



Johnson Matthey
Inspiring science, enhancing life

Capital Markets Day Delivering sustainable growth and value

19th September 2019

Cautionary statement

This presentation contains forward looking statements that are subject to risk factors associated with, amongst other things, the economic and business circumstances occurring from time to time in the countries and sectors in which Johnson Matthey operates. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a wide range of variables which could cause actual results to differ materially from those currently anticipated and you should therefore not place reliance on any forward-looking statements made. Johnson Matthey will not update forward-looking statements contained in this document or any other forward-looking statement it may make.

Agenda

Start	Session	Presenters
09:30	Introduction and group strategy	Robert MacLeod
10:00	Financial strategy	Anna Manz
10:20	Q&A	
10:50	Break	
11:10	Clean Air	John Walker
11:30	Battery Materials	Robert MacLeod
11:50	Q&A	
12:10	Lunch	
13:00	Sector breakout sessions	Sector CEOs
14:20	Break	
14:35	Sector breakout sessions	Sector CEOs
16:00	Concluding remarks and Q&A	Robert MacLeod



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Delivering sustainable growth and value

Robert MacLeod
Chief Executive

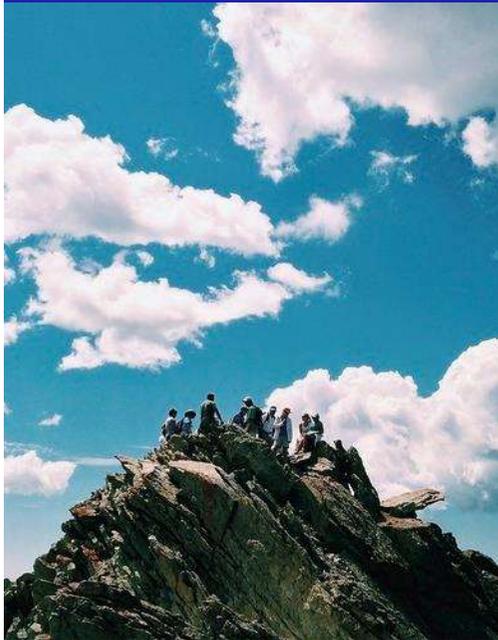
**A world that's
cleaner and
healthier;
today and
for future
generations**

JM

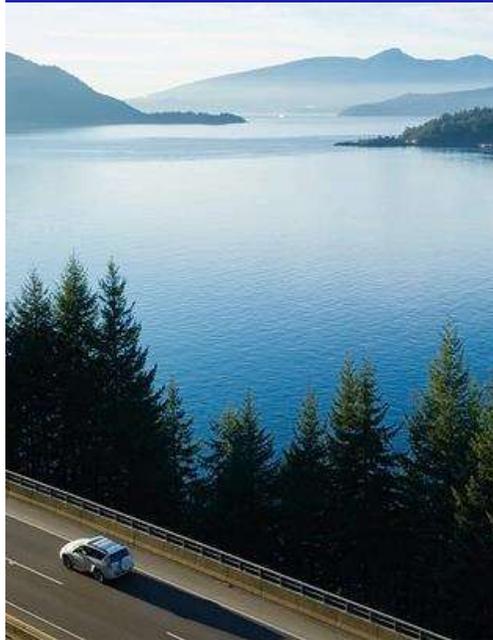


Sustained growth fuelled by key megatrends

Climate change



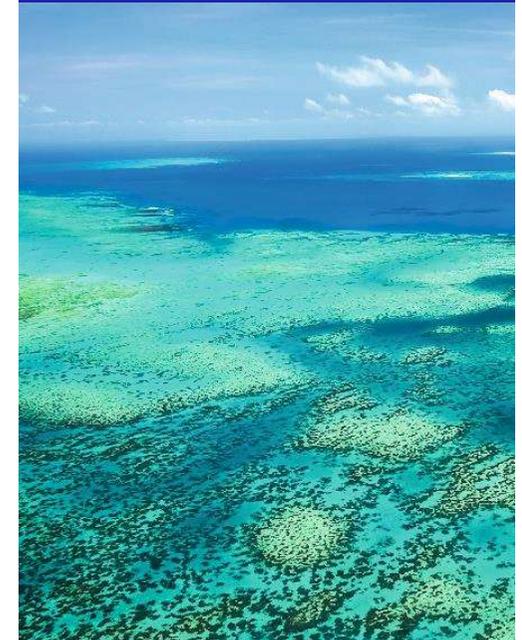
Energy transition



Population and longevity



Resource challenges



We contribute to the UN sustainable development goals

87% of sales from products contributing to the UN SDGs



UN Sustainable Development Goals

A world that's cleaner and healthier; today and for future generations



Note: 2018/19 sales excluding precious metals

Making the world cleaner and healthier



34,500 tonnes
of CO₂ saved per annum by our
new UK renewable energy contract

3.4m tonnes
of pollutants removed by
our emission control catalysts

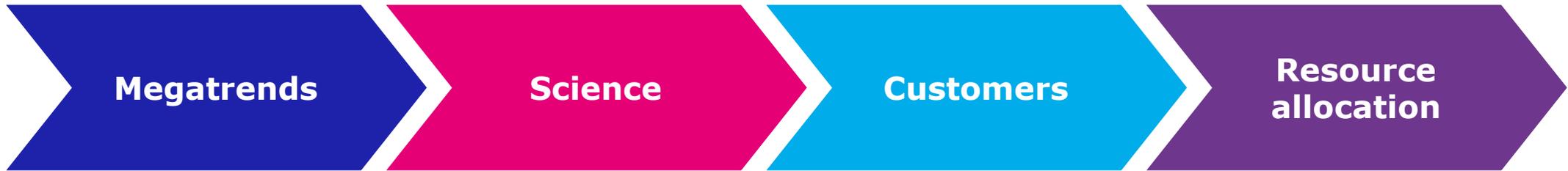
11 million gallons
of renewable jet fuel produced
per annum using our technology

181,000 lives
positively impacted by drugs
containing our API products

10.1m tonnes
of greenhouse gases removed
by our technology

87% of sales contribute to the UN Sustainable Development Goals

Addressing megatrends with our science



Climate change
Energy transition
Population and longevity
Resource challenges

Applying our **world class science** to solve our customers' **complex problems**

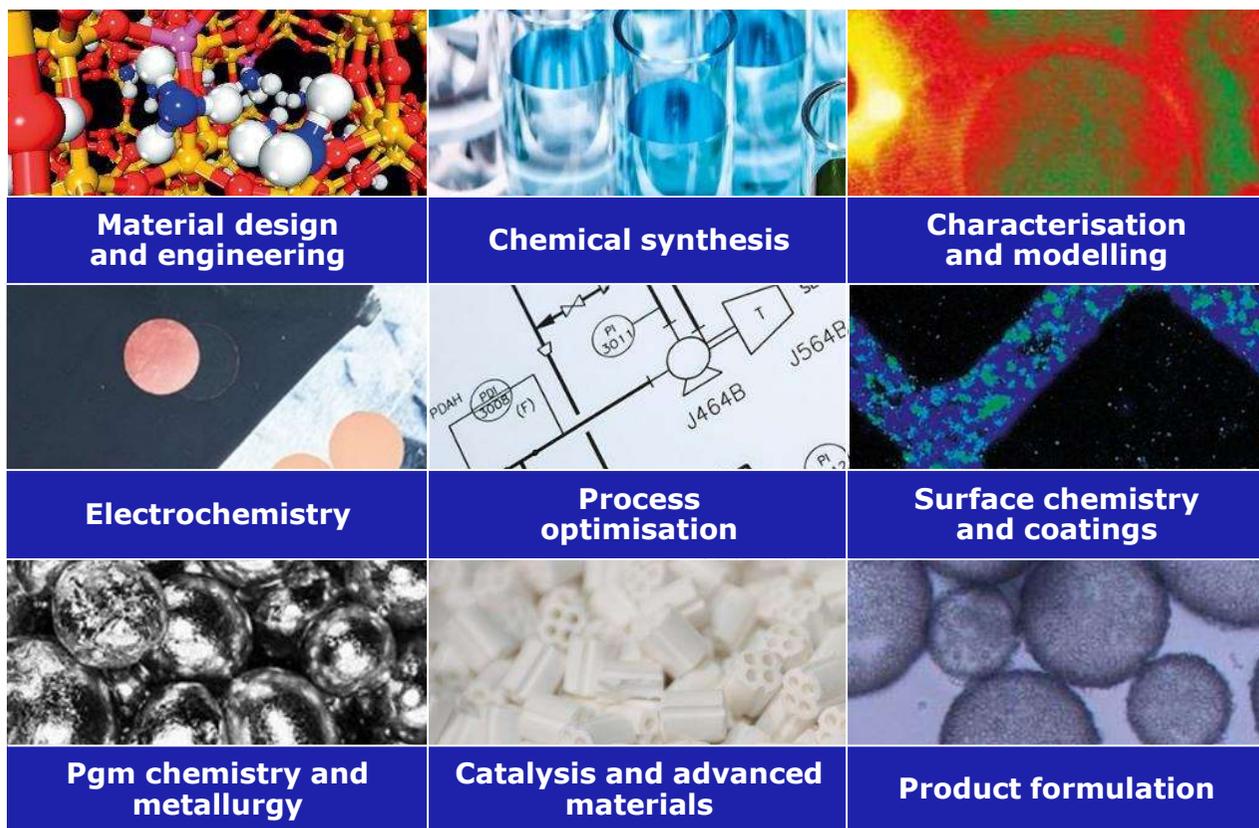
Creating **customised solutions** that make a real difference to the world
Driving value

Rigorous, effective **resource allocation** to address megatrends
Driving **high returns**
Creating an **agile** and **efficient** organisation
Investing in **sustainable innovations** of the future

Driving sustained growth and value creation

The spine of science running through our sectors

Our core capabilities

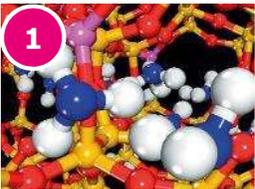
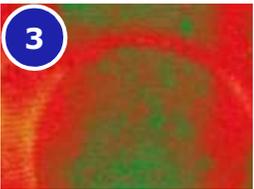
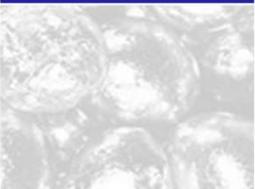


Clever application



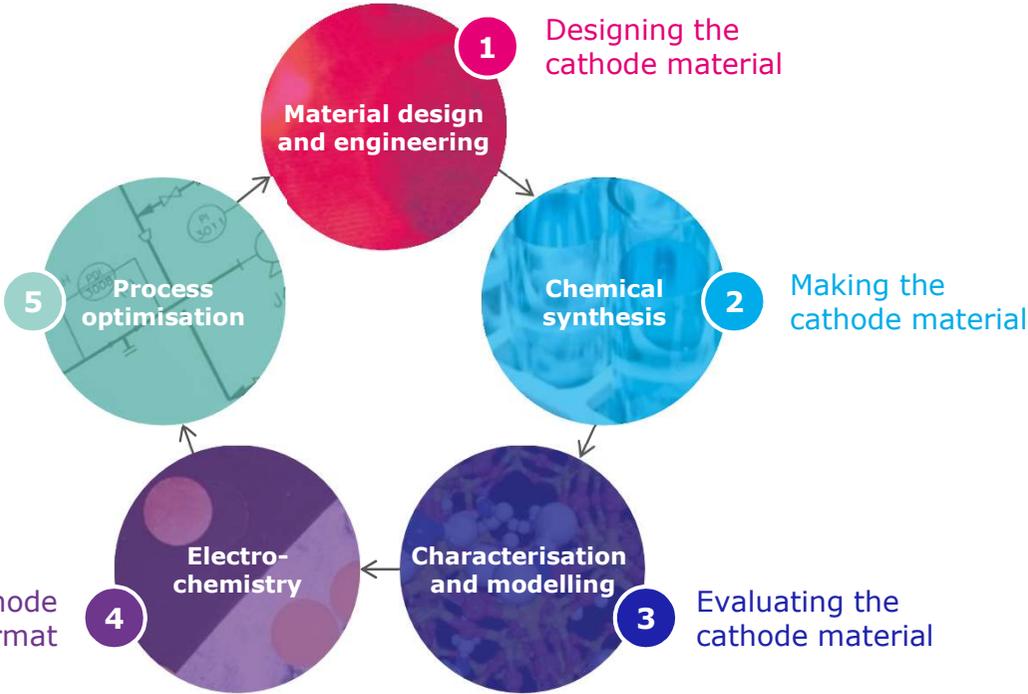
Solving our customers' complex problems

For example in Battery Materials

 1	 2	 3
Material design and engineering	Chemical synthesis	Characterisation and modelling
 4	 5	
Electrochemistry	Process optimisation	Surface chemistry and coatings
		
Pgm chemistry and metallurgy	Catalysis and advanced materials	Product formulation

Enhancing the process through optimisation and repetition

Testing the cathode in battery format



Our world class science gives us leading positions in the markets in which we operate

Science gives us leading market positions



Clean Air

One of three global players in Clean Air
#1 Diesel
Strong position in gasoline



Efficient Natural Resources

Strong segment shares
#1 Methanol
#1 Pgms
#1 Oxo alcohols
#1 Formaldehyde
#1 SNG / #1 BDO



Health

#1 controlled substances in Europe

Sustained competitive advantage through R&D investment at 5% of sales

Our business strategy

Sustained growth and value creation from:

Applying world class science to solve customers' complex problems

JM



Creating long term value

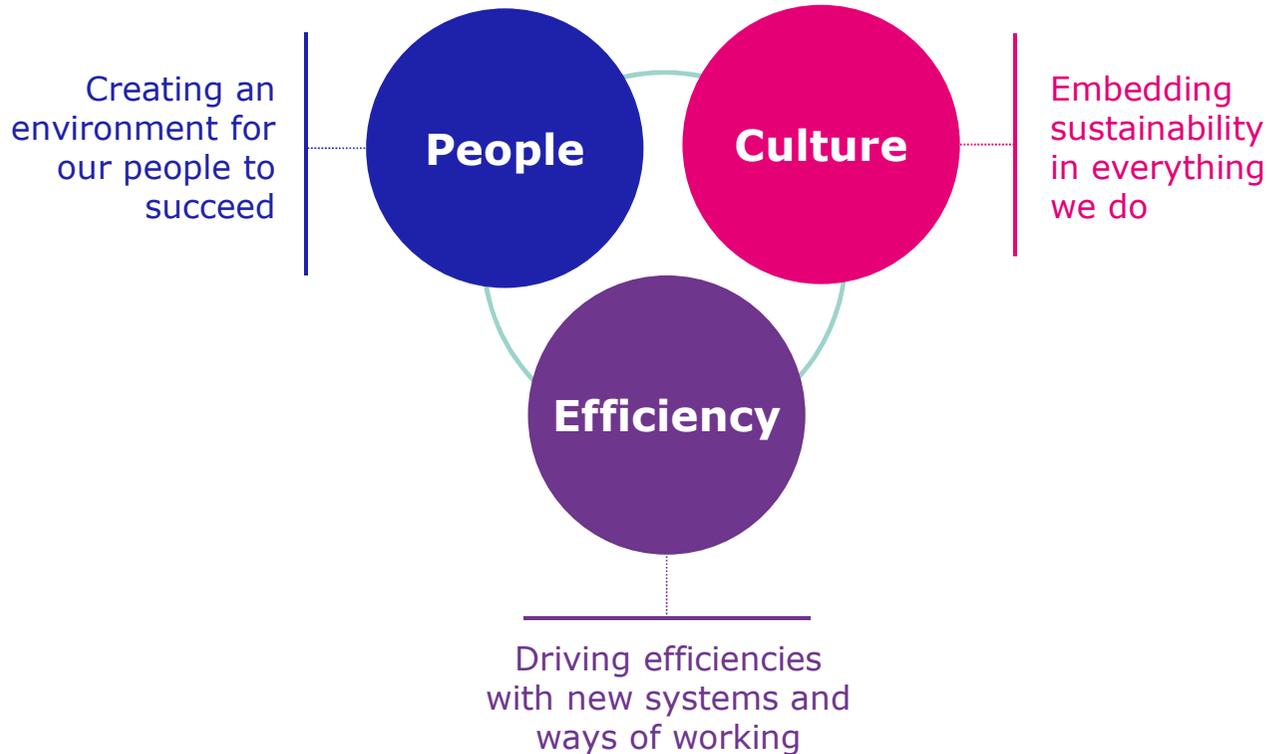
Delivering attractive growth and returns

- Mid to high single digit EPS CAGR
- ROIC to 20%
- Progressive dividend

Delivery of strategy underpinned by fundamental changes across all aspects of the group



We are transforming JM...



...to create an agile and efficient business, giving us flexibility to consistently deliver



- Strengthening our platform for growth



- Creating a more sustainable business



- Greater standardisation and efficiency

- Empowering people

- Faster decision making

We are successfully executing our strategy



Delivering on expectations in Clean Air



Built platform for stronger growth in Efficient Natural Resources



Operational improvements and pipeline development in Health



Significant progress in Battery Materials

Delivered 5% annualised EPS growth since 2017 despite a tougher macro environment

Delivering sustained growth and value

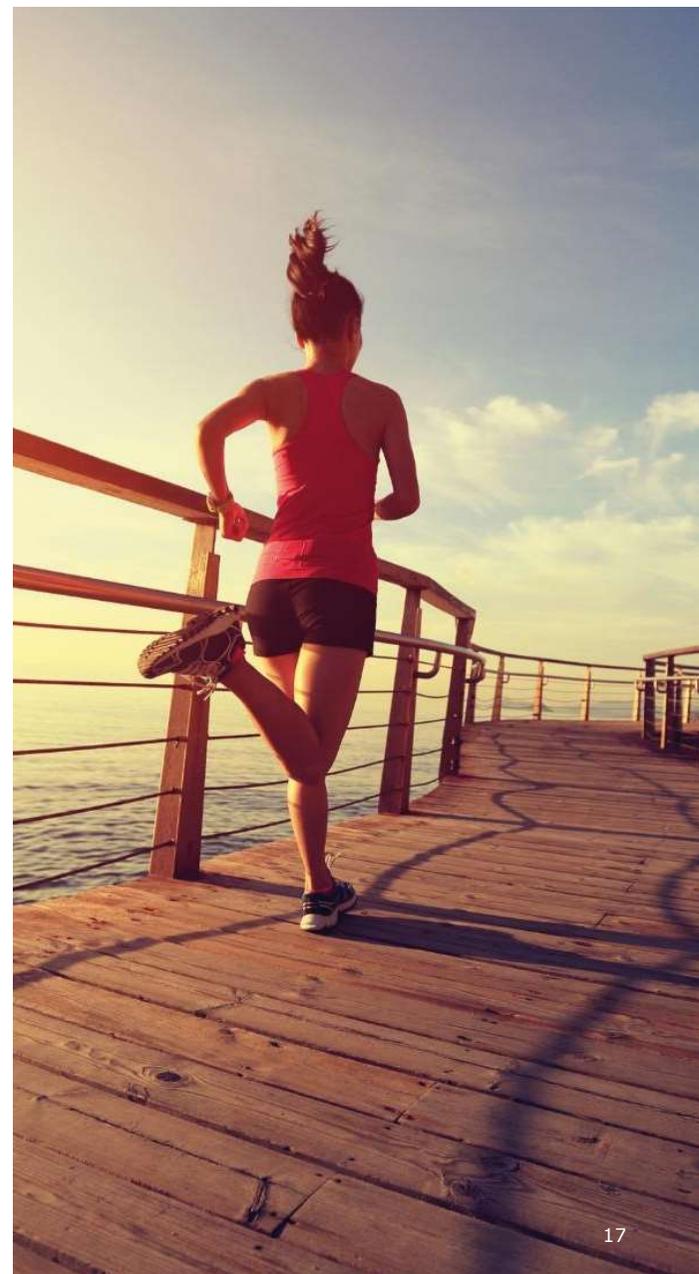
Sustained growth in **Clean Air** over the next decade

Mid to high single digit growth in **Efficient Natural Resources**

Passed the point of inflection for breakout growth in **Health**

Strong progress in **Battery Materials** to build a leading position

Efficiencies remain a strong focus



Clean Air: sustained growth for the next decade

2025 outcomes

Asia more than doubles in size

Europe maintains size despite diesel decline

Americas driven by GDP growth

Margins maintained through focus on efficiency

Mid single digit growth in operating performance to 2025

JM



Efficient Natural Resources: market leading growth

2025 outcomes

Positioned in higher growth segments

Continue to evolve our existing strengths

New technologies

Increased efficiency of operations

Mid to high single digit growth in operating performance to 2025

JM



Health: passed inflection for breakout growth

2025 outcomes

Enhancing the performance of our base business

Delivering growth from our new product pipeline

Building capabilities to support our customers

Delivering c.£100m additional operating profit by 2025

JM



Battery Materials: breakout growth

2025 outcomes

Maintained our technology leadership

Qualified on customer platforms

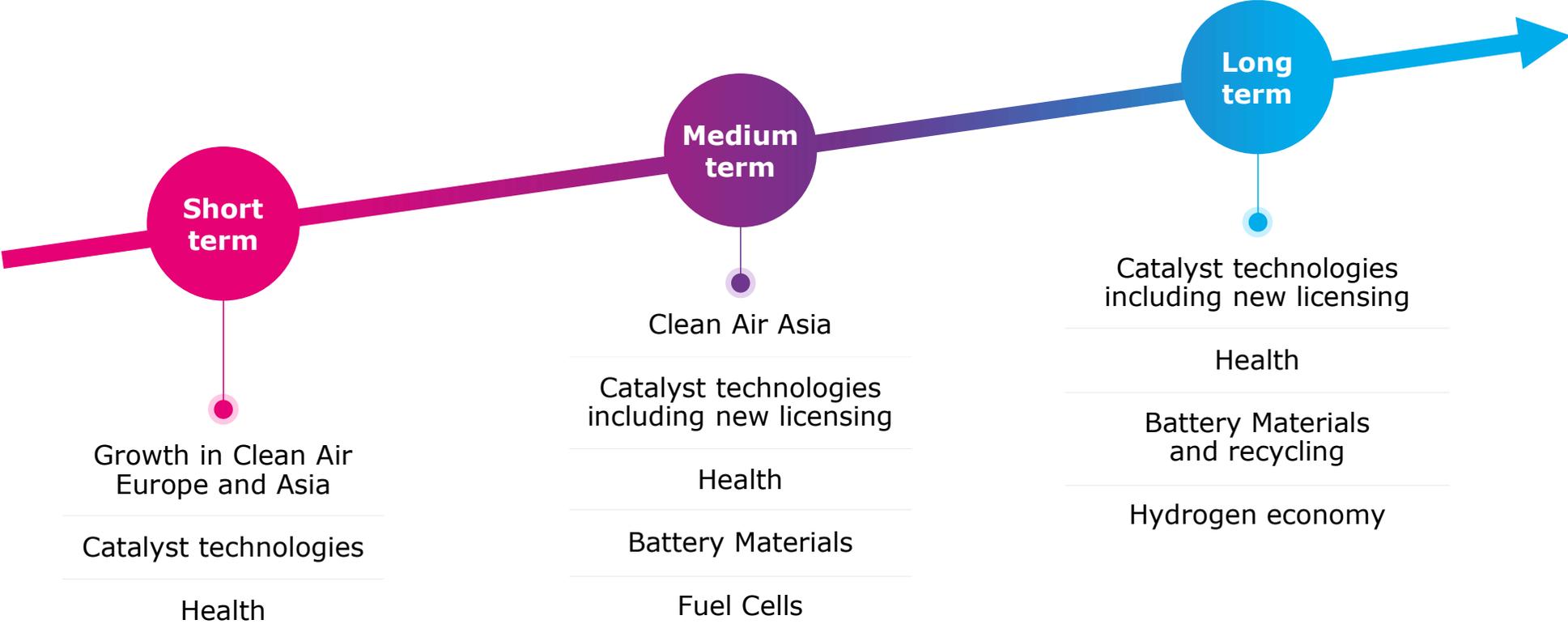
Commercial scale capacity

Well positioned for breakout growth

JM



Megatrends drive growth opportunities for science-led solutions



Sustained growth and value

Successfully executing our strategy

Addressing megatrends with our science

Spine of science running through our sectors

A more agile and efficient business

Mid to high single
digit EPS CAGR

Expanding ROIC
to 20%

Progressive
dividend



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Driving shareholder value

Anna Manz
Chief Financial Officer

2019/20 guidance unchanged for first half and full year



Operating performance to be slightly below the prior year in **Clean Air**



Better performance and continue to anticipate sales growth with operating performance growth ahead of sales in **Efficient Natural Resources**



Broadly stable sales and double digit operating performance growth in **Health**



Sales and operating performance growth in **New Markets**

JM

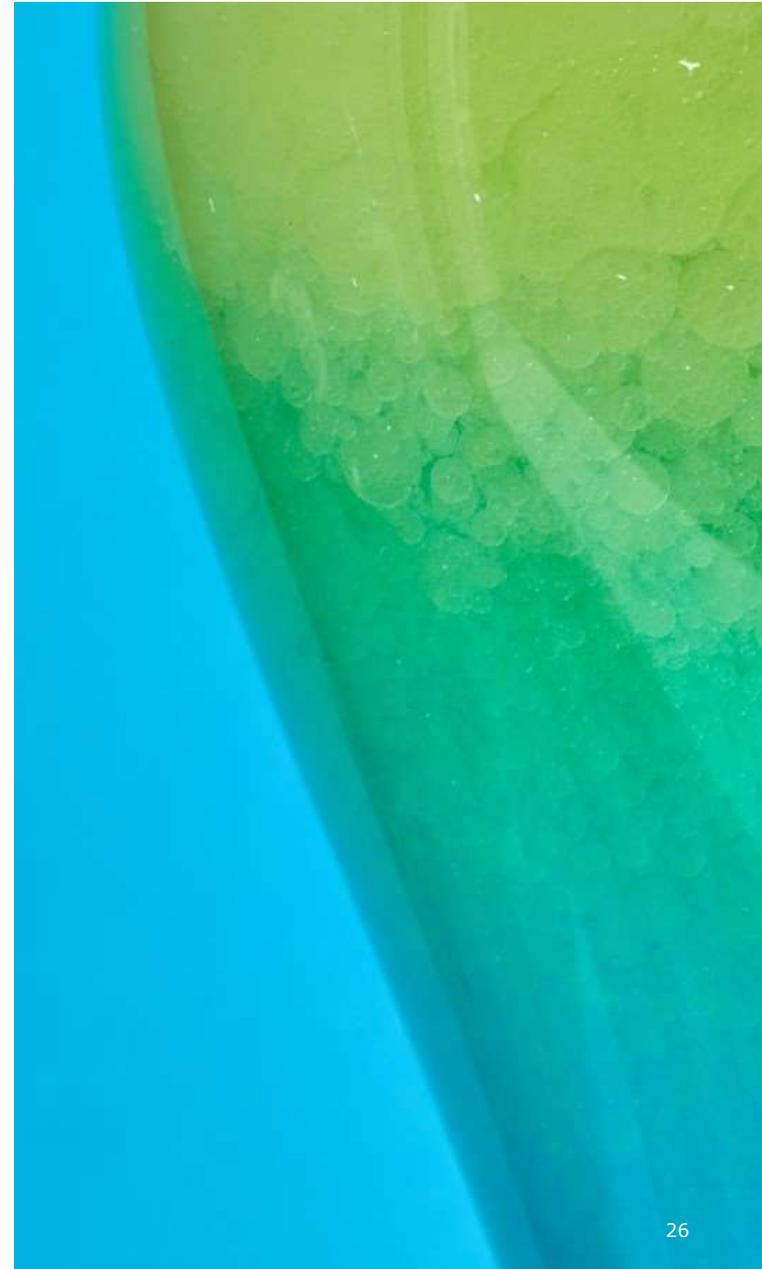
Mid to high single digit growth in operating performance with performance to be more heavily weighted to the second half

Delivery of strategy underpinned by my three focus areas

Drive increasing business wide efficiency

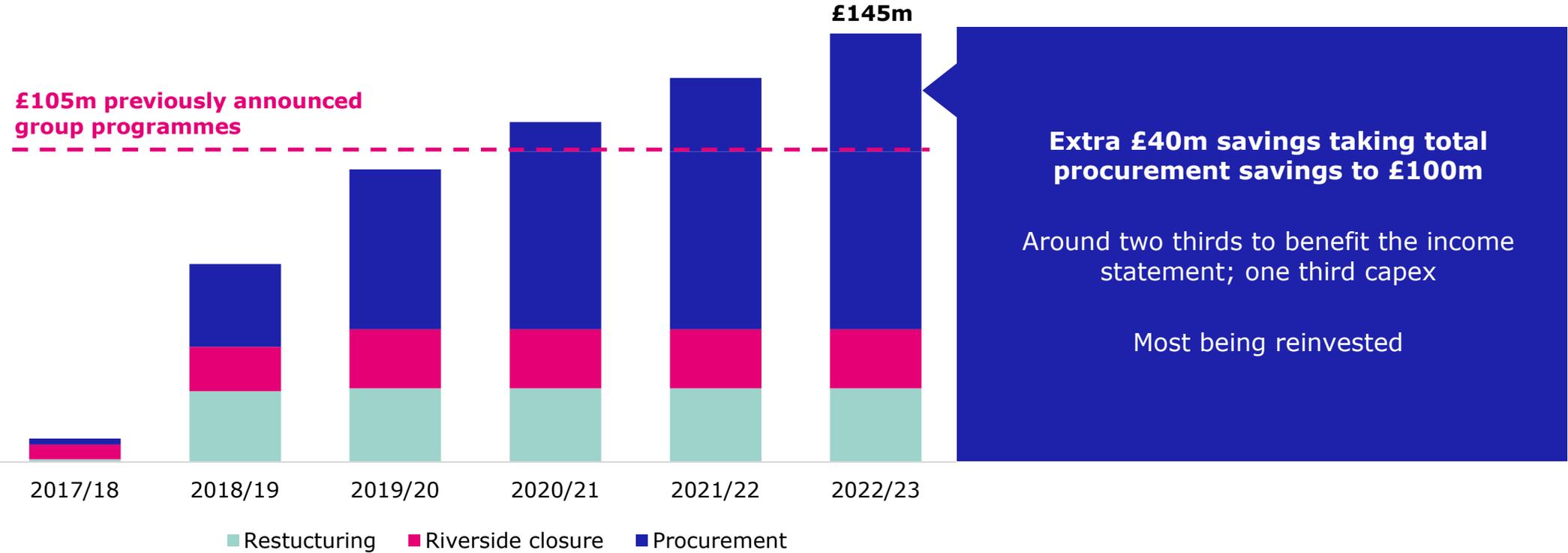
Disciplined management of working capital

Rigorous resource allocation

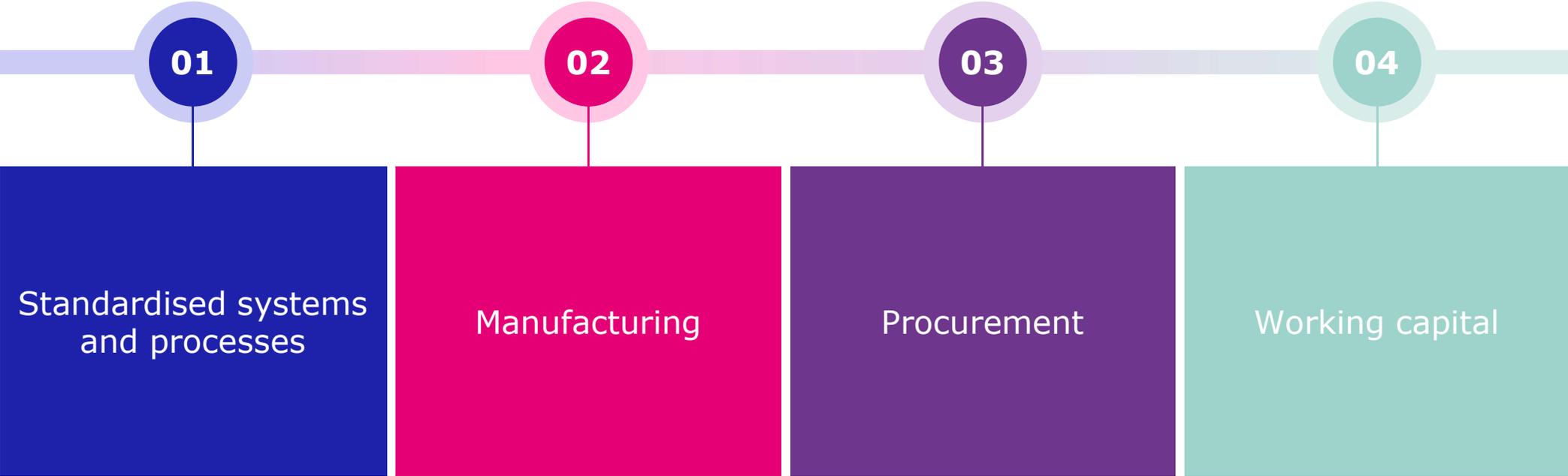


Building a more efficient business for the long term

Annualised benefits from group programmes (£m)



Building a better business for the long term



Disciplined management of working capital – non precious metal

High performance culture

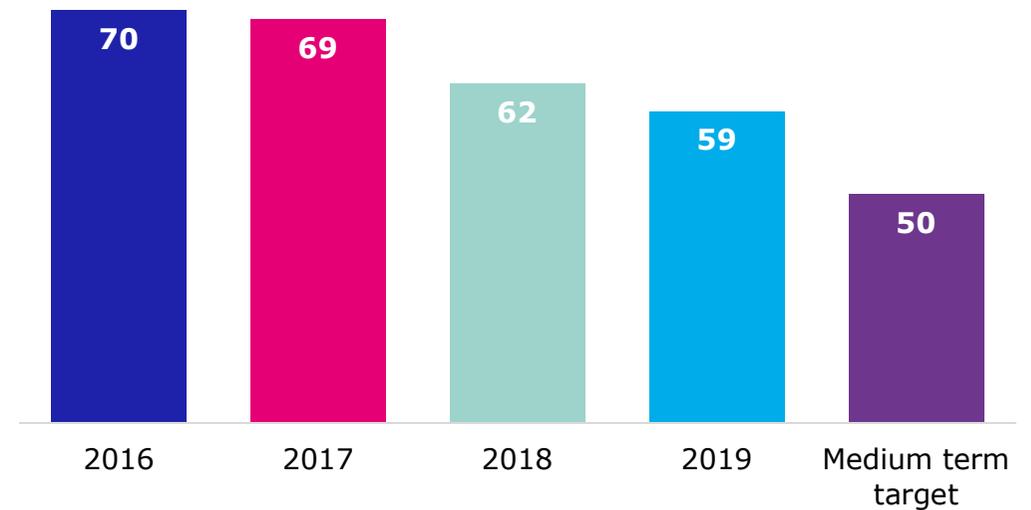
Procurement excellence

Manufacturing excellence

Commercial excellence

Enabled by single, global ERP system

Average working capital days excluding precious metals



- 11 day improvement in average working capital days since 2016, a total of £120m
- Continue to drive improvement in average working capital days to a medium term target of 50 days

Precious metal working capital to improve by c.£350m

Reducing refining backlogs

Progress on track

Complex process

Refineries sized to support Clean Air

Expect reduction in backlogs of
c.£250m from FY 2018/19

Investing to improve refineries

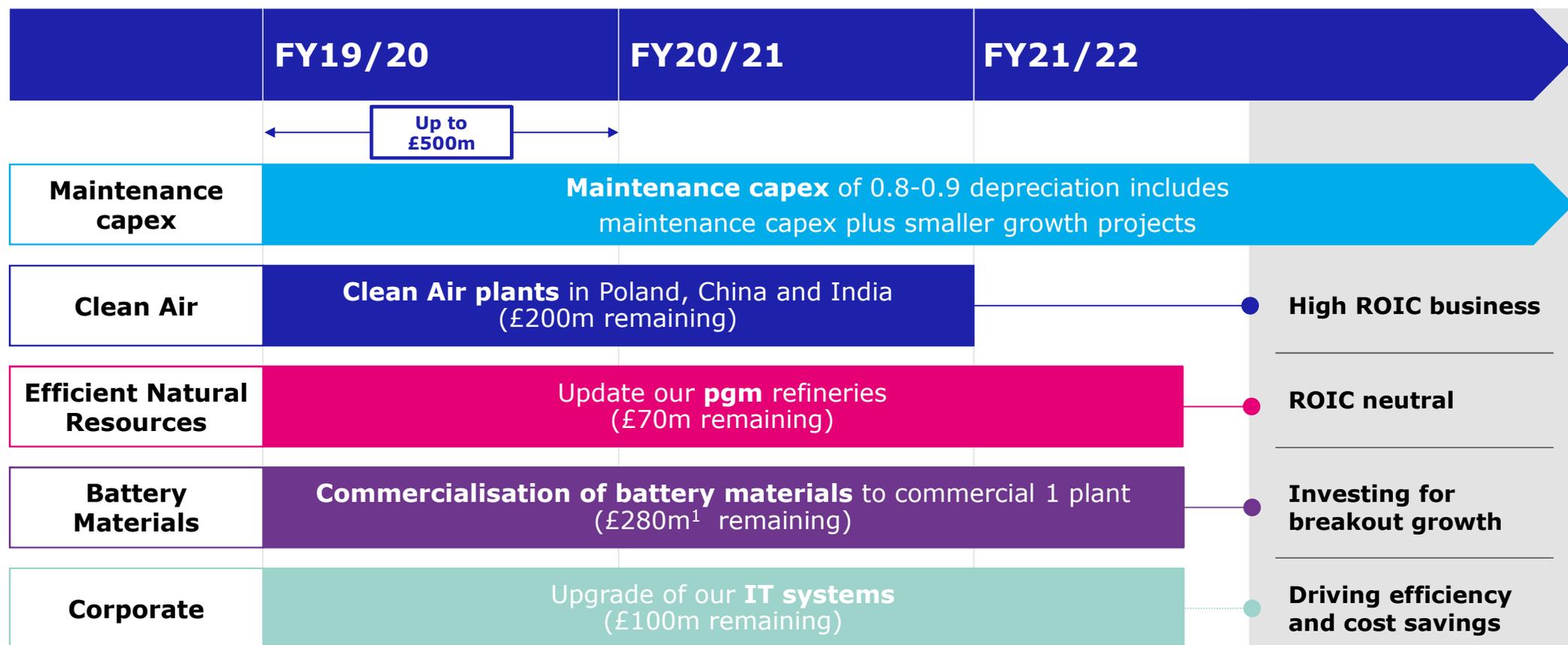
£100m investment over 3 years

Improving resilience and efficiency of refineries

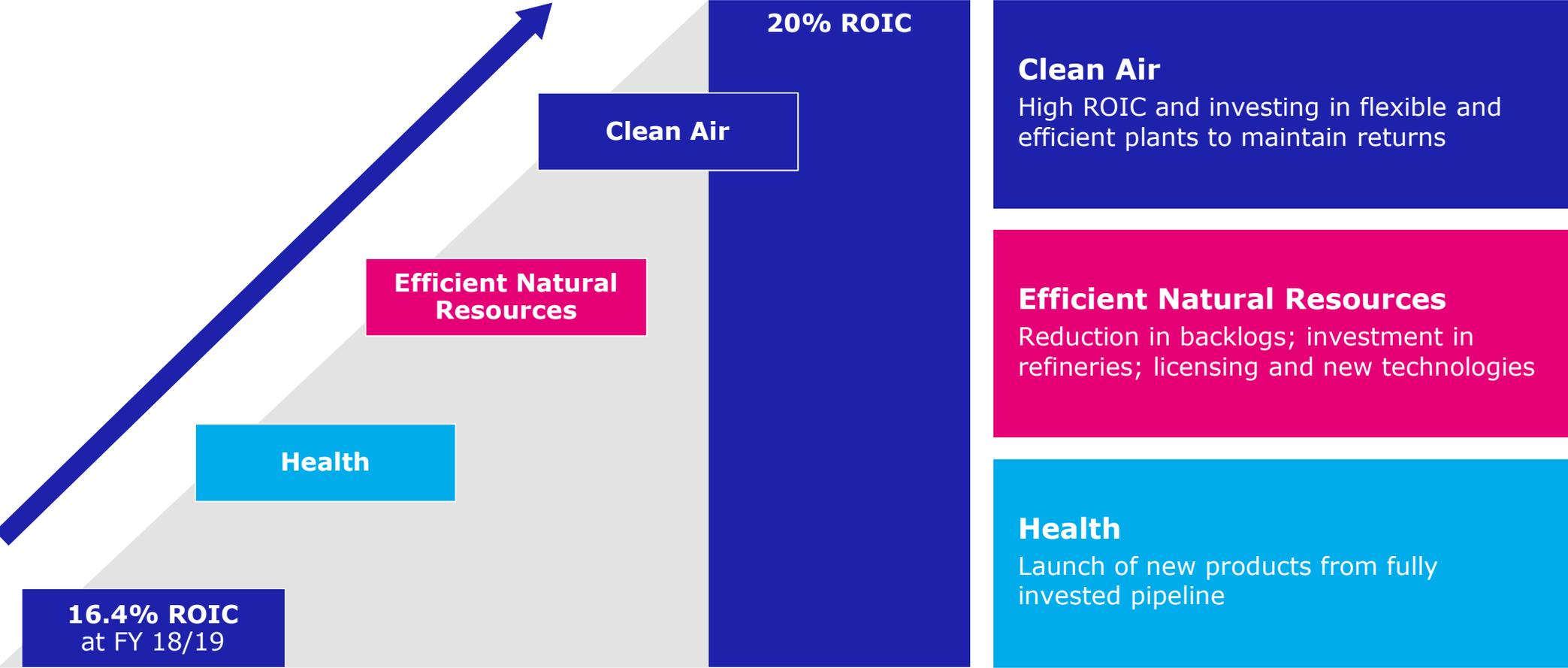
Neutral impact on ROIC

Delivering a further c.£100m improvement
in working capital from efficiencies

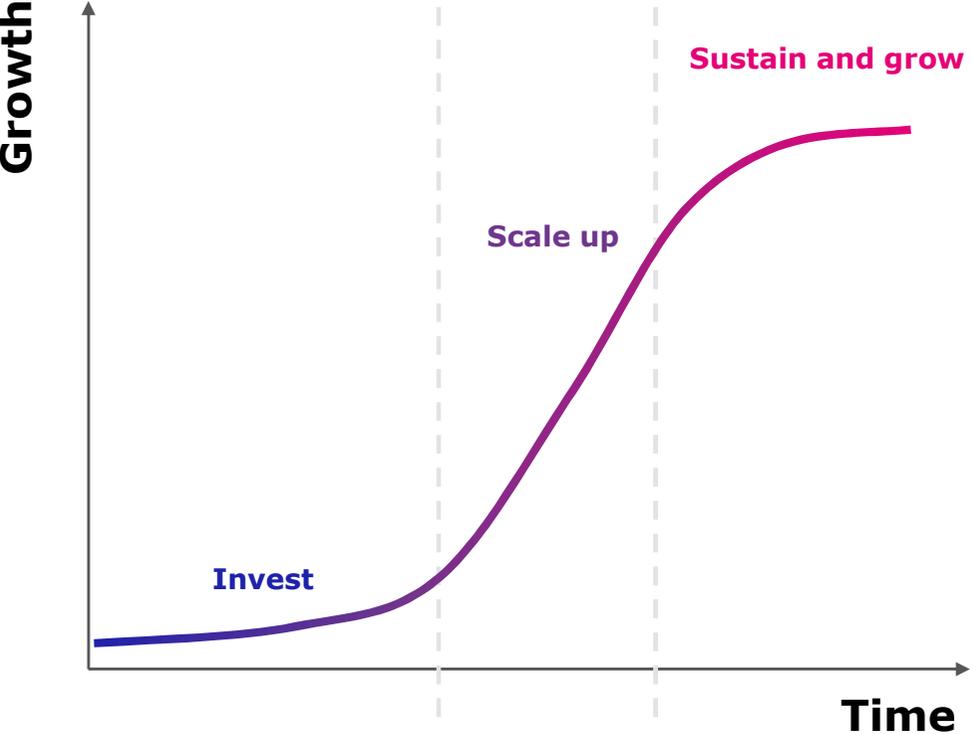
Investing for growth, efficiency and returns



Clear path to deliver 20% ROIC target



How we think about ROIC strategically



- Portfolio of businesses
- World class science
- Leading positions in our key markets
- Managing portfolio through lifecycles
- Allocate resources appropriately through lifecycles
- 20% ROIC businesses at scale

JM is a 20% ROIC business



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Clean Air: sustained growth for the next decade

John Walker – Sector Chief Executive, Clean Air



Clean Air leadership team

John Walker



John joined in 1984 and appointed Executive Director in 2013

35 years' experience and held a series of positions within the sector in the US, Asia and Europe

Successfully led the Clean Air Sector through many transitions, influencing the strategic direction and growing it into a significant global business

To retire and step down from the board on 31st March 2020

Joan Braca



Joan joins on 1 October 2019 as Sector Chief Executive, Clean Air

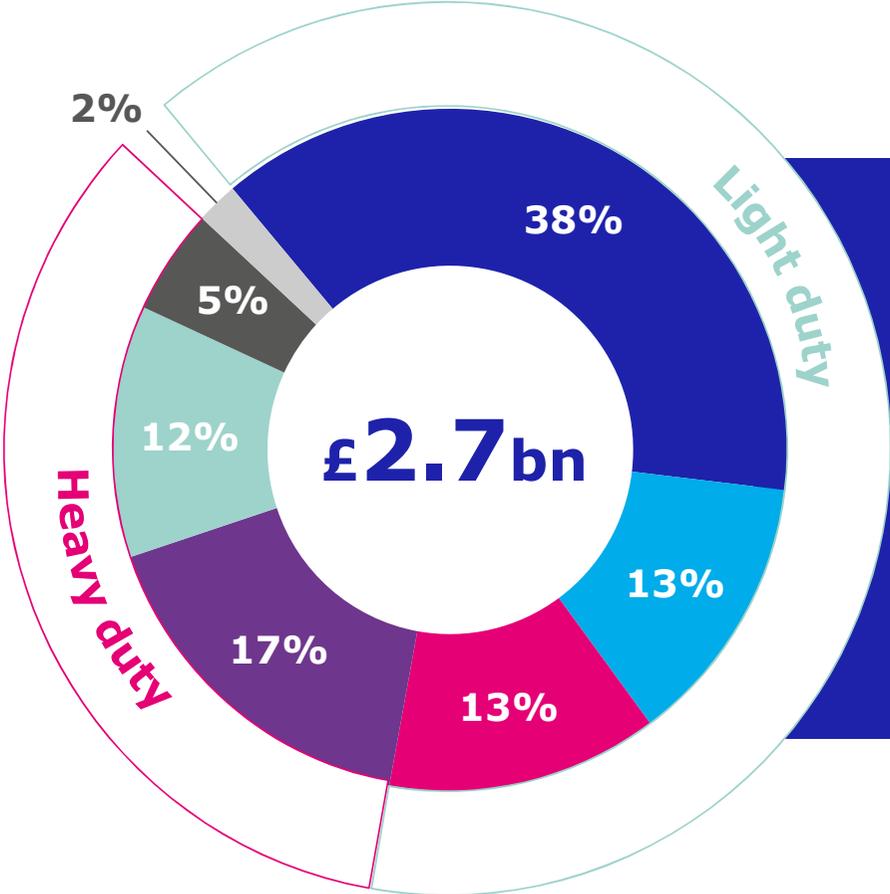
20 years' experience in speciality chemicals with Dow Chemical and Rohm & Haas Company

Significant experience in running complex businesses, driving growth in emerging markets and delivering efficiencies in mature markets

Most recently worked for Tate & Lyle

Clean Air: strongly positioned for sustained growth

Sales 2018/19 by sub-business



Leadership in catalysts to reduce emissions from vehicles

Growth driven by consumer desire for cleaner air and legislation

2018/19 ROIC of 30%



Note: 2018/19 sales excluding precious metals

Delivering on our expectations

Progress since 2017

Strong growth in European light duty achieved, driven by 20ppt share gain in diesel

On track with strategy in Asia and winning our share of China 6 business and in India winning BS 6

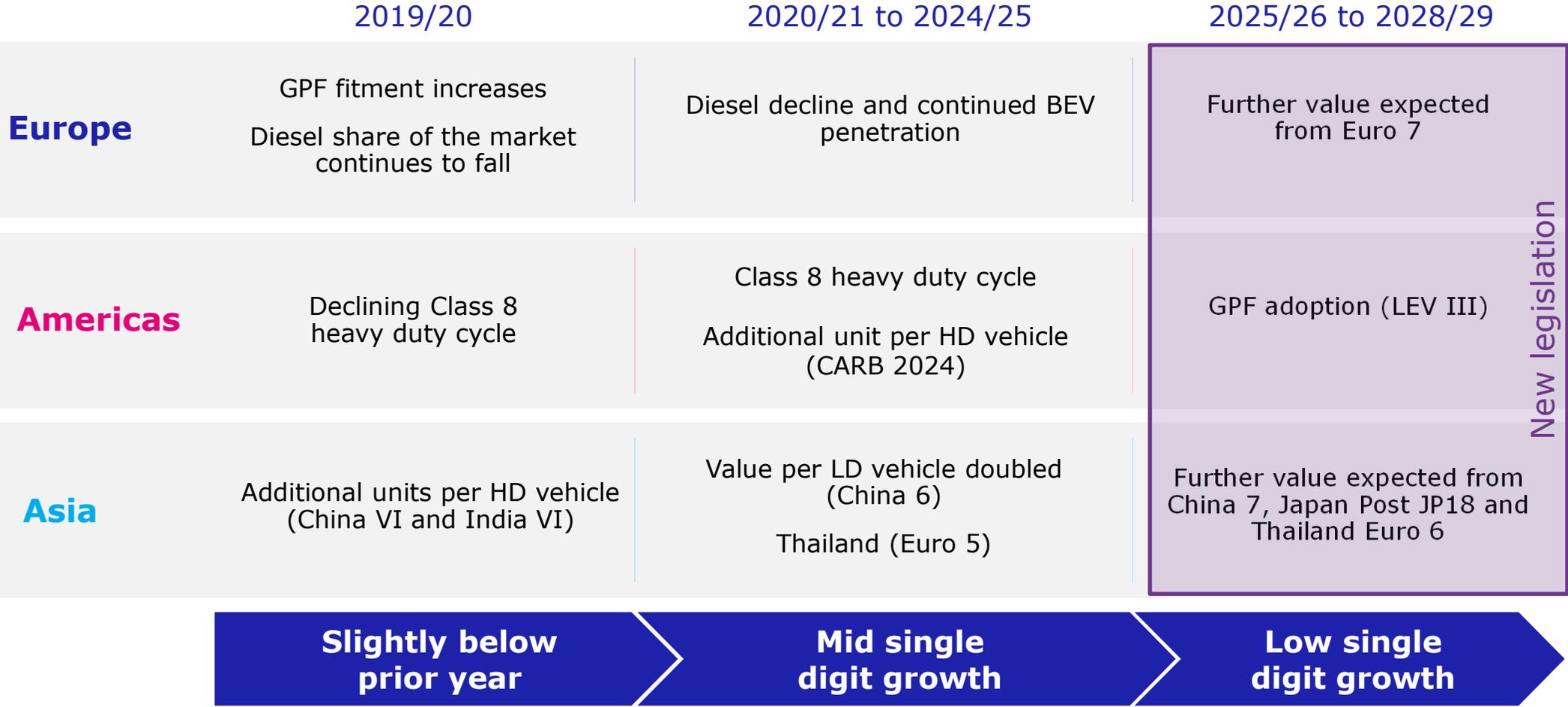
Class 8 up-cycle in North America successfully delivered without adding new manufacturing capacity

New plants in Poland, China and India commissioned in next 12 months

Margin around 14% and strong ROIC maintained

**Executing our
strategy**

Growth for the next decade driven mainly by legislation



Note: Growth 2018/19 to 2028/29 refers to operating performance. BEV: battery electric vehicle; GPF: gasoline particulate filter; CARB: California Air Resources Board; LEV: Low emission vehicle

Europe maintains size to 2025 despite light duty diesel decline

Light duty small decline

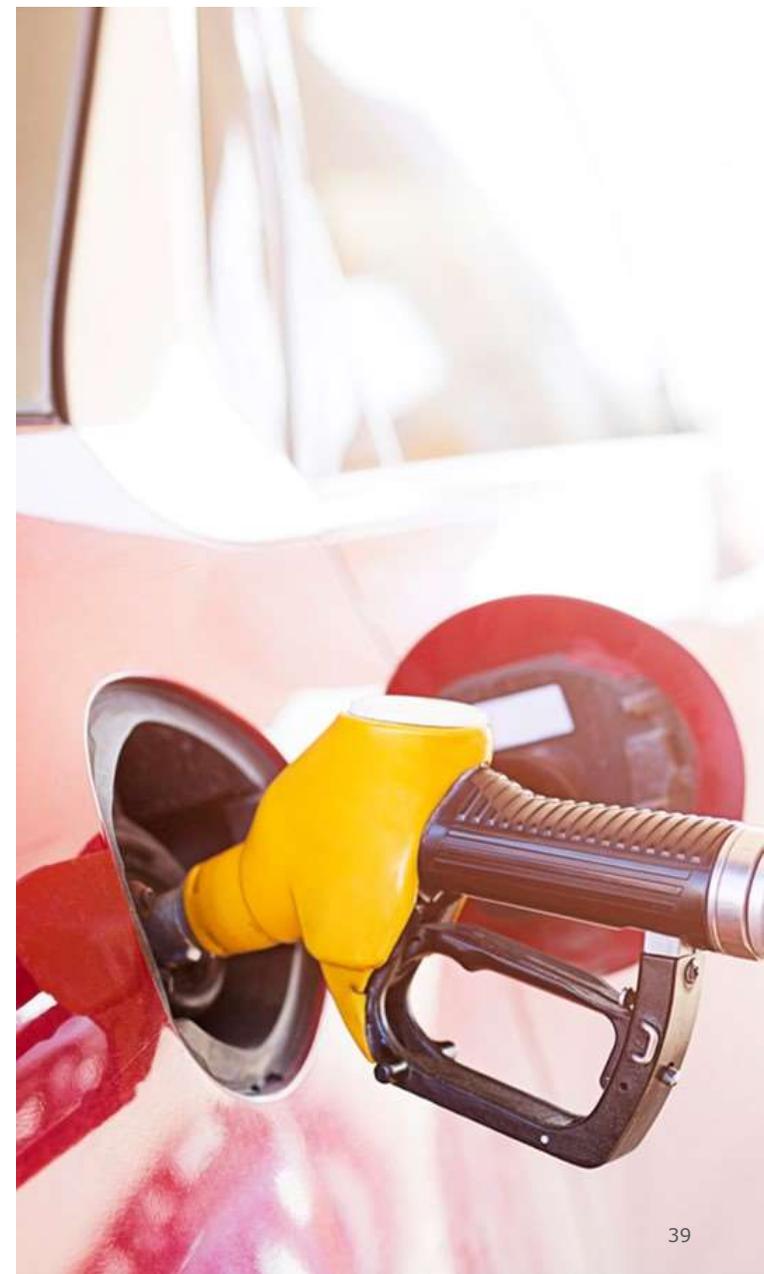
Share in light duty gasoline and diesel remain stable

Decline in light duty diesel share of the market

Increasing fitment of gasoline particulate filters

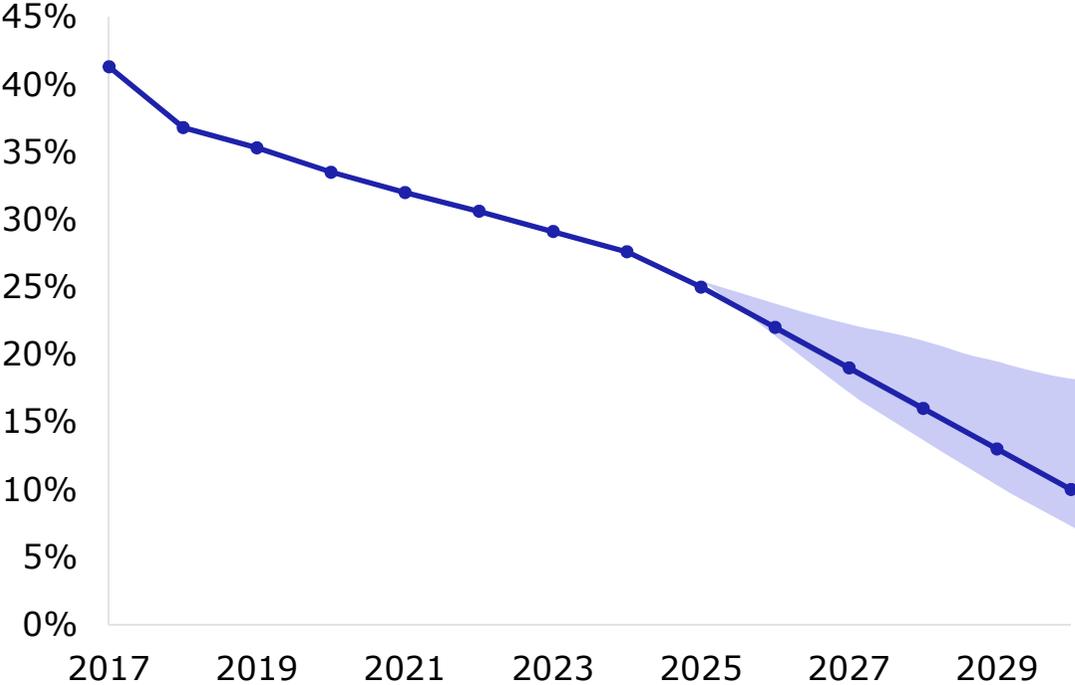
Heavy duty to grow

European heavy duty will grow steadily with GDP



Western Europe light duty diesel share

Western Europe light duty fuel mix
% Vehicles sold (diesel and diesel hybrid)



Diesel share of light duty Western Europe assumed to decline to 25% by 2025¹ and 10% by 2030

1ppt shift from diesel to gasoline impacts gross profit by c.£4m

1. Equivalent to c.20% of light duty passenger car sales

Europe: key assumptions

Key assumptions

Vehicle production

- <1% light duty vehicle production growth

Diesel share of market

- Diesel share of light duty vehicles in Western Europe declines to c.25% by 2025¹

Value uplift

- Up to 2x value per light duty gasoline vehicle
- Up to 1.5x value per light duty diesel vehicle
- Hybrid neutral

BEV penetration

- 9% by 2025

JM market share

- Maintain share in light duty diesel and gasoline vehicles to 2025

Americas: driven by GDP growth in absence of legislation changes

**Overall growth in Americas in line with
GDP to 2025**

Without major legislation changes, no significant
movement in key value drivers



Americas: key assumptions

Key assumptions

Vehicle production

- <1% light duty vehicle production growth

Value uplift

- Up to 1.2x value uplift per heavy duty vehicle (CARB 2024)
- Small value uplift across light duty vehicles from 2025/26 (LEV III)

BEV penetration

- 3% by 2025

JM market share

- Stable market share in light duty gasoline, light duty diesel and heavy duty diesel in 2025

Asia to more than double in size by 2025

Heavy duty

Tripling of value per vehicle in China and India

- China VIa nationwide from 2021 and China VIb from 2023
- India BSVI from 2020

Light duty

Doubling of value in China and India

- China VIa nationwide from 2021 and China VIb from 2023
- India BSVI from 2020



Asia: key assumptions

Key assumptions

Vehicle production

- <3% light duty vehicle production growth

Value uplift

- Up to 2x value per light duty vehicle (China 6)
- Up to 3x value per heavy duty vehicle (China VI and India 6)

BEV penetration

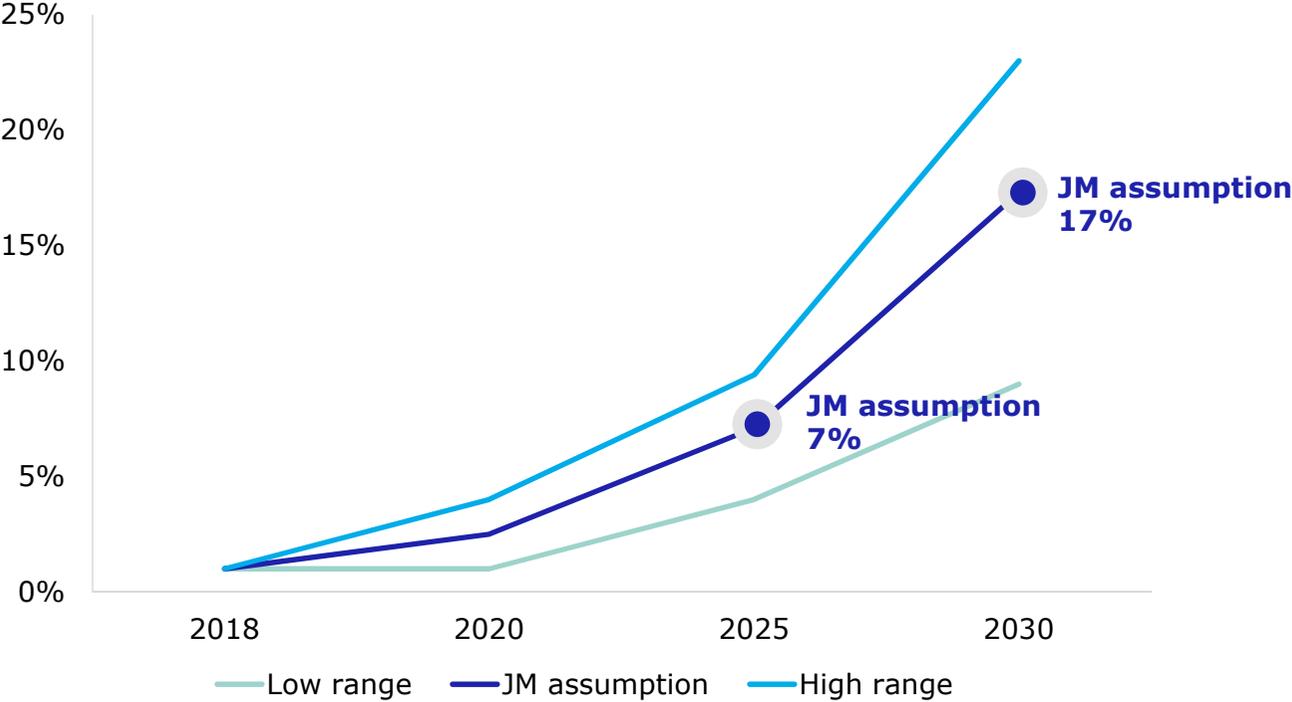
- 13% by 2025

JM market share

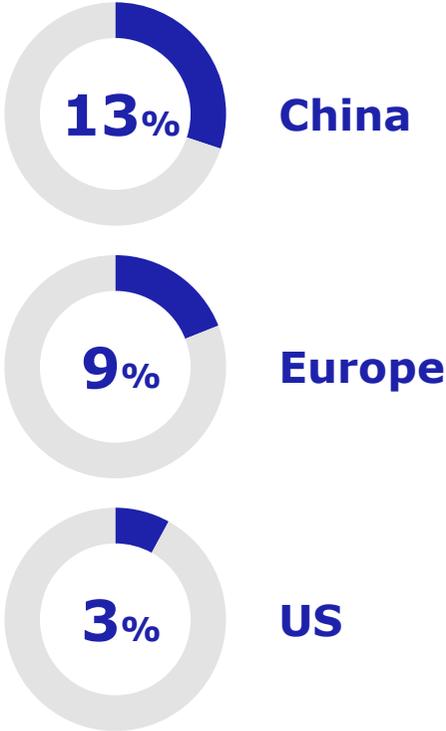
- Slight share gains in both light and heavy duty in China by 2025

Global BEV penetration is accelerating

Expected global BEV penetration (%)



JM assumes 7% global BEV penetration by 2025:



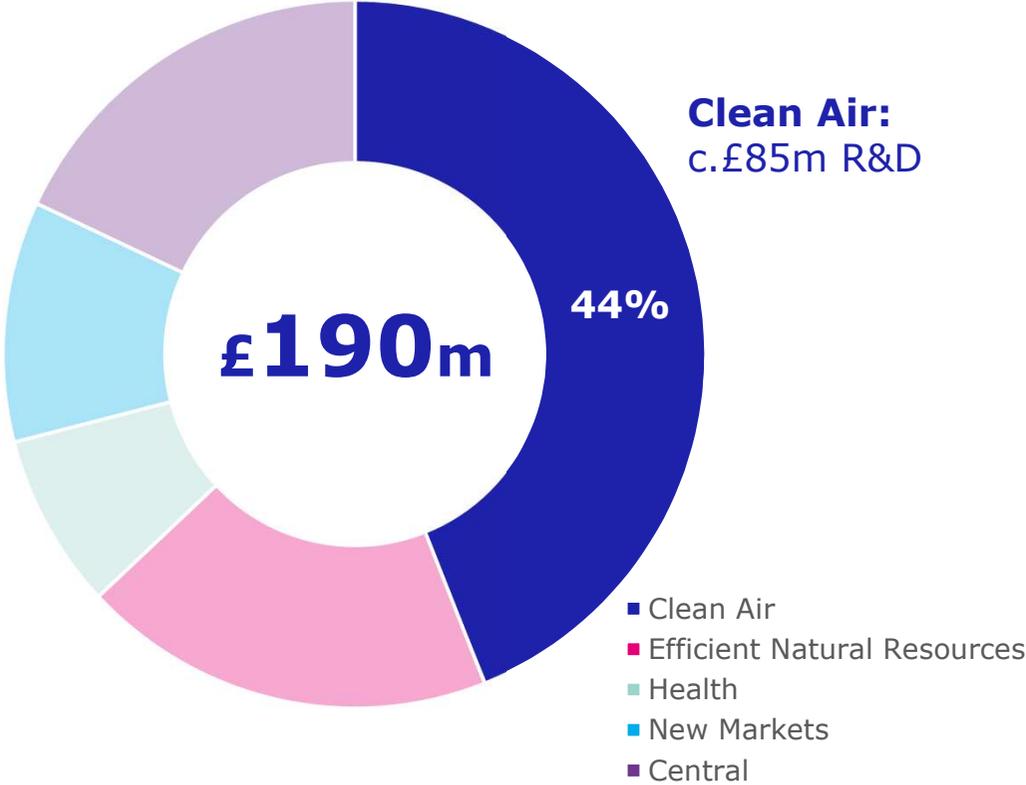
Source: Various external industry sources and internal estimates. Pie charts not to scale.

Customer focused and positioned for success



Investing in science to drive leadership

Research and development (£m)



Growth driven by legislation

Technology driven leadership

Leading diesel technology driving share gains

Positioning in gasoline for leadership

Global, efficient and flexible manufacturing to maximise returns



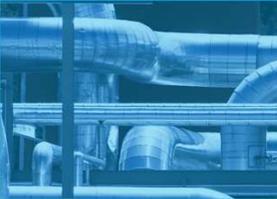
Global, efficient footprint

3 new world class plants in Poland, China and India



Fully flexible manufacturing

Identical customer experiences
Standard plant operating model



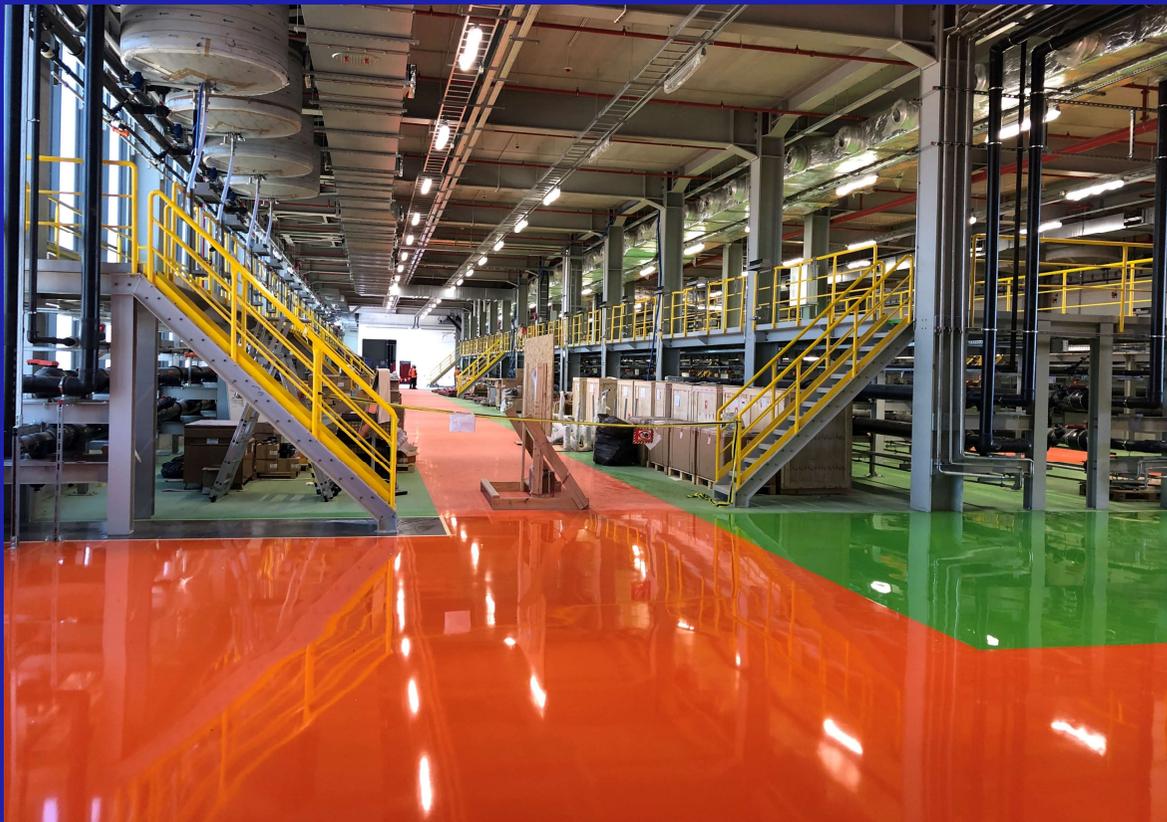
Standardised manufacturing processes

Optimise production between locations
Increasing capacity in existing plants

Right sized, global and efficient footprint

Clean Air Poland: a world class manufacturing facility

Poland plant



Automated end to end process

Successful customer audit

Flexible, efficient manufacturing

Commissioning underway

Procurement integral to the strategy



Integral part of strategic decision making

Involvement in new product introduction
Better solutions for the customer



Strategic partnering with vendors

Delivers better service and quality to customers



Creating agility in the organisation

Capacity to invest or improve margin
Ability to deal with unforeseen events

Consistent value creation from a global leader

**Asia more than
doubles in size**

**Europe maintains
size to 2025
despite diesel
decline**

**Americas driven
by GDP growth**

**Margins
maintained
through focus
on efficiency**

Flexible and agile business positioned for the future

Mid single digit growth in operating performance to 2025



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Battery Materials: breakout growth

Robert MacLeod
Chief Executive

Battery Materials leadership

Christian Günther,
Chief Executive, Battery Materials

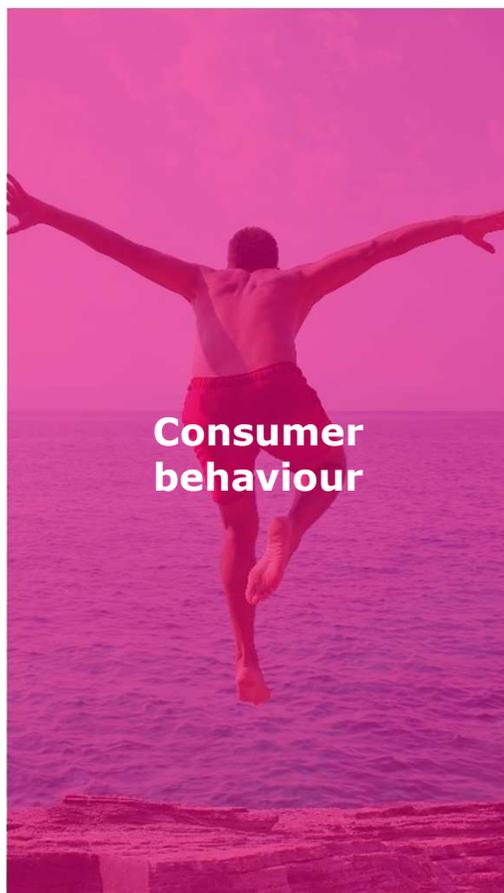


Christian joins on 4th November as Sector Chief Executive,
Battery Materials

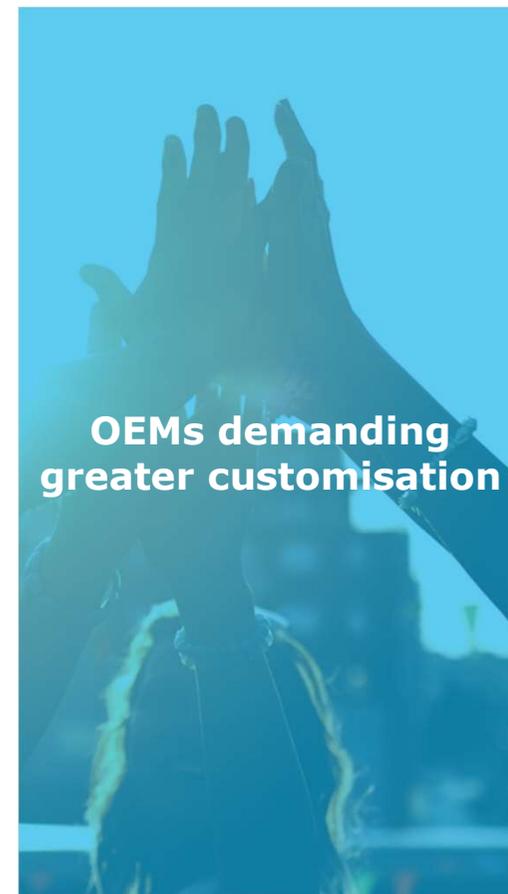
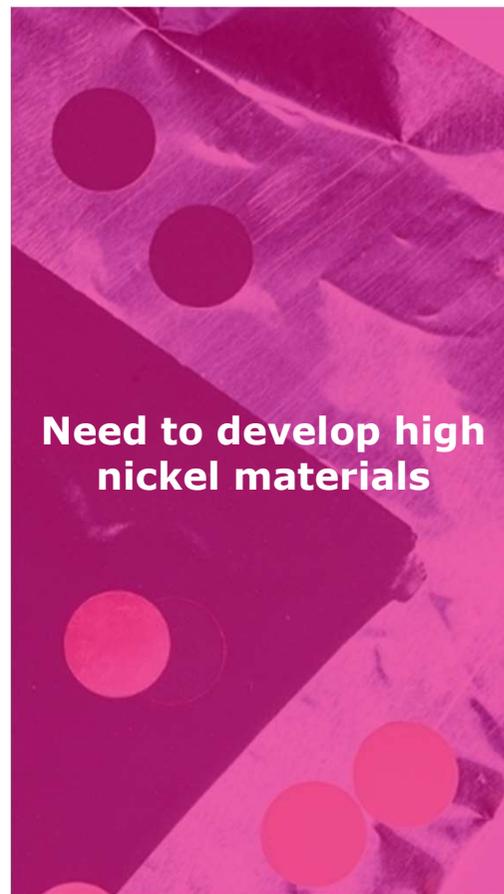
Strong background in science and successful track
record in the development and leadership of large,
global technology businesses

Most recently worked for Tasnee, a Saudi Arabian company
with a wide range of activities in chemicals, petrochemicals,
plastics, battery manufacturing and environmental technologies

The external environment continues to drive towards electrification



Solving our customers' complex problems



Cathode materials: complexity gives opportunity to capture value...

Technology is a key differentiator

Customised solutions

Reliability of supply chain

Long lead time to qualification

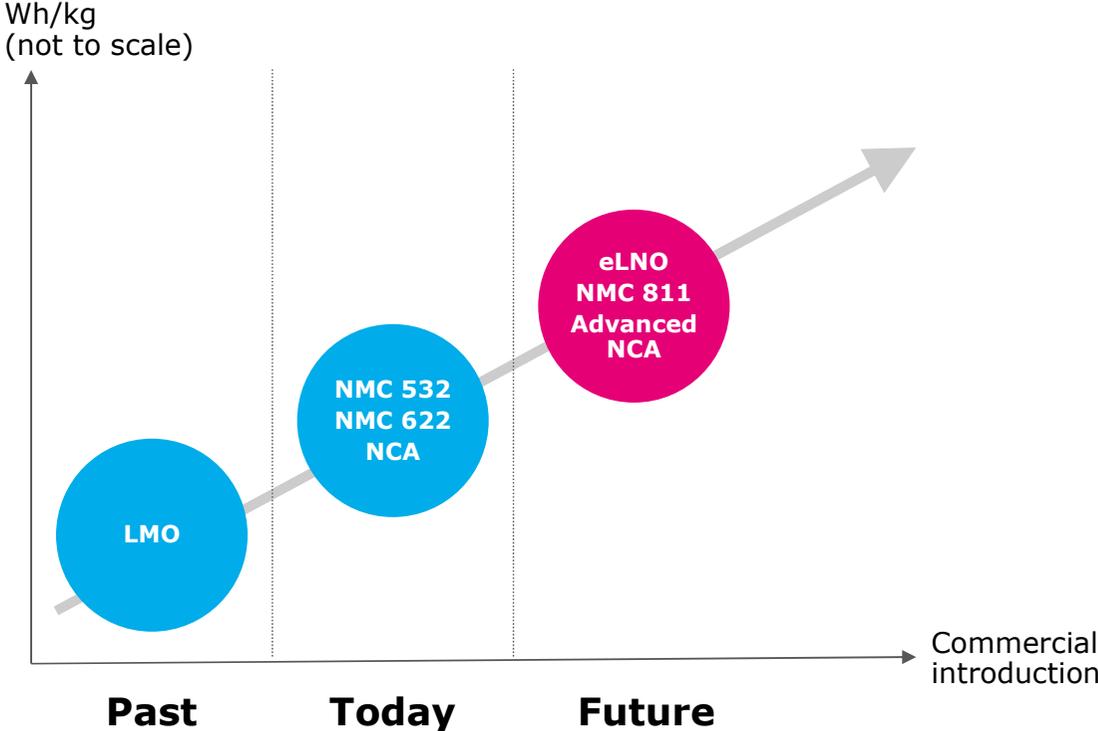
...which plays to
our strengths

eLNO: a next generation material to enable long range, pure BEV

eLNO, our portfolio of next generation, leading, ultra high energy density cathode material

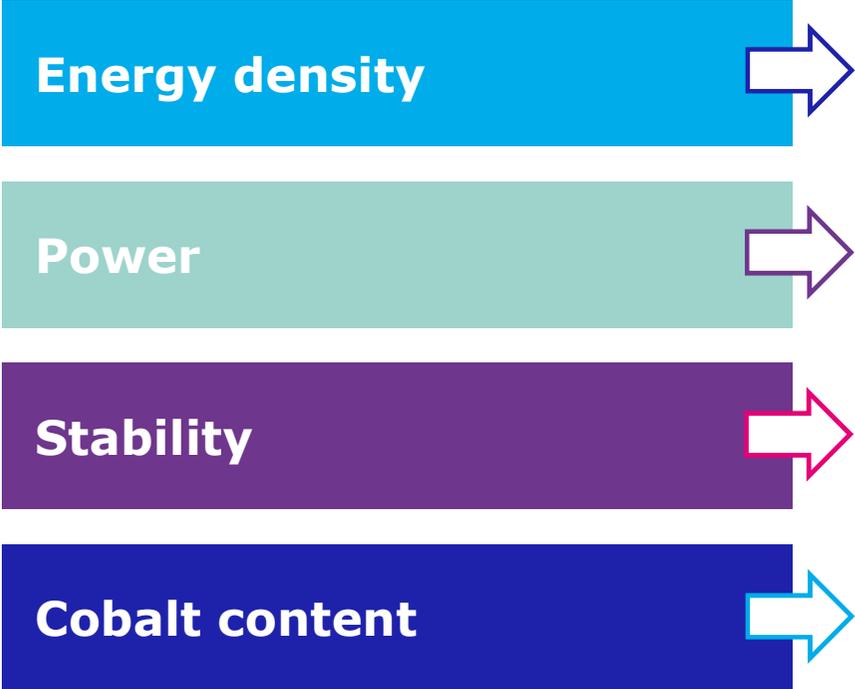
Expected ultra high energy density market by 2030:
500kt to 1,800kt
(total market of 1,700kt to 2,700kt)

Energy density and commercial introduction



eLNO can solve many of the current challenges for BEV penetration

Properties OEMs optimise on



eLNO is structurally more customisable than other materials, enabling customers to deliver leading performance

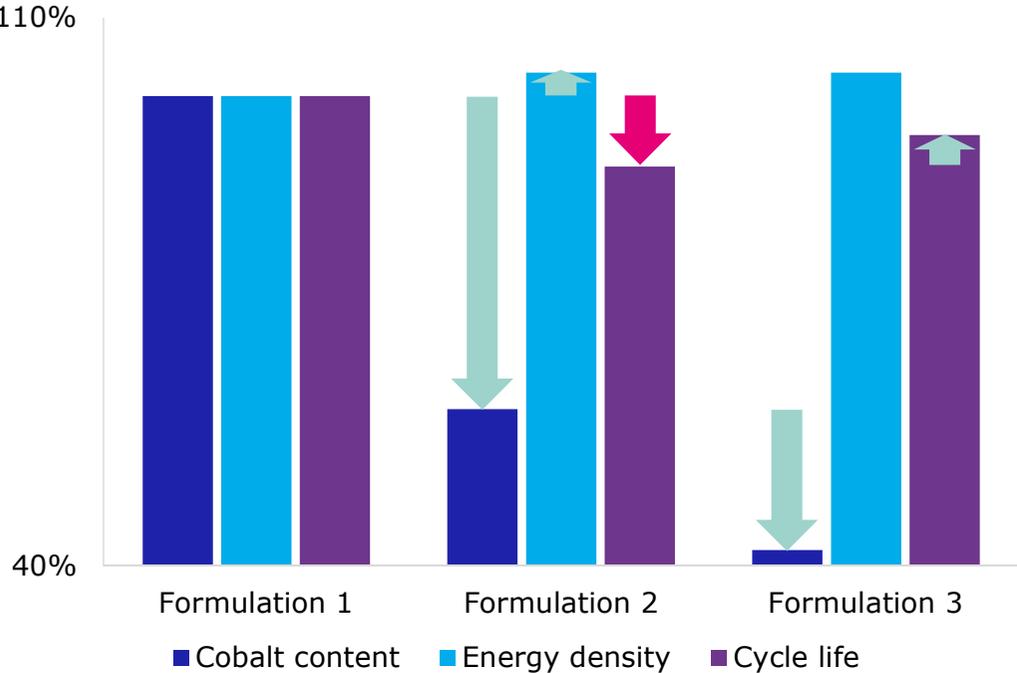
eLNO enables



A portfolio of eLNO materials

Customisation is key to capturing value

Tailoring eLNO to meet customer requirements



Technology expertise enables rapid development and customisation

Committed to customisation with positive customer feedback:

*"JM is a **preferred** cathode material company to work with due to fast response, **willingness to customise** the product [and] investing in science"*

No single material meets the needs of all customers

World class application and testing facilities

Enabling customised development

- Building **best in class** application and testing facilities
- Enables development of **tailored solutions**
- Supports **new process** and **material development**
- Capability to fabricate and test **large format cells**

Designed with customers to their specifications

JM



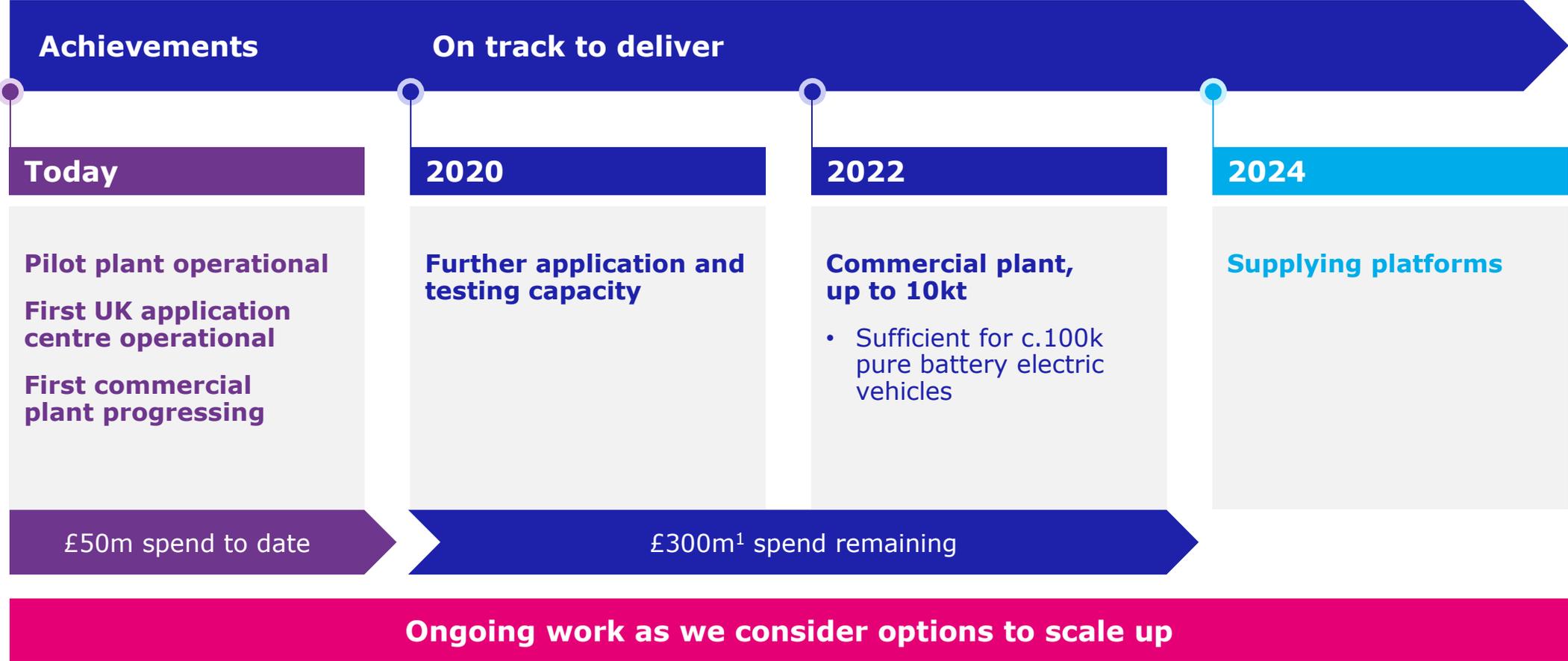
Breakout growth: making significant progress

Progress

- Positive customer feedback and progressed to **full cell testing** with two parties
- Investing for **commercialisation**
 - Pilot plant operational
 - FEED work well advanced on first commercial plant
- Progress on sourcing key **raw materials**
- Evaluating best **options for scale up**



Commercialisation: bringing a viable product to market



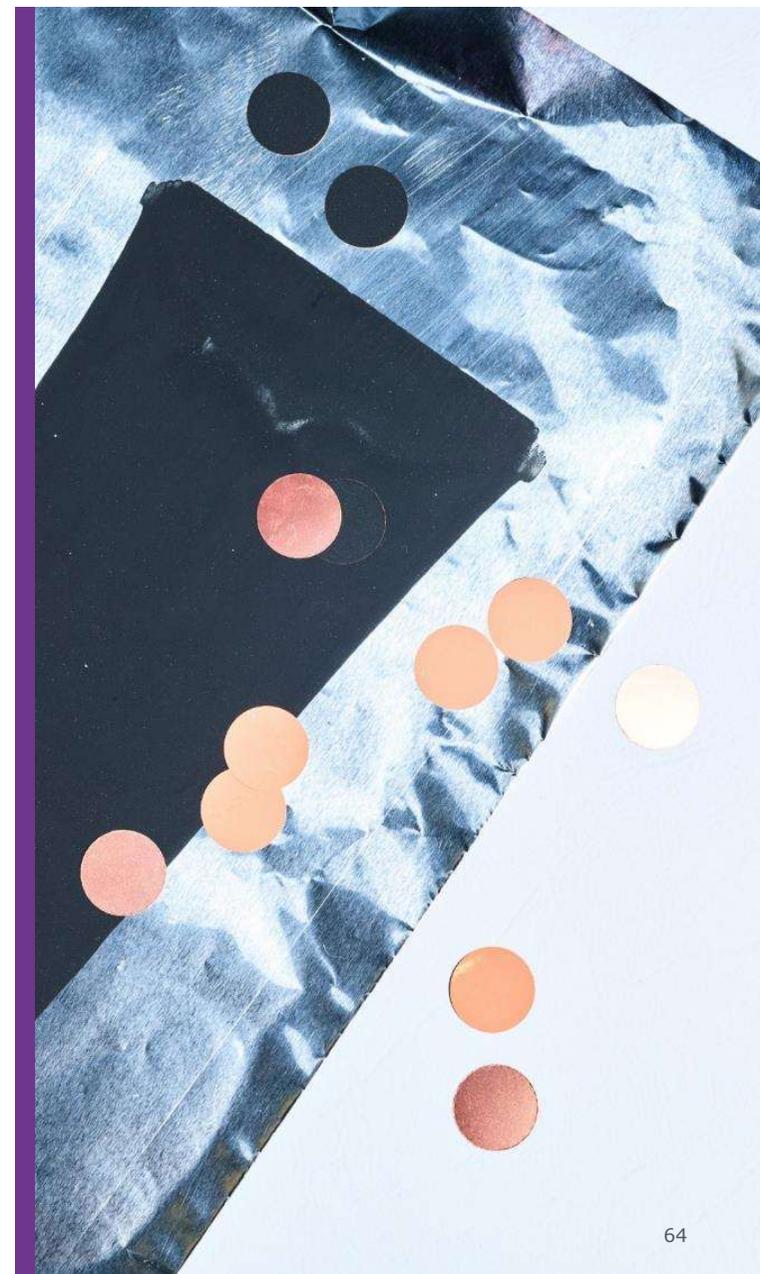
Building a scalable business

Scale up beyond our first commercial plant likely to be **phased**

Matching capacity to market demand

Enables the use of the most **modern process technology** to improve returns profile

Resources to be allocated in a **disciplined manner** and in line with our capital allocation framework



Conclusion

**Maintained
technology
leadership**

**Customer testing
and customisation
continues**

**Commercialisation
progressing as
planned**

**Progressing scale
up plans**

Well positioned for breakout growth



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Efficient Natural Resources

Jane Toogood
Sector Chief Executive, Efficient Natural Resources

Efficient Natural Resources leadership

Jane Toogood,
Sector Chief Executive



Joined in February 2016 as Divisional Director, Precious Metal Products

Sector Chief Executive, Efficient Natural Resources from April 2017

Efficient Natural Resources formed from Process Technologies and Precious Metal Products businesses combined

30 years of experience in the chemicals industry, covering multiple industry sectors

Non-Executive Director of Victrex Plc

Upgrading our guidance

Took over a declining business

Stabilised and delivering on strategy

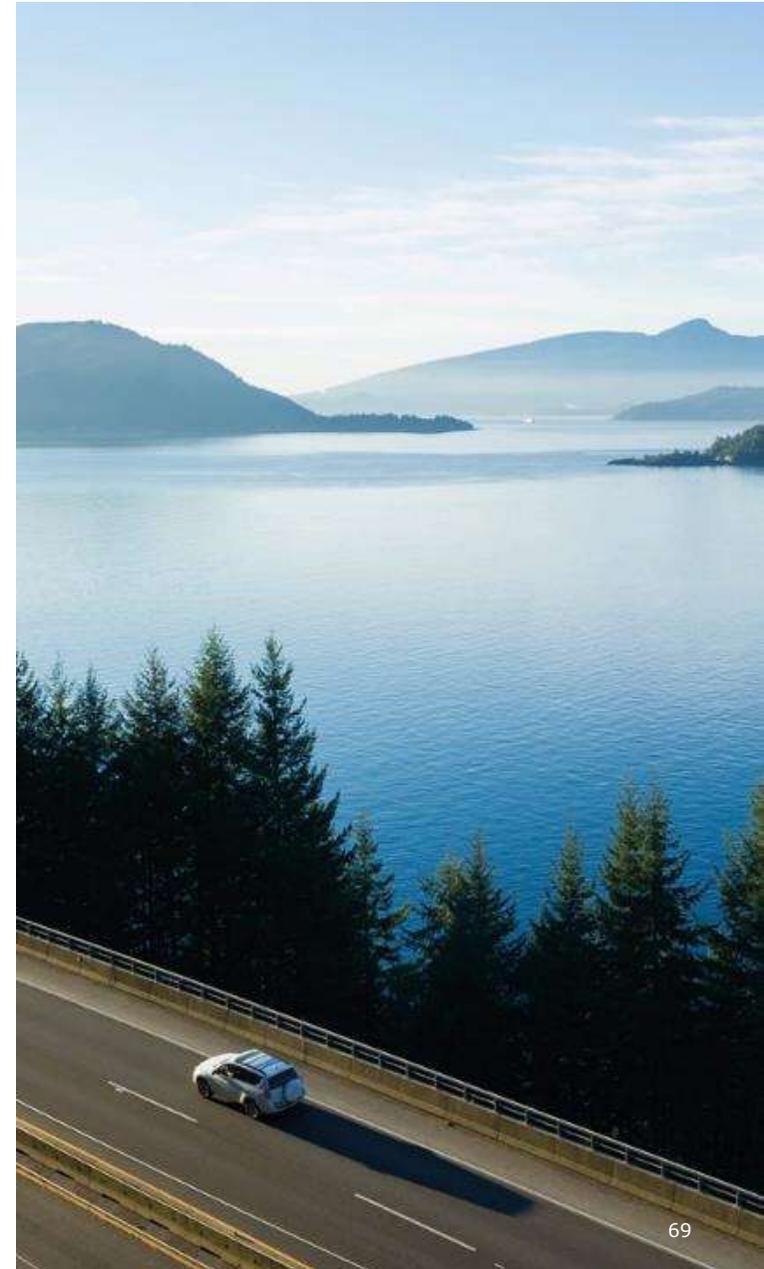
Our technologies accelerate growth

Future growth driven by megatrends

**Confident in
mid to high single
digit growth in
operating
performance
to 2025**

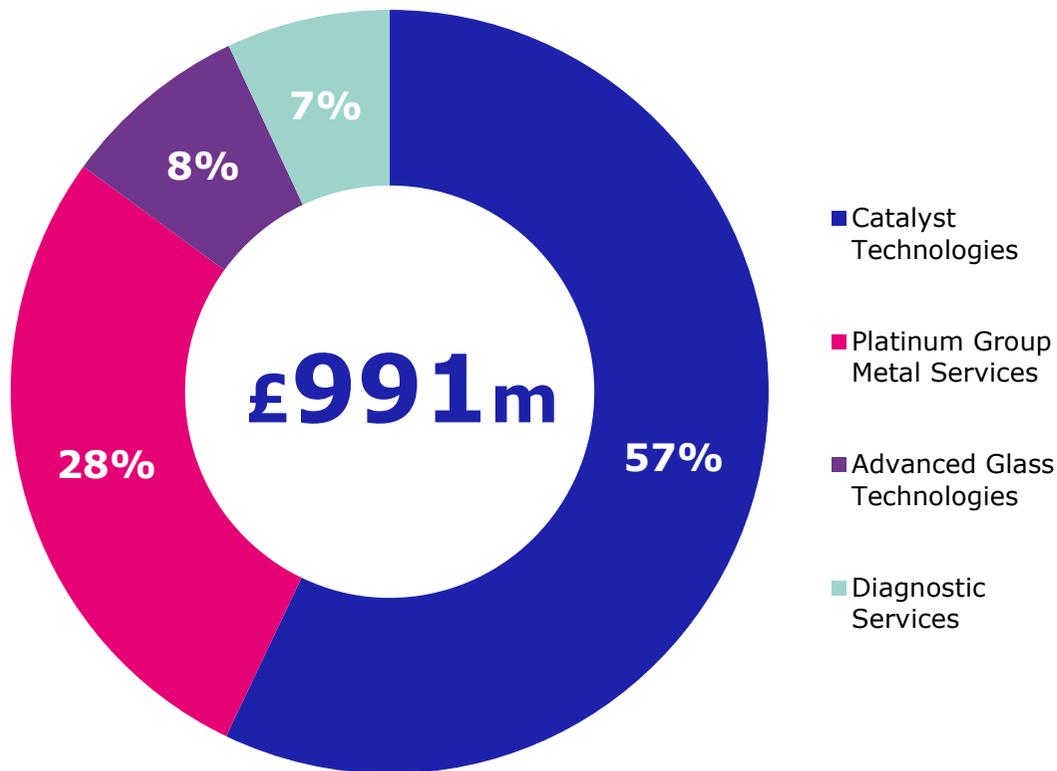
We create value from the efficient transformation and use of natural resources:

- Demand and consumer concern for the **planet** is increasing
- Efficient Natural Resources allows our customers to use those resources both **efficiently** and **cleanly**
- Using our **core chemistry** and technology expertise to solve **complex** problems through close **collaboration** with customers



Efficient Natural Resources

Sales 2018/19 by sub-business



Note: Sales excluding precious metals

Catalyst Technologies

Chemical and refinery catalysts and process technology

Platinum Group Metal Services

Strategic service to the group and the world's leading secondary refiner of pgms; precious metal products and business solutions

Advanced Glass Technologies

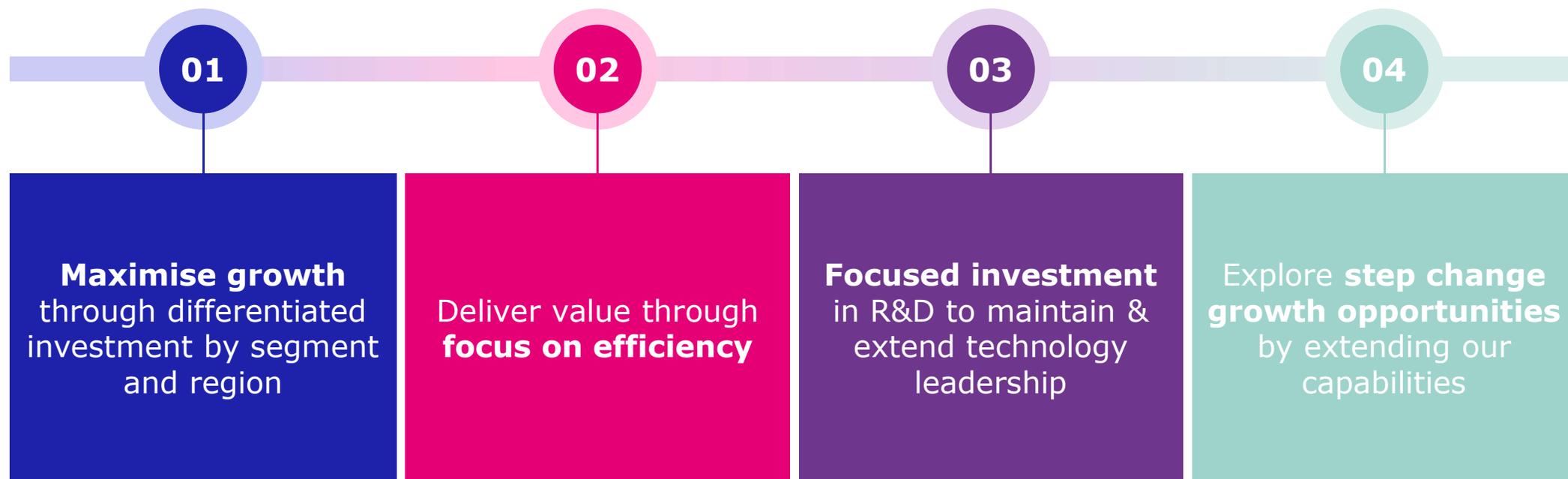
Advanced glass materials and conductive inks for use in auto glass and other industries

Diagnostic Services

Specialised detection, diagnostic and measurement solutions for use in the petroleum industry

2018/19 ROIC of 12.6%

Our strategy to deliver sustained market outperformance



Mid to high single digit growth in operating performance to 2025

Significant strategic progress

Focus	Delivered
Creating a robust and sustainable business	Stabilised performance with operating profit 2 year CAGR of 5%
Focus on efficiencies	Restructuring programme completed Product portfolio rationalisation Investing into refineries
Using existing technologies and investing in new technologies	Developed and commercialised new license technologies <ul style="list-style-type: none">• Mono ethylene glycol• Waste to aviation fuel



An agile
and efficient
business well
positioned
for growth

Drivers of near term growth – continuing to evolve our existing strengths



Examples

Formaldehyde
Cleaner, more efficient process
JM has leading technology

Additives
Debottlenecking has increased capacity

Licensing
will drive steady value as plants are built

Technology leadership positions	
Methanol	#1
Hydrogen	#1
Gas processing	#1
Formaldehyde	#1
FCC additives	#1
PGM Services	#1

We evolve in line with customers needs and create value through efficiencies
Driving growth

Extending our technologies to accelerate near term growth

Mono ethylene glycol (MEG) technology

MEG is a key industrial chemical

- Used in production of polyesters and fibre applications
- Our technology allows MEG to be produced from coal, natural gas or biomass
- Customers able to maximise feedstock conversion and reduce utility consumption

Fischer Tropsch (FT cans) technology

Waste to aviation fuel

- License FT cans technology to Fulcrum BioEnergy Inc
- First commercial scale plant to begin production 2020
- 175,000 tonnes of waste into 11 million gallons of fuel each year

Extending our technologies into new applications and markets to accelerate growth in the medium term

Opportunities for our science in the future

Driven by megatrends

Building on existing expertise



Hydrogen

Climate change
Energy transition

Advanced technology in
gas heated reforming



**Battery materials
recycling**

Climate change
Energy transition

Pgm recycling

Conclusion

**Delivering
our strategy**

**Accelerating
growth**

**Opportunities for our
science today and in
the future**

Mid to high single digit growth in operating performance to 2025



Johnson Matthey
Inspiring science, enhancing life

Health: delivering breakout growth

Jason Apter
Chief Executive, Health



Health leadership



Jason Apter,
Sector Chief Executive

Joined JM in March 2018 as Sector Chief Executive

Over 20 years' experience working across a variety of industry segments, including 9 years in life sciences

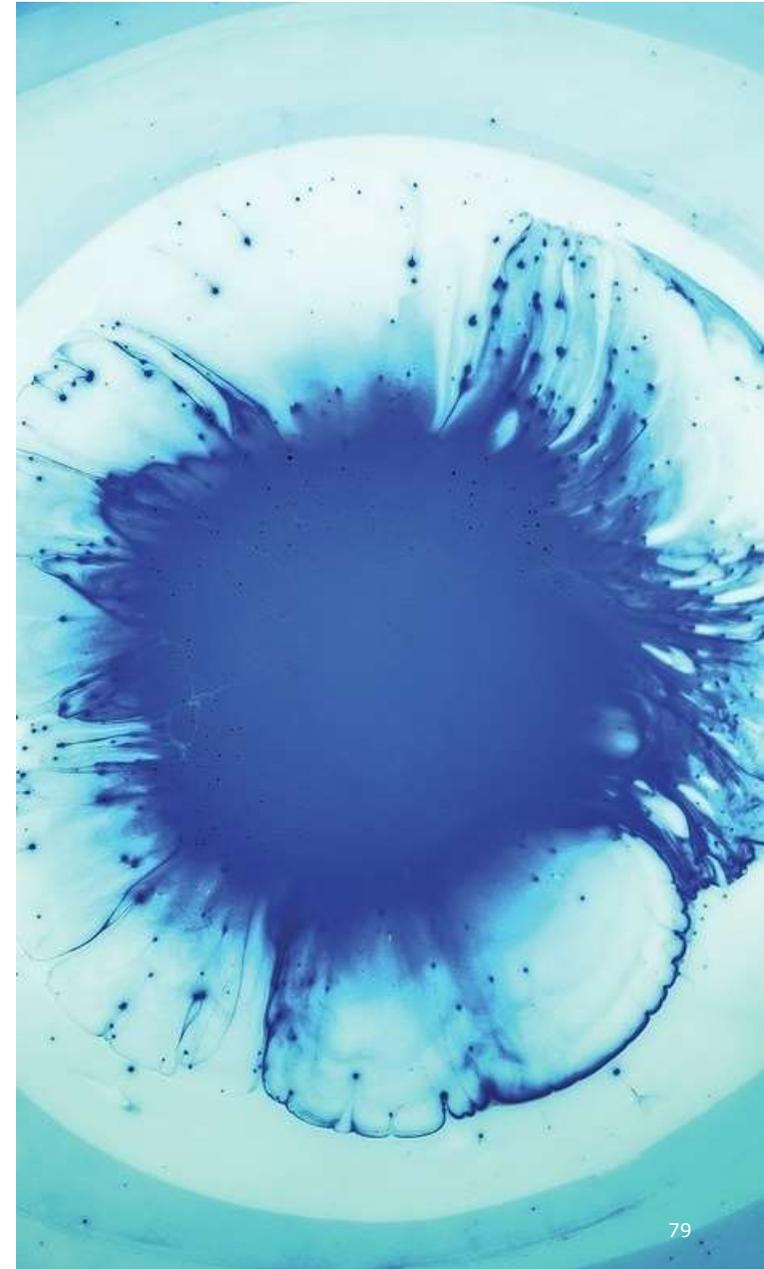
Extensive experience in driving innovation, growth and operational effectiveness

Applying science and innovation to provide solutions to our customers

● **Population and longevity** driving increased demand for more effective and affordable treatments

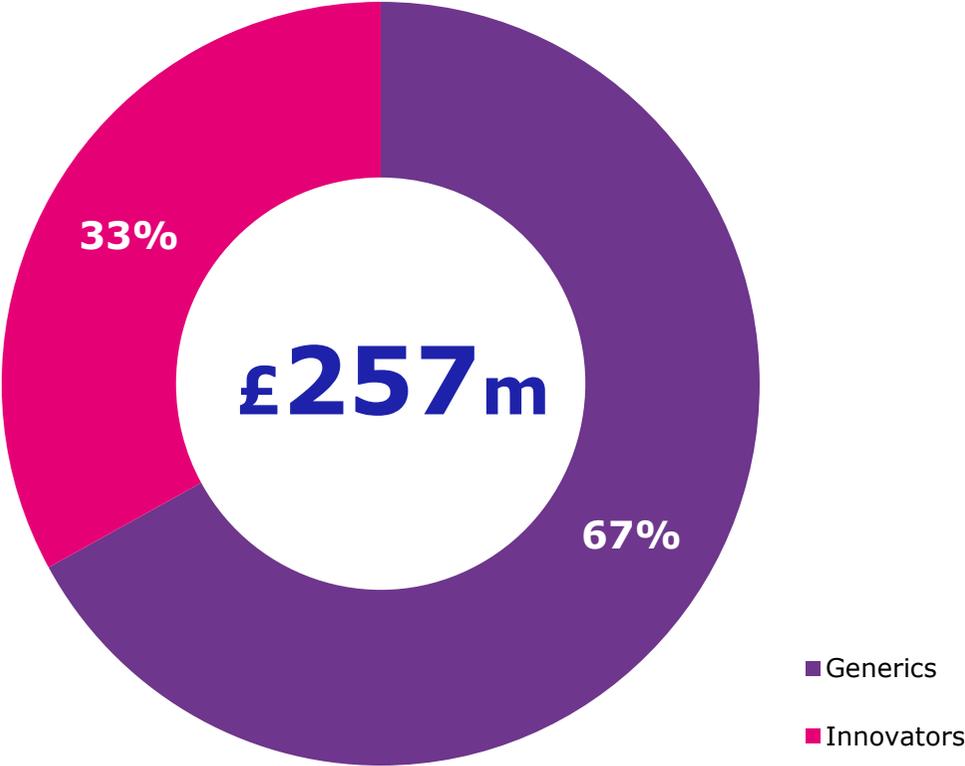
● Advances in novel drugs driving growth in **highly potent** drug substances and **more complex** small molecule solutions

● Continued pressure on more affordable healthcare solutions driving demand for **generic versions of existing drugs**



Our business at a glance

Sales 2018/19 by sub-business



Note: 2018/19 sales excluding precious metals

Generic
Controlled substances (84%)
Non controlled substances (16%)

Innovators
Clinical development (24%)
Commercial API (76%)

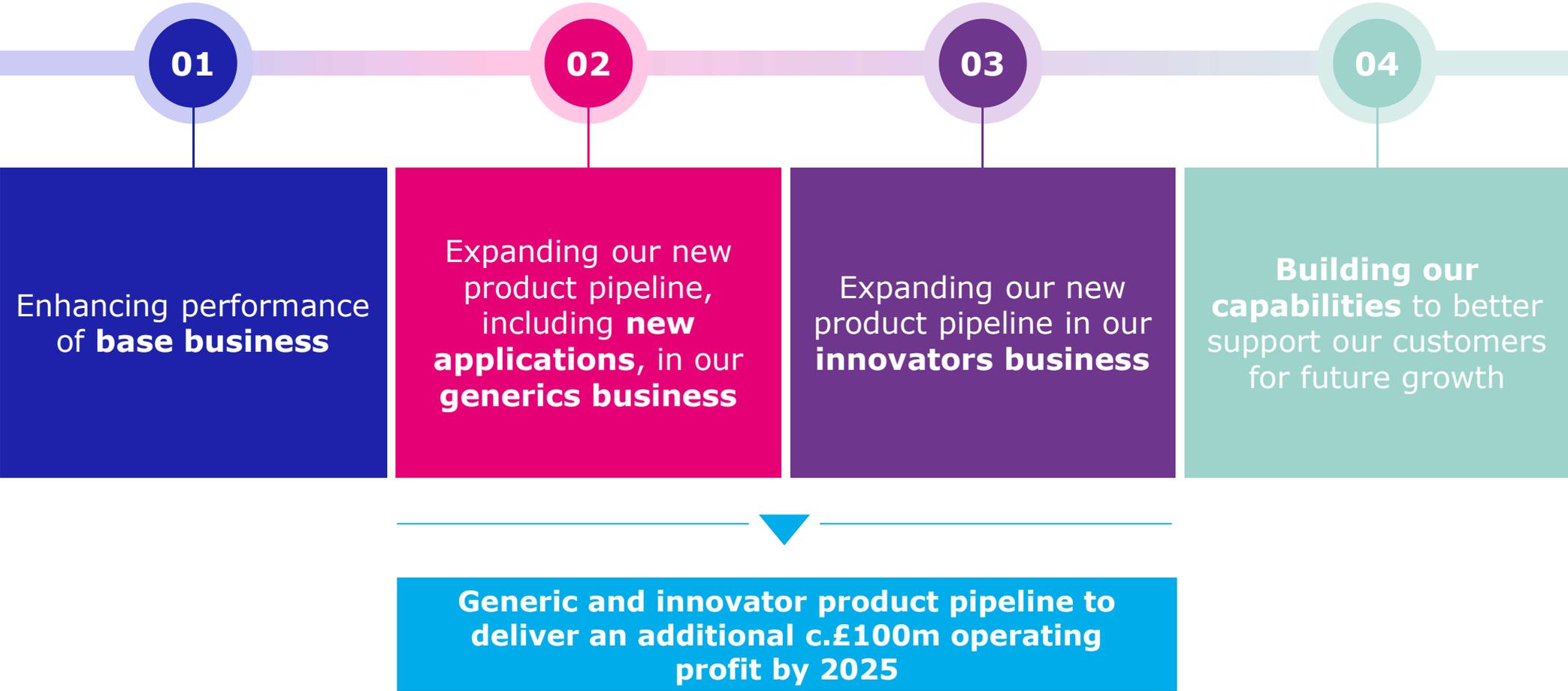
2018/19 ROIC of 9%

Strong position in attractive market niches

	Generics	Innovators
Market position	Leader in controlled substances	Complex and high potency small molecules
Barriers to entry	High	High
Growth drivers	New applications New product pipeline	Clinical development services New product pipeline

Served through a common development and manufacturing base

Our strategy for breakout growth



Significant progress against our strategy

Focus	Delivered
Optimise base business	Footprint rationalisation Productivity improvements Procurement initiatives
Expand new product pipeline	2 new applications 1 new generic launch 10 generics in regulatory approval 4 late stage innovator programmes
Building capabilities to better support customers	High potent drug manufacturing Particle technology Process chemistry



Well positioned to deliver breakout growth

Driving operational improvements to optimise our base business

Footprint

Riverside closure

Annan ramp up

Productivity

Process simplification

Capacity optimisation

Procurement

Narcotic raw material

Indirect spending

New leadership team with relentless focus on execution

Delivering on our product pipeline

New application



New drug approval using existing controlled drug substance

New **ADHD** treatment with novel controlled release profile

New generic launch



Developed non-controlled molecule for **new generic launch**

Complex molecule used in treatment of **acute myeloid leukemia**

Late stage innovator

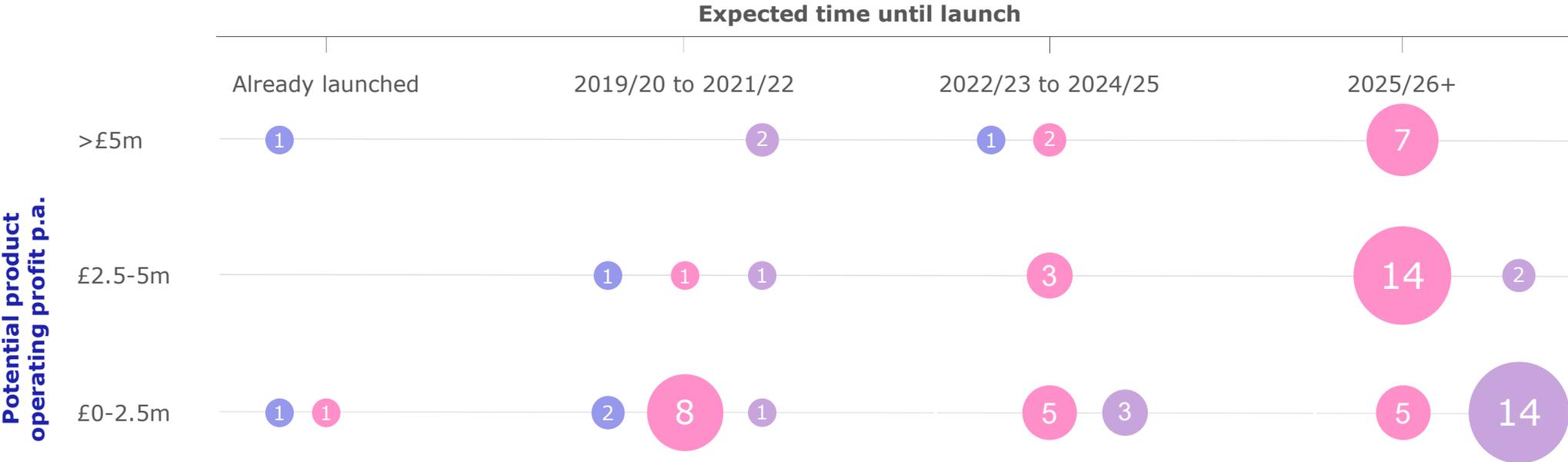


Development and manufacturing partner for submitted **new drug approval**

Novel immunotherapy (**antibody drug conjugate**) in oncology

Generics and innovators pipeline to deliver an additional c.£100m operating profit per year by 2025

Number of generic and innovator products by expected launch date and value¹ (Total products: 75)



- Generic
- Innovator
- New applications³

c.£100m operating profit by 2025

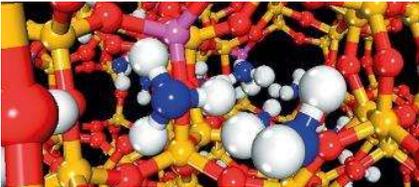
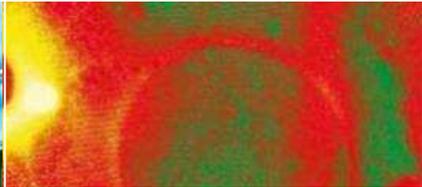
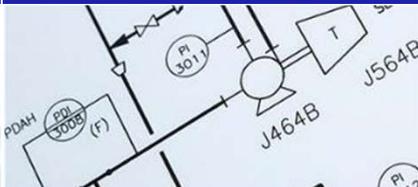
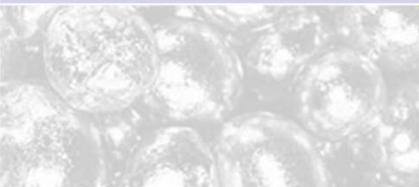
Additional growth



1. Size of bubbles proportional to number of products
 2. Current pipeline as at September 2019
 3. New applications already launched are part of base and therefore not included in £100m operating profit by 2025

Expanding our science capabilities to solve our customers' problems

Our core capabilities

		
Material design and engineering	Chemical synthesis	Characterisation and modelling
		
Electrochemistry	Process optimisation	Surface chemistry and coatings
		
Pgm chemistry and metallurgy	Catalysis and advanced materials	Product formulation

Expanding capabilities


Particle technology

High potent manufacturing

Continuous flow

Conclusion

Population and longevity driving more complex, high potency, targeted APIs

World class science to solve our customers' complex problems

Opportunity to expand our capabilities

Passed inflexion point and now delivering growth

Generic and innovator pipeline to deliver c.£100m additional operating profit per year by 2025



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