financing activities

	Note	Borrowings Note 24 £m	Lease liabilities Note 17(a)(ii) £m	Total £m
At 1 July 2019		83.7	45.6	129.3
Charges from financing cash flows (see cash flow statement)				
- Proceeds from loans and borrowings		140.3	-	140.3
- Repayment of borrowings		(90.7)	-	(90.7)
- Movement in bank overdraft		6.6	-	6.6
- Repayment of lease liabilities		-	(5.6)	(5.6)
Total changes from financing cash flows		56.2	(5.6)	50.6
The effect of changes in foreign exchange rates		-	0.2	0.2
Other changes				
Liability-related				
- New leases		-	5.7	5.7
- Disposals		-	(13.6)	(13.6)
- Remeasurements		-	(3.0)	(3.0)
- Interest expense		3.2	1.2	4.4
- Interest paid		(3.4)	(1.2)	(4.6)
Total other changes		(0.2)	(10.9)	(11.1)
At 30 June 2020		139.7	29.3	169.0
At 1 July 2020		**139.7**	**29.3**	**169.0**
Charges from financing cash flows (see cash flow statement)				
- Proceeds from loans and borrowings		**5.0**	**-**	**5.0**
- Repayment of bank loan		**(0.1)**	**-**	**(0.1)**
- Repayment of hire purchase liability		**(57.9)**	**-**	**(57.9)**
- Movement in bank overdraft		**2.2**	**-**	**2.2**
- Repayment of lease liabilities		**-**	**(6.5)**	**(6.5)**
Total changes from financing cash flows		**88.9**	**22.8**	**111.7**
The effect of changes in foreign exchange rates		**-**	**(0.8)**	**(0.8)**
Other changes				
Liability-related				
- New leases		**-**	**2.6**	**2.6**
- Remeasurements		**-**	**(0.5)**	**(0.5)**
- Interest expense	*9*	**4.4**	**1.0**	**5.4**
- Interest paid		**(4.4)**	**(0.8)**	**(5.2)**
Total other changes		**-**	**2.3**	**2.3**
At 30 June 2021		**88.9**	**24.3**	**113.2**

26. Fair value of financial assets and liabilities

Fair value of financial assets and liabilities accounting policy – *Note 1(v)*

There are no differences between the fair value of financial assets and liabilities and their carrying value. The Group holds the following financial instruments:

	Note	2021 £m	2020 £m
Financial assets			
Amortised cost:			
- Trade receivables - net	*22*	**59.3**	40.0
- Lease receivable	*22*	**2.0**	2.3
- Other receivables	*22*	**10.0**	11.8
- Cash and cash equivalents	*24*	**42.0**	66.3
Fair value through other comprehensive income ('FVOCI')			
- Fair value hedging instruments		**-**	3.9
Fair value through profit or loss ('FVTPL')			
- Fair value hedging instruments		**0.9**	-
		114.2	124.3
Financial liabilities			
Amortised cost:			
- Borrowings	*24*	**88.9**	139.7
- Lease payables	*17*	**24.3**	29.3
- Trade payables	*23*	**16.1**	9.6
- Other payables	*23*	**3.9**	0.4
Fair value through other comprehensive income ('FVOCI')			
- Fair value hedging instruments		**-**	7.1
Fair value through profit or loss ('FVTPL')			
- Fair value hedging instruments		**1.0**	-
- Derivative financial liabilities		**-**	(0.6)
At 30 June		**134.2**	185.5

Net derivative financial gains of £2.5m (2020: £0.5m) recognised in the period relate to foreign exchange contracts (see also Note 27(g)):

	2021 £m	2020 £m
Measured at FVTPL		
Foreign exchange swap contract assets:		
- Fair value losses	**(3.8)**	-
- Fair value gains	**6.8**	-
Foreign exchange swap contract liabilities:		
- Fair value losses	**(1.1)**	0.6
- Fair value gains	**0.6**	-
	2.5	0.6
Measured at FVOCI		
Foreign exchange swap contract assets:		
- Fair value losses	**-**	(7.9)
- Fair value gains	**-**	5.7
Foreign exchange swap contract liabilities:		
- Fair value losses	**-**	(0.2)
- Fair value gains	**-**	2.3
	-	(0.1)

27. Financial risk management

The financial risks faced by the Group comprise capital risk, liquidity risk, credit risk and market risk (comprising interest rate risk and foreign exchange risk). The Board reviews and agrees policies for managing each of these risks. The Group have no material exposure to commodity price fluctuations and this situation is not expected to change in the foreseeable future.

The financial instruments of the Group 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.

(a) Objectives, policies and strategies

The objectives when managing capital are to safeguard the ability to continue as a going concern in order to provide returns for shareholders, benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

(b) Capital risk

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, plus net debt. Please see Note 24.

(c) Liquidity risk

The Group's policy towards managing its liquidity risks is to maintain a mix of short- and medium-term borrowing facilities. Short-term flexibility is provided by bank overdraft facilities. In addition, the Group maintains medium-term borrowing facilities in order to provide the appropriate level of finance to support current and future working capital requirements. As the cash profile on large contracts can vary significantly, the Group seeks committed facilities that provide sufficient headroom against forecast requirements to mitigate its exposure.

The tables below analyse the Group's external non-derivative financial liabilities into relevant maturity groupings, based on the remaining period at the reporting date to the contractual maturity date. All amounts disclosed in the tables below are the contractual undiscounted cash flows. These amounts approximate to their carrying amount as the impact of discounting on trade payables that mature after more than one year is insignificant and borrowings that mature after more than one year are primarily floating rate bank loans where payments are reset to market rates at regular short-term intervals.

Not included within the tables below are the following financial liabilities:

- Derivative financial liabilities as their contractual maturities are not considered to be essential for an understanding of the timing of the cash flows; and
- Other payables as the phasing of these liabilities is not contractually defined;

Maturity of trade payables	2021 £m	2020 £m
Within one month	**9.8**	7.6
After one month and within three months	**6.3**	2.0
At 30 June	**16.1**	9.6

Maturity of borrowings	2021 £m	2020 £m
Overdrafts repayable on demand	**12.7**	10.5
Within 12 months:		
- Hire purchase liabilities	**0.1**	0.1
After 12 months and within 5 years		
- Hire purchase liabilities	**0.3**	0.4
- Bank loans	**75.8**	128.7
At 30 June	**88.9**	139.7

Maturity of undiscounted lease liability	2021 £m	2020 £m
Within one year	**5.6**	7.0
Between one and five years	**14.2**	16.3
After five years	**8.4**	11.1
Finance portion of net liability	**(3.9)**	(5.1)
At 30 June	**24.3**	29.3

27. Financial risk management (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.

Expected credit loss assessment	Weighted-average loss rate	Gross carrying amount	Impairment loss allowance
At 30 June 2021	**%**	**£m**	**£m**
Not overdue not impaired	**0.25%**	**47.5**	**(0.1)**
Overdue but not impaired:			
Less than 30 days overdue	**2.00%**	**7.3**	**(0.1)**
31-60 days overdue	**5.00%**	**1.6**	**(0.1)**
61-90 days overdue	**10.00%**	**1.0**	**(0.1)**
91-120 days overdue	**20.00%**	**0.5**	**(0.1)**
121-180 days overdue	**25.00%**	**0.8**	**(0.2)**
181-365 days overdue	**50.00%**	**0.8**	**(0.4)**
Over 365 days overdue	**75.00%**	**3.1**	**(2.2)**
		62.6	**(3.3)**
At 30 June 2020			
Not overdue not impaired	0.25%	28.1	(0.1)
Overdue but not impaired:			
Less than 30 days overdue	2.00%	4.2	(0.1)
31-60 days overdue	5.00%	3.7	(0.2)
61-90 days overdue	10.00%	1.4	(0.1)
91-120 days overdue	20.00%	0.6	(0.1)
121-180 days overdue	25.00%	0.9	(0.2)
181-365 days overdue	50.00%	2.5	(1.3)
Over 365 days overdue	75.00%	2.4	(1.7)
		43.8	(3.8)

The Group's customers include the world's major transportation original equipment manufacturers, tier 1 suppliers, energy companies and government agencies. Revenue by customer location is disclosed within Note 5(b) and trade receivables are derived from these customer groups and locations.

The Group has limited experience of bad debts with any of these customers. Of the total net trade receivables balance as at 30 June 2021, £34.1m was received in July 2021 (2020: £20.6m). Trade receivables and contract assets are provided in full when there is no reasonable expectation of recovery. There were no such balances in the current or prior year. An analysis of net trade receivables by currency is as follows:

	2021	2020
	£m	£m
Pounds Sterling	**25.2**	15.9
US Dollars	**15.9**	7.3
Chinese Renminbi	**6.7**	5.2
Euros	**5.8**	6.8
Australian Dollars	**1.4**	1.1
Other currencies	**4.3**	3.7
At 30 June	**59.3**	40.0

27. Financial risk management (continued)

(d) Credit risk (continued)

The Group 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 further limits risk in this area by setting an overall credit limit for all transactions with each bank counterparty in accordance with the institution's credit standing.

Maximum exposure to counterparty risk	2021 £m	2020 £m
Cash and cash equivalents	**42.0**	66.3
Derivative financial assets	**0.9**	3.9
At 30 June	**42.9**	70.2

Analysis of cash and cash equivalents by geographic location	2021 £m	2020 £m
United Kingdom	**18.5**	37.9
Asia	**8.1**	8.9
Mainland Europe	**5.8**	7.2
Australia	**3.7**	3.5
North America	**1.7**	4.5
Rest of the World	**4.2**	4.3
At 30 June	**42.0**	66.3

(e) Market risk

Interest rate risk

The Group's borrowings and cash balances held at floating interest rates are exposed to cash flow interest rate risk. 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 remain unhedged, although the policy is reviewed on an ongoing basis. The Group's lease assets and liabilities are held at fixed interest rates.

Financial assets and liabilities by interest type	2021 £m	2020 £m
Financial assets:		
- Fixed rate	**2.0**	2.3
- Floating rate	**24.5**	27.8
- Interest-free	**87.7**	94.2
Financial liabilities:		
- Fixed rate	**(24.7)**	(29.9)
- Floating rate	**(89.7)**	(136.1)
- Interest-free	**(19.8)**	(6.5)
At 30 June	**(20.0)**	(48.2)

Foreign exchange risk

The Group faces currency exposures on trading transactions undertaken by its subsidiaries in foreign currencies and balances arising therefrom, and on the translation of profits earned in, and net assets of, overseas subsidiaries primarily in the US, Europe and China. The carrying amounts of the Group's foreign currency denominated monetary assets and liabilities are:

	Assets		Liabilities	
Foreign currency denominated assets and liabilities	2021 £m	2020 £m	2021 £m	2020 £m
US Dollar	**23.1**	14.4	**7.6**	2.7
Euro	**12.8**	13.3	**15.1**	5.4
Chinese Renminbi	**12.4**	11.0	**0.5**	1.2

27. Financial risk management (continued)

(e) Market risk (continued)

The following foreign exchange differences were (charged)/credited to the income statement for the Group:

Foreign exchange (losses)/gains on financial assets and liabilities	Note	2021 £m	2020 £m
Derivative contracts measured at FVTPL			
- Foreign exchange contract assets	*26*	**3.0**	-
- Foreign exchange contract liabilities	*26*	**(0.5)**	(2.2)
Other financial assets		**2.5**	1.1
Other financial liabilities		**(5.6)**	(0.5)
At 30 June		**(0.6)**	(1.6)

The Group does not undertake any speculative currency transactions.

The Group use derivative financial instruments primarily to manage currency risk on its US Dollar, Euro, Chinese Renminbi, Japanese Yen, Hong Kong Dollar and Australian Dollar denominated receivables from its subsidiaries, in addition to managing transactional exposures relating to customer contracts denominated in foreign currencies.

(f) Sensitivity analysis of financial instruments to market risk

Exchange rate sensitivity

The Group has financial assets and liabilities denominated in foreign currencies, principally in US Dollars, Euros and Chinese Renminbi, which are not in the functional currency of the entity that holds them. A 20% change in the value of the US Dollar, Euro or Chinese Renminbi would have an immaterial impact on the value of these financial instruments at the year-end.

Interest rate sensitivity

A 1% increase in interest rates would not have a material impact on finance costs, based on the value of the Group's floating rate financial instruments at the year-end. A 1% sensitivity is deemed to be appropriate as interest charges on the Group's loans are based on LIBOR at 30 June 2021, and SONIA from 1 July 2021, and are therefore considered unlikely to be subjected to significant fluctuations in interest rates in the foreseeable future.

(g) Cash flow derivatives

The Group employs derivative financial instruments, including foreign exchange contracts, to mitigate currency exposures on trading transactions that could affect the income statement. Changes in the fair value of effective derivative foreign exchange swap contracts designated as hedge accounted under IFRS 9 are recognised in other comprehensive income, with any ineffective amount recognised in the income statement. Any other changes in the fair value of derivative foreign exchange forward and option contracts are recognised in the income statement. No derivative transactions were designated as hedge accounted in the current year.

Cash flows expected to occur from derivative financial instruments used by the Group for hedging purposes are set out below, which will be largely offset by cash flows expected to occur from hedged items:

Affecting the income statement	2021 £m	2020 £m
Within three months	**14.9**	2.3
After three months and within twelve months	**23.4**	-
After twelve months	**21.7**	-
	60.0	2.3

Affecting other comprehensive income	2021 £m	2020 £m
Within three months	**-**	78.2
After three months and within twelve months	**-**	13.3
	-	91.5

Equity

28. Share capital and share premium

Share capital	2021 £m	2020 £m
Allotted, called up and fully paid		
At 1 July - 53,406,250 (2020: 53,406,250) ordinary shares of 25p each	**13.4**	13.4
Issue of ordinary share capital - 8,812,030 (2020: nil) ordinary shares of 25p each	**2.2**	-
At 30 June - 62,218,280 (2020: 53,406,250) ordinary shares of 25p each	**15.6**	13.4

No dividends were paid for interim and final dividends in respect of shares held by an Employee Benefit Trust ('EBT') in relation to the LTIP. There were 18,317 such shares at 30 June 2021 (2020: 41,193 shares).

Share premium	2021 £m	2020 £m
At 1 July	**14.3**	14.3
Premium on share issue	**2.5**	-
At 30 June	**16.8**	14.3

On 11 November 2020, Ricardo plc issued 8,812,030 new ordinary shares of 25 pence, representing 16.5% of the existing issued ordinary share capital of the Company. They were issued at a price of 333 pence per share, being a discount of 9.76% to the closing mid-price on 10 November 2020, raising gross proceeds of £29.3m. Associated transaction costs of £1.1m were incurred, including £0.7m brokerage fees and £0.4m of other directly attributable professional fees. The issue was carried out in order to reduce leverage, strengthen the balance sheet and provide adequate working capital for the business.

The issue took place in the three parts; "Subscription shares" subscribed for by certain Directors of the Company for cash consideration; "Placing shares" placed via Liberum Capital Limited and Investec Bank plc, to certain existing shareholders and other institutional investors, in exchange for preference shares in Project Star Funding Limited; and "Retail shares" offered by the Company for cash consideration.

The number of shares issued in each category, and the associated proceeds, are as follows:

	Number of shares	Percentage of total shares	£m
Subscription shares	29,128	0.05%	0.1
Placing shares	7,981,809	14.95%	26.6
Retail shares	801,093	1.50%	2.6
Total shares issued/proceeds	8,812,030	16.50%	29.3
Directly attributable transaction costs			(1.1)
Net proceeds			28.2

Subscription shares

The subscription shares were subscribed by the following directors:

	Number of shares	£k
Sir Terry Morgan	11,111	37
Ian Gibson	7,507	25
Russell King	5,105	17
Dave Shemmans	3,003	10
William Spencer	2,402	8
Net proceeds	**29,128**	**97**

The proceeds of £0.1m resulted in share capital of Nil and a share premium balance of £0.1m. There were no fees allocated to this element of the issue.

28. Share capital and share premium (continued)

Placing shares

The placing shares were issued via a 'cashbox' structure, whereby Ricardo plc shares were issued in exchange for preference shares in Project Star Funding Limited, a special purpose vehicle. Section 565 of the Companies Act 2006 allows new shares to be issued for non-cash consideration under exception from the pre-emption requirements of section 561 of the Companies Act 2006.

Project Star Funding Limited ('PSFL') was incorporated in Jersey on 4 September 2020. Prior to the placing, Ricardo plc held 89% of the ordinary share capital of PSFL, with the other 11% held by Liberum Capital Limited.

On 11 November 2020 PSFL issued preference share capital of £26.6m (with no par value) to Liberum Capital Limited. Liberum Capital Limited and Investec Bank plc placed shares to certain existing shareholders and other institutional investors, the proceeds of which were used to settle the consideration for the preference share capital. Ricardo plc allotted new ordinary shares in consideration for the transfer of all of Liberum Capital Limited's preference and ordinary shares in PFSL. The issue created an additional £2.0m of share capital. The premium on issuance of these shares was £23.5m, net of directly attributable costs of £1.0m. Since the premium arose from an issuance the purpose of which was to acquire more than 90% of the equity of PSFL, under s612 of the Companies Act 2006 the associated premium is therefore accounted for as a merger reserve.

On the 18 November, PSFL redeemed its preference shares, and PSFL was dissolved on 24 November 2020.

Retail shares

In order to provide retail and other interested investors the opportunity to participate in the offer, shares were made available via PrimaryBid.com, a platform that facilitates discounted equity offerings for publicly listed companies. Due to its size, the issue fell within the exemption set out in section 86(1)(e) and 86(4) of the Financial Services and Markets Act 2000, as amended, and the Company was not required to publish a prospectus.

The £2.6m proceeds (net of directly attributable fees of £0.1m) resulted in additional share capital of £0.2m and a share premium balance of £2.5m.

Treatment of proceeds

The total net proceeds were accounted for as follows:

	£m
Share capital: at 25p per share	2.2
Share premium: premium on retail and subscription share issue, net of directly attributable costs	2.5
Merger reserve: premium on placing share issue, net of directly attributable costs	23.5
Net proceeds	**28.2**

29. Other reserves

The merger reserve represents the amount by which the fair value of the shares issued as consideration for historic acquisitions exceeded their nominal value, offset by the goodwill on these acquisitions. The translation reserve comprises cumulative foreign exchange differences arising from the translation of financial statements of foreign operations on consolidation.

	Merger reserve £m	Translation reserve £m	Total £m
At 1 July 2019	1.0	15.9	16.9
Exchange rate adjustments	-	0.5	0.5
At 30 June 2020	1.0	16.4	17.4
At 1 July 2020	**1.0**	**16.4**	**17.4**
Premium on share issue	**23.5**	**-**	**23.5**
Exchange rate adjustments	**-**	**(2.9)**	**(2.9)**
At 30 June 2021	**24.5**	**13.5**	**38.0**

30. Retained earnings

	Note	2021 £m	2020 £m
At 1 July		**103.5**	123.1
Profit/(loss) for the period		**1.7**	(6.5)
Remeasurements of the defined benefit pension scheme	*33*	**9.1**	(2.7)
Deferred tax on remeasurements of the defined benefit pension scheme	*20*	**(2.0)**	1.1
Fair value gains on foreign currency cash flow hedges	*26*	**-**	(0.1)
Ordinary share dividends	*8*	**(1.1)**	(11.5)
Purchases of own shares to settle awards		**-**	(0.5)
Equity-settled transactions	*34*	**1.0**	0.6
At 30 June		**112.2**	103.5

31. Non-controlling interests

In the opinion of the Directors, the comprehensive income for the year and equity at the reporting date which is attributable to non-controlling interests is not considered to be material. Non-controlling interests are as follows:

- C2D Joint Venture is 33.3% owned by Ricardo Defense, Inc.; 33.3% owned by DG Technologies; 33.3% owned by Claxton Logistics Services LLC.
- CDQ Joint Venture is 50% owned by Ricardo Defense, Inc.; 50% owned by DG Technologies
- Nanjing Delta Win Transportation Technical Services Limited is 40% owned by Ricardo Beijing Company Limited; 25% owned by Ricardo Hong Kong Limited; 35% owned by Jiangsu Urban Mass Transit Research & Design Institute Company Limited.

For their registered office and principal activities please see Note 36.

Employees

32. Employee number and costs

Staff costs	Note	2021 £m	2020 £m
Wages and salaries (including redundancy and termination costs)		**155.3**	162.3
Social security costs		**15.3**	15.6
Pension costs – defined contribution schemes		**10.0**	10.0
Share-based payments	*34*	**1.4**	0.6
Total staff costs		**182.0**	188.5

Average monthly number of employees (including Executive Directors)	2021 £m	2020 £m
EE	**621**	554
Rail	**605**	629
A&I	**1,047**	1,249
Defense	**180**	147
PP	**397**	416
Plc and Board	**55**	55
Total average number of employees	**2,905**	3,050

Key management compensation	2021 £m	2020 £m
Short-term employee benefits	**3.8**	4.0
Share-based payments	**1.2**	0.5
Post-employment benefits	**0.3**	0.4
Termination benefits	**0.7**	0.1
Total key management compensation	**6.0**	5.0

Key management personnel are the Board of Directors, together with the Managing Directors who have the authority and responsibility for planning, directing and controlling the Group's activities and resources within the market sectors in which the Group operates. The remuneration received by all Executive and Non-Executive Directors during the year is disclosed in the Directors' Remuneration Report on page 96.

33. Retirement benefits

Retirement benefits accounting policy – *Note 1(w)*
Key sources of estimation uncertainty on defined benefit obligations – *Note 1(c)*

The Group 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 - including investment decisions and contribution schedules - lies with the Board of Trustees, with the assets held in the fund governed by local regulations and practice in the United Kingdom. The Board of Trustees must be comprised of representatives of the Group and RGPF participants in accordance with the RGPF's regulations. The last approved triennial valuation of the RGPF was completed with an effective date of 5 April 2017 and was approved on 24 September 2018. At the effective date, the assets of the RGPF had a market value of £134.0m and were sufficient to cover 86% of the benefit that had accrued to members when assessed on the Trustees' prudent funding basis. Based on the recovery plan agreed following the 2017 valuation annual contributions due to the RGPF during the year ending 30 June 2022 will be £4.6m. The latest triennial valuation with an effective date of 5 April 2020 is currently being discussed by the Company and the Trustees. The results of the 2020 triennial valuation will determine whether the Group's current contribution commitment remains appropriate. The IAS 19 Employee Benefits valuation was completed as at 30 June 2021. The pension costs relating to the RGPF were assessed using the projected unit credit method, in accordance with the advice of Mercer, qualified actuaries.

From June 2016, the Group and Trustees decided to introduce a 'retirement flexibility' option to the RGPF, which allows members to transfer out their benefit at retirement. The Group continues to make no allowance within the defined benefit obligation as at 30 June 2021 for members who may elect to transfer out their benefits at retirement. This assumption will be reviewed on an ongoing basis and may change in future as experience emerges as to the level of members who elect to transfer out their benefits at retirement.

The post-retirement mortality assumptions for the current year have been reviewed and use mortality tables known as the SAPS 'Series 3' tables, with an 85% (2020: 'SAPS Series 2' 83%) multiplier for males and a 84% (2020: 'SAPS Series 2' 91%) multiplier for females, both applicable to the 'standard' version of the table. The future improvements component has been updated to be in line with the Continuous Mortality Investigation ('CMI') 2020 projection model with an 'S-kappa' smoothing parameter of 7, an initial addition to mortality improvements of 0.5% and an annual weight parameter for 2020 of zero (2020: CMI 2019 with 'S-kappa' smoothing parameter of 7 and no initial addition to mortality improvements). The latest available CMI model will be used at each year-end to provide the most accurate representation of the defined benefit obligation. The use of a 1.25% long-term trend is consistent with the prior year. Under these principal mortality assumptions, the expected future life expectancy from age 65 is as follows:

	2021		2020	
Age	**Males**	**Females**	Males	Females
65 now	**23.6**	**25.9**	23.2	24.4
65 in 20 years	**24.9**	**27.3**	24.6	26.0

	2021	2020
Other principal assumptions	**% p.a.**	% p.a.
Discount rate	**1.85**	1.60
RPI inflation rate	**3.30**	2.90

	2021	2020
Other assumptions	%	%
Rate of increase in pensions in payment accrued p.a.		
- Pre 1 July 2002	3.65	3.50
- Post 1 July 2002	3.15	2.80
- Post 88 GMP	2.15	1.85
Rate of increase in deferred pension revaluation p.a.	2.60	2.20
Percentage of pension to be commuted for a lump sum at retirement	15.00	15.00

	2021			2020		
	Quoted	**Unquoted**	**Total**	Quoted	Unquoted	Total
Scheme assets	**£m**	**£m**	**£m**	£m	£m	£m
Equities	**22.2**	**-**	**22.2**	32.9	-	32.9
Debt	**103.9**	**-**	**103.9**	80.4	-	80.4
Cash and other	**0.6**	**0.4**	**1.0**	-	0.5	0.5
Property fund	**-**	**8.3**	**8.3**	-	7.6	7.6
Investment funds	**20.7**	**-**	**20.7**	29.0	-	29.0
At 30 June	**147.4**	**8.7**	**156.1**	142.3	8.1	150.4

33. Retirement benefits (continued)

The property fund relates to a share of the BlackRock UK Property Fund ("Fund"). Real property is valued either on the basis of the open market value or under the premise of a forced sale. Property fund investments are valued by reference to the underlying value of assets or the latest available net asset value.

Movements in the fair value of scheme assets and present value of the defined benefit surplus/(obligation) were as follows:

	2021			2020		
	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	150.4	(157.1)	(6.7)	137.5	(146.0)	(8.5)
Past service costs	-	(0.1)	(0.1)	-	-	-
Finance income/(costs)	2.4	(2.5)	(0.1)	3.1	(3.2)	(0.1)
Total credit/(charge) to the income statement	2.4	(2.6)	(0.2)	3.1	(3.2)	(0.1)
Return on plan assets excluding finance income	6.3	-	6.3	11.2	-	11.2
Effect of change in demographic assumptions	-	(3.6)	(3.6)	-	0.4	0.4
Effect of change in financial assumptions	-	1.2	1.2	-	(15.3)	(15.3)
Effect of experience adjustments	-	5.2	5.2	-	1.0	1.0
Total remeasurements in other comprehensive income	6.3	2.8	9.1	11.2	(13.9)	(2.7)
Contributions from sponsoring companies	4.6	-	4.6	4.6	-	4.6
Benefit payments from plan assets	(7.6)	7.6	-	(6.0)	6.0	-
Total cash flows	(3.0)	7.6	4.6	(1.4)	6.0	4.6
Total movements	5.7	7.8	13.5	12.9	(11.1)	1.8
At 30 June	156.1	(149.3)	6.8	150.4	(157.1)	(6.7)

The sensitivity of the defined benefit scheme to changes in principal assumptions:	Change in assumption	Impact on present value of obligation
Discount rate	- 0.25%	Increase by £6.5m
Inflation rate	+ 0.25%	Increase by £3.1m
Post-retirement mortality assumptions	- 1 year	Increase by £6.2m

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 non-current liabilities. The methods and types of assumptions used in preparing the sensitivity analysis did not change when compared to the previous year. Exposure to significant risks from the RGPF are as follows:

Risks	Impact
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.
Corporate bond yields	A decrease in corporate bond yields will increase RGPF liabilities, although this will be partially offset by an increase in the value of the RGPF's bond holdings. Brexit and COVID-19 have caused volatility in the market, which may continue to adversely affect corporate bond yields, with a corresponding impact on discount rates as described above.
Inflation	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.
Post-retirement mortality assumptions	The RGPF provides benefits for the life of the members, therefore improvements in post-retirement mortality assumptions will result in an increase in the RGPF's liabilities.

33. Retirement benefits (continued)

The weighted average duration of the defined benefit obligation is 16.0 (2020: 18.0) years.

Expected maturity analysis of undiscounted pension benefits	2021 £m	2020 £m
Less than one year	**4.6**	4.5
Between one and two years	**4.8**	4.6
Between two and five years	**15.1**	14.8
Beyond five years	**28.2**	27.8

Amounts charged to the income statement in respect of the defined benefit obligation	*Note*	2021 £m	2020 £m
Past service costs for:		**-**	-
- GMP equalisation	*6*	**0.1**	-
Net financing costs	*9*	**0.1**	0.1
Total		**0.2**	0.1

34. Share-based payments

Accounting policy – *Note 1(x)*

The Group operates the following share-based payment schemes: an equity-settled Executive Share Option Plan (the '2004 Plan'); an equity-settled and a cash-settled Long-Term Incentive Plan ('LTIP'); a Deferred Share Bonus Plan ('DBP') and an equity-settled all-employee Share Incentive Plan ('SIP'). The general terms and conditions, including vesting requirements and performance conditions for the 2004 Plan, the equity-settled LTIP, the DBP and the equity-settled SIP are described in the Directors' Remuneration Report. The 2004 Plan, LTIP, DBP and SIP require shareholder approval for the issue of shares. There were no awards outstanding in relation to the SIP at the year-end.

One third (2020: one third) of awards granted under the LTIP and DBP Matching Awards are dependent on a Total Shareholder Return ('TSR') performance condition. As relative TSR is defined as a market condition under IFRS 2 *Share-based Payment*, this requires the valuation model used to take into account the anticipated performance outcome. The TSR element of the charge to the income statement has been calculated using the Monte Carlo model and the earnings per share ('EPS') element has been calculated using the Black Scholes model. The following assumptions are used for the plan cycles commencing in these years:

	2021 £m	2020 £m
Weighted average share price at date of award	**472.0p**	640.0p
Expected volatility	**54.0%**	32.0%
Expected life	**3 yrs**	3 yrs
Risk-free rate	**0.0%**	0.4%
Dividend yield	**0.0%**	3.3%
Possibility of ceasing employment before vesting	**10.0%**	10.0%
Weighted average fair value per LTIP as a percentage of a share at date of award	**81.4%**	74.4%

Expected volatility was determined by calculating the historical volatility of the Company's share price over the three financial years preceding the date of award. The share-based payments charge of £1.4m (2020: £0.6m) disclosed in Note 32 was all in respect of equity-settled schemes.

Equity-settled Long-Term Incentive Plan

The current LTIP is described in the Directors' Remuneration Report. Awards are forfeited if the employee leaves the Group before the awards vest, unless they are considered 'good leavers'.

Outstanding	2021 Shares allocated(1)	2020 Shares allocated(1)
At 1 July	**693,796**	565,478
Awarded	**742,379**	358,135
Lapsed	**(225,913)**	(130,830)
Vested	**-**	(94,987)
Transferred to cash-settled	**-**	(4,000)
At 30 June	**1,210,262**	693,796

(1) Shares allocated excludes dividend roll-up.

34. Share-based payments (continued)

The outstanding LTIP awards had a weighted average contractual life of 1.9 years (2020: 1.6 years). The weighted average exercise price in both 2021 and 2020 was Nil. During the prior year, the Group cash purchased shares in order to settle vested awards. All shares that were vested during the prior year were exercised for their price of Nil.

Cash-settled Long-Term Incentive Plan

The cash-settled LTIP has the same performance conditions as the equity-settled LTIP but the award is settled in cash rather than by share issue.

Outstanding	2021 Shares allocated[1]	2020 Shares allocated[1]
At 1 July	**11,699**	8,000
Awarded	**10,049**	5,199
Forfeited	**-**	(1,500)
Vested	**-**	(4,000)
Transferred to cash-settled	**-**	4,000
At 30 June	**21,748**	11,699

(1) Shares allocated excludes dividend roll-up.

The outstanding LTIP awards had a weighted average contractual life of 1.7 years (2020: 2.0 years). The weighted average exercise price in both 2021 and 2020 was Nil.

The carrying value of the cash settled share-based payments is Nil (2020: Nil). All shares that were vested during the prior year were exercised for their price of Nil.

Deferred Share Bonus Plan

The Deferred Share Bonus Plan is described in the Directors' Remuneration Report.

Outstanding	2021 Shares allocated[1]	2020 Shares allocated[1]
At 1 July	**132,274**	169,874
Awarded	**-**	78,765
Forfeited	**(1,736)**	(22,390)
Dividend shares awarded in the year	**221**	3,738
Vested	**(22,876)**	(97,713)
At 30 June	**107,883**	132,274

(1) Shares allocated excludes dividend roll-up.

The outstanding DBP awards had a weighted average contractual life of 0.7 years (2020: 1.5 years). The weighted average exercise price in both 2021 and 2020 was Nil. During the year, the Group cash purchased shares in order to settle vested awards. All shares that were vested during the current and prior year were exercised for their price of Nil.

Unrecognised items and uncertain events

35. Contingent liabilities

In the ordinary course of business, the Group has £13.0m (2020: £9.4m) of possible obligations for bonds, guarantees and counter-indemnities placed with the Group's banking and other financial institutions and primarily relating to performance under contracts with customers. These possible obligations are contingent on the outcome of uncertain future events which are considered unlikely to occur. The Group is also involved in commercial disputes and litigation with some customers, which is also in the normal course of business. Whilst the result of such disputes cannot be predicted with certainty, the ultimate resolution of these disputes is not expected to 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 ('RGPF') of £2.8m in respect of certain contingent liabilities that may arise, which have been secured on specific land and buildings (see Note 16). The outcome of this matter is not expected to give rise to any material cost to the Group. In October 2018, a further guarantee was provided to the RGPF for an amount that shall not exceed the employers' liability were a debt to arise under Section 75 of the Pensions Act 1995. The guarantee will terminate on 5 April 2023. The outcome of this matter is not expected to give rise to any material cost to the Group on the basis that the Group continues as a going concern.

36. Related undertakings of the Group

Subsidiary or related undertaking	Registered office	Principal activities
Ricardo Investments Limited(*)	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Holding Company and Management Services
Ricardo EMEA Limited∞	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Holding Company and Management Services
Power Planning Associates Limited∞	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Holding Company
Ricardo US Holdings, Inc.	Detroit Technical Campus, 40000 Ricardo Drive, Van Buren Township, Detroit, Michigan, 48111-1641, United States	Holding Company
Ricardo Real Estate LLC	Detroit Technical Campus, 40000 Ricardo Drive, Van Buren Township, Detroit, Michigan, 48111-1641, United States	Property Investment Company
Ricardo UK Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Automotive & Industrial Consulting, Strategic Consulting, Defence Consulting and Performance Products
Ricardo Asia Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Automotive & Industrial Consulting, Rail Consulting and Business Development
Ricardo Japan K.K.	18th Floor, Shin Yokohama Square Building, 2-3-12 Shin Yokohama, Kohoku-ku, Yokohama-shi, Kanagawa, 222-0033, Japan	Automotive & Industrial Consulting, Rail Consulting and Business Development
Ricardo Shanghai Company Limited(*)	Floor 17, Phoenix Building, No. 1515 Gumei Road, Xuhui District, Shanghai, 200233, PR China	Automotive & Industrial Consulting, Rail Consulting and Business Development
Ricardo Prague s.r.o.	Palác Karlín, Thámova 11-13, 186 00 Praha 8, Czech Republic	Automotive & Industrial Consulting and Software
Ricardo GmbH	Güglingstraße 66, 73529, Schwäbisch Gmünd, Germany	Automotive & Industrial Consulting and Business Development
Ricardo Motorcycle Italia s.r.l.	Via Giovanni Pascoli 47, 47853, Cerasolo, Coriano, Rimini, Italy	Automotive & Industrial Consulting
Ricardo, Inc.	Detroit Technical Campus, 40000 Ricardo Drive, Van Buren Township, Detroit, Michigan, 48111-1641, United States	Automotive & Industrial Consulting, Strategic Consulting and Software
Ricardo India Private Limited(1)	6th Floor, M6 Plaza, Jasola District Centre, New Delhi 110076, India	Business Development
Ricardo Canada, Inc	2600-160 Elgin Street, Ottawa, Ontario, Canada, K0A 3PO	Business Development
Ricardo Strategic Consulting GmbH	4th Floor, Kreuzstraße 16, 80331, Munich, Germany	Strategic Consulting
Ricardo Defense Systems LLC	300 E. Big Beaver RD, Suite 180, Detroit, Michigan, 48083, United States	Performance Products
Ricardo Defense, Inc.	175 Cremona Drive, Suite 140, Goleta, California, 93117, United States	Defence Consulting
C2D Joint Venture (33.3%)(2)	175 Cremona Drive, Suite 140, Goleta, California, 93117, United States	Defence Consulting
Ricardo-AEA Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Energy & Environmental Consulting
Cascade Consulting (Environment & Planning) Limited∞	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Energy & Environmental Consulting
Ricardo South Africa (Pty) Ltd (formerly PPA Energy (Pty) Ltd)	111 Pretoria Road, Rynfield, Benoni, Johannesburg, 1501, South Africa	Energy & Environmental Consulting
Ricardo Gulf Technical Consultancy LLC (49%)(3)	Abu Dhabi Island, Corniche Street, G5, Block 17, Floor 11, Office 1108, Unit Building / Mesmak Real Estate Company, United Arab Emirates	Energy & Environmental Consulting
Ricardo Energy Environment and Planning Pty Ltd	Grant Thornton Australia Limited, Level 17, 383 Kent Street, Sydney, NSW, 2000, Australia	Energy & Environmental Consulting
Ricardo Australia Pty Ltd	Level 7, 151 Clarence Street, Sydney, New South Wales, 2000, Australia	Energy & Environmental Consulting and Rail Consulting
Ricardo Consulting SL	Agustín de Foxá 29, 9B, 28036, Madrid, Spain	Energy & Environmental Consulting and Rail Consulting
Ricardo Rail Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Rail Consulting
Ricardo Nederland B.V.	Catharijnesingel 33, 3511 GC, Utrecht, Netherlands	Rail Consulting
Ricardo Rail Australia Pty Ltd	Suite 2.01, Level 2, Tower B, The Zenith, 821 Pacific Highway, Chatswood, New South Wales, 2067, Australia	Rail Consulting
Ricardo Singapore Pte Limited	141 Middle Road, 5-6 GSM Building, 188976, Singapore	Rail Consulting
Ricardo (Thailand) Ltd (49%)(4)	140/36 ITF Tower 17th Floor, Silom Road, Kwang Surawong, Khet bangrak, Bangkok, 10500, Thailand	Rail Consulting
Ricardo Hong Kong Limited	Units No.18, 11/F., Shui On Centre, 6-8 Harbour Road, Hong Kong Hong Kong	Rail Consulting

36. Related undertakings of the Group (continued)

Subsidiary or related undertaking	Registered office	Principal activities
Ricardo Technical Consultancy LLC (49%)(5)	Palm Tower, Block B, 15th Floor, P.O. Box 26600, West Bay, Doha, Qatar	Rail Consulting
Chongqing Transportation Railway Safety Assessment Center Limited (60%)(6)	No. 2 Yangliu Road, Mid Huangshan Street, New North District, Chongqing, 401123, PR China	Rail Consulting
Wamarragu Transport Services Pty Ltd (45%)(7)	Suite 2.01, Level 2, Tower B, The Zenith, 821 Pacific Highway, Chatswood, New South Wales, 2067, Australia	Rail Consulting
Ricardo Rail (Taiwan) Ltd	11F-2 (Westside), No.51, Hengyang Rd., Zhongzheng Dist., Taipei City 10045, Taiwan (R.O.C.)	Rail Consulting
Ricardo Beijing Company Limited	Room 1302, Building 11, No.1 Xiangheyuan Street, Dongcheng District, Beijing P.R. of China	Independent Assurance
Ricardo Certification Limited∞	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Independent Assurance
Ricardo Certification B.V.	Catharijnesingel 33, 3511 GC, Utrecht, Netherlands	Independent Assurance
Ricardo Certification Denmark ApS	Høffdingsvej 34, 2500 Valby, Copenhagen, Denmark	Independent Assurance
Ricardo Certification Iberia SL	Agustín de Foxá 29, 9B, 28036, Madrid, Spain	Independent Assurance
Ricardo Software, Inc.	Detroit Technical Campus, 40000 Ricardo Drive, Van Buren Township, Detroit, Michigan, 48111-1641, United States	Dormant
Ricardo Innovations Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
CDQ Joint Venture (50%)(8)	175 Cremona Drive, Suite 140, Goleta, California, 93117, United States	Dormant
Ricardo Software Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Certificación SL	Agustín de Foxá 29, 9B, 28036, Madrid, Spain	Dormant
Ricardo Environment Arabia LLC(9)	Bahrain Tower, Building Number 8953, 2393, King Fahd Road, Olaya, 12214, Kingdom of Saudi Arabia	Dormant
Ricardo Strategic Consulting Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Consulting Engineers Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Technology Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Transmissions Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo Pension Scheme (Trustees) Limited	Shoreham Technical Centre, Old Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 5FG, United Kingdom†	Dormant
Ricardo-AEA Limited Saudi Branch	Bahrain Tower, 2nd Floor, King Fahad Road, PO Box 8953, Riyadh, 12214-2393 Kingdom of Saudi Arabia	Dormant
Ricardo Deutschland GmbH	Güglingstraße 66, 73529, Schwäbisch Gmünd, Germany	In Liquidation
Nanjing Delta Win Transportation Technical Services Limited (65%)(10)	Room 1101, No. 301, Zhongmen Street, Gulou District, Nanjing, Jiangsu Province, PR China	Liquidation finalised

* Wholly owned direct subsidiary of Ricardo plc

† Registered in England and Wales

∞ These companies have claimed exemption from audit per 479A of the Companies Act 2006.

(1) 99% owned by Ricardo plc; 1% owned by Ricardo UK Limited.

(2) 33.3% owned by Ricardo Defense, Inc.; 33.3% owned by DG Technologies; 33.3% owned by Claxton Logistics Services LLC.

(3) 49% of share capital and 80% of retained earnings owned by Ricardo Rail Limited; 51% of share capital and 20% of retained earnings owned by SSD Commercial Investment

(4) 49% of share capital and 92.5% of retained earnings owned by Ricardo Hong Kong Limited; 51% of share capital and 7.5% of retained earning owned by First Asia Industries Limited.

(5) 49% of share capital and 97% of retained earnings owned by Ricardo Rail Limited; 51% of share capital and 3% of retained earnings owned by Pro-Partnership LLC.

(6) 60% owned by Ricardo Beijing Company Limited; 40% owned by Chongqing Science & Technology Testing Center Limited.

(7) 45% owned by Ricardo Rail Australia Pty Ltd; 55% owned by Justin Brooker Nominees Pty Ltd. This associate undertaking is immaterial to the Group.

(8) 50% owned by Ricardo Defense, Inc.; 50% owned by DG Technologies.

(9) 15% owned by Ricardo plc; 85% owned by Ricardo-AEA Limited.

(10) 40% owned by Ricardo Beijing Company Limited; 25% owned by Ricardo Hong Kong Limited; 35% owned by Jiangsu Urban Mass Transit Research & Design Institute Company Limited.

In the opinion of the Directors, the comprehensive income for the year and equity at the reporting date which is attributable to non-controlling interests is not considered to be material. Non-controlling interests are set out above in Footnotes (2) to (8), and (10).

37. Related parties' transactions

Key management personnel are the Board of Directors, together with the Managing Directors who have the authority and responsibility for planning, directing and controlling the Group's activities and resources within the market sectors in which the Group operates. This is set out in Note 32.

The remuneration received by all Executive and Non-Executive Directors during the year is disclosed in the Directors' Remuneration Report on page 96.

The Ricardo Pension Scheme (Trustees) Limited is a related party to the Group. Amounts paid to the Group's retirement payments is set out in Note 33.

38. Events after the reporting date

On 31 July 2021, the Group terminated its lease for the Schwäbish Gmünd Technical Centre, incurring a termination fee of £0.3m (€0.4m). At this date, the related right-of-use asset of £1.1m was derecognised, £0.1m of leasehold improvements were impaired, and the £1.5m lease liability balance was released. The net impact to the income statement was nil.

Company primary statements

Company statement of financial position of Ricardo plc
as at 30 June

	Note	2021 £m	2020 £m
Assets			
Non-current assets			
Intangible assets	*2*	**1.1**	1.1
Property, plant and equipment	*3*	**4.5**	4.7
Right-of-use assets	*4*	**5.7**	6.1
Retirement benefit surplus	*11c*	**6.8**	-
Investments	*5*	**103.1**	103.1
Trade and other receivables	*7*	**40.4**	-
Deferred tax assets	*6*	**1.2**	2.1
		162.8	117.1
Current assets			
Trade and other receivables	*7*	**93.7**	127.3
Derivative financial assets	*11g*	**0.9**	3.9
Current tax assets		**0.7**	-
Cash and cash equivalents		**5.4**	20.3
		100.7	151.5
Total assets		**263.5**	268.6
Liabilities			
Current liabilities			
Borrowings	*8*	**5.9**	0.7
Lease liabilities	*9*	**0.8**	0.8
Trade and other payables	*10*	**111.8**	97.0
Current tax liabilities		**-**	0.9
Derivative financial liabilities	*11g*	**1.0**	6.5
Provisions	*11d*	**-**	0.1
		119.5	106.0
Net current (liabilities)/assets		**(18.8)**	45.5
Non-current liabilities			
Borrowings	*8*	**-**	47.7
Lease liabilities	*9*	**6.1**	6.6
Retirement benefit obligations	*11c*	**-**	6.7
Deferred tax liabilities	*6*	**2.1**	0.7
		8.2	61.7
Total liabilities		**127.7**	167.7
Net assets		**135.8**	100.9
Equity			
Share capital	*11e*	**15.6**	13.4
Share premium	*11e*	**16.8**	14.3
Other reserves	*11e*	**23.5**	-
Retained earnings		**79.9**	73.2
Total equity		**135.8**	100.9

The Ricardo plc Company statement of financial position has been prepared in accordance with Financial Reporting Standard 101 *Reduced Disclosure Framework* ('FRS 101'). The notes on pages 190 to 194 form an integral part of these financial statements.

The Company has not presented its own Income Statement and Statement of Comprehensive Income as permitted by Section 408 of the Companies Act 2006. The Company's loss for the year was £0.4m (2020: profit £11.8m). The financial statements of Ricardo plc (registered number 222915) on pages 189 to 194 were approved by the Board of Directors on 14 September 2021 and signed on its behalf by:

Dave Shemmans
Chief Executive Officer

Ian Gibson
Chief Financial Officer

Company statement of changes in equity of Ricardo plc
for the year ended 30 June

	Attributable to owners of the parent				
	Share capital £m	Share premium £m	Other reserves £m	Retained earnings £m	Total £m
At 1 July 2019	13.4	14.3	-	74.6	102.3
Profit for the year	-	-	-	11.8	11.8
Other comprehensive expense for the year	-	-	-	(1.7)	(1.7)
Total comprehensive income for the year	-	-	-	10.1	10.1
Equity-settled transactions	-	-	-	0.6	0.6
Purchase of own shares to settle awards	-	-	-	(0.6)	(0.6)
Ordinary share dividends	-	-	-	(11.5)	(11.5)
At 30 June 2020	13.4	14.3	-	73.2	100.9
At 1 July 2020	**13.4**	**14.3**	**-**	**73.2**	**100.9**
Loss for the year	**-**	**-**	**-**	**(0.4)**	**(0.4)**
Other comprehensive income for the year	**-**	**-**	**-**	**7.2**	**7.2**
Total comprehensive income for the year	**-**	**-**	**-**	**6.8**	**6.8**
Issue of ordinary share capital	**2.2**	**2.5**	**23.5**	**-**	**28.2**
Equity-settled transactions	**-**	**-**	**-**	**1.0**	**1.0**
Ordinary share dividends	**-**	**-**	**-**	**(1.1)**	**(1.1)**
At 30 June 2021	**15.6**	**16.8**	**23.5**	**79.9**	**135.8**

Notes to the Company financial statements of Ricardo plc

1. Principal accounting policies

Basis of preparation

The financial statements of Ricardo plc have been prepared on a going concern basis, as discussed in the viability statement on page 38 and in preparing these financial statements, the Company applies the recognition, measurement and disclosure requirements of international accounting standards in conformity with the requirements of the Companies Act 2006 but makes amendments where necessary in order to comply with Companies Act 2006 and has set out below where advantage of the FRS 101 disclosure exemptions has been taken. The accounting policies set out below have been applied consistently to all years presented in these financial statements. The following exemptions available under FRS 101 have been applied:

- Paragraphs 45(b) and 46 to 52 of IFRS 2 *Share-based Payment* (details of the number and weighted average exercise prices of share options and how the fair value of goods and services received was determined).
- IFRS 7 Financial Instruments: Disclosures.
- Paragraphs 91 to 99 of IFRS 13 *Fair Value Measurement* (disclosure of valuation techniques and inputs used for fair value measurement of assets and liabilities).
- Paragraph 38 of IAS 1 *Presentation of Financial Statements* to present comparative information in respect of:
  - paragraph 73(e) of IAS 16 *Property, Plant and Equipment*; and
  - paragraph 118(e) of IAS 38 *Intangible Assets*.
- The following paragraphs of IAS 1 Presentation of financial statements:
  - 10(d) (statement of cash flows);
  - 16 (statement of compliance with all IFRS);
  - 38(a) (requirement for minimum of two primary statements, including cash flow statements);
  - 38(b)-(d) (additional comparative information);
  - 111 (cash flow statement information); and
  - 134-136 (capital management disclosures).
- IAS 7 *Statement of Cash Flows* (the Company has not published its individual cash flow statement as its liquidity, solvency and financial adaptability are dependent on the Group rather than its own cash flows).
- Paragraphs 30 and 31 of IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors* (requirement for the disclosure of information when an entity has not applied a new IFRS that has been issued and is not yet effective).
- Paragraph 17 of IAS 24 *Related Party Disclosures* (key management compensation) and the requirements of IAS 24 *Related Party Disclosures* to disclose related party transactions entered into between two or more members of the Group, provided that any subsidiary which is party to the transaction is wholly-owned by such a member.

Significant accounting policies

The significant accounting policies applied in the preparation of these individual financial statements are set out below. These policies have been applied consistently to all the years presented, unless otherwise stated.

Investments

Investments in subsidiaries are stated at cost less any impairment in value. The Company evaluates the carrying value of investments at the end of each financial year to determine if there has been an impairment in value, which would result in the inability to recover the carrying amount. When it is determined that the carrying value exceeds the recoverable amount, the excess is written-off to comprehensive income.

Amounts owed by subsidiary undertakings

The majority of the Company's financial assets are amounts owed by subsidiary undertakings. These are measured initially at fair value, and subsequently at amortised cost. The general approach is applied to the impairment of financial assets, recognising a loss allowance for expected credit losses ('ECL'). Where the credit risk has not increased significantly since initial recognition the loss allowance are measured as 12-month ECL. For balances repayable on demand, or where the credit risk has increased significantly since initial recognition, a lifetime ECL is measured. ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Company expects to receive, therefore considering future expectations). ECLs are discounted at the effective interest rate of the financial asset.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECL, the Company considers the available cash and cash equivalents within the subsidiary, the net current assets of the undertaking and future cash generation.

Assets are provided in full and subsequently written off when there is no reasonable expectation of recovery. Indicators that there may be no reasonable expectation of recovery could include, amongst others, evidence that the subsidiary has entered liquidation proceedings, or no reasonable expectation that sufficient future cash generation to repay the loan will occur in the subsidiary undertaking.

Other significant accounting policies

Other significant accounting policies are consistent with the Group financial statements.

Judgements in applying accounting policies and key sources of estimation uncertainties

The preparation of financial statements under FRS 101 requires the Company's management to make judgements and estimates that affect the application of accounting policies and the reported amounts of assets, liabilities, revenues and costs. These judgements and estimates are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The key area of judgment that has the most significant effect on the amounts recognised in the financial statements is the review of financial assets for impairment. Management has applied judgement to when determining the credit risk of fellow Group undertakings and their ability to repay loans.

The area involving significant risk of a material adjustment to the carrying amounts of assets and liabilities due to estimate uncertainty within the next financial year is the Company's defined benefit obligation. This risk is the same as that of the Group and is explained in Note 1(c) to the Group financial statements. Another area of estimation uncertainty is management's assessment of the Company's investments to determine whether an indicator of impairment exists. Where applicable, management then evaluates the carrying value of investments against their value in use to determine if there has been an impairment in value, which would result in the inability to recover the carrying amount. The value in use is estimated using a discounted cash flow methodology. A pre-tax discount rate is used to discount the cash flows, which are derived from externally sourced data reflecting the current market assessment of these investments.

The basis for the projected cash flows is the Group's three-year plan, which is prepared by management and reviewed and approved by the Board. The plan reflects past experience and management's assessment of the current contract portfolio, contract wins, contract retention, price increases, and gross margin, as well as future expected market trends. Cash flows after the three-year plan are projected into perpetuity using a growth rate based on inflation and an average long-term economic growth rate for the territory.

Changes in accounting policies

Several other standards, interpretations and amendments to existing standards became effective on 1 July 2020 as detailed in Note 1(z) to the Group financial statements; none of these had a material impact on the Company.

2. Intangible assets

	Software £m
Cost	
At 1 July 2019	8.9
Additions	0.6
At 30 June 2020	9.5
At 1 July 2020	**9.5**
Additions	**0.2**
At 30 June 2021	**9.7**
Accumulated amortisation	
At 1 July 2019	8.0
Charge for the period	0.4
At 30 June 2020	8.4
At 1 July 2020	**8.4**
Charge for the period	**0.2**
At 30 June 2021	**8.6**
Net book value	
At 1 July 2019	0.9
At 30 June 2020	1.1
At 30 June 2021	**1.1**

Software includes £0.7m (2020: £0.7m) in respect of assets under construction which are not being amortised until the assets are made available for use.

3. Property, plant and equipment

	Land and property £m	Fixtures, fittings and equipment £m	Total £m
Cost			
At 1 July 2019	6.7	1.0	7.7
Additions	-	0.4	0.4
At 30 June 2020	6.7	1.4	8.1
At 1 July 2020	**6.7**	**1.4**	**8.1**
At 30 June 2021	**6.7**	**1.4**	**8.1**
Accumulated depreciation and impairment			
At 1 July 2019	2.7	0.5	3.2
Charge for the period	0.1	0.1	0.2
At 30 June 2020	2.8	0.6	3.4
At 1 July 2020	**2.8**	**0.6**	**3.4**
Charge for the period	**0.1**	**0.1**	**0.2**
At 30 June 2021	**2.9**	**0.7**	**3.6**
Net book value			
At 1 July 2019	4.0	0.5	4.5
At 30 June 2020	3.9	0.8	4.7
At 30 June 2021	**3.8**	**0.7**	**4.5**

A contingent liability of up to £2.8m which is associated with a guarantee provided to the Ricardo Group Pension Fund in July 2013 is secured on specific land and buildings. Further detail is given in Note 35 to the Group financial statements. Fixture, fittings and equipment includes Nil (2020: £0.6m) in respect of assets under construction which are not being depreciated until the assets are made available for use.

4. Leases

(a) As a lessee

The Company leases one office premises and technical centre, with a remaining lease term of 12 years. The lease agreement does not impose any covenants. The leased asset may not be used as security for borrowing purposes.

Right-of-use assets

Right-of-use assets	Property £m
Cost	
At 1 July 2019	7.6
At 30 June 2020	7.6
At 1 July 2020	**7.6**
At 30 June 2021	**7.6**
Accumulated amortisation	
At 1 July 2019	1.0
Charge for the period	0.5
At 30 June 2020	1.5
At 1 July 2020	**1.5**
Charge for the period	**0.4**
At 30 June 2021	**1.9**
Net book value	
At 1 July 2019	6.6
At 30 June 2020	6.1
At 30 June 2021	**5.7**

See Note 9 for details of the associated lease liabilities.

(b) As a lessor

The Company subleases part of its right of use property with a remaining term of 5 years. This lease is classified as an operating lease.

During the year the Company recognised rental income of £0.2m (2020: £0.2m) on these subleases.

The following table sets out a maturity analysis of lease payments, showing the undiscounted lease payments to be received after the reporting date.

Operating lease	2021 £m	2020 £m
Less than one year	**0.2**	0.4
One to two years	**0.7**	1.6
Two to three years	**-**	0.3
Total	**0.9**	2.3

5. Investments

	Shares in subsidiaries £m
At 1 July 2019	103.1
At 30 June 2020	103.1
At 30 June 2021	**103.1**

The Directors consider that the fair value of investments is not less than the carrying value. Details of the Company's subsidiaries and related undertakings are shown in Note 36 to the Group financial statements.

6. Deferred tax

Recognised deferred tax (liabilities)/assets	2021 £m	2020 £m
At 1 July	**1.4**	1.7
Charged to the income statement	**(0.3)**	(1.4)
Credited to other comprehensive income	**(2.0)**	1.1
At 30 June	**(0.9)**	1.4

Deferred tax (liabilities)/assets comprise	2021 £m	2020 £m
Accelerated capital allowances	**(0.3)**	(0.2)
Defined benefit obligation	**(1.3)**	1.3
Tax losses and credits	**-**	0.1
Unrealised capital gains	**(0.7)**	(0.5)
Other	**1.4**	0.7
At 30 June	**(0.9)**	1.4

Non-current	2021 £m	2020 £m
Assets	**1.2**	2.1
Liabilities	**(2.1)**	(0.7)
At 30 June	**(0.9)**	1.4

7. Trade and other receivables

	2021 £m	2020 £m
Trade receivables	-	0.1
Amounts owed by subsidiaries	131.0	124.8
Prepayments	2.0	1.2
Other receivables	1.1	1.2
Total	**134.1**	127.3

	2021 £m	2020 £m
Current	93.7	127.3
Non-current	40.4	-
At 30 June	**134.1**	127.3

£11.3m (2020: £11.1m) of the amounts owed by subsidiaries are due for repayment within the next 12 months and the remaining £119.7m (2020: £113.9m) have no fixed repayment date. Non-current trade and other receivables consist of amounts owed by subsidiaries which are neither planned nor likely to be settled in the foreseeable future. £108.8m (2020: £102.7m) of the amounts owed by subsidiaries carry interest at rates between 2.0% and 5.0% (2020: 2.0% and 5.0%) with the remaining £22.2m (2020: £22.3m) being interest-free. All amounts owed by subsidiaries are unsecured.

8. Borrowings

	2021 £m	2020 £m
Current liabilities - borrowings:		
Bank overdrafts repayable on demand	5.9	0.7
Non-current liabilities - borrowings:		
Bank loans maturing after one year	-	47.7
At 30 June	**5.9**	48.4

The Company has the same banking facilities as the Group. See Note 24 to the Group financial statements.

9. Lease liabilities

Movement in lease liability	2021 £m	2020 £m
At 1 July	7.4	7.9
Interest	0.3	0.3
Payments	(0.8)	(0.8)
At 30 June	**6.9**	7.4

Lease liability	2021 £m	2020 £m
Current liabilities - maturing within one year	0.8	0.8
Non-current liabilities - maturing after one year	6.1	6.6
At 30 June	**6.9**	7.4

Maturity of undiscounted lease liability	2021 £m	2020 £m
Within one year	0.8	0.8
Between one and five years	3.2	3.2
After five years	4.8	5.6
Finance portion of net liability	(1.9)	(2.2)
At 30 June	**6.9**	7.4

10. Trade and other payables

	2021 £m	2020 £m
Trade payables	0.6	0.6
Tax and social security payable	0.4	0.2
Amounts owed to subsidiaries	107.8	95.2
Accruals	3.0	-
Other payables	-	1.0
At 30 June	**111.8**	97.0

All amounts owed to subsidiaries are unsecured. £99.6m (2020: £87.0m) of the amounts owed to subsidiaries carry interest at rates between 2.0% and 3.0% (2020: 2.0% and 3.1%) and has no fixed repayment date. £8.2m (2020: £8.2m) of the amounts owed to subsidiaries are interest-free and due for repayment within the next 12 months.

11. Other information

(a) Company audit fee

Fees payable to the Company's auditor for the audit of the Company's annual financial statements totalled £0.3m (2020: £0.3m). Fees payable to KPMG LLP and its associates for non-audit services to the Company are not required to be disclosed because the Group financial statements disclose such fees on a consolidated basis (see Note 10 to the Group financial statements).

(b) Director's emoluments

The remuneration received by all Executive and Non-Executive Directors during the year is disclosed in the Directors' Remuneration Report on page 96. The Directors are remunerated by the Company for their services to the Group as a whole. No remuneration was paid to them specifically in respect of their services to Ricardo Plc for either year.

(c) Employees and defined benefit obligation

During the year the Company employed an average of 48 (2020: 51) employees.

The Company operates a defined benefit pension scheme, the Ricardo Group Pension Fund ('RGPF'). This is disclosed in Note 33 to the Group financial statements together with the accounting policy and key accounting estimates.

(d) Provisions

The Company has a provision within current liabilities for expected costs of legal claims and litigation of Nil (2020: £0.1m).

(e) Share capital, share premium and other reserves

See Note 28 to the Group financial statements.

(f) Contingent liabilities

Contingent liabilities exist in the form of guarantees provided in the ordinary course of business to certain subsidiaries to give assurance of their contractual and financial commitments. None of these arrangements are expected to give rise to any material cost to the Company.

In July 2013, a guarantee was provided to the Ricardo Group Pension Fund ('RGPF') of £2.8m in respect of certain contingent liabilities that may arise, which have been secured on specific land and buildings. The outcome of this matter is not expected to give rise to any material cost to the Group. In October 2018, a further guarantee was provided to the RGPF for an amount that shall not exceed the employers' liability were a debt to arise under Section 75 of the Pensions Act 1995. The guarantee will terminate on 5 April 2023. The outcome of this matter is not expected to give rise to any material cost to the Group on the basis that the Group continues as a going concern.

(g) Derivative financial assets and liabilities

The Company has the same derivative financial assets and liabilities as the Group. These are disclosed in Note 26 to the Group financial statements.

(h) Related party transactions

The Company has taken the exception under FRS 101 not to disclose related party transactions entered into between two or more members of the Group, nor to disclose key management compensation. Directors' emoluments are referenced in Note 11(b).

Additional information

Corporate information

Group General Counsel and Company Secretary
Patricia Ryan
Registered office
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BN43 5FG

Registered Company number
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A PDF version of this Annual Report & Accounts can be downloaded from the Investors page of our website.

Key dates
Annual General Meeting: 11 November 2021

Shareholder services
Link Asset Services provide a share portal service, which allows shareholders to access a variety of services online, including: viewing shareholdings; buying and selling shares online; registering change of address details; and bank mandates to have dividends paid directly into your bank account. Any shareholder who wishes to register with Link Asset Services to take advantage of this service should visit www.linkassetservices.com/shareholders.

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EC4P 4DU

Glossary

Term	
B-BBEE legislation	South African employment legislation – Broad-based Black Economic Empowerment
Cash conversion	Statutory cash conversion is calculated as cash generated from operations divided by earnings before interest, tax, depreciation and amortisation ('EBITDA')
Constant currency organic growth/decline	The Group generates revenues and profits in various territories and currencies because of its international footprint. Those results are translated on consolidation at the foreign exchange rates prevailing at the time. Constant currency organic growth/decline is calculated by translating the result for the current year using foreign currency exchange rates applicable to the prior year. This provides an indication of the growth/decline of the business, excluding the impact of foreign exchange.
DTC	Detroit Technology Campus
EBITDA	Earnings before interest, tax, depreciation, impairment and amortisation
ESG	Environmental, Social and Governance
FY	Financial Year
GHG	Greenhouse gases
Headcount	Headcount is calculated as the number of colleagues on the payroll at the reporting date and includes subcontractors on a full-time equivalent basis.
ISO 9001	International standard for Quality Management Systems
ISO 14001	International standard for Environmental Management Systems
ISO 27001	International standard for Information Security Management Systems
ISO 45001	International standard for Occupational Health and Safety Management Systems
Net debt	Net debt is defined as current and non-current borrowings less cash and cash equivalents, including hire purchase agreements, but excluding IFRS 16 lease liabilities. Management believes this definition is the most appropriate for monitoring the indebtedness of the Group and is consistent with the treatment in the Group's banking agreements.
Order book	The value of all unworked purchase orders and contracts received from customers at the reporting date, providing an indication of revenue that has been secured and will be recognised in future accounting periods.
Order intake	The value of purchase orders and contracts received from customers during the period.
Organic growth/decline	Organic growth/decline is calculated as the decline in the result for the current year compared to the prior year, after adjusting for the performance of acquisitions or disposals, to include the results of those acquisitions for an equivalent period in each financial year.
Organic result	The organic result for the prior year includes the performance of acquisitions for an equivalent period to FY 2019/20.
REEP	Ricardo Energy, Environment and Planning, formerly PLC Consulting Pty Ltd, acquired 31 July 2019
RRA	Ricardo Rail Australia, formerly Transport Engineering Pty Ltd, acquired 31 May 2019
Scope 1 Emissions	Direct emissions from owned or controlled sources
Scope 2 Emissions	Indirect emissions from the generation of purchased energy.
Scope 3 Emissions	All indirect emissions (not included in scope 2) that occur in the value chain, including both upstream and downstream emissions.
TCFD	Task Force on Climate-Related Financial Disclosures: An organization of 31 members aiming to develop guidelines for voluntary climate-centred financial disclosures across industries
Underlying	Underlying measures exclude the impact on statutory measures of specific adjusting items. Underlying measures are considered to provide a more useful indication of underlying performance and trends over time.

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