



# INTERIM RESULTS FY22/23

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1 March 2023

## Disclaimer statement

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This presentation contains certain statements that are forward-looking. They appear in a number of places throughout this presentation and include statements regarding the intentions, beliefs and/or current expectations of Ricardo plc (the “Company”)

By their nature, these statements involve uncertainty since future events and circumstances can cause results and developments to differ materially from those anticipated. The forward-looking statements reflect knowledge and information available at the date of preparation of this presentation and, unless otherwise required by applicable law, the Company undertakes no obligation to update or revise these forward-looking statements. Nothing in this presentation should be construed as a profit forecast.

The Company and its Directors accept no liability to third parties.

# AGENDA

OPENING REMARKS

Graham Ritchie, CEO

FINANCIAL RESULTS

Ian Gibson, CFO

STRATEGY UPDATE

Graham Ritchie, CEO

CLOSING REMARKS

Graham Ritchie, CEO



## A GOOD SET OF RESULTS FOR HY22/23

Underlying performance in line with the Board's expectations

Strong growth in Environmental & Energy-Transition portfolio

Record high order book of over £410m

Good performance with 28% underlying operating profit growth

Continued strong cash generation of 97% underlying conversion

Market dynamics impacting A&I Established and Emerging

Acquisition after HY accelerating our portfolio transformation



# FINANCIAL RESULTS

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IAN GIBSON

Chief Financial Officer

# STRONG PERFORMANCE ACROSS ALL INDICATORS

ORDER INTAKE <sup>(1)</sup>

£293m

+42%

HY 2021/22: £206m

REVENUE <sup>(1)</sup>

£213m

+17%

HY 2021/22: £182m

UNDERLYING OPERATING  
PROFIT MARGIN <sup>(1) (2)</sup>

5.9%

+50bps

HY 2021/22: 5.4%

UNDERLYING PBT <sup>(1) (2)</sup>

£9.9m

+24%

HY 2021/22: £8.0m

UNDERLYING BASIC  
EARNINGS PER SHARE <sup>(2)</sup>

12.2p

+15%

HY 2021/22: 10.6p

UNDERLYING CASH  
CONVERSION <sup>(3)</sup>

97%

(65)pts

HY 2021/22: 162%

NET DEBT

£(31)m

£4m reduction

FY 2021/22: £(35)m

RETURN ON CAPITAL  
EMPLOYED <sup>(4)</sup>

22%

+4pts

HY 2021/22: 18%

DIVIDEND

3.35p

+15%

HY 2021/22: 2.91p

HEADCOUNT <sup>(1)</sup>

2,873

+3%

HY 2021/22: 2,784

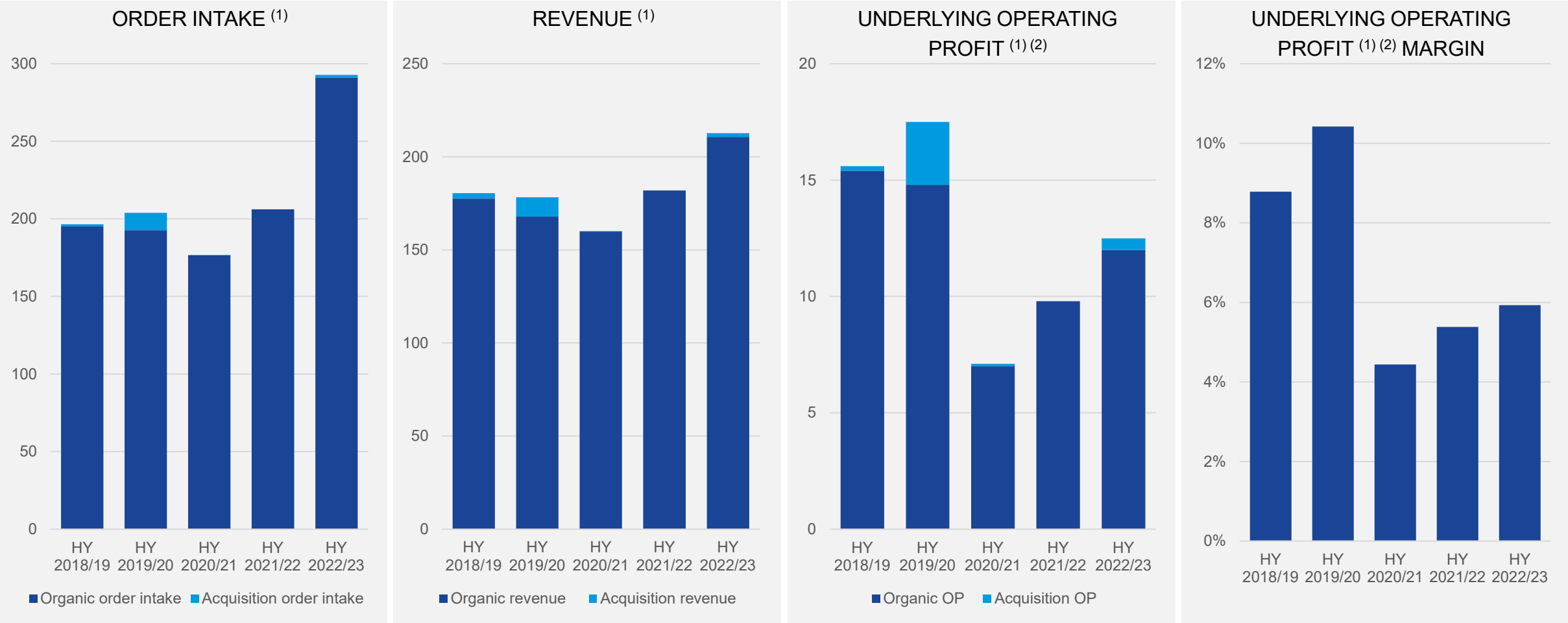
(1) Figures presented on a Continuing Operations basis.

(2) Excluding specific adjusting items, which comprise asset impairment, amortisation of acquired intangible assets, acquisition-related expenditure, ERP system implementation costs, reorganisation costs and non-recurring items.

(3) Cash from operations, adjusted for the cash impact of specific adjusting items, divided by EBITDA.

(4) Return on capital employed defined as underlying operating profit from continuing operations for the last 12 months, divided by net assets excluding goodwill, acquired intangible assets, net debt, lease assets and liabilities, retirement benefit surplus, deferred and current tax, derivative financial assets and liabilities and long-term provisions.

# STRONG ORGANIC GROWTH SUPPORTS CONTINUING RECOVERY



(1) Figures presented on a Continuing Operations basis.

(2) Excluding specific adjusting items, which comprise asset impairment, amortisation of acquired intangible assets, acquisition-related expenditure, ERP system implementation costs, reorganisation costs and non-recurring items.

# UNDERLYING INCOME STATEMENT – CONTINUING OPERATIONS

Good H1 underlying performance in line with expectations

	Six months ended 31 December		Period-on-period movement	
£m	2022 Underlying <sup>(1)</sup>	2021 Underlying <sup>(1) (2)</sup>	% change	% change constant currency <sup>(3)</sup>
Revenue	212.7	182.0	17%	12%
Gross profit	60.1	53.5	12%	8%
Gross profit margin	28.3%	29.4%	(110)bp	(100)bp
Indirect costs	(47.6)	(43.7)	9%	5%
Indirect costs % of revenue	(22.4)%	(24.0)%	160bp	150bp
Operating profit	12.5	9.8	28%	20%
Operating profit margin	5.9%	5.4%	50bp	40bp
Net finance costs	(2.6)	(1.8)	44%	37%
Profit before tax	9.9	8.0	24%	16%
Taxation charge	(2.6)	(1.9)	37%	37%
<b>Profit for the period</b>	<b>7.3</b>	<b>6.1</b>	<b>20%</b>	<b>11%</b>

(1) Excluding specific adjusting items, which comprise asset impairment, amortisation of acquired intangible assets, acquisition-related expenditure, ERP system implementation costs, reorganisation costs and non-recurring items.

A full income statement, including specific adjusting items, is included in the Appendix.

(2) The prior period has been re-presented to reclassify certain costs, such as engineering software licenses and subscriptions and running costs related to testing and manufacturing facilities, from indirect costs to cost of sales in a manner that is consistent with their classification in the current period.

(3) The prior period results have been restated at current period FX rates.

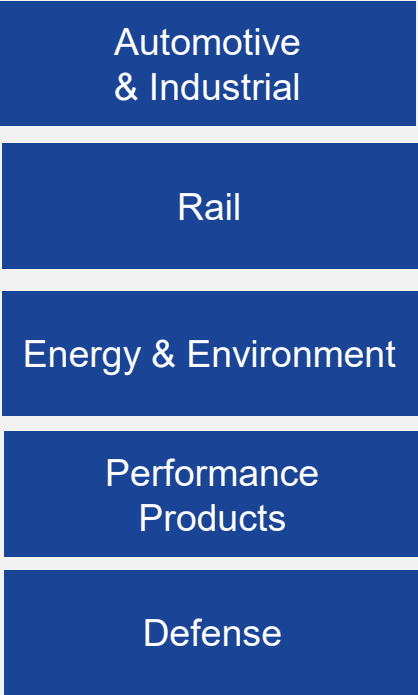


# NEW REPORTING STRUCTURE

Reporting prioritised into two key portfolios: Environmental & Energy-Transition and Established Mobility

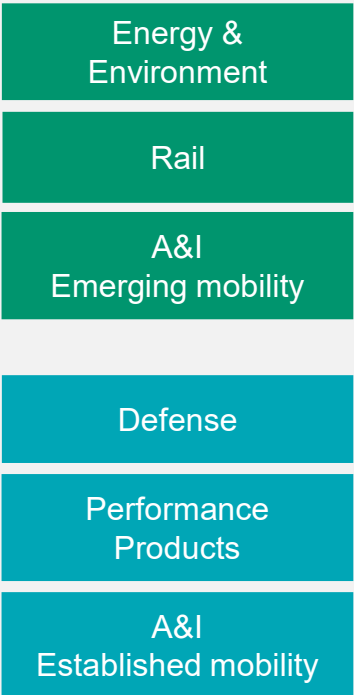
- High-revenue growth and high-margin in our Environmental & Energy-Transition portfolio
- Established Mobility portfolio continues to create value for the Group and provides long-term visibility and financial resilience to support our transition
- Group costs now held in the centre and not attributed to the segments

**BUSINESS UNITS (BU)**



**NEW REPORTING STRUCTURE**

**KEY ELEMENTS**



**PORTFOLIO FOCUS**



# FINANCIAL RESULTS BY OPERATING SEGMENT

Six months ended 31 December						
£m	Order intake			Revenue		
	2022	2021 at constant currency <sup>(2)</sup>	% change constant currency <sup>(2)</sup>	2022	2021 at constant currency <sup>(2)</sup>	% change constant currency <sup>(2)</sup>
Energy & Environment	57.4	38.9	48%	38.2	31.1	23%
Rail	44.8	43.1	4%	36.1	39.2	(8)%
A&I Emerging Mobility <sup>(1)</sup>	50.7	53.1	(5)%	43.9	30.7	43%
<b>Environmental &amp; Energy-Transition</b>	<b>152.9</b>	<b>135.1</b>	<b>13%</b>	<b>118.2</b>	<b>101.0</b>	<b>17%</b>
Defense	46.4	18.4	152%	41.0	24.9	65%
Performance Products	77.0	33.8	128%	38.5	38.4	-
A&I Established mobility <sup>(1)</sup>	16.5	28.0	(41)%	15.0	26.0	(42)%
<b>Established Mobility</b>	<b>139.9</b>	<b>80.2</b>	<b>74%</b>	<b>94.5</b>	<b>89.3</b>	<b>6%</b>
<b>Total Continuing Operations</b>	<b>292.8</b>	<b>215.3</b>	<b>36%</b>	<b>212.7</b>	<b>190.3</b>	<b>12%</b>

(1) The A&I Established and A&I Emerging operating segments were previously reported as the A&I operating segment. Comparative numbers have been restated.

(2) The prior period results have been restated at current period FX rates.

# FINANCIAL RESULTS BY OPERATING SEGMENT

Six months ended 31 December						
£m	Underlying operating profit <sup>(1)</sup>			Underlying operating profit <sup>(1)</sup> margin		
	2022	2021 at constant currency <sup>(3)</sup>	% change constant currency <sup>(3)</sup>	2022	2021 at constant currency <sup>(3)</sup>	% change constant currency <sup>(3)</sup>
Energy & Environment	6.4	5.1	25%	16.8%	16.4%	40bp
Rail	3.6	4.9	(27)%	10.0%	12.5%	(250)bp
A&I Emerging Mobility <sup>(2)</sup>	6.6	(1.4)	571%	15.0%	(4.6)%	1960bp
<b>Environmental &amp; Energy-Transition</b>	<b>16.6</b>	<b>8.6</b>	<b>93%</b>	<b>14.0%</b>	<b>8.5%</b>	<b>550bp</b>
Defense	5.7	3.5	63%	13.9%	14.1%	(20)bp
Performance Products	3.6	4.5	(20)%	9.4%	11.7%	(230)bp
A&I Established mobility <sup>(2)</sup>	(4.8)	0.9	(633)%	(32.0)%	3.5%	(3550)bp
<b>Established Mobility</b>	<b>4.5</b>	<b>8.9</b>	<b>(49)%</b>	<b>4.8%</b>	<b>10.0%</b>	<b>(520)bp</b>
Plc Costs	(8.6)	(7.1)	21%			
<b>Total Continuing Operations</b>	<b>12.5</b>	<b>10.4</b>	<b>20%</b>	<b>5.9%</b>	<b>5.5%</b>	<b>40bp</b>

(1) Excluding specific adjusting items, which comprise asset impairment, amortisation of acquired intangible assets, acquisition-related expenditure, ERP system implementation costs, reorganisation costs and non-recurring items.

(2) The A&I Established and A&I Emerging operating segments were previously reported as the A&I operating segment. Comparative numbers have been restated.

(3) The prior period results have been restated at current period FX rates and to reflect that a share of central plc costs are no longer included in the operating profit measure for operating segments.

# STRATEGIC RESTRUCTURING OF A&I

Accelerating our restructuring programme to right-size A&I Established and improve resilience

## MEANINGFUL PROGRESS

Greater transparency in portfolio profitability

### Created a global operating model

- Providing better overall performance
- A&I overall improving H1 over H1

### Split business into Emerging & Established

- Segmental split provides further transparency
- Clarity in terms of portfolio profitability



## ACCELERATING TRANSFORMATION

Decisive actions for business performance

### H1 FY22/23 actions

- Goodwill and asset impairments of £18.3m

### H2 FY22/23 into FY23/24 actions

- Physical test reduction – Low capital intensity
- Resource reduction – circa 20% of our resourcing
- Circa £5m cash cost in H2
- Fixed to variable cost model – Resilient structure



## RESTRUCTURING BENEFITS

Confidence in long-term and sustainable growth

### Cash neutral through transition

- Specific adjusting items cash neutral in FY22/23

### Strong returns from restructuring

- Payback in 18-24 months

### Better positioned for long-term growth

- Investment for growth in emerging capability

# SPECIFIC ADJUSTING ITEMS

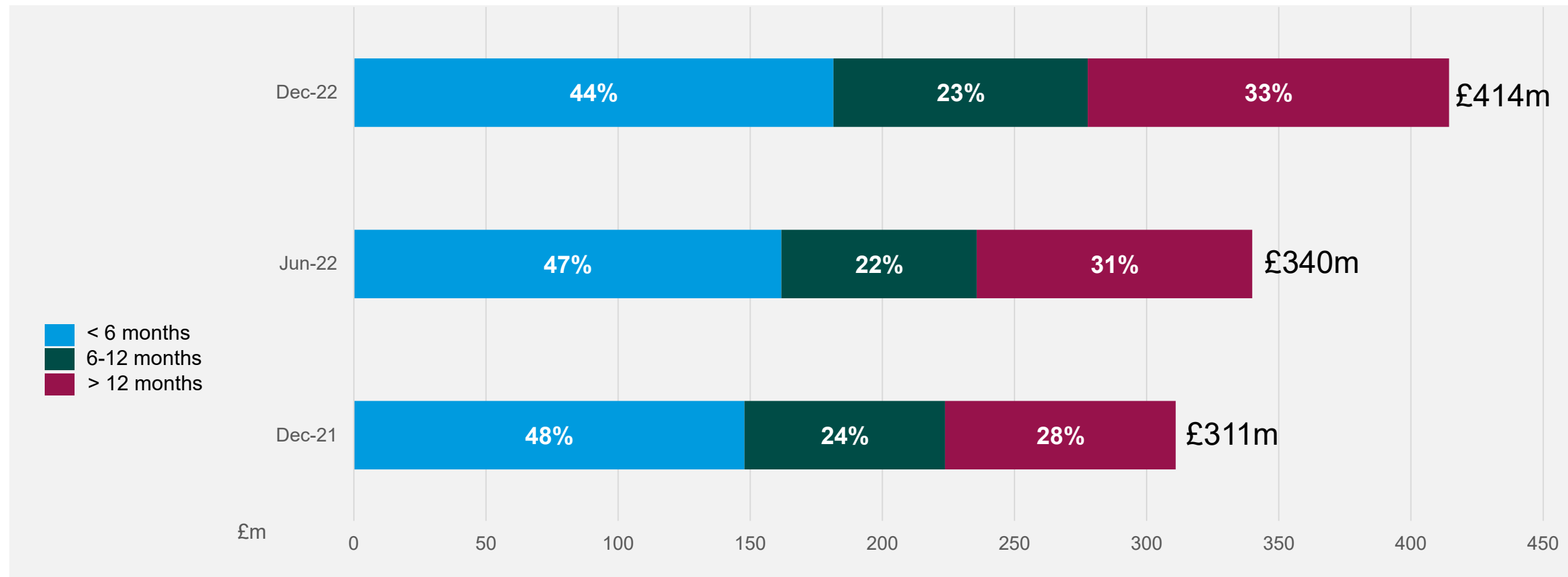
Specific adjusting items to support the transformation

- In H1, A&I restructuring charges include goodwill and asset impairments of £18.3m non-cash in relation to the Established Mobility business
- A&I restructuring will continue in H2 FY23 as the business transitions towards Emerging solutions
- Overall in FY23, the cash cost of restructuring activities are expected to be more than covered by asset disposal proceeds

	Six months ended 31 December	
	Income statement	Cash flow
£m	2022	2022
<b>Continuing operations</b>		
Amortisation of acquisition-related intangible assets	(2.0)	-
Acquisition-related expenditure	(1.4)	(0.9)
A&I: restructuring costs	(0.4)	(2.6)
A&I: asset impairment and decommissioning	(18.3)	(0.1)
Rail: restructuring costs	(0.3)	(0.6)
Costs related to the change in CEO	-	(0.2)
<b>Total from continuing operations before tax</b>	<b>(22.4)</b>	<b>(4.4)</b>
<b>Discontinued operation</b>		
Gain on disposal and external fees relating to the disposal	7.5	11.9
<b>Total Group before tax</b>	<b>(14.9)</b>	<b>7.5</b>
HY 2021/22 Total Group before tax	(4.0)	(2.3)

# ORDER BOOK PROFILE

Very strong growth in our order book across all business segments



Figures presented on a Continuing Operations basis.



# CASH FLOW

Strong cash generation

£m	Six months ended 31 December		
	2022	2021	% change
EBITDA	20.5	19.7	4%
Share based payments, Fair value losses on derivatives, Loss on disposal	1.2	1.3	(8)%
Working capital (increase)/decrease	(0.9)	13.0	(107)%
Pension charge and funding	(0.9)	(2.1)	(57)%
<b>Underlying cash from operations</b>	<b>19.9</b>	<b>31.9</b>	<b>(38)%</b>
<b>Underlying cash conversion %</b>	<b>97%</b>	<b>162%</b>	<b>(65)pts</b>
Net interest paid	(3.8)	(1.8)	111%
Tax paid	(3.7)	(2.4)	54%
Net capital expenditure	(4.9)	(6.2)	(21)%
Principal element of lease payments	(2.4)	(2.6)	(8)%
Dividends and return of capital	(4.7)	(3.2)	47%
Purchase of own shares, Cash flow hedges, FX, Financing fees	(3.9)	(0.1)	3800%
<b>Movement in net debt before acquisition &amp; restructuring related costs</b>	<b>(3.5)</b>	<b>15.6</b>	<b>(122)%</b>
Proceeds from sale of discontinued operation, net of fees	11.9	-	-
Acquisition and restructuring related costs	(4.4)	(7.2)	(39)%
<b>Movement in net debt <sup>(1)</sup></b>	<b>4.0</b>	<b>8.4</b>	<b>(52)%</b>
Opening net debt	(35.4)	(46.9)	
Closing net debt	(31.4)	(38.5)	

(1) Cash outflow net of movement in borrowings.

# M&A ACTIVITY

Our M&A strategy is focused on high growth, high margin, low capital intensity business

## DIVESTMENT

### RICARDO SOFTWARE

Sold on 1 August 2022

Key locations	UK, Prague, USA
Services	Engineering software
No. of staff	90
Annual revenue	£9.4m (including £2.3m of intercompany revenue with Ricardo Group)
Capital intensity	High
Annual operating profit	£1.8m*
Operating profit margin	19%
Cash consideration	\$17.5m (£14.9m) – less \$2.0m (£1.7m) cash disposed

\*Includes £0.3m of amortisation which was not charged in FY 2021/22 as Ricardo Software was held for sale in June 2022



## ACQUISITION

### E3 MODELLING

Acquired on 25 January 2023

Key locations	Greece
Services	Advanced empirical modelling
No. of staff	34
Annual revenue	c. £4.0m
Capital intensity	Low
Annual operating profit	£1.8m
Operating profit margin	45%
Cash consideration	93% acquired – £19m upfront with a max £5m deferral Remaining 7% based on performance



# STRATEGY UPDATE

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GRAHAM RITCHIE

Chief Executive Officer

# REALISING OUR STRATEGIC AMBITION THROUGH HIGH GROWTH FOCUS

Shifting our portfolio to Environmental & Energy-Transition solutions ensures high-growth and margin focus

To become a world-leading  
strategic and engineering  
consultancy in Environmental &  
Energy-Transition solutions.

OUR AMBITION

## ENVIRONMENTAL AND ENERGY-TRANSITION PORTFOLIO

75% operating profit  
High growth, high margin and  
low capital intensity focus

**H1 results**  
17% revenue growth at a  
margin of 14%

## Established Mobility PORTFOLIO

Long-term visibility to  
support transition

**H1 results**  
6% revenue growth at a  
margin of 4.8%

5 YEAR PLAN

# MAKING SIGNIFICANT PROGRESS ACCELERATING OUR GROWTH

## STRATEGIC PRIORITIES ON TRACK FOR FY22/23

Organic growth focus  
and A&I recovery

### **Proactive sales & differentiation**

- More focused portfolio
- Revenue growth across the business
- Prioritise capital allocation to growth portfolio

### **Continuing A&I recovery**

- Deliver A&I restructuring plan
- Transparency in established vs emerging portfolio
- Build resilience and agility for future business

### **Build capability & belief**

- Embedded Ricardo DNA
- Leaders equipped and capable
- Improved performance culture

# GAINING MOMENTUM THROUGH OUR STRATEGIC GROWTH MODEL

Strong execution is driving high demand for services in Environmental & Energy-Transition

## ① PORTFOLIO PRIORITISATION

Defined portfolio prioritisation

Digital focus

## ② MARKET EXPANSION

Industry growth and diversification

Global leverage in E&ET

## ③ M&A ACCELERATION

### Further market access through Inside Infrastructure

- Business has grown by 20%
- Expansion into water and mining industries
- Further expansion across Australia footprint

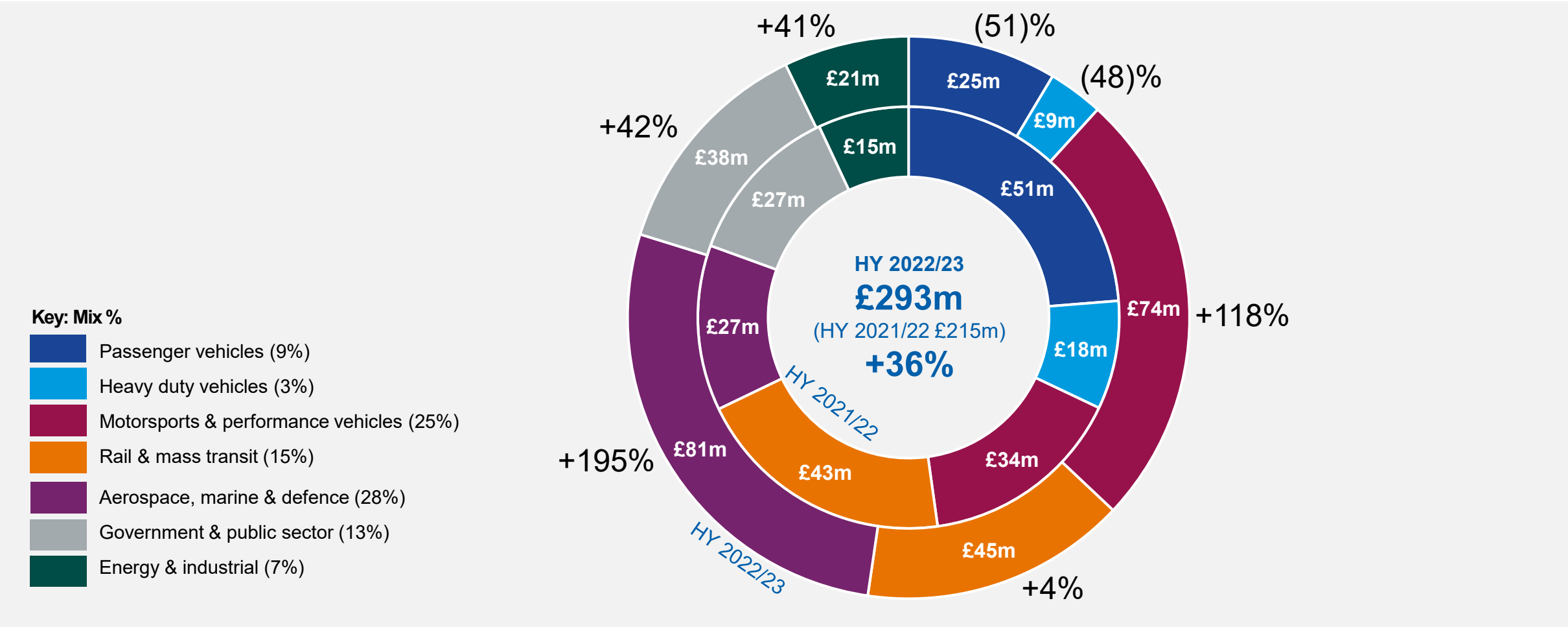
### E3M expands digital capability across the Group

- Expands strategy, policy & economics portfolio
- Opportunity to deliver repeatable digital models
- Creates further value for our global client base



# ORDER INTAKE BY INDUSTRY

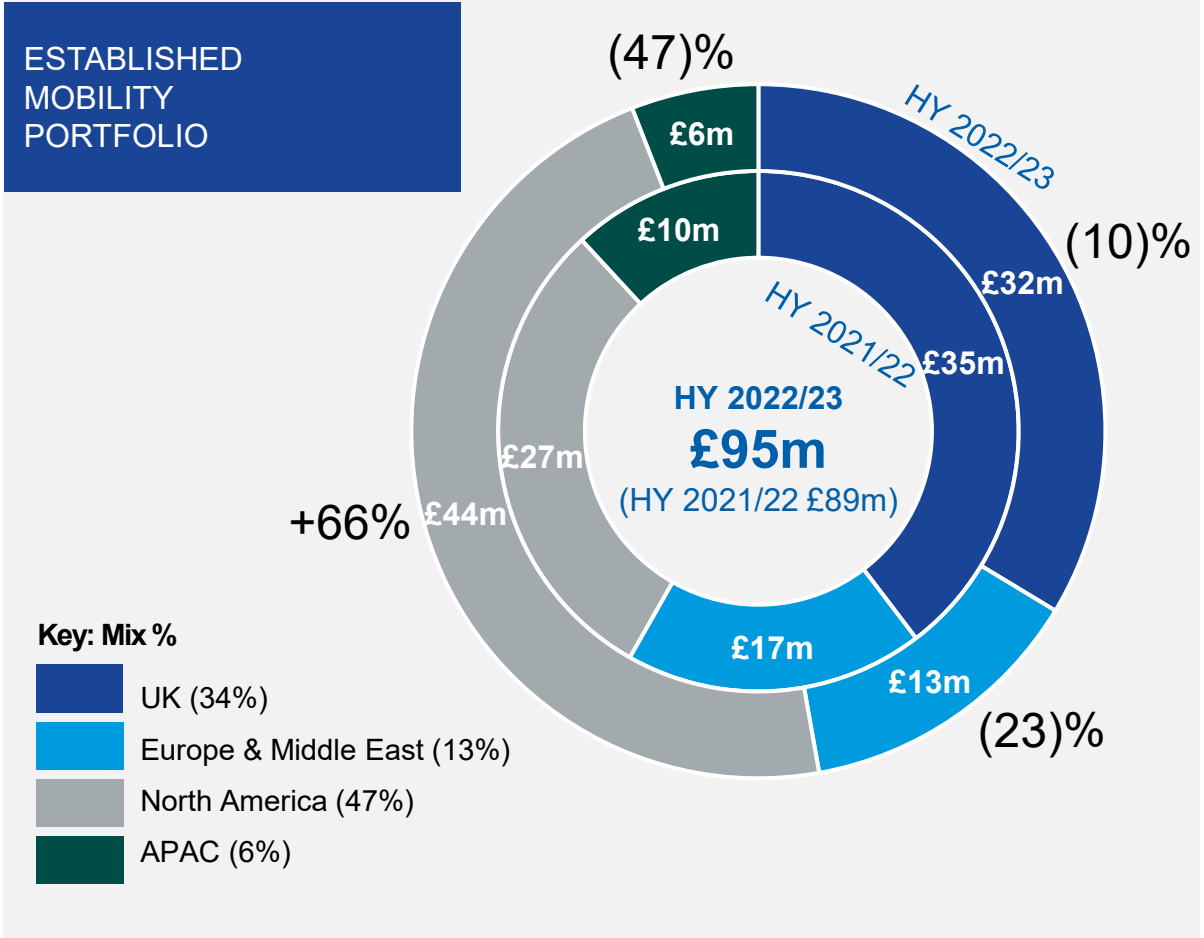
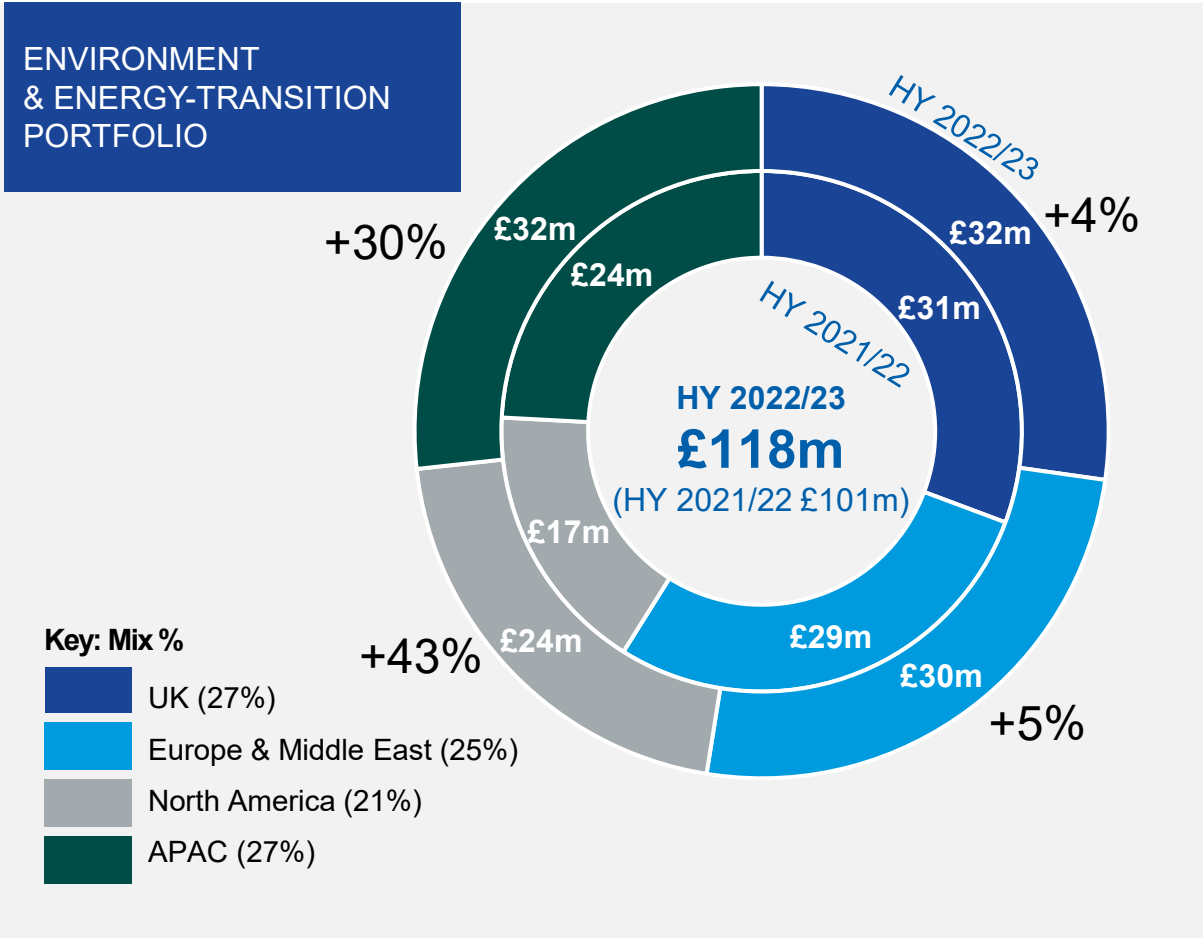
Proactive sales and differentiation to deliver industry diversification



Figures presented on a Continuing Operations basis. The prior period results have been restated at current period FX rates.

# REVENUE BY GEOGRAPHIES

Good progress in expanding our footprint across key territories



Figures presented on a Continuing Operations basis. The prior period results have been restated at current period FX rates.

# MARKET DYNAMICS ACCELERATING A&I TRANSFORMATION

Economic uncertainty accelerating market transition and prioritising capital allocation

## IMPACT ON ESTABLISHED

Optimising our established portfolio for cash

### OEM Insourcing

Utilise internal resource where possible

### Platform life extension

OEMs run existing ICE or Hybrid platforms for longer optimising cash

### Traditional supply chains remain under pressure

Supply constraints, Inflationary pressures, regulation and purchasing power from OEMs reduce new investment

## IMPACT ON EMERGING

Prioritising for growth

### OEMs and start ups more selective on projects for passenger and light vehicle

Higher uncertainty and borrowing costs in the short term means deferral and more selective on new projects.  
Long term still high growth

### Heavy duty investment

Government funding, regulation and pressure for 'ESG' supply chains accelerating transition

### Aerospace, marine and defence

Government funding, regulation and pressure for 'ESG' supply chains accelerating transition

# ACCELERATING A&I TRANSFORMATION TO RE-POSITION FOR GROWTH

Building agility and resilience within the ongoing A&I operating structure

Restructuring so far to:

## CONSOLIDATE FOR GROWTH

### One global operating model

Reduced from three operating geographies to one globally benefitting from operational synergies

### Portfolio prioritisation

Providing greater transparency in its overall portfolio through the introduction of two main technology areas: Established and Emerging



Accelerating restructuring to:

## PRIORITISE FOR GROWTH

### Prioritising capital allocation to growth services

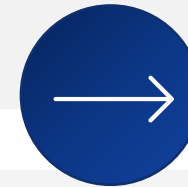
Reallocation of capital from physical test to high growth emerging technologies and focus on repeatable scalable offerings

### Resource flexibility across economic cycles

Fixed to variable cost model provides us agility in our resource base, enabling resilience through the economic cycles

### Growth focus through increased performance management

Closer scrutiny through market portfolio focus linking pipeline to capacity management by solution



# PURPOSE LED IN OUR APPROACH

## RICARDO'S CULTURE

- **New values** – embedding further across the Group
- **Leading lights** – excellence awards inauguration
- **Activities alignment** – Unified Group action plan

## LEARNING & DEVELOPMENT

- **Leadership conference** – top 100 leaders
- **Cascade frequency**– Monthly SLT, Global Townhalls
- **Proactive succession planning** – Insight of top talent

## REWARDS & BENEFITS

- **Cost of living payments** – Additional financial support
- **Stronger alignment** – Consistent bonus and total reward framework across the group

## DIVERSITY, EQUITY & INCLUSION

- **DEI forum established** – With representation from our Executive Committee and remit created
- **Affinity groups** – 5 networks run by colleagues to connect , share experiences and raise awareness



# SUMMARY AND OUTLOOK

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GRAHAM RITCHIE

Chief Executive Officer



# GOOD UNDERLYING RESULTS WHILST TRANSFORMING FOR GROWTH

## HY REVIEW

- A good set of underlying results for the Group in line with the Board's expectations
- Strong growth in Environment and Energy-Transition services
- Strong order book in PP and Defense gives long-term visibility to support transition
- Decisive action to accelerate transformation of A&I Established to return to profitability

## STRATEGY UPDATE

- Strong economics in Environment and Energy-Transition confirms our confidence in the strategic direction
- Creating a more flexible operating model to invest for growth in our A&I Emerging solutions
- Meaningful strategic progress through recent growth synergistic and margin accretive acquisition
- Building our purpose led culture to enable our transformation

## GROUP OUTLOOK

- Some short term uncertainty in A&I pipeline but confidence in longer term growth and margin
- Full year guidance maintained
- Long term Group guidance remains unchanged

THANK YOU

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QUESTIONS?

# APPENDIX

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# PORTFOLIO UPDATE

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Environmental & Energy-Transition portfolio

# ENERGY & ENVIRONMENT

A leader in sustainability consultancy, solving complex environmental challenges

Revenue

**£38.2m**

HY 2021/22: £31.1m <sup>(1)</sup>

Underlying operating profit

**£6.4m**

HY 2021/22: £5.1m <sup>(1)</sup>

Underlying operating profit margin

**16.8%**

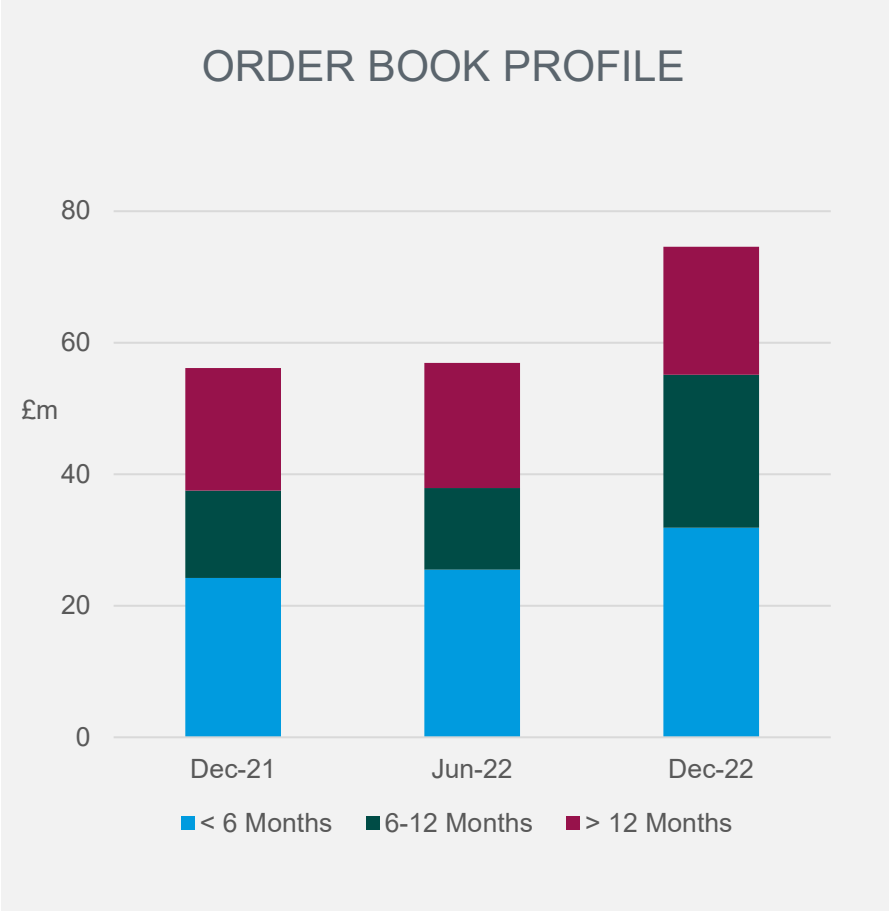
HY 2021/22: 16.4% <sup>(1)</sup>

Headcount

**800**

BUSINESS HIGHLIGHTS

- A very strong first half, mainly due to air quality and energy decarbonisation
- Order intake for the period was strong at £57.4m
- Increased market demand in the Middle East with large new contract wins
- Expansion in water and mining sectors through Inside Infrastructure
- EU commission work growing and leading to further opportunities
- Major contract secured for Air Quality for DEFRA in the UK



(1) The prior period results have been restated at current year FX rates.

Energy and Environment case study:

## EUROPEAN COMMISSION SETTING THE STANDARD FOR ZERO EMISSION VEHICLES

### **Client requirement**

The European Commission required industry experts to define a single, harmonised life cycle assessment (LCA) approach for vehicles and batteries to create transparency and comparability of impacts from these products.

### **Our solution**

Ricardo's transport and policy experts are part of the core team of the TranSensus LCA consortium, delivering expert advice and insights which builds on their experience of delivering the world's most comprehensive alternative fuelled vehicles LCA. We will be screening and evaluating LCA concepts and approaches including product environmental reporting and defining application for regulatory compliance and assessment.

### **Customer benefits**

Official harmonised standards will facilitate industry, mobility providers and planners to develop sustainable road transport products that are optimised to combat climate change. It will also support the European Commission in achieving its objective of making Europe the first digitally enabled circular, climate-neutral sustainable economy.



# RAIL

Experts in critical and complex railway systems, supporting industry’s operational and regulatory demands

Revenue

**£36.1m**

HY 2021/22: £39.2m <sup>(1)</sup>

Underlying operating profit

**£3.6m**

HY 2021/22: £4.9m <sup>(1)</sup>

Underlying operating profit margin

**10.0%**

HY 2021/22: 12.5% <sup>(1)</sup>

Headcount

**533**

BUSINESS HIGHLIGHTS

- Robust order intake, up 4% on the prior period
- HY22/23 included project extensions in Australia and the Middle East
- Period on period underlying profit and profit margin reduction linked to a gap between long-term projects ending and new work starting
- Re-organisation actions from FY21/22 delivering operational benefits
- Significant contract wins in North America to act as systems integrator verifier for the extension of Ottawa’s O-train system and in South America, to support a new monorail in Panama



(1) The prior period results have been restated at current year FX rates.

Rail case study:

## PANAMA MONORAIL RAMS TECHNICAL CONSULTANCY

### Client requirement

To provide design and systems integration support for Metro Line 3, the latest new monorail system on Panama's metro network. This will be the most elevated route connecting Panama City to the major urban centres in the province.

### Our solution

HPH Consortium, who are overseeing the design and construction, has appointed Ricardo to provide specialist RAMS support. We will undertake strategic planning, conduct detailed technical studies and maintain communications with all stakeholders to ensure the RAMS targets are met. By continually assessing potential risk scenarios, we will be able to understand emerging problems and take proactive steps to resolve them

### Client benefits

We have teams based in Seoul and Yokohama who have extensive experience working with the rail manufacturers and supply chains located in South Korea and Japan, who are directly delivering this project. We can also draw upon our experience across similar projects we have completed in Asia Pacific and Europe to provide essential expertise to the Panama project.





# A&I EMERGING MOBILITY

Experts in electrified propulsion systems, software and digital technologies for sustainable mobility

Revenue

**£43.9m**

HY 2021/22: £30.7m <sup>(1)</sup>

Underlying operating profit/(loss)

**£6.6m**

HY 2021/22: £(1.4)m <sup>(1)</sup>

Underlying operating profit/(loss) margin

**15.0%**

HY 2021/22: (4.6)% <sup>(1)</sup>

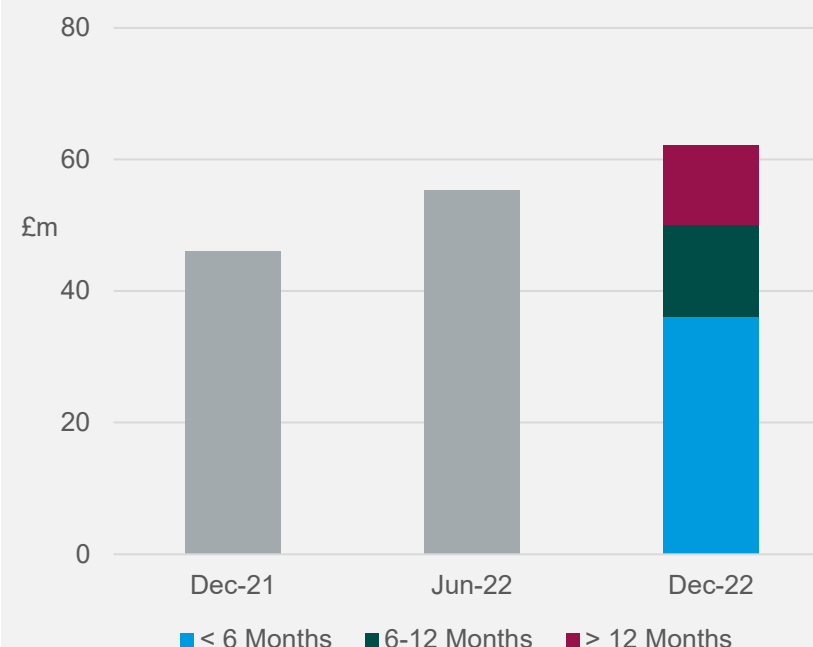
Headcount

**543**

## BUSINESS HIGHLIGHTS

- Growth in all key financial metrics
- Order intake was £50.7m, in line with the prior period, on a constant-currency basis
- Several multi-million pound contracts secured in H1 including fuel cell, power-electronics and battery applications for commercial trucking, battery systems for passenger cars vehicles and advanced propulsion systems for aerospace
- A&I Emerging accounted for 75% of total A&I order intake
- Talent development enhanced with positive impacts in both reducing time to acquire talent and reducing voluntary attrition

## ORDER BOOK PROFILE



(1) The prior period results have been restated at current year FX rates.

A&I Emerging case study:

## TOYOTA UK

### IT'S FIRST UK-BASED HYDROGEN LCV

#### Client requirement

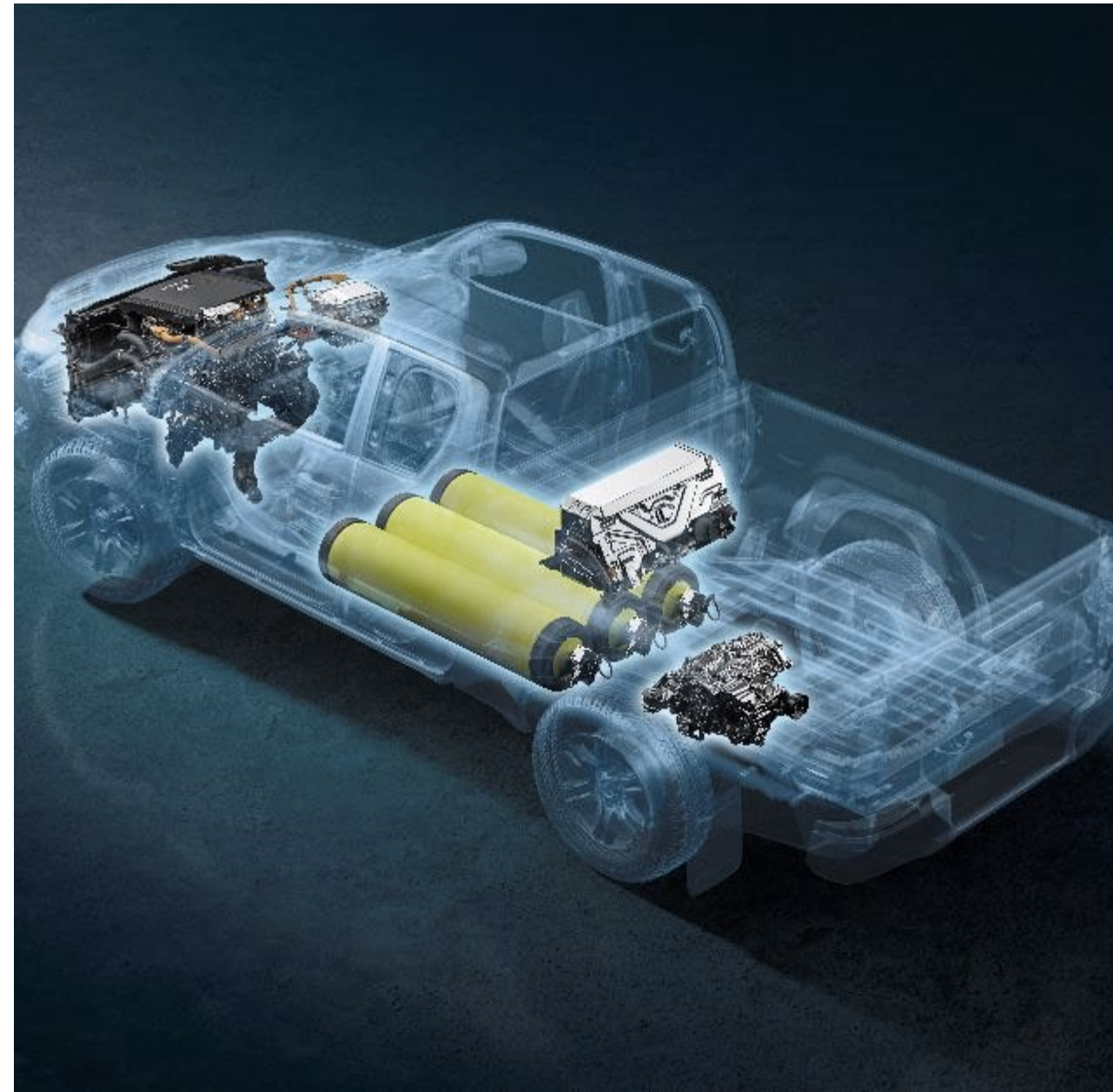
Toyota plans to develop and manufacture hydrogen related technologies in its drive towards zero emissions. The Hilux hydrogen variant will deliver low volume manufacture for the light commercial vehicle market and require a technical partner in hydrogen fuel cell design and integration

#### Our solution

Ricardo is supporting Toyota in partnership with APC, to develop its first zero emission hydrogen powered LCV in the UK. Our role is to integrate the complete hydrogen fuel cell, fuel storage system and controls including design, analysis and validation.

#### Client benefits

Working alongside other partners, Ricardo will support the delivery of a complete turnkey solution, creating greater agility for Toyota in the UK supply base as well as a quicker turnaround in the design of low volume manufacturing.



# PORTFOLIO UPDATE

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Established mobility portfolio

# DEFENSE

Trusted expertise in delivering wide ranging engineering programmes to drive efficiencies and performance

Revenue

**£41.0m**

HY 2021/22: £24.9m <sup>(1)</sup>

Underlying operating profit

**£5.7m**

HY 2021/22: £3.5m <sup>(1)</sup>

Underlying operating profit margin

**13.9%**

HY 2021/22: 14.1% <sup>(1)</sup>

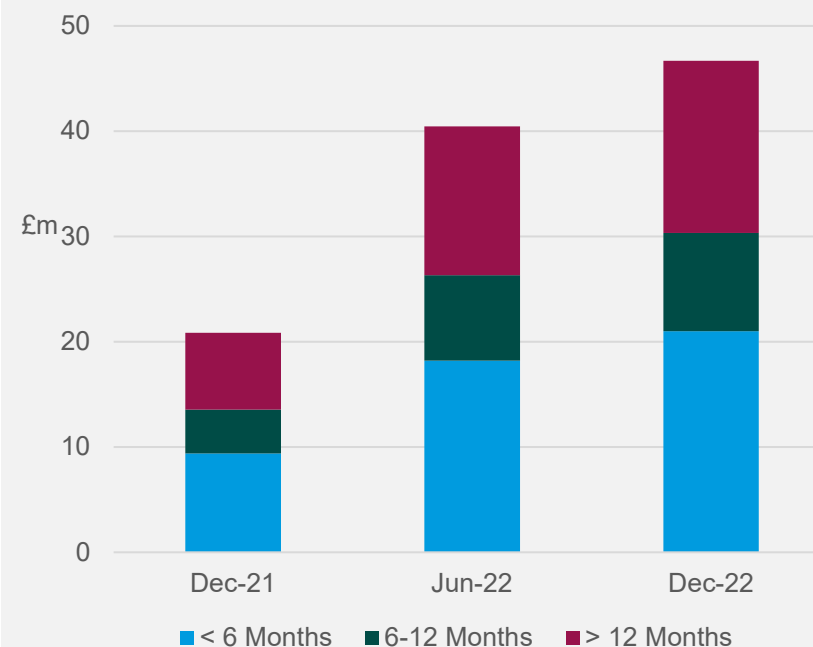
Headcount

**208**

## BUSINESS HIGHLIGHTS

- H1 order intake grew significantly by £28.1m on a constant-currency basis due to ABS/ESC kit orders from the US DoD
- Revenue increased by 65% period-on-period driven by increased volumes in ABS/ESC kits
- Technical services continue to have high levels of direct utilisation supporting strong underlying profit
- Demand for field support solutions is increasing with further training requirements from the US DoD
- Software application introduction for US DoD is directly supporting improvements in energy usage and fuel management

## ORDER BOOK PROFILE



(1) The prior period results have been restated at current year FX rates.

Defense case study:

## MOBILE FUEL & ENERGY MANAGEMENT

### Customer requirement

Platforms using mobile distributed energy resources for critical operational assets need near-real-time visual and data analytical tools as part of energy management systems in order to analyze changing electrical demand and fuel logistical constraints so that operators might make better informed command and control decision on fuel and energy resiliency on the battlespace.

### Our solution

Ricardo Defense is working with the U.S. Marine Corps to develop and demonstrate capabilities that are in alignment with the Department of Navy climate strategy to improve management of energy supplies, better secure energy resources and reduce their overall carbon footprint.

### Customer benefits

Ricardo Defense is working with the U.S. Marine Corps to develop and demonstrate capabilities that are in alignment with the Department of Navy climate strategy to improve management of energy supplies, better secure energy resources and reduce their overall carbon footprint.



# PERFORMANCE PRODUCTS

Engineering specialists in transmission design and niche-volume manufacturing

Revenue

**£38.5m**

HY 2021/22: £38.4m <sup>(1)</sup>

Underlying operating profit

**£3.6m**

HY 2021/22: £4.5m <sup>(1)</sup>

Underlying operating profit margin

**9.4%**

HY 2021/22: 11.7% <sup>(1)</sup>

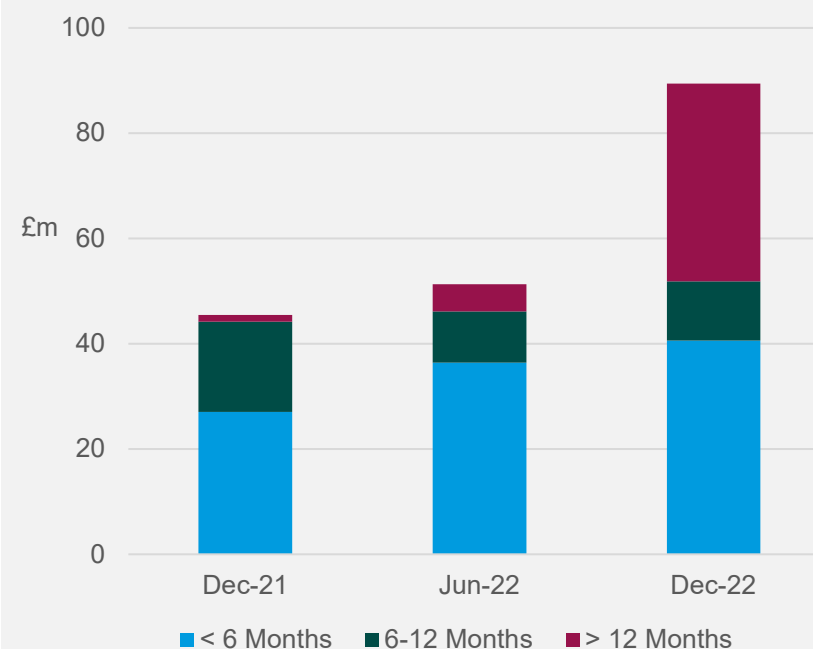
Headcount

**341**

## BUSINESS HIGHLIGHTS

- Order intake for H1 more than doubled from the prior period to £77m
- Two major contracts secured to manufacture high performance transmissions
- McLaren engine volumes increased with revenue also increasing due to higher volume and mix of engines sold
- Ongoing expansion of powertrain and driveline services, including green propulsion products
- Managing supply chain challenges through rigorous process management to ensure client deliveries remain unaffected

## ORDER BOOK PROFILE



(1) The prior period results have been restated at current year FX rates.



Performance Products case study:

## INOBAT PARTNERSHIP NICHE VOLUME MANUFACTURING AND BATTERY ASSEMBLY

### Client requirements

Increasing pressure for decarbonised transport solutions has driven demand for electric vehicles, but manufacturers have faced extensive supply chain disruption for electric vehicle components, further impacted by the war in Ukraine

### Our solution

Ricardo has partnered with InoBat, a pioneer of premium electric vehicle battery R&D, engineering, production and recycling, to jointly supply battery cells, modules and packs to high performance automotive manufacturers for their electrification programmes. Ricardo and InoBat will co-operate on the assembly, production and testing of cells, modules and full battery packs for a number of high performance automotive applications.

### Client benefits

This partnership will accelerate the adoption of electrification in these critical sectors by providing a robust supply route for key battery products and help to accelerate net zero ambitions.



# A&I Established Mobility

Over a century of propulsion design and development

Revenue

**£15.0m**

HY 2021/22: £26.0m <sup>(1)</sup>

Underlying operating profit/(loss)

**£(4.8)m**

HY 2021/22: £0.9m <sup>(1)</sup>

Underlying operating profit/(loss) margin

**(32.0)%**

HY 2021/22: 3.5% <sup>(1)</sup>

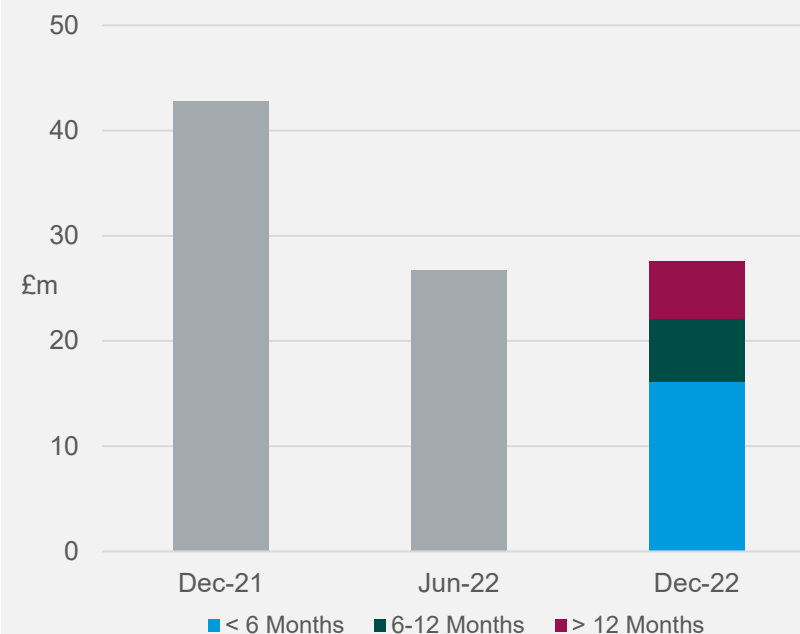
Headcount

**378**

## BUSINESS HIGHLIGHTS

- Overall H1 performance challenging due to impacts in market demand
- Restructuring programme accelerated to ensure that we are well positioned to maximise growth
- Focus on delivering high-efficiency Internal Combustion Engines (ICE) and emissions-compliant capabilities to support the market through its global transition to electrification and alternative fuels
- Moving to a variable resourcing model, operating at a base level that will allow for the business to manage demand fluctuations.
- Reorganisation will continue into H2, focussed on returning the business back to profit

## ORDER BOOK PROFILE



(1) The prior period results have been restated at current year FX rates.



A&I Established case study:

## AECOM / DEPARTMENT for TRANSPORT PARTICLE EMISSIONS FROM BRAKE & TYRES

### Client requirement

In the UK, brake and tyre wear emissions are now the primary source of PM<sub>10</sub> and PM<sub>2.5</sub> from road transport. As the transition towards zero (exhaust) emissions continues, more understanding and a solution to control non-exhaust emissions is required. This work aims to improve current knowledge and address gaps on non-exhaust emissions which can be used to inform policy and legislation aimed at reducing tyre and brake wear.

### Our solution

Ricardo, in collaboration with the Arup AECOM consortium, supported the Department for Transport in the UK to develop an effective system and methodology for measuring and characterising particles emitted from brake and tyre wear under real driving conditions. An on-road system for measuring brake and tyre wear was developed and installed to a small light duty van. Testing was successfully undertaken in a chassis dynamometer

### Customer benefits

Through the work carried out, Ricardo supported the creation of a measure for brake and tyre particles – this will help with ongoing work by UNECE to introduce regulatory test procedures and limits, due to be introduced in late 2023.



# FINANCIALS

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# INCOME STATEMENT – CONTINUING/DISCONTINUED OPERATIONS

## Underlying and total Group

	Six months ended 31 December							
£m	2022	2022	2022	2021	2021	2021	Period-on-period movement	
	Underlying	Specific adjusting items <sup>(1)</sup>	Total	Underlying	Specific adjusting items <sup>(1)</sup>	Total	Underlying	Total
Revenue	212.7	-	212.7	182.0	-	182.0	17%	17%
Gross profit	60.1	-	60.1	53.5	-	53.5	12%	12%
Indirect costs	(47.6)	(22.4)	(70.0)	(43.7)	(3.4)	(47.1)	9%	(49)%
Operating profit/(loss) from continuing	12.5	(22.4)	(9.9)	9.8	(3.4)	6.4	28%	n/a
Net finance costs	(2.6)	-	(2.6)	(1.8)	-	(1.8)	44%	44%
Profit/(loss) before tax from continuing operations	9.9	(22.4)	(12.5)	8.0	(3.4)	4.6	24%	n/a
Taxation charge	(2.6)	0.5	(2.1)	(1.9)	0.9	(1.0)	37%	110%
Profit/(loss) from continuing operations	7.3	(21.9)	(14.6)	6.1	(2.5)	3.6	20%	n/a
Profit/(loss) from discontinued operations	0.4	6.1	6.5	0.5	(0.6)	(0.1)	(20)%	n/a
Profit/(loss) for the period	7.7	(15.8)	(8.1)	6.6	(3.1)	3.5	17%	n/a

(1) Specific adjusting items comprise asset impairment, amortisation of acquired intangible assets, acquisition-related expenditure, ERP system implementation costs, reorganisation costs and non-recurring items.

# RECONCILIATION OF FINANCIAL RESULTS BY OPERATING SEGMENT (HY22)

Prior period results restated to reflect the disposal of Software and removal of plc management charge

Six months ended 31 December 2021						
£m	Underlying operating profit <sup>(1)</sup>					
	Originally reported	Software discontinued operation	Remove plc management charge	Restated	Effect of currency translation	Restated at constant currency
Energy & Environment	4.3		0.8	5.1		5.1
Automotive & Industrial	(1.7)	(0.5)	1.8	(0.4)	(0.1)	(0.5)
- Emerging mobility				(1.3)	(0.1)	(1.4)
- Established mobility				0.9		0.9
Rail	3.8		0.8	4.6	0.3	4.9
Defense	2.8		0.3	3.1	0.4	3.5
Performance Products	3.9	(0.1)	0.7	4.5		4.5
Plc Costs	(2.6)		(4.5)	(7.1)		(7.1)
<b>Continuing operations</b>	<b>10.5</b>	<b>(0.6)</b>	<b>(0.1)</b>	<b>9.8</b>	<b>0.6</b>	<b>10.4</b>
Discontinued operation		0.6	0.1	0.7		0.7
<b>Total operating profit</b>	<b>10.5</b>	<b>-</b>	<b>-</b>	<b>10.5</b>	<b>0.6</b>	<b>11.1</b>

(1) Excluding specific adjusting items, which comprise asset impairment, amortisation of acquired intangible assets, acquisition-related expenditure, reorganisation costs and non-recurring items.

# RECONCILIATION OF FINANCIAL RESULTS BY OPERATING SEGMENT (FY22)

Impact of restatement to remove plc management charge

	Year ended 30 June 2022			Six months ended 31 December 2022		
	Underlying operating profit <sup>(1)</sup>					
£m	Previous basis (as reported)	Remove plc management charge	New basis	Previous basis	Remove plc management charge	New basis (as reported)
Energy & Environment	9.1	1.9	11.0	5.4	1.0	6.4
Automotive & Industrial	3.7	3.9	7.6	-	1.8	1.8
- Emerging mobility			2.7			6.6
- Established mobility			4.9			(4.8)
Rail	7.7	1.7	9.4	2.8	0.8	3.6
Defense	5.9	0.7	6.6	5.0	0.7	5.7
Performance Products	7.2	1.6	8.8	2.8	0.8	3.6
Plc Costs	(5.6)	(9.8)	(15.4)	(3.5)	(5.1)	(8.6)
Continuing operations	28.0	-	28.0	12.5	-	12.5

(1) Excluding specific adjusting items, which comprise asset impairment, amortisation of acquired intangible assets, acquisition-related expenditure, reorganisation costs and non-recurring items.

## BALANCE SHEET SUMMARY

	31 December		30 June
£m	2022	2021	2022
Tangible non-current assets	35.0	44.9	47.0
Intangible non-current assets	105.5	115.2	113.7
Right of use assets	20.1	16.9	18.3
Pension surplus	12.9	9.6	15.2
Inventories, trade and other receivables	170.0	143.2	152.2
Net assets held for sale	-	-	6.2
Net debt	(31.4)	(38.5)	(36.5) <sup>(2)</sup>
Trade and other payables	(93.2)	(79.2)	(78.2)
Lease liability	(24.9)	(20.9)	(23.3)
Other <sup>(1)</sup>	(10.9)	(7.0)	(17.0)
<b>Net assets</b>	<b>183.1</b>	<b>184.2</b>	<b>197.6</b>

(1) Other includes provisions, deferred and current tax, derivative financial assets and liabilities and investments

(2) Total Group net debt £35.4m, including £1.1m of cash reported within assets held for sale.