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News Release

Thursday 21st November 2019, 7.00 am

Half year results for the six months ended 30th September 2019
Good sales growth and confident in delivering our strategy

Robert MacLeod, Chief Executive, commented:
We continue to execute well against our strategy and delivered first half operating performance in line with expectations. I was pleased with the continued good sales growth, demonstrating our broad based growth drivers, although operating profit was slightly down as a result of one-off costs associated with manufacturing inefficiencies in Clean Air in the first half.

We expect to deliver a stronger second half, primarily driven by the absence of the one-off costs and seasonality in Efficient Natural Resources. For the full year, we expect to deliver group operating performance in line with market expectations.

Given our clear strategy, the strong foundations we have put in place and the ongoing investment into the business for the longer term, we remain confident about the future growth prospects across all of our sectors, which will together drive mid to high single digit growth in earnings per share over the medium term. Our focus remains on executing our strategy, delivering on the ambitions that we laid out at our recent Capital Markets Day and continuing to drive towards our vision to create a cleaner, healthier world.

Reported results		**Half year ended 30th September**		**% change**
		2019	**2018**	
Revenue[1]	£ million	6,818	4,967	+37
Operating profit	£ million	259	264	-2
Profit before tax (PBT)	£ million	225	244	-8
Earnings per share (EPS)	pence	91.8	106.1	-13
Interim dividend per share	pence	24.50	23.25	+5

Underlying performance[2]		**Half year ended 30th September**		**% change**	**% change, constant rates[3]**
		2019	**2018**		
Sales excluding precious metals (sales)[4]	£ million	2,124	2,009	+6	+3
Operating profit	£ million	265	271	-2	-5
Profit before tax	£ million	231	251	-8	-10
Earnings per share	pence	95.8	109.0	-12	

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Underlying performance[2]

- Sales increased 3% driven by good growth in Clean Air and Efficient Natural Resources
- Underlying operating profit declined 5% impacted by c.£15 million of one-off costs in Clean Air, which included additional freight costs and inefficiencies within our manufacturing footprint, driven by the phasing of completion of our new plant in Poland as we serve the strong growth in our European Light Duty business
- Underlying EPS declined 12% reflecting lower underlying operating profit, higher net interest expense and a one-off tax provision
- Capital expenditure of £186 million in the first half and estimated to be up to £500 million in 2019/20, in line with previous guidance, as we invest in strategic growth projects
- Free cash flow weaker as expected driven by higher precious metal working capital (price and volume) and higher capital expenditure
- Stable average working capital days excluding precious metals
- Return on invested capital (ROIC) lower primarily driven by higher precious metal working capital
- Net debt to EBITDA of 2.1x with net debt at £1.5 billion, impacted by higher precious metal working capital

By sector

- Good growth in **Clean Air** with sales up 4%, well ahead of the decline in global vehicle production, although operating profit was impacted by the phasing of completion of our new plant in Poland
- Sales and operating profit growth in **Efficient Natural Resources** driven by strong performance in Pgm Services as a result of higher average pgm prices, and improved licensing income
- In **Health**, sales declined although operating profit grew double digit driven by net benefits from footprint optimisation
- **New Markets** saw good sales growth but lower operating profit due to higher costs as we develop eLNO, our portfolio of leading ultra-high energy density cathode materials. We continue to make good progress with commercialisation of eLNO and recently moved to full cell testing with two customers, another significant milestone in the customer validation process

Reported results

- Reported revenue increased 37% reflecting higher precious metal prices
- Reported operating profit down 2%
- Reported EPS down 13% reflecting lower operating profit, higher net interest expense and a one-off tax provision
- Cash outflow from operating activities of £159 million due to an increase in precious metal working capital
- Interim dividend up 5% to 24.50 pence given our confidence in the group's future prospects

Outlook for the year ending 31st March 2020

- For 2019/20, we expect to deliver group operating performance in line with market expectations[5]. We expect a stronger second half due to the absence of one-off costs, seasonality in Catalyst Technologies and efficiency gains in Pgm Services

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Notes:

1. Revenue for the six months ended 30th September 2018 has been restated, see note 15 on pages 39 to 40
2. Underlying is before profit or loss on disposal of businesses, gain or loss on significant legal proceedings together with associated legal costs, amortisation of acquired intangibles, major impairment and restructuring charges and, where relevant, related tax effects. For definitions and reconciliations of other non-GAAP measures, see pages 41 to 42
3. Unless otherwise stated, sales and operating profit commentary refers to performance at constant rates. Growth at constant rates excludes the translation impact of foreign exchange movements, with 2018/19 results converted at 2019/20 average exchange rates
4. Revenue excluding sales of precious metals to customers and the precious metal content of products sold to customers
5. Vara consensus for full year underlying operating profit in 2019/20 is £595 million (range: £583 million to £611 million)

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Strategy update

At our recent Capital Markets Day, we provided an update on our strategy for sustained growth and value creation. Through our leading positions in high margin, technology driven growth markets, we will deliver attractive and sustainable growth over the medium term:

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

Sustained growth for the next decade in Clean Air

In Clean Air, we have clear visibility of sustained growth for the next decade as we benefit from tightening legislation globally, particularly in Europe and Asia. This will drive mid single digit growth in operating performance to 2025.

- We expect good growth in the short term as we benefit from new legislation in Asia and tighter legislation in Europe, driving GPF (gasoline particulate filter) fitment in both regions. Our European business will be maintained in size to 2025 and we expect to maintain our 65% share of the Light Duty diesel market in Europe
- Growth will accelerate in the medium term with the full benefits of the new legislation in China and India. Our Asian business will more than double in size to 2025
    - Heavy duty legislation in China and India will be phased in from 2020 and drives a tripling of value per vehicle to us
    - Implementation of China 6 light duty legislation will on average double the value per vehicle to us from July 2023 when the second phase of legislation is enacted
- Growth is expected to moderate in the longer term with the increased penetration of pure battery electric vehicles
- We will deliver planned efficiencies from optimising our cost base and processes, and expect to maintain margins and return on capital in the medium term
- Construction of our new manufacturing plants is progressing. Our new plants in Poland and China are nearing completion and construction of our plant in India is underway. As these plants ramp up they will drive further growth and efficiencies across the sector

Market leading growth in Efficient Natural Resources

In Efficient Natural Resources, we have stabilised the business through restructuring and are on plan with our programme to modernise our operations, whilst targeting investment in R&D for future growth. We expect this sector to deliver mid to high single digit growth in operating performance to 2025 through:

- Focused investment in higher growth sub-segments
- Leveraging and evolving our existing technology to meet customer requirements
- Further simplification of our product portfolio to optimise and improve our offering to the market
- Delivering planned efficiency benefits as we focus on areas including procurement, operational excellence and build our commercial expertise
- Steady income from licensing with growth in the medium term as we extend our technologies into new applications and markets, for example commercialisation of newly developed technology including Fischer Tropsch waste to aviation fuel and mono ethylene glycol
- Business development projects to support longer term growth, for example, battery materials recycling and work with various partners to drive the acceleration of adoption of hydrogen as a more significant part of the energy mix

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Breakout growth in Health

In Health, we are making strong progress on operational improvements and will deliver breakout growth over the medium term as we benefit from the commercialisation of our pipeline of new generic and innovator products.

Following our Capital Markets Day, the further political and regulatory focus on opioid addiction – principally in the United States – has created uncertainty in the market for opioid addiction therapies, principally Suboxone products. We are well positioned in this attractive and growing segment as it evolves, supplying active pharmaceutical ingredients (APIs) to several customers and remain confident in the long term growth prospects. However, these recent developments mean that we now expect Health operating performance in the second half of 2019/20 to be broadly in line with the first half.

- This is primarily driven by lower demand in the short term for a single API due to the recent and ongoing developments in the opioid addiction therapy market
- Whilst these developments impact the performance of our base business, the timing of delivery and value of our pipeline of generic and innovator APIs is unaffected and we continue to expect an incremental c.£100 million of operating profit from this by 2025
- We remain focused on stabilising short term performance in this business, delivering the value from our pipeline and executing our strategy for breakout growth

Significant progress in commercialisation of eLNO

eLNO is our portfolio of leading ultra-high energy density cathode materials which will compete with future materials such as NMC 811. eLNO will suit a broad range of applications in electric vehicles and, in particular, enable greater adoption of long range, pure battery electric vehicles.

We are making significant progress in commercialising eLNO. We continue to test our materials with target customers and customer feedback remains positive, in particular our ability to provide tailored solutions to solve their specific problems. Recently, we moved to full cell testing with two customers which is another significant milestone and point of validation in the commercialisation process. These two customers have reduced the number of potential suppliers they are testing with and are collaborating with us more intensively to further develop, formulate and test eLNO. This gives us increased confidence that our materials provide the solutions our customers seek.

There is also ongoing work as we consider options for manufacturing scale up. We recently made the decision to progress directly from our pilot plant to our first commercial plant, which resulted in an impairment of £8 million to our demo plant. Our first commercial plant is expected to be on stream in 2022 and supplying platforms in production in 2024. Our total investment to commercial production from our plant will amount to c.£350 million. Beyond this, scale up is likely to be phased as we match capacity to market demand.

Working capital and efficiencies remain a strong focus

We continue to have a disciplined approach to working capital and remain focused on building a more efficient business to strengthen our platform for growth and increase our agility.

Precious metal working capital

We use precious metals such as platinum, palladium and rhodium which are processed and converted into manufactured goods. As a result, there is a precious metal component to our working capital. The exposure to these metals is principally within Clean Air and Efficient Natural Resources.

In the period, average palladium and rhodium prices were up 52% and 58% respectively which had an associated impact to precious metal working capital and return on invested capital.

- **Higher precious metal working capital:** an outflow of £352 million driven by the impact of higher pgm prices (£271 million) and also volumes (£81 million). Higher pgm prices have a direct impact on precious metal working capital and also liquidity and funding requirements due to lower customer metal. We also had stock builds related to roll out of our single global ERP system and the UK’s planned withdrawal from the European Union as well as higher working capital to support business growth
- **Impact on return on invested capital:** this declined to 15.0% (1H 2018/19: 16.7%) driven by higher precious metal working capital. ROIC excluding the impact of the increase in precious metal working capital was 15.9%

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Non precious metal working capital
We are targeting an improvement in average non precious metal working capital to between 50 and 60 days over the medium term and in the period, we achieved 61 days (1H 2018/19: 61 days)

Summary of efficiency initiatives
We are focusing on areas including procurement, restructuring and manufacturing footprint optimisation in Health which will together deliver £145 million of savings by 2022/23.

- **Global procurement** – as our global procurement process builds, we are continuing to realise benefits and are on track to deliver the expected £100 million of savings to 2022/23. Of these savings, around three quarters will benefit the income statement and around two thirds will be reinvested. In 2019/20, we expect around £23 million of savings to benefit the income statement, of which £13 million was achieved in the first half
- **Group restructuring programme** – now complete with the delivery of annualised cost savings of around £25 million
- **Health footprint optimisation** – delivered £20 million of annualised cost savings following the closure of our manufacturing plant in Riverside, US

Initiative **£ million**	**Total**	**Achieved in the period**	**Achieved to date**
Procurement	100	15	43
Restructuring	25	1	25
Footprint optimisation	20	5	20
Total	**145**	**21**	**88**

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Summary of underlying operating results

Unless otherwise stated, commentary refers to performance at constant rates. Percentage changes in the tables are calculated on unrounded numbers

Sales (£ million)	**Half year ended 30th September 2019**	**2018**	**% change**	**% change, constant rates**
Clean Air	1,392	1,312	+6	+4
Efficient Natural Resources	496	463	+7	+4
Health	111	118	-6	-9
New Markets	186	173	+7	+5
Eliminations	(61)	(57)		
Sales	**2,124**	**2,009**	**+6**	**+3**

Underlying operating profit (£ million)	**Half year ended 30th September 2019**	**2018**	**% change**	**% change, constant rates**
Clean Air	179	191	-6	-9
Efficient Natural Resources	94	85	+9	+6
Health	18	15	+25	+21
New Markets	(8)	3	n/a	n/a
Corporate	(18)	(23)		
Underlying operating profit	**265**	**271**	**-2**	**-5**

Reconciliation of underlying operating profit to operating profit (£ million)	**Half year ended 30th September 2019**	**2018**
Underlying operating profit	265	271
Amortisation of acquired intangibles	(6)	(7)
Operating profit	**259**	**264**

Operating results by sector

Clean Air

Good sales growth but operating profit impacted by one-off costs

- Light Duty Europe sales up 13% with strong growth in both gasoline and diesel driven by increasing fitment of gasoline particulate filters and annualisation of our diesel share gains
- Light Duty Asia sales grew 6%, ahead of declining market production
- Light Duty Americas sales were down 7% driven by weaker diesel sales
- Sales of Heavy Duty Diesel catalysts were slightly lower, with growth in US Class 8 more than offset by a decline in Europe and Asia
- Operating profit was down 9% and margin declined 1.7 percentage points to 12.9% impacted by one-off costs associated with manufacturing inefficiencies

	Half year ended 30th September		% change	% change, constant rates
	2019 £ million	2018 £ million		
Sales				
LDV Europe	540	479	+13	+13
LDV Asia	193	177	+9	+6
LDV Americas	171	175	-2	-7
Total Light Duty Vehicle Catalysts	**904**	**831**	**+9**	**+7**
HDD Americas	258	234	+10	+4
HDD Europe	154	165	-7	-7
HDD Asia	52	63	-18	-20
Total Heavy Duty Diesel Catalysts	**464**	**462**	**-**	**-3**
Other – stationary	24	19	+34	+30
Total sales	**1,392**	**1,312**	**+6**	**+4**
Underlying operating profit	**179**	**191**	**-6**	**-9**
Margin	**12.9%**	**14.6%**		
Return on invested capital (ROIC)	**26.5%**	**30.9%**		
Reported operating profit	**178**	**190**	**-6**	

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Estimated LDV sales and production (number of light duty vehicles)*

		Half year ended 30th September 2019 millions	2018 millions	% change
North America	Sales	10.4	10.6	-2
	Production	8.5	8.4	+2
Total Europe	Sales	10.4	10.5	-1
	Production	10.5	10.7	-2
Asia	Sales	18.9	20.5	-8
	Production	21.7	23.3	-7
Global	Sales	44.5	46.8	-5
	Production	44.0	45.9	-4

Estimated HDD truck sales and production (number of trucks)*

		Half year ended 30th September 2019 thousands	2018 thousands	% change
North America	Sales	325	306	+6
	Production	333	314	+6
Total Europe	Sales	241	227	+6
	Production	290	293	-1
Asia	Sales	871	1,010	-14
	Production	901	967	-7
Global	Sales	1,516	1,618	-6
	Production	1,592	1,634	-3

*Source: LMC Automotive

Light Duty Vehicle (LDV) Catalysts

Our LDV Catalyst business provides catalysts for emission control after-treatment systems that reduce emissions for cars and other light duty vehicles powered by diesel and gasoline. The business grew 7%, well ahead of the decline in global vehicle production.

In Europe, where diesel accounts for around 80% of our LDV business, sales grew 13% with strong sales in both diesel and gasoline, despite a decline in market production.

Sales of diesel catalysts were up 6% driven by the annualisation of diesel market share gains as we maintained market share of c.65% in light duty diesel vehicles.

In Western Europe, diesel accounted for 32% of new passenger car sales in the first half of 2019/20 compared with 34% in the second half of last year. Light duty commercial vehicles remain largely diesel today. When these are included, the overall share of diesel sales in Western Europe was 39% for the first half of 2019/20, compared with 42% in the second half of 2018/19. We continue to assume a diesel share of around 25% of total light duty vehicles and 20% of cars in 2025.

Sales of gasoline catalysts were up 49%, significantly ahead of market production. Growth was driven by new platforms in production and an increased number of high value coated gasoline particulate filters (GPFs) sold in the period. We expect the number of vehicles with coated GPFs will continue to increase in the medium term, increasing our sales value per gasoline vehicle by up to two times.

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Sales in Asia LDV grew 6%, with growth across most of our key markets and well ahead of the decline in market production. This was driven by increased sales of high value coated GPFs due to the beginning of light duty China 6 legislation. Over the medium term, our Asian business will more than double in size as we capture growth from tightening legislation in China and India.

Sales in Americas LDV were down 7%, whilst market production grew. This was driven by a weaker performance in diesel following a temporary pause in production at one of our customers and the ramp down of a platform.

Heavy Duty Diesel (HDD) Catalysts

Our HDD Catalyst business provides catalysts for emission control after-treatment systems that reduce emissions for trucks, buses and non-road equipment. Sales declined 3%, in line with global market production. We saw growth in Americas HDD catalyst business, however this was offset by our HDD businesses in Asia and Europe.

Sales in our Americas HDD catalyst business grew 4%. Sales of catalysts for Class 8 trucks grew with continued strength in the US truck cycle, although behind market production due to phasing of platforms. We saw high levels of production peak towards the end of the first half and continue to expect production to decline in the second half as the cycle rolls over.

Sales in our European HDD Catalyst business declined 7%. This was driven by our non-road business which was lower following a pre-buy in the prior year ahead of new legislation and lower exports outside of Europe. We maintained our market share.

Sales in the Asian HDD Catalyst business were down 20%, behind market production. This was primarily driven by China, where sales fell 23% mainly due to the phasing as our customers transition from China 5 to China 6 products.

Underlying operating profit

Operating profit declined 9% and margin declined by 1.7 percentage points primarily driven by c.£15 million of one-off costs, which included additional freight costs and inefficiencies within our manufacturing footprint. This was caused by the phasing of completion of our new plant in Poland as we serve the strong growth in our European Light Duty business.

ROIC

ROIC was down 4.4 percentage points to 26.5% reflecting higher working capital and invested capital from our three new plants which is not yet yielding returns.

Outlook

We expect operating performance in 2019/20 to be below the prior year, weighted to the second half. In the second half, we will benefit from the absence of one-off costs experienced in the first half.

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Efficient Natural Resources

Sales and operating profit growth

- Sales growth driven by strong performance in Pgm Services and improved licensing income
- Good operating profit growth and margin improved 0.3 percentage points to 18.8%, driven by higher average pgm prices partly offset by higher costs as we continue to invest in our refineries and the absence of one-off benefits from improved efficiency in the prior period

	Half year ended 30th September 2019 £ million	2018 £ million	% change	% change, constant rates
Sales				
Catalyst Technologies	274	264	+4	+1
Pgm Services	150	128	+17	+13
Advanced Glass Technologies	37	39	-6	-7
Diagnostic Services	35	32	+9	+9
Total sales	**496**	**463**	**+7**	**+4**
Underlying operating profit	**94**	**85**	**+9**	**+6**
Margin	**18.8%**	**18.5%**		
Return on invested capital (ROIC)	**12.9%**	**12.6%**		
Reported operating profit	**91**	**82**	**+10**	

Catalyst Technologies

Our Catalyst Technologies business licenses technology and manufactures speciality catalysts and additives for the chemicals and oil and gas industries. Sales improved with good growth in licensing partly offset by lower sales of copper zeolites to Clean Air. Refill catalysts and additives were stable following a very strong prior period, and first fills were broadly flat as expected.

Refill catalysts and additives is recurring business which makes up the majority of sales within Catalyst Technologies. In refill catalysts, sales were up, ahead of the market. We saw good performance in ammonia and formaldehyde, although weaker relative performance in methanol following strong demand in the prior period. In additives, sales were down due to feedstock dynamics and a planned maintenance shutdown at one of our plants.

Our licensing business is dependent on new plant builds and income is recognised over the period of construction. In the year, licensing income saw good performance driven by formaldehyde and we also began to recognise income from recent licence wins, which includes our newly developed mono ethylene glycol technology. We signed three new licences in the period and are pleased with the progress in developing and commercialising new technologies.

Pgm Services

Our Pgm Services business primarily provides a strategic service to the group, mainly supporting Clean Air with security of metal supply in a volatile market. This business is expected to grow at low single digits over the medium term. It comprises our pgm refining and recycling activities, and produces chemical and industrial products containing pgms.

In the period, sales grew 13%. We saw strong growth in our refining and trading businesses due to higher and more volatile average pgm prices. Average palladium and rhodium prices were up 52% and 58% respectively, while platinum was up 1% compared to the same period last year. Sales of chemical products grew driven by growth in Clean Air which uses pgm materials in its catalyst products, however, sales of industrial products containing pgms were down.

Following the unscheduled downtime in one of our pgm refineries in 2018/19 which resulted in higher precious metal working capital, we continue to make progress in reducing the volume of precious metal working capital in our refineries and still expect to be at normalised levels by the

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end of 2020/21. However, despite reducing our backlog volumes, the sharp increase in pgm prices has led to the value of precious metal working capital increasing in the period.

As previously announced, the £100 million investment in our new refinery is well underway. This will ensure our assets operate effectively and reliably, improving returns and strengthening our position as a long term supplier to our customers.

Advanced Glass Technologies
Advanced Glass Technologies mainly provides black obscuration enamels and silver paste for automotive glass applications. Sales were lower, primarily driven by the automotive segment reflecting both a slowdown in global car production and some loss of market share in non-automotive product segments across Europe.

Diagnostic Services
Diagnostic Services provides specialised detection, diagnostic and measurement solutions for our customers in the petroleum industry. Our Diagnostic Services business grew strongly. A higher, stable oil price drove greater activity in the upstream oil and gas industry leading to higher capital investment and increased operating expenditure by our customers. This resulted in improved demand for our services.

Underlying operating profit
Operating profit was up 6% and margin improved 0.3 percentage points to 18.8%, driven mainly by a £14 million benefit from higher average pgm prices partly offset by higher costs as we continue to invest in our refineries and one-off benefits of £5 million in the prior period from improved efficiency.

ROIC
ROIC increased 0.3 percentage points to 12.9%.

Outlook
In 2019/20, we expect sales growth with operating profit growth ahead of sales as we continue to drive efficiencies in our business and maintain our focus on higher growth segments. Second half performance will benefit from normal seasonality and the timing of orders in Catalyst Technologies, and efficiency gains in Pgm Services.

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Health

Sales declined although operating profit grew double digit

- Innovators grew double digit whilst generics declined, with no new launches in the period
- Operating profit grew double digit and margin improved 4.1 percentage points. This was primarily driven by net benefits from footprint optimisation
- Health operating performance in the second half of 2019/20 is now expected to be broadly in line with the first half reflecting recent developments in the opioid addiction therapy market. The timing of delivery and value of our pipeline of generic and innovator APIs is unaffected and we continue to expect an incremental c.£100 million of operating profit from this by 2025

	Half year ended 30th September		% change	% change, constant rates
	2019 £ million	2018 £ million		
Sales				
Generics	67	80	-16	-19
Innovators	44	38	+17	+11
Total sales	**111**	**118**	**-6**	**-9**
Underlying operating profit	**18**	**15**	**+25**	**+21**
Margin	**16.5%**	**12.4%**		
Return on invested capital (ROIC)	**9.5%**	**7.4%**		
Reported operating profit	**18**	**15**	**+26**	

Generics

Our Generics business develops and manufactures generic active pharmaceutical ingredients (APIs) for a variety of treatments. Sales were down significantly, with a mixed performance across the business.

Sales of controlled APIs were flat. We saw growth in sales of speciality opiates but this was offset by lower sales of APIs for ADHD treatments as certain high margin ADHD APIs moved through their natural lifecycle. Sales of bulk opiates in Europe were stable.

Our non-controlled APIs declined as expected. This primarily reflected a continued reduction in sales of dofetilide as new competitors for our customer entered the market.

Innovators

Our Innovators business performed well. We saw growth from sales of APIs from customers in four late stage testing programmes who are increasing volumes ahead of commercialisation. This included higher sales in relation to our strategic manufacturing partnership with Immunomedics for the manufacture of a drug linker used in the production of an immuno-oncology treatment for triple negative breast cancer.

API product pipeline

We continued to invest in our new product pipeline across both our Generics and Innovators businesses and remain confident in delivering an additional c.£100 million of operating profit by 2025. Overall, our pipeline comprises 75 molecules which includes generic APIs, innovator APIs and new applications. Within this, 33 molecules will generate the additional c.£100 million of operating profit by 2025 and the remainder will support growth beyond this timeframe.

In the period, we continued to make progress in developing and commercialising our pipeline of new generic and innovator products. At the end of September, 3 molecules had launched, 10 generics were awaiting regulatory approval and 4 products were late stage innovator programmes.

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Underlying operating profit

Operating profit grew double digit and margin improved 4.1 percentage points. This was mainly driven by net benefits from footprint optimisation.

ROIC

ROIC increased 2.1 percentage points to 9.5% mainly driven by higher operating profit.

Outlook

As described on page 4, Health operating performance in the second half of 2019/20 is now expected to be broadly in line with the first half. This primarily reflects lower demand in the short term, due to the recent and ongoing developments in the opioid addiction therapy market, for a single API used in Suboxone products. The timing of delivery and value of our pipeline of generic and innovator APIs is unaffected and we continue to expect an incremental c.£100 million of operating profit from this by 2025.

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New Markets

Good sales growth; further progress on commercialisation of eLNO

- Sales growth driven by strong demand for our non-automotive battery systems and fuel cells
- Operating profit declined due to higher costs as we develop eLNO and an impairment of £8 million related to our demo plant
- Commercialisation of eLNO is progressing well and we have advanced to full cell testing with two customers

	Half year ended 30th September 2019 £ million	2018 £ million	% change	% change, constant rates
Sales				
Alternative Powertrain	110	98	+13	+12
Medical Device Components	37	36	+3	-1
Life Science Technologies	23	23	-	-3
Other	16	16	-5	-9
Total sales	**186**	**173**	**+7**	**+5**
Underlying operating profit	**(8)**	**3**		
Margin	**-4.2%**	**1.6%**		
Return on invested capital (ROIC)	**-3.2%**	**5.1%**		
Reported operating loss	**(10)**	**-**		

Alternative Powertrain

Our Alternative Powertrain business provides battery systems for a range of applications, fuel cell technologies and battery materials for automotive applications. Our battery materials business comprises lithium iron phosphate (LFP) materials as well as eLNO, our portfolio of leading ultra-high energy density cathode materials. Alternative Powertrain sales grew 12% driven by continued momentum in battery systems for e-bikes and significant growth in Fuel Cells.

Commercialisation of eLNO

eLNO will compete with future ultra-high energy density cathode materials such as NMC 811. We continue to make good progress in the development and commercialisation of our portfolio.

Testing of our materials with our target customers is progressing well and feedback remains positive. As previously announced, we have progressed to full cell testing with two customers, which is another significant milestone and point of validation in the commercialisation process. These two customers have reduced the number of potential suppliers they are testing with and are collaborating with us more intensively to further develop, formulate and test eLNO. This gives us increased confidence that our materials provide the solutions our customers seek.

Plans for manufacturing scale up are continuing. We recently made the decision to progress directly from our pilot plant to our first commercial plant in Konin, Poland, which resulted in an impairment of £8 million to our demo plant. Our first commercial plant is expected to be on stream in 2022 and supplying platforms in production in 2024. This plant will initially produce 10,000 metric tonnes per annum but the site has the potential for expansion up to 100,000 metric tonnes.

Fuel Cells

Sales in Fuel Cells grew 62% to £15 million, with increased demand for non-automotive applications and new business wins in China. We are investing £15 million in new capacity in both the UK and China to support growth in demand.

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Medical Device Components
Our Medical Device Components business leverages our science and technology to develop products found in devices used in medical procedures. Sales were broadly flat as we continue to experience increased competition in the market with a number of customers moving to dual sourcing.

Life Science Technologies
Life Science Technologies provides advanced catalysts to the pharmaceutical and agricultural chemicals markets. Sales were broadly stable in the period.

Underlying operating profit
Operating profit declined due to higher costs as we develop eLNO, which includes an £8 million impairment following our decision not to proceed with our demo plant.

ROIC
ROIC decreased to -3.2%.

Outlook
New Markets is expected to deliver sales and operating profit growth in 2019/20.

Corporate
Corporate costs in the period were £18 million, a decrease of £5 million due to cost saving initiatives and lower legal costs.

Outlook
Corporate costs are now expected to be below the prior year in 2019/20.

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Financial review

Restatements

At the full year, we concluded that location and form swaps and sale and repurchase agreements entered into by our Pgm Services business within Efficient Natural Resources should not be included within statutory revenue. Consequently, we have excluded these transactions from statutory revenue in 2019, and we have also fully restated the prior half financial statements to reflect these changes. This results in both periods now being presented on a consistent basis.

The impact of the restatement is to reduce both revenue and cost of sales in respect of swaps and sale and repurchase agreements for the six months ended 30th September 2018 by £2.1 billion. The restatement has no net impact on sales, profit, working capital, net debt or net assets. Historic business performance measures communicated by Johnson Matthey are unchanged. Full details are given in note 15 on pages 39 to 40.

IFRS 16

IFRS 16 came into effect from 1st April 2019 and replaces IAS 17, Leases. Upon transition, the group recognised right-of-use assets and lease liabilities of £89 million and £77 million respectively on the balance sheet.

For the year ending 31st March 2020, we anticipate an increase in underlying operating profit of £2 million and an additional interest cost of £3 million. Consequently, the group estimates that profit before tax will be reduced by approximately £1 million for the year ending 31st March 2020 as a result of adopting IFRS 16. Full details are given in note 14 on pages 37 to 39.

Research and development (R&D)

We invested £100 million in R&D in the half, including £12 million of capitalised R&D, around 5% of sales. Key areas of spend included next generation technologies in Clean Air, improving the efficiency and resiliency of our refineries in Efficient Natural Resources, our Health API product pipeline and investment in our eLNO battery material.

Foreign exchange

The calculation of growth at constant rates excludes the impact of foreign exchange movements arising from the translation of overseas subsidiaries' profit into sterling. The group does not hedge the impact of translation effects on the income statement.

The principal overseas currencies, which represented 83% of non-sterling denominated underlying operating profit in the half year ended 30th September 2019, were:

	Share of H1 2019/20 non-sterling denominated underlying operating profit	Average exchange rate Half year ended 30th September		
		2019	2018	% change
US dollar	44%	1.257	1.329	-5
Euro	31%	1.126	1.131	-
Chinese renminbi	8%	8.70	8.77	-1

For the half, the impact of exchange rates increased sales by £47 million and increased underlying operating profit by £8 million.

If current exchange rates (£:$ 1.295, £:€ 1.160, £:RMB 9.11) are maintained throughout the year ending 31st March 2020, foreign currency translation will have a negative impact of approximately £5 million on underlying operating profit. A one cent change in the average US dollar and euro exchange rates each have an impact of approximately £1 million on full year underlying operating profit and a ten fen change in the average rate of the Chinese renminbi has an impact of less than £1 million.

Pgm prices

Higher average pgm prices benefited operating profit by around £14 million in the period in Efficient Natural Resources.

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Major impairment and restructuring charges

We had no major impairment and restructuring charges in the half year ended 30th September 2019. Cash spend in relation to ongoing restructuring was £1 million in the period.

Our group restructuring programme is now complete, having achieved a further £1 million of benefits in the half. This programme delivers annualised cost savings of around £25 million.

The closure of our manufacturing plant in Riverside, US, is now complete and delivers annualised cost savings of around £20 million, having delivered £5 million of savings in the half.

Finance charges

Net finance charges in the period amounted to £36 million, an increase of £16 million from the first half year ended 30th September 2018. This increase was primarily driven by higher precious metal funding costs.

We continue to expect that net finance charges will be significantly higher in 2019/20 due to higher average net debt as we invest for future growth, higher precious metal funding costs and the impact of IFRS 16.

Taxation

The tax charge on underlying profit for the half year ended 30th September 2019 was £47 million, an effective tax rate of 20.5% (1H 2018/19: 16.3%). This was due to increases in provisions for uncertain tax positions (£12 million of which relates to reassessments of prior years) which have been recognised in the first half of this year. We also recognised a tax charge of £2 million outside of underlying which resulted in an effective tax rate of 21.7% (1H 2018/19: 16.4%).

We expect the tax rate on underlying profit for the year ending 31st March 2020 to be around 18% compared to our previous guidance of around 16%. This is due to the increase in provisions for uncertain tax positions.

Post-employment benefits

IFRS – accounting basis

At 30th September 2019, the group's net post-employment benefit position, after taking account of the bonds held to fund the UK pension scheme deficit, was a surplus of £173 million.

The cost of providing post-employment benefits in the period was £20 million, which is in line with the same period last year. The post-employment benefits cost also included a past service credit of £10 million, which compared to an £8 million credit in the prior period.

Actuarial – funding basis

The UK pension scheme has a legacy defined benefit career average section which was closed to new entrants on 1st October 2012 when a new defined benefit cash balance section was opened.

The last triennial actuarial valuation of the career average section as at 1st April 2018 revealed a deficit of £34 million, or a surplus of £9 million after taking account of the Special Purpose Vehicle set up in January 2013. The annual funding update as at 31st March 2019 showed a deficit of £22 million or a surplus of £15 million after taking the value of the Special Purpose Vehicle into account.

The last triennial actuarial valuation of the cash balance section as at 1st April 2018 revealed a surplus of £0.2 million. The annual funding update as at 31st March 2019 showed a surplus of £2.6 million. Since the triennial valuation a review of the Scheme's investment strategy has taken place. This resulted in several changes that diversify the Scheme's assets and reduce investment risk further.

The latest actuarial valuations of our two US pension schemes showed a total deficit of £2 million at 1st July 2018.

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UK's withdrawal from European Union

JM relies extensively on an agile, flexible supply chain and so we have paid significant attention to the potential impact of the UK's withdrawal from the European Union under a 'no deal' scenario. Our well established working group, which is composed of a number of functional and sector experts, has assessed the implications of a 'no deal' withdrawal. A number of mitigating activities were put in place ahead of 31st October 2019 in preparation for this eventuality, for example through building inventory.

As part of the preparations, the project team conducted scenario analyses to assess the potential impact of individual risks and combinations of risks. As the probability of a hard withdrawal (without a transition agreement reflecting the existing trading rules) increased, we accelerated our contingency plans, with the primary objective of ensuring the continuity of our business across our whole business model.

We remain confident that our current contingency planning will be effective should the UK withdraw from the European Union without a deal. We remain vigilant and alert to changes in the political environment, and the UK and EU's stance, and the potential implications these may have on our operations.

Capital expenditure

Capital expenditure was £186 million in the half, 2.2 times depreciation and amortisation (excluding amortisation of acquired intangibles). In the period, projects included:

- Clean Air manufacturing plants in Poland, China and India. This increased capacity will drive growth, efficiency and improve flexibility, enabling us to support demand from tightening legislation in Europe and Asia
- Investment in development and commercialisation of eLNO, our leading ultra-high energy density cathode material. We continued construction of our application centres. FEED (front end engineering design) work has progressed for our site in Poland for the first 10,000 metric tonnes commercial plant, and the site has the potential for expansion to 100,000 metric tonnes. We expect to supply platforms in 2024
- Upgrading our core IT business systems
- In Health, continued investment in our API product pipeline
- Expansion of our additives plant in the US and continued investment to improve the efficiency and resilience of our pgm refineries within Efficient Natural Resources

Capital expenditure for 2019/20 is estimated to be up to £500 million as our investments in growth projects mentioned above increase.

Depreciation and amortisation (excluding amortisation of acquired intangibles) is expected to increase by around £14 million in 2019/20 primarily as we depreciate our investment in upgrading our core IT systems.

Free cash flow and working capital

Free cash flow was an outflow of £382 million. This was mainly due to a working capital outflow of £467 million, of which £352 million related to precious metal working capital driven by higher pgm prices (£271 million) and volumes (£81 million). We also saw higher capital expenditure of £184 million in the half.

Excluding precious metal, working capital days at 30th September 2019 improved to 61 days compared to 65 days at 30th September 2018. Average working capital days through the period excluding precious metals was stable at 61 days.

We continue to have a disciplined approach to our working capital position. We are targeting an improvement in average non precious metal working capital to between 50 and 60 days over the medium term, and expect to deliver £350 million of savings in precious metal working capital, comprising £250 million in backlog reduction and a further £100 million of refinery efficiencies. As metal prices move, the level of savings will vary.

Dividend

The board approved an increase of 5% in the interim dividend to 24.50 pence per share (1H 2018/19: 23.25 pence per share). The interim dividend will be paid to shareholders on 4th February 2020, with an ex dividend date of 28th November 2019.

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Return on invested capital (ROIC)

ROIC declined to 15.0% from 16.7% at 30th September 2018 driven primarily by higher precious metal working capital and also increased capital expenditure. ROIC excluding the impact of the increase in precious metal working capital was 15.9%.

Capital structure

Net debt at 30th September 2019 was £1.5 billion. This is an increase of £452 million from 30th September 2018 and an increase of £622 million from 31st March 2019, mainly driven by the significant increase in precious metal working capital and higher capital expenditure. Net debt increased to £1,548 million when adjusted for the post tax pension deficits (£1,488 million excluding post tax pension deficits). The group's net debt (including post tax pension deficits) to EBITDA was 2.1 times (30th September 2018: 1.5 times). Our target range is 1.5 to 2.0 times, as this ensures we have flexibility to invest further in the future growth of the business.

Contingent liabilities

The group is involved in various disputes and claims which arise from time to time in the course of its business including, for example, in relation to commercial matters, product quality or liability, employee matters and tax audits. The group is also involved from time to time in the course of its business in legal proceedings and actions, engagement with regulatory authorities and in dispute resolution processes. These are reviewed on a regular basis and, where possible, an estimate is made of the potential financial impact on the group. In appropriate cases a provision is recognised based on advice, best estimates and management judgement. Where it is too early to determine the likely outcome of these matters, no provision is made. Whilst the group cannot predict the outcome of any current or future such matters with any certainty, it currently believes the likelihood of any material liabilities to be low, and that such liabilities, if any, will not have a material adverse effect on its consolidated income, financial position or cash flows.

On a specific matter, the group previously disclosed that it had been informed by two customers of failures in certain engine systems for which the group supplied a particular coated substrate as a component for their customers' emissions after-treatment systems. The particular coated substrate was sold to only these two customers. The group has not been contacted by any regulatory authority about these engine system failures. The reported failures have not been demonstrated to be due to the coated substrate supplied by the group. As previously disclosed, we settled with one of these customers on mutually acceptable terms with no admission of fault.

Having reviewed its contractual obligations and the information currently available to it, the group believes it has defensible warranty positions in respect of its supplies of coated substrate for the after-treatment systems in the affected engines remaining at issue. If required, it will vigorously assert its available contractual protections and defences. The outcome of any discussions relating to the matters raised is not certain, nor is the group able to make a reliable estimate of the possible financial impact at this stage, if any. The group works with all its customers to ensure appropriate product quality and we have not received claims in respect of our emissions after-treatment components from this or any other customer. Our vision is for a world that's cleaner and healthier; today and for future generations. We are committed to enabling improving air quality and we work constructively with our customers to achieve this.

Going concern

The directors have assessed the future funding requirements of the group and are of the opinion that the group has adequate resources to fund its operations for the foreseeable future. Therefore the directors believe that it is appropriate to prepare the accounts on a going concern basis. Given the large increase in precious metal working capital recently, the group has already taken actions to increase liquidity in case of further pressure.

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Risks and uncertainties

We have made several improvements to our approach to understanding risk and uncertainty, further articulating the risk information and insights we use to support various business decisions. The principal risks and uncertainties, together with the group's strategies to manage them, are set out on pages 91 to 96 of the 2019 annual report and these are unchanged. They are:

- **Existing market outlook** – the risk of a change to the outlook for our key markets is either unplanned or unforeseen and as a result we may be inefficient in our plans to respond. Whilst not a principal risk, see our financial review on page 18 for details on how we are monitoring the possible impacts of the UK's planned withdrawal from the EU and related risks
- **Future growth** – this risk considers the potential failure to deliver growth and create value as communicated in our capital markets day
- **Maintaining our competitive advantage** – addressing the need to maintain our competitive advantage in existing markets, including our ability to transform and adapt Johnson Matthey to new challenges
- **Environment, health and safety** – operating in accordance with our own values, and in line with changes to environmental, health and safety legislation standards
- **Sourcing of strategic materials** – we closely analyse and manage our supply of key critical materials to address the risk of metal supply to our manufacturing facilities
- **People** – we recruit, retain and motivate the most appropriate people at every level of our business
- **Security of metal and highly regulated substances** – keeping our valuable and highly regulated products and intermediates secure
- **Intellectual capital management** – our ability to identify, manage and protect the innovative ideas that underpin our current and future success
- **Failure of significant sites** – our ability to run our operations effectively and efficiently, and with resilience to adverse events
- **Ethics and compliance** – running our businesses ethically and effectively – not 'business at any cost'
- **Business transition** – our ability to identify and deliver the requirement for projects and programmes to transform Johnson Matthey as we develop new products and markets
- **Product quality** – the imperative to consistently deliver our products to required standards
- **Applications, systems and cyber** – the systems, and supporting knowledge, processes and behaviours that allow effective and secure information management

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Responsibility statement of the Directors in respect of the half yearly report

The half yearly report is the responsibility of the directors. Each of the directors as at the date of this responsibility statement, whose names and functions are set out below, confirms that to the best of their knowledge:

- the condensed consolidated accounts have been prepared in accordance with International Accounting Standard (IAS) 34 – 'Interim Financial Reporting'; and
- the interim management report included in the Half-Yearly Report includes a fair review of the information required by:
  a) DTR 4.2.7R of the Financial Conduct Authority's Disclosure Guidance and Transparency Rules, being an indication of important events that have occurred during the first six months of the financial year and their impact on the condensed consolidated accounts; and a description of the principal risks and uncertainties for the remaining six months of the financial year; and
  b) DTR 4.2.8R of the Financial Conduct Authority's Disclosure Guidance and Transparency Rules, being related party transactions that have taken place in the first six months of the current financial year and that have materially affected the financial position or performance of the company during that period; and any changes in the related party transactions described in the last annual report that could do so.

The names and functions of the directors of Johnson Matthey Plc are as follows:

Patrick Thomas	Chairman of the Board and of the Nomination Committee
Alan Ferguson	Non-Executive Director, Senior Independent Director and Chairman of the Audit Committee
Jane Griffiths	Non-Executive Director
Xiaozhi Liu	Non-Executive Director
Robert MacLeod	Chief Executive
Anna Manz	Chief Financial Officer
Chris Mottershead	Non-Executive Director and Chairman of the Remuneration Committee
John O'Higgins	Non-Executive Director
John Walker	Executive Director
Doug Webb	Non-Executive Director

The responsibility statement was approved by the Board of Directors on 20th November 2019 and is signed on its behalf by:

Patrick Thomas

Chairman

Independent Review Report
to Johnson Matthey Plc

Report on the condensed consolidated accounts

Our conclusion
We have reviewed Johnson Matthey Plc's condensed consolidated accounts (the "interim financial statements") in the half year results of Johnson Matthey Plc for the six-month period ended 30th September 2019. Based on our review, nothing has come to our attention that causes us to believe that the interim financial statements are not prepared, in all material respects, in accordance with International Accounting Standard 34, ‘Interim Financial Reporting’, as adopted by the European Union and the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom’s Financial Conduct Authority.

What we have reviewed
The interim financial statements comprise:

- the Condensed Consolidated Balance Sheet as at 30th September 2019;
- the Condensed Consolidated Income Statement and Condensed Consolidated Statement of Total Comprehensive Income for the period then ended;
- the Condensed Consolidated Cash Flow Statement for the period then ended;
- the Condensed Consolidated Statement of Changes in Equity for the period then ended; and
- the explanatory notes to the interim financial statements.

The interim financial statements included in the half year results have been prepared in accordance with International Accounting Standard 34, ‘Interim Financial Reporting’, as adopted by the European Union and the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom’s Financial Conduct Authority.

As disclosed in note 1 to the interim financial statements, the financial reporting framework that has been applied in the preparation of the full annual financial statements of the group is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union.

Responsibilities for the interim financial statements and the review

Our responsibilities and those of the directors
The half year results, including the interim financial statements, is the responsibility of, and has been approved by, the directors. The directors are responsible for preparing the half year results in accordance with the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom’s Financial Conduct Authority.

Our responsibility is to express a conclusion on the interim financial statements in the half year results based on our review. This report, including the conclusion, has been prepared for and only for the company for the purpose of complying with the Disclosure Guidance and Transparency Rules sourcebook of the United Kingdom’s Financial Conduct Authority and for no other purpose. We do not, in giving this conclusion, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

What a review of interim financial statements involves
We conducted our review in accordance with International Standard on Review Engagements (UK and Ireland) 2410, ‘Review of Interim Financial Information Performed by the Independent Auditor of the Entity’ issued by the Auditing Practices Board for use in the United Kingdom. A review of interim financial information consists of making enquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures.

A review is substantially less in scope than an audit conducted in accordance with International Standards on Auditing (UK) and, consequently, does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

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We have read the other information contained in the half year results and considered whether it contains any apparent misstatements or material inconsistencies with the information in the interim financial statements.

PricewaterhouseCoopers LLP
Chartered Accountants
London
20th November 2019

Notes:

a) The maintenance and integrity of the Johnson Matthey Plc website is the responsibility of the directors; the work carried out by the auditors does not involve consideration of these matters and, accordingly, the auditors accept no responsibility for any changes that may have occurred to the interim financial statements since it was initially presented on the website.
b) Legislation in the United Kingdom governing the preparation and dissemination of interim financial statements may differ from legislation in other jurisdictions.

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Condensed Consolidated Income Statement
for the six months ended 30th September 2019

	Notes	Six months ended 30.9.19 £ million	30.9.18 Restated[1] £ million
Revenue	2, 3	**6,818**	4,967
Cost of sales		**(6,321)**	(4,493)
Gross profit		**497**	474
Distribution costs		**(66)**	(65)
Administrative expenses		**(166)**	(138)
Amortisation of acquired intangibles	6	**(6)**	(7)
Operating profit		**259**	264
Finance costs		**(66)**	(42)
Finance income		**30**	22
Share of profit of joint venture and associate		**2**	-
Profit before tax		**225**	244
Tax expense		**(49)**	(40)
Profit for the period		**176**	204
		pence	pence
Earnings per ordinary share			
Basic		**91.8**	106.1
Diluted		**91.6**	105.9

[1] See note 15.

Condensed Consolidated Statement of Total Comprehensive Income
for the six months ended 30th September 2019

	Notes	Six months ended 30.9.19 £ million	30.9.18 £ million
Profit for the period		**176**	204
Other comprehensive income			
Items that will not be reclassified to the income statement			
Remeasurements of post-employment benefit assets and liabilities	10	**-**	65
Tax on items that will not be reclassified to the income statement		**1**	(11)
		1	54
Items that may be reclassified to the income statement:			
Exchange differences on translation of foreign operations		**73**	42
Fair value gains / (losses) on investments at fair value through other comprehensive income		**3**	(2)
Amounts charged to hedging reserve		**(16)**	(1)
Fair value and exchange losses on net investment hedges		**(8)**	(7)
Tax on items that may be reclassified to the income statement		**1**	1
		53	33
Other comprehensive income for the period		**54**	87
Total comprehensive income for the period		**230**	291

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Condensed Consolidated Balance Sheet

as at 30th September 2019

	Notes	30.9.19 £ million	31.3.19 £ million
Assets			
Non-current assets			
Property, plant and equipment		**1,363**	1,271
Right-of-use assets		**88**	-
Goodwill		**588**	578
Other intangible assets		**378**	336
Investments in joint venture and associate		**22**	20
Investments at fair value through other comprehensive income		**56**	52
Other receivables		**69**	39
Interest rate swaps	8	**30**	13
Deferred income tax assets		**74**	58
Post-employment benefit net assets	10	**232**	209
Total non-current assets		**2,900**	2,576
Current assets			
Inventories		**1,475**	1,316
Current income tax assets		**35**	37
Trade and other receivables		**1,953**	1,553
Cash and cash equivalents — cash and deposits	8	**99**	90
Cash and cash equivalents — money market funds	8	**-**	347
Other financial assets		**15**	22
Assets held for sale		**-**	7
Total current assets		**3,577**	3,372
Total assets		**6,477**	5,948
Liabilities			
Current liabilities			
Trade and other payables		**(1,713)**	(1,647)
Current income tax liabilities		**(155)**	(130)
Cash and cash equivalents — bank overdrafts	8	**(65)**	(59)
Other borrowings and related swaps	8	**(351)**	(184)
Lease liabilities	8	**(12)**	-
Other financial liabilities		**(21)**	(13)
Provisions		**(14)**	(20)
Total current liabilities		**(2,331)**	(2,053)
Non-current liabilities			
Borrowings and related swaps	8	**(1,124)**	(1,073)
Lease liabilities	8	**(65)**	-
Deferred income tax liabilities		**(93)**	(91)
Employee benefit obligations	10	**(119)**	(106)
Provisions		**(10)**	(9)
Other payables		**(6)**	(5)
Total non-current liabilities		**(1,417)**	(1,284)
Total liabilities		**(3,748)**	(3,337)
Net assets		**2,729**	2,611
Equity			
Share capital		**221**	221
Share premium		**148**	148
Shares held in employee share ownership trust (ESOT)		**(32)**	(45)
Other reserves		**140**	87
Retained earnings		**2,252**	2,200
Total equity		**2,729**	2,611

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Condensed Consolidated Cash Flow Statement

for the six months ended 30th September 2019

	Notes	Six months ended 30.9.19 £ million	30.9.18 Restated[1] £ million
Profit before tax		**225**	244
Adjustments for:			
Share of profit of joint venture and associate		**(2)**	-
Depreciation, amortisation, impairment losses and profit / loss on sale of non-current assets		**99**	86
Share-based payments		**3**	3
Increase in inventories		**(134)**	(254)
Increase in receivables		**(403)**	(30)
Increase/(decrease) in payables		**70**	(75)
Decrease in provisions		**(5)**	(12)
Contributions in excess of employee benefit obligations charge		**(13)**	(20)
Changes in fair value of financial instruments		**(3)**	(2)
Net finance costs		**36**	20
Income tax paid		**(32)**	(48)
Net cash outflow from operating activities		**(159)**	(88)
Interest received		**28**	22
Purchases of property, plant and equipment		**(133)**	(63)
Purchases of intangible assets		**(51)**	(33)
Proceeds from sale of non-current assets		**8**	1
Net cash outflow from investing activities		**(148)**	(73)
Proceeds from borrowings		**168**	137
Repayment of borrowings		**(11)**	(2)
Dividends paid to equity shareholders	7	**(120)**	(112)
Interest paid		**(70)**	(45)
Principal element of lease payments		**(5)**	-
Net cash outflow from financing activities		**(38)**	(22)
Net decrease in cash and cash equivalents		**(345)**	(183)
Exchange differences on cash and cash equivalents		**1**	(1)
Cash and cash equivalents at beginning of year		**378**	304
Cash and cash equivalents at end of period	8	**34**	120
Net cash outflow from operating activities		**(159)**	(88)
Interest received		**28**	22
Interest paid		**(70)**	(45)
Purchases of property, plant and equipment		**(133)**	(63)
Purchases of intangible assets		**(51)**	(33)
Proceeds from sale of non-current assets		**8**	1
Principal element of lease payments		**(5)**	-
Free cash flow[2]		**(382)**	(206)
Reconciliation to net debt			
Net decrease in cash and cash equivalents		**(345)**	(183)
Less: Increase in borrowings		**(157)**	(135)
Less: Principal element of lease payments		**5**	-
Increase in net debt resulting from cash flows		**(497)**	(318)
New leases, remeasurements and modifications		**(4)**	-
Exchange differences on net debt[3]		**(47)**	(38)
Other non-cash movements[3]		**3**	(1)
Movement in net debt		**(545)**	(357)
Net debt at beginning of year		**(866)**	(679)
Impact of adoption of IFRS 16	14	**(77)**	-
Net debt at end of period[2]	8	**(1,488)**	(1,036)

[1] See note 15.
[2] Non-GAAP measure (see page 41).
[3] 2018 re-presented to separately analyse fair value movements in net debt relating to hedging instruments.

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Condensed Consolidated Statement of Changes in Equity

for the six months ended 30th September 2019

	Share capital £ million	Share premium account £ million	Shares held in ESOT £ million	Other reserves £ million	Retained earnings £ million	Total equity £ million
At 1st April 2018	221	148	(48)	62	1,995	2,378
Total comprehensive income for the period	-	-	-	33	258	291
Dividends paid (note 7)	-	-	-	-	(112)	(112)
Share-based payments	-	-	-	-	6	6
Cost of shares transferred to employees	-	-	3	-	(6)	(3)
Tax on share-based payments	-	-	-	-	1	1
At 30th September 2018	221	148	(45)	95	2,142	2,561
Total comprehensive (expense) / income for the period	-	-	-	(12)	99	87
Dividends paid (note 7)	-	-	-	-	(44)	(44)
Share-based payments	-	-	-	-	11	11
Cost of shares transferred to employees	-	-	-	-	(4)	(4)
Reclassification	-	-	-	4	(4)	-
At 31st March 2019	221	148	(45)	87	2,200	2,611
Impact of adoption of IFRIC 23	-	-	-	-	5	5
At 31st March 2019 (restated)	221	148	(45)	87	2,205	2,616
Total comprehensive income for the period	-	-	-	53	177	230
Dividends paid (note 7)	-	-	-	-	(120)	(120)
Share-based payments	-	-	-	-	6	6
Cost of shares transferred to employees	-	-	13	-	(16)	(3)
At 30th September 2019	**221**	**148**	**(32)**	**140**	**2,252**	**2,729**

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1 Basis of preparation

These condensed consolidated accounts do not constitute statutory accounts within the meaning of Section 435 of the Companies Act 2006 and should be read in conjunction with the Annual Report 2019. The half-yearly accounts have been prepared in accordance with International Accounting Standard (IAS) 34 'Interim Financial Reporting' and the Disclosure Guidance and Transparency Rules of the UK's Financial Conduct Authority. The accounting policies applied are consistent with the accounting policies applied by the group in its consolidated accounts as at, and for the year ended, 31st March 2019, with the exception of the adoption of new and amended standards as explained below.

Information in respect of the year ended 31st March 2019 is derived from the company's statutory accounts for that year which have been delivered to the Registrar of Companies. The auditor's report on those statutory accounts was unqualified, did not include a reference to any matters to which the auditor drew attention by way of emphasis without qualifying its report and did not contain any statement under Section 498 (2) or Section 498 (3) of the Companies Act 2006.

The comparatives for the six months ended 30th September 2018 have been restated as a result of a detailed review of revenue transactions in the group's Platinum Group Metal Services business conducted in the prior year which concluded that location and form swaps and sale and repurchase agreements should be excluded from revenue under IFRS 15 (see note 15).

The group uses various measures to manage its business not defined by generally accepted accounting principles (GAAP) which are presented alongside GAAP measures. The group's non-GAAP measures are defined on page 41.

The half-yearly accounts are unaudited, but have been reviewed by the auditors. They were approved by the board of directors on 20th November 2019.

New and amended standards adopted by the group
IFRS 16, 'Leases', became applicable to the group on 1st April 2019 and the group changed its accounting policy as a result of adopting the new standard. The impact of the adoption of IFRS 16 and the group's new accounting policy in respect of leases are disclosed in note 14.

IFRIC 23, 'Uncertainty over Income Tax Treatments', became applicable to the group on 1st April 2019. The interpretation clarifies how to recognise and measure current and deferred income tax assets and liabilities where there is uncertainty over a tax treatment. The group has adopted IFRIC 23 retrospectively, with the cumulative effect of adoption, a £5 million decrease in tax provisions, recognised in reserves at 1st April 2019.

The other amendments to standards did not have any impact on the group's reported results or net assets.

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2 Segmental information

Six months ended 30th September 2019

	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Eliminations £ million	Total £ million
Revenue from external customers	**2,937**	**3,530**	**114**	**237**	**-**	**-**	**6,818**
Inter-segment revenue	**-**	**1,822**	**-**	**2**	**-**	**(1,824)**	**-**
Revenue	**2,937**	**5,352**	**114**	**239**	**-**	**(1,824)**	**6,818**
External sales	**1,392**	**437**	**111**	**184**	**-**	**-**	**2,124**
Inter-segment sales	**-**	**59**	**-**	**2**	**-**	**(61)**	**-**
Sales	**1,392**	**496**	**111**	**186**	**-**	**(61)**	**2,124**
Underlying operating profit (note 5)	**179**	**94**	**18**	**(8)**	**(18)**	**-**	**265**
Segmental net assets	**1,594**	**1,437**	**531**	**282**	**287**	**-**	**4,131**
Net debt							**(1,488)**
Post-employment benefit net assets and liabilities							**113**
Deferred income tax net liabilities							**(19)**
Provisions and non-current other payables							**(30)**
Investments in joint venture and associate							**22**
Net assets							**2,729**

Six months ended 30th September 2018

	Clean Air £ million	Efficient Natural Resources Restated[1] £ million	Health £ million	New Markets £ million	Corporate £ million	Eliminations £ million	Total Restated[1] £ million
Revenue from external customers	2,305	2,320	120	222	-	-	4,967
Inter-segment revenue	144	1,203	-	7	-	(1,354)	-
Revenue	2,449	3,523	120	229	-	(1,354)	4,967
External sales	1,312	408	118	171	-	-	2,009
Inter-segment sales	-	55	-	2	-	(57)	-
Sales	1,312	463	118	173	-	(57)	2,009
Underlying operating profit (note 5)	191	85	15	3	(23)	-	271
Segmental net assets	1,245	1,342	486	231	163	-	3,467
Net debt							(1,036)
Post-employment benefit net assets and liabilities							214
Deferred income tax net liabilities							(58)
Provisions and non-current other payables							(46)
Investments in joint venture and associate							20
Net assets							2,561

[1] See note 15.

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3 Revenue

Revenue from external customers by principal products and services

Six months ended 30th September 2019

	Clean Air £ million	**Efficient Natural Resources £ million**	**Health £ million**	**New Markets £ million**	**Total £ million**
Metal	**1,545**	**3,093**	**3**	**53**	**4,694**
Heavy Duty Catalysts	**464**	**-**	**-**	**-**	**464**
Light Duty Catalysts	**904**	**-**	**-**	**-**	**904**
Catalyst Technologies	**-**	**249**	**-**	**-**	**249**
Platinum Group Metal Services	**-**	**117**	**-**	**-**	**117**
Advanced Glass Technologies	**-**	**36**	**-**	**-**	**36**
Diagnostic Services	**-**	**35**	**-**	**-**	**35**
Generics	**-**	**-**	**67**	**-**	**67**
Innovators	**-**	**-**	**44**	**-**	**44**
Alternative Powertrain	**-**	**-**	**-**	**110**	**110**
Medical Device Components	**-**	**-**	**-**	**37**	**37**
Life Science Technologies	**-**	**-**	**-**	**22**	**22**
Other	**24**	**-**	**-**	**15**	**39**
Revenue	**2,937**	**3,530**	**114**	**237**	**6,818**

Six months ended 30th September 2018

	Clean Air £ million	Efficient Natural Resources Restated[1] £ million	Health £ million	New Markets £ million	Total Restated[1] £ million
Metal	993	1,912	2	51	2,958
Heavy Duty Catalysts	462	-	-	-	462
Light Duty Catalysts	831	-	-	-	831
Catalyst Technologies	-	232	-	-	232
Platinum Group Metal Services	-	106	-	-	106
Advanced Glass Technologies	-	38	-	-	38
Diagnostic Services	-	32	-	-	32
Generics	-	-	80	-	80
Innovators	-	-	38	-	38
Alternative Powertrain	-	-	-	97	97
Medical Device Components	-	-	-	36	36
Life Science Technologies	-	-	-	22	22
Other	19	-	-	16	35
Revenue	2,305	2,320	120	222	4,967

[1] See note 15.

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4 Effect of exchange rate movements on translation of sales and underlying operating profit of foreign operations

Average exchange rates used for translation of results of foreign operations	Six months ended 30.9.19	Six months ended 30.9.18
US dollar / £	**1.257**	1.329
Euro / £	**1.126**	1.131
Chinese renminbi / £	**8.70**	8.77

The main impact of exchange rate movements on the group's sales and underlying operating profit comes from the translation of the results of foreign operations into sterling.

	Six months ended 30.9.19 £ million	Six months ended 30.9.18 At last year's rates £ million	Six months ended 30.9.18 At this year's rates £ million	Change at this year's rates %
Sales				
Clean Air	**1,392**	1,312	1,341	4%
Efficient Natural Resources	**496**	463	475	4%
Health	**111**	118	122	-9%
New Markets	**186**	173	176	5%
Elimination of inter-segment sales	**(61)**	(57)	(58)	
Sales	**2,124**	2,009	2,056	3%
Underlying operating profit				
Clean Air	**179**	191	196	-9%
Efficient Natural Resources	**94**	85	88	6%
Health	**18**	15	15	21%
New Markets	**(8)**	3	3	n/a
Unallocated corporate expenses	**(18)**	(23)	(23)	
Underlying operating profit	**265**	271	279	-5%

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5 Underlying profit reconciliations

	Six months ended 30.9.19 £ million	30.9.18 £ million
Underlying operating profit	**265**	271
Amortisation of acquired intangibles (note 6)	**(6)**	(7)
Operating profit	**259**	264
Underlying profit before tax	**231**	251
Amortisation of acquired intangibles (note 6)	**(6)**	(7)
Profit before tax	**225**	244
Tax on underlying profit before tax	**(47)**	(41)
Tax on amortisation of acquired intangibles (note 6)	**1**	1
Change in non-underlying tax provisions	**(3)**	-
Tax expense	**(49)**	(40)
Underlying profit for the period	**184**	210
Amortisation of acquired intangibles (note 6)	**(6)**	(7)
Tax thereon	**1**	1
Change in non-underlying tax provisions	**(3)**	**-**
Profit for the period	**176**	204
	million	million
Weighted average number of shares in issue	**192.3**	192.1
	pence	pence
Underlying earnings per share	**95.8**	109.0

6 Amortisation of acquired intangibles

Amortisation of intangible assets which arises on the acquisition of businesses, together with any subsequent impairment of these intangible assets, is shown separately on the face of the income statement and excluded from underlying operating profit.

7 Dividends

An interim dividend of 24.50 pence (2018/19 23.25 pence) per ordinary share has been proposed by the board which will be paid on 4th February 2020 to shareholders on the register at the close of business on 29th November 2019. The estimated amount to be paid is £47 million (2018/19 £44 million) and has not been recognised in these accounts.

	Six months ended 30.9.19 £ million	30.9.18 £ million
2017/18 final ordinary dividend paid – 58.25 pence per share	**-**	112
2018/19 final ordinary dividend paid – 62.25 pence per share	**120**	-
Total dividends	**120**	112

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8 Net debt

	30.9.19 £ million	31.3.19 £ million
Cash and deposits	**99**	90
Money market funds	**-**	347
Bank overdrafts	**(65)**	(59)
Cash and cash equivalents	**34**	378
Other current borrowings and related swaps	**(351)**	(184)
Non-current borrowings and related swaps	**(1,124)**	(1,073)
Non-current interest rate swaps	**30**	13
Current lease liabilities	**(12)**	-
Non-current lease liabilities	**(65)**	-
Net debt	**(1,488)**	(866)

Net debt (including post tax pension deficits) to underlying EBITDA

	Six months ended 30.9.19 £ million	30.9.18 Restated[1] £ million
Underlying EBITDA	**350**	350
Depreciation and amortisation	**(91)**	(86)
Finance costs	**(66)**	(42)
Finance income	**30**	22
Share of profit of joint venture and associate	**2**	-
Tax expense	**(49)**	(40)
Profit for the period	**176**	204
Underlying EBITDA for this period	**350**	350
Underlying EBITDA for prior year	**723**	681
Less: Underlying EBITDA for prior first half	**(350)**	(327)
Annualised underlying EBITDA	**723**	704
Net debt	**(1,488)**	(1,036)
Pension deficits	**(74)**	(61)
Related deferred taxation	**14**	11
Net debt (including post tax pension deficits)	**(1,548)**	(1,086)
Net debt (including post tax pension deficits) to underlying EBITDA	**2.1**	1.5

[1] See note 15.

9 Precious metal leases

The group leases precious metals to fund temporary peaks in metal requirements provided market conditions allow. These leases are from banks for specified periods (less than 12 months) and the group pays a fee which is expensed on a straight-line basis over the lease term in finance costs. The group holds sufficient precious metal inventories to meet all the obligations under these lease arrangements as they fall due. At 30th September 2019, precious metal leases were £371 million at closing prices (31st March 2019 £372 million). The group's accounting policy in respect of precious metal leases is discussed in note 14.

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10 Post-employment benefits

The group operates a number of post-employment benefit plans around the world, the forms and benefits of which vary with conditions and practices in the countries concerned. The major defined benefit plans are pension plans and post-retirement medical plans in the UK and the US.

Movements in the net post-employment benefit assets and liabilities, including reimbursement rights, were:

	UK pension - legacy section £ million	UK pension - cash balance section £ million	UK post-retirement medical benefits £ million	US pensions £ million	US post-retirement medical benefits £ million	Other £ million	Total £ million
At 1st April 2019	199	(1)	(9)	(15)	(29)	(38)	107
Current service cost - in operating profit	(4)	(10)	-	(4)	-	(2)	(20)
Past service credit - in operating profit	-	-	-	-	10	-	10
Administrative expenses - in operating profit	(2)	-	-	-	-	-	(2)
Interest	2	-	-	-	(1)	-	1
Remeasurements	13	(2)	-	(8)	(3)	-	-
Company contributions	15	9	-	-	-	1	25
Exchange	-	-	-	(2)	(2)	-	(4)
At 30th September 2019	**223**	**(4)**	**(9)**	**(29)**	**(25)**	**(39)**	**117**

A past service credit of £10 million has been recognised in underlying operating profit in respect of changes to the Johnson Matthey Inc. Post-retirement Welfare Plan, effective 1st January 2020, which were announced during the period.

The post-employment benefit assets and liabilities are included in the balance sheet as follows:

	30.9.19 Post-employment benefit net assets £ million	**30.9.19 Employee benefit obligations £ million**	31.3.19 Post-employment benefit net assets £ million	31.3.19 Employee benefit obligations £ million
UK pension - legacy section	**223**	**-**	199	-
UK pension - cash balance section	**-**	**(4)**	-	(1)
UK post-retirement medical benefits	**-**	**(9)**	-	(9)
US pensions	**-**	**(29)**	-	(15)
US post-retirement medical benefits	**7**	**(32)**	8	(37)
Other	**2**	**(41)**	2	(40)
Total post-employment plans	**232**	**(115)**	209	(102)
Other long-term employee benefits		**(4)**		(4)
Total long-term employee benefit obligations		**(119)**		(106)

11 Transactions with related parties

There have been no material changes in related party relationships in the six months ended 30th September 2019 and no related party transactions have taken place which have materially affected the financial position or performance of the group during that period.

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12 Fair values

Fair value of financial instruments
Certain of the group's financial instruments are held at fair value. The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the balance sheet date.

Fair value hierarchy
Fair values are measured using a hierarchy where the inputs are:

- Level 1 — quoted prices in active markets for identical assets or liabilities.
- Level 2 — not level 1, but are observable for that asset or liability either directly or indirectly.
- Level 3 — not based on observable market data (unobservable).

The fair value of forward foreign exchange contracts, interest rate swaps, forward precious metal price contracts and currency swaps is estimated by discounting the future contractual cash flows using forward exchange rates, interest rates and prices at the balance sheet date.

The fair value of trade and other receivables measured at fair value is the face value of the receivable less the estimated costs of converting the receivable into cash.

The fair value of money market funds is calculated by multiplying the net asset value per share by the investment held at the balance sheet date.

There were no transfers of any financial instrument between the levels of the fair value hierarchy during the current or prior periods.

	30.9.19 £ million	31.3.19 £ million	Fair value hierarchy level
Financial instruments measured at fair value			
Non-current			
Investments at fair value through other comprehensive income	**56**	52	1
Interest rate swaps	**30**	13	2
Borrowings and related swaps	**(9)**	(5)	2
Current			
Trade receivables[1]	**431**	173	2
Other receivables[2]	**4**	9	2
Cash and cash equivalents - money market funds	**-**	347	2
Other financial assets[3]	**15**	22	2
Other financial liabilities[3]	**(21)**	(13)	2
Financial instruments not measured at fair value			
Non-current			
Borrowings and related swaps	**(1,115)**	(1,068)	
Lease liabilities	**(65)**	-	
Current			
Cash and cash equivalents - cash and deposits	**99**	90	
Cash and cash equivalents - bank overdrafts	**(65)**	(59)	
Other borrowings and related swaps	**(351)**	(184)	
Lease liabilities	**(12)**	-	

[1] Trade receivables held in a part of the group with a business model to hold trade receivables for collection or sale.
[2] Other receivables with cash flows that do not represent solely the payment of principal and interest.
[3] Includes forward foreign exchange contracts, forward precious metal price contracts and currency swaps.

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12 Fair values (continued)

The fair value of financial instruments, excluding accrued interest, is approximately equal to book value except for:

	30.9.19		31.3.19	
	Carrying amount £ million	**Fair value £ million**	Carrying amount £ million	Fair value £ million
US Dollar Bonds 2022, 2023, 2025 and 2028	**(511)**	**(522)**	(481)	(477)
Euro Bonds 2021, 2023, 2025 and 2028	**(266)**	**(277)**	(251)	(264)
Euro EIB loan 2019	**(110)**	**(111)**	(107)	(108)
Sterling Bonds 2024 and 2025	**(110)**	**(120)**	(110)	(118)
KfW US dollar loan 2024	**(41)**	**(43)**	(38)	(39)

The fair values are calculated using level 2 inputs by discounting future cash flows to net present values using appropriate market interest rates prevailing at the period end.

13 Contingent liabilities

The group is involved in various disputes and claims which arise from time to time in the course of its business including, for example, in relation to commercial matters, product quality or liability, employee matters and tax audits. The group is also involved from time to time in the course of its business in legal proceedings and actions, engagement with regulatory authorities and in dispute resolution processes. These are reviewed on a regular basis and, where possible, an estimate is made of the potential financial impact on the group. In appropriate cases a provision is recognised based on advice, best estimates and management judgement. Where it is too early to determine the likely outcome of these matters, no provision is made. Whilst the group cannot predict the outcome of any current or future such matters with any certainty, it currently believes the likelihood of any material liabilities to be low, and that such liabilities, if any, will not have a material adverse effect on its consolidated income, financial position or cash flows.

On a specific matter, the group previously disclosed that it had been informed by two customers of failures in certain engine systems for which the group supplied a particular coated substrate as a component for their customers' emissions after-treatment systems. The particular coated substrate was sold to only these two customers. The group has not been contacted by any regulatory authority about these engine system failures. The reported failures have not been demonstrated to be due to the coated substrate supplied by the group. As previously disclosed, we settled with one of these customers on mutually acceptable terms with no admission of fault. Having reviewed its contractual obligations and the information currently available to it, the group believes it has defensible warranty positions in respect of its supplies of coated substrate for the after-treatment systems in the affected engines remaining at issue. If required, it will vigorously assert its available contractual protections and defences. The outcome of any discussions relating to the matters raised is not certain, nor is the group able to make a reliable estimate of the possible financial impact at this stage, if any. The group works with all its customers to ensure appropriate product quality and we have not received claims in respect of our emissions after-treatment components from this or any other customer. Our vision is for a world that's cleaner and healthier; today and for future generations. We are committed to enabling improving air quality and we work constructively with our customers to achieve this.

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14 Changes in accounting policies

This note explains the impact of the adoption of IFRS 16, 'Leases', on the group's accounts and discloses the new accounting policy that has been applied from 1st April 2019.

IFRS 16

IFRS 16 became effective from 1st April 2019, replacing IAS 17, 'Leases', and related interpretations. Whilst lessor accounting is similar to IAS 17, lessee accounting is significantly different. The group leases some of its property, plant and equipment which are used by the group in its operations. Under IFRS 16, the group recognises on the balance sheet a right-of-use asset and a lease liability for future lease payments in respect of all leases unless the underlying assets are of low value or the lease term is 12 months or less. In the income statement, rental expense on the impacted leases is replaced with depreciation on the right-of-use asset and interest expense on the lease liability.

It is unclear whether contracts entered into by the group to lease metal from third parties constitute leases as defined by IFRS 16. Specifically, it is not clear whether the leased metal represents a defined asset given its fungible nature. However, on the basis that there is no alternative accounting standard applicable to these transactions, the group has continued to recognise the expense in the income statement on a straight-line basis over the lease term, with no recognition on the balance sheet.

The group has applied the modified retrospective transition approach and has not restated comparative amounts for the year ended 31st March 2019. Under this approach, the group has chosen to measure right-of-use assets at 1st April 2019 at an amount equal to the lease liability as adjusted for lease prepayments, accrued lease expenses and onerous lease provisions.

The group has elected to adopt the following practical expedients on transition:

- not to capitalise a right-of-use lease asset or lease liability where the lease expires before 31st March 2020;
- not to reassess contracts to determine if the contract contains a lease;
- to utilise onerous lease provisions to reduce right-of-use asset values;
- to use hindsight in determining the lease term;
- to exclude initial direct costs from the measurement of the right of use asset; and
- to apply the portfolio approach where a group of leases has similar characteristics.

Impact of adoption on the group's primary statements

Income statement

The group estimates that profit before tax will be reduced by approximately £1 million in the year ending 31st March 2020 as a result of adopting IFRS 16, with operating profit and finance costs increasing by £2 million and £3 million, respectively.

Balance sheet

The group has recognised a right-of-use asset of £89 million (after adjustments for lease prepayments, accrued lease expenses and onerous lease provisions) and lease liabilities of £77 million on transition at 1st April 2019. The weighted average incremental borrowing rate applied to lease liabilities was 4.2%.

Cash flow statement

There is no net cash flow impact from the adoption of IFRS 16. Lease payments of £7 million during the six months ended 30th September 2019, including interest, are included in financing rather than operating activities.

Impact of adoption on the group's non-GAAP measures

The adoption of IFRS 16 has not had a material impact on the group's non-GAAP measures.

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14 Changes in accounting policies (continued)

Reconciliation between operating lease commitments and lease liabilities

The following table reconciles between the operating lease commitments disclosed under IAS 17 at 31st March 2019 and the lease liabilities recognised on transition to IFRS 16 at 1st April 2019:

	£ million
Future minimum amounts payable under non-cancellable operating leases reported under IAS 17 at 31st March 2019	**76**
Change in assessment of lease term	**22**
Low-value or short-term leases	**(1)**
Reclassification of onerous lease provision	**1**
Impact of discounting lease liabilities	**(21)**
Lease liabilities recognised on transition to IFRS 16 at 1st April 2019	**77**
Current	**11**
Non-current	**66**
Lease liabilities recognised on transition to IFRS 16 at 1st April 2019	**77**

Impact on consolidated balance sheet at 1st April 2019

The following table shows the effect of adopting IFRS 16 on the consolidated balance sheet at 1st April 2019:

	£ million
Non-current assets	
Right-of-use assets	**89**
Other receivables[1]	**(14)**
Total non-current assets	**75**
Total assets	**75**
Current liabilities	
Trade and other payables	**1**
Lease liabilities	**(11)**
Total current liabilities	**(10)**
Non-current liabilities	
Lease liabilities	**(66)**
Provisions	**1**
Total non-current liabilities	**(65)**
Total liabilities	**(75)**
Net assets	**-**

[1] Prepayments reclassified as right-of-use assets.

Accounting policy applied to 31st March 2019

Under IAS 17, all of the group's leases were classified as operating leases and lease payments made (net of any incentives received from the lessor) were charged to the income statement on a straight-line basis over the lease term.

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14 Changes in accounting policies (continued)

Accounting policy applied from 1st April 2019

Leases are recognised as a right-of-use asset, together with a corresponding lease liability, at the date at which the leased asset is available for use.

The right-of-use asset is initially measured at cost, which comprises the initial value of the lease liability, lease payments made (net of any incentives received from the lessor) before the commencement of the lease, initial direct costs and restoration costs. The right-of-use asset is depreciated on a straight-line basis over the shorter of the asset's useful life and the lease term in operating profit.

The lease liability is initially measured as the present value of future lease payments discounted using the interest rate implicit in the lease or, where this rate is not determinable, the group's incremental borrowing rate, which is 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 with similar terms and conditions. Interest is charged to finance costs at a constant rate of interest on the outstanding lease liability over the lease term.

Payments in respect of short-term leases, low-value leases and leases of intangible assets are charged to the income statement on a straight-line basis over the lease term in operating profit.

15 Restatements

The comparatives for the six months ended 30th September 2018 have been restated as a result of a detailed review of revenue transactions in the group's Platinum Group Metal Services business conducted in the prior year which concluded that location and form swaps and sale and repurchase agreements should be excluded from revenue under IFRS 15. The group regularly enters into contracts whereby metal is transferred with a separate agreement to buy back the metal, either in a different location and/or in a different form. IFRS 15 requires the presentation of swap transactions (regardless of whether they are a location or form swap) with counterparties of a similar nature to the group to be excluded from revenue. It further clarifies that transactions with a linked sale and future repurchase (sale and repurchase agreements) are excluded from revenue and treated as finance transactions.

The impact of the restatement is to reduce both revenue and cost of sales in respect of swaps and sale and repurchase agreements for the six months ended 30th September 2018 by £604 million and £1,537 million, respectively. The latter restatement includes other, smaller errors identified during the review and also increases finance costs and finance income by £18 million. The restatement has no net impact on sales, profit, working capital, net debt and net assets and, therefore, historic business performance measures communicated by the group are unchanged.

Impact on the Condensed Consolidated Income Statement

	Six months ended 30th September 2018			
	As previously reported £ million	Sale and repurchase agreements £ million	Location and form swaps £ million	**Restated £ million**
Revenue	7,108	(1,537)	(604)	**4,967**
Cost of sales	(6,634)	1,537	604	**(4,493)**
Gross profit	474	-	-	**474**
Finance costs	(24)	(18)	-	**(42)**
Finance income	4	18	-	**22**

15 Restatements (continued)

Impact on the Condensed Consolidated Cash Flow Statement

	Six months ended 30th September 2018		
	As previously reported £ million	Sale and repurchase agreements £ million	**Restated £ million**
Interest received	4	18	**22**
Interest paid	(27)	(18)	**(45)**

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Non-GAAP Measures

for the six months ended 30th September 2019

The group uses various measures to manage its business which are not defined by generally accepted accounting principles (GAAP). The group's management believes these measures provide valuable additional information to users of the accounts in understanding the group's performance. Certain of these measures are financial Key Performance Indicators which measure progress against our strategy.

Non-GAAP measure	Definition	Purpose	Reconciliation to GAAP measure
Sales[1]	Revenue excluding sales of precious metals to customers and the precious metal content of products sold to customers.	Provides a better measure of the growth of the group as revenue can be heavily distorted by year on year fluctuations in the market prices of precious metals and, in many cases, the value of precious metals is passed directly on to customers.	See note 2
Underlying operating profit margin[1]	Underlying operating profit divided by sales. Underlying operating profit excludes profit or loss on disposal of businesses, gain or loss on significant legal proceedings, together with associated legal costs, amortisation of acquired intangibles and major impairment and restructuring charges.	Provides a measure of how we convert our sales into underlying operating profit and the efficiency of our business.	See note 5
Underlying earnings per share[1]	Underlying profit for the period divided by the weighted average number of shares in issue.	Our principal measure used to assess the overall profitability of the group.	See note 5
Return on Invested Capital (ROIC)[1]	Underlying operating profit divided by average equity, excluding post tax pension net assets, plus average net debt for the same period.	Provides a measure of the group's efficiency in allocating the capital under its control to profitable investments.	See below
Average working capital days (excluding precious metals)[1]	Monthly average of non-precious metal related inventories, trade and other receivables and trade and other payables (including any classified as held for sale) divided by sales for the last three months multiplied by 90 days.	Provides a measure of efficiency in the business with lower days driving higher returns and a healthier liquidity position for the group.	See below
Free cash flow	Net cash flow from operating activities after net interest paid, net purchases of non-current assets and investments, dividends received from joint venture and associate and the principal element of lease payments.	Provides a measure of the cash the group generates through its operations, less capital expenditure.	See Condensed Consolidated Cash Flow Statement
Net debt (including post tax pension deficits) to underlying EBITDA	Net debt, including post tax pension deficits and quoted bonds purchased to fund the UK pension (excluded when the UK pension plan is in surplus) divided by underlying EBITDA for the same period.	Provides a measure of the group's ability to repay its debt.	See note 8

[1] Key Performance Indicator

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Non-GAAP Measures

for the six months ended 30th September 2019

Return on Invested Capital (ROIC)

	Six months ended 30.9.19 £ million	30.9.18 £ million
Underlying operating profit for this period (note 5)	**265**	271
Underlying operating profit for prior year	**566**	525
Less: Underlying operating profit for prior first half (note 5)	**(271)**	(250)
Annualised underlying operating profit	**560**	546
Average net debt	**1,270**	1,029
Average equity	**2,679**	2,373
Average capital employed	**3,949**	3,402
Less: Average pension net assets	**(258)**	(170)
Less: Average related deferred taxation	**40**	26
Average capital employed (excluding post tax pension net assets)	**3,731**	3,258
ROIC (excluding post tax pension net assets)	**15.0%**	16.7%
ROIC	**14.2%**	16.0%

Average working capital days (excluding precious metals)

	30.9.19 £ million	30.9.18 Restated[1] £ million
Inventories	**1,475**	1,176
Trade and other receivables	**1,953**	1,342
Trade and other payables	**(1,713)**	(1,122)
Total working capital	**1,715**	1,396
Less: Precious metal working capital	**(959)**	(671)
Working capital (excluding precious metals)	**756**	725

	Six months ended 30.9.19 Days	30.9.18 Days
Average working capital days (excluding precious metals)	**61**	61

[1] See note 15.

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2019

28th November
Ex dividend date

29th November
Interim dividend record date

2020

4th February
Payment of interim dividend

28th May
Announcement of results for the year ending 31st March 2020

4th June
Ex dividend date

5th June
Final dividend record date

23rd July
129th Annual General Meeting (AGM)

4th August
Payment of final dividend subject to declaration at the AGM

Cautionary Statement

This announcement 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 the group operates. It is believed that the expectations reflected in this announcement 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.

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