



JM

2020 Annual Report and Accounts

Johnson Matthey
Inspiring science, enhancing life

Our report for 2020

Unless otherwise stated, performance data is for the year ended 31st March 2020.

Sustainability reporting

This report is written to the Global Reporting Initiative (GRI) reporting standard Core option. We report against GRI in line with the issues that are important and / or material to our business.






Stay updated

You can find this report and additional information about Johnson Matthey, including the latest news, investor updates and sustainability, on our website:

www.matthey.com

Navigation

Throughout this report you will find a series of easy to identify icons to help you find further information about the group.

-  Read more
-  Principal risk
-  Go online
-  Key performance indicator (KPI)
-  GRI indicator

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Cautionary statement

The Strategic Report and certain other sections of this annual report contain 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 these statements are reasonable but they may be affected by a wide range of variables which could cause actual results to differ materially from those currently anticipated.

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Johnson Matthey

Our vision is for a world that's cleaner and healthier, today and for future generations.

As a global leader in sustainable technologies, we use our cutting edge science to create solutions with our customers that make a real difference to the world around us.

Inspiring science, enhancing life

2019/20 in numbers – good progress prior to COVID-19; confident in the strength of our business

	Year ended 31st March		
	2020	2019	Change
Investing in our science			
Gross R&D spend	£199 million	£190 million	+5%
Supporting our people			
Lost time injury and illness rate ¹	0.35	0.57 ²	-39%
Employee engagement index score ³	63	59	+4
Delighting our customers			
Revenue	£14,577 million	£10,745 million	+36%
Sales ⁴ *	£4,170 million	£4,214 million	-2% ⁵
Operating profit	£388 million	£531 million	-27%
Underlying operating profit ^{6,*}	£539 million	£566 million	-6% ⁵
Running our business better			
Average working capital days ^{6,*}	63 days	59 days	+4 days
Free cash inflow / outflow ^{6,*}	£52 million inflow	£13 million outflow	
Operational carbon footprint	391,459 tonnes CO₂ equivalent	423,123 tonnes ⁷ CO ₂ equivalent	-7%
Creating value for our shareholders			
Return on invested capital ^{6,*}	13.3%	16.4%	
Earnings per share	132.3p	215.2p	-39%
Underlying earnings per share ^{6,*}	199.2p	228.8p	-13%
Ordinary dividend per share	55.625p	85.5p	-35%

* The group uses various non-GAAP measures which are not defined by generally accepted accounting principles (GAAP) as we believe these provide valuable additional information in understanding the group's performance. For further details, see note 35 on page 198.

¹ For definition see page 217.

² Restated, see page 40.

³ For definition see page 42.

⁴ Sales excluding precious metals. For definition see page 198.

⁵ At constant rates (see note 2 on page 53).

⁶ For definition see page 198.

⁷ Restated, see page 216.



Strategic Report

Here we explain how we use our inspiring science to enhance life.

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Strategic Report

JMM

in profile

Our vision is for a world that's **cleaner and healthier**; today and for future generations.

We put our inspiring **science** to work

- Catalysis
- Characterisation and modelling
- Chemical synthesis
- Electrochemistry
- Material design and engineering
- Platinum group metals (pgms) and specialist metallurgy
- Process optimisation
- Product formulation
- Surface chemistry and coatings

tackling the world's big **challenges**

Clean air for all

Achieving more with less

Affordable, accessible healthcare

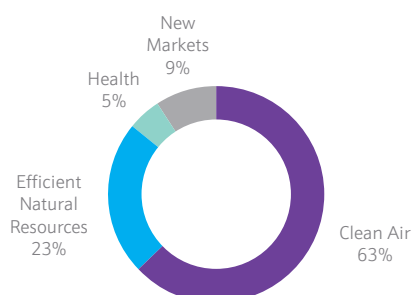
A new era of clean energy

Our key highlights

Sales¹
excluding precious metals

£4.2bn

Sales by sector
excluding precious metals



Operating profit
reported

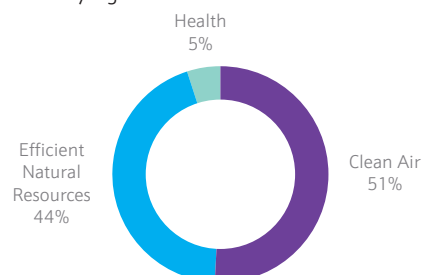
£388m

¹ The group believes that sales excluding precious metals is a better measure of the underlying performance of the group than revenue. Total 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 our customers.

Operating profit
underlying

£539m

Operating profit (excludes £38 million of corporate costs)
underlying



Johnson Matthey is a global leader in science that makes the world cleaner and healthier.

The world is facing a set of complex challenges: climate change; the need for cleaner air; the drive for improved health; and a responsibility to be smarter and more efficient in the way we use our planet's finite natural resources.

Using our expertise in science at the atomic scale, JM is developing the solutions that create value for our customers and have an impact globally, making the world cleaner and healthier; today and for future generations.

delivered through four global **sectors**

Clean Air

+ See page 56 for more information

Efficient Natural Resources

+ See page 57 for more information

Health

+ See page 58 for more information

New Markets

+ See page 60 for more information

to solve our **customers'** complex problems.

A global leader in catalysts and catalyst systems to reduce emissions from vehicles and industry, serving the **automotive** and **energy** markets.

Products and processes that transform, conserve and recycle scarce resources using less energy and fewer raw materials across the **chemicals, energy, automotive** and **pharmaceutical** markets.

Core capabilities in complex chemistry, manufacturing and scale up to create active pharmaceutical ingredients (APIs) and other solutions for niche areas primarily in the **pharmaceutical** market.

Applying our science into emerging opportunities, such as battery materials and fuel cells, enabling the once in a generation shifts occurring in the **automotive, chemicals** and **energy** markets.

Where we operate

Over **30** countries
~**15,350** people

North America
11 major manufacturing facilities
30% of group sales
18% of employees

Europe
14 major manufacturing facilities
49% of group sales
57% of employees

Rest of Asia
6 major manufacturing facilities
8% of group sales
10% of employees

China
5 major manufacturing facilities
7% of group sales
8% of employees

Rest of World
5 major manufacturing facilities
6% of group sales
7% of employees

Strategic Report

Chair's statement

Making a huge contribution to a more sustainable future

Patrick Thomas
Chair



As I write to you this year, my thoughts are with you all and I hope you are safe and well.

I also want to extend the board's sincere gratitude to every single JM employee for their immense efforts and contribution over the past few months and, indeed, throughout 2019/20.

As I reflect on the past year, I am pleased with the many changes we are making to strengthen our business, improving our efficiency and effectiveness in such a changing and volatile business environment. I call this the 'known unknown', but I doubt that anyone was planning for the 'unknown unknown' brought about by the global COVID-19 pandemic.

Robert and the whole leadership team have really stepped up to the challenge and the rapid and decisive action they have taken is to be commended. At times of crisis like this, some leadership teams struggle and some get stronger; the board has seen the strength of response at JM.

The ongoing uncertainty has required us to take short term action without losing sight of the long term, and our strong values have guided us well. As the crisis evolved, it was important for us to make clear commitments to all of our stakeholders at such a worrying time.

[+ Read more: Our COVID-19 commitments on page 9](#)

Taking decisions for all our stakeholders

We have prioritised – without compromise – the health, safety and financial security of our employees, customers, suppliers, shareholders and communities. And we have played our part in keeping the economy going through supplying countless products that the world's pharmaceutical, food and energy supply chains are reliant on right now.

Who knew that JM's technologies performed a critical role in ventilators? Or that Bitrex, a bitter tasting product that stops accidental swallowing of household cleaning products, is used to make sure medical grade face masks are correctly fitted?

The board members were united in wanting to do their bit alongside JM's 15,000 employees. Each director is adding a portion of their salaries or fees for April, May and June to a new, £1 million science education fund that JM has specially created in the wake of COVID-19. We know that science will help provide the solution to winning the fight against COVID-19, and other global challenges. The new fund will be used to break down the barriers that prevent people choosing to study science.

Our fast response to COVID-19 has ensured JM is in a strong position financially with a solid cash position and a strong balance sheet. One must also remember that JM is a highly resilient and diverse business. The nature of our portfolio means we serve a range of end markets and geographies which will be impacted by COVID-19 to varying degrees and timescales. The actions we have taken to protect our people, maintain good liquidity and a strong balance sheet mean that we are well positioned to navigate COVID-19 and take advantage of the opportunities that will emerge. We have also announced the acceleration of certain strategic initiatives to drive further efficiency which will deliver savings over the next three years. However, the economic situation remains extremely dynamic, especially in our largest market, automotive.

The board is acutely aware of its accountability to maintain the long term financial health of JM and its responsibilities to stakeholders. We have spent significant time considering this year's final dividend and have taken a decision which we believe balances the interests of all our stakeholders.

Notwithstanding the strong financial position of the group, in light of the current uncertainty and to balance the needs of all stakeholders, we are proposing a final dividend for the year of 31.125 pence, representing half the level of the 2018/19 final dividend. This is not intended to be a rebasing; the board remains committed to a progressive dividend and anticipates restoring future dividend payments to levels seen prior to the COVID-19 pandemic when circumstances permit.

JM's sustainable technologies are even more relevant

The big growth drivers of JM's business are stronger than ever and the need to balance human prosperity with climate stability has moved even further up the agenda over the last year. Through its science, JM continues to make a huge contribution to a sustainable future – driving down pollution, lowering carbon footprints for our customers and creating molecules to combat cancer – and we are orienting our investments towards the sustainable technologies that will be needed in the not too distant future.

"The ongoing uncertainty has required us to take short term action without losing sight of the long term, and our strong values have guided us well. As the crisis evolved, it was important for us to make clear commitments to all of our stakeholders at such a worrying time."

We use a risk lens to get the right balance of capital allocation across the portfolio, particularly to our investments that relate to our ability to meet automotive industry demands as the shift to lower carbon transportation continues. We are investing significant resources into our eLNO battery materials technology and focusing carefully on the risk management of the market, technology and capital investment elements. As our Clean Air business matures, our investments in new world class manufacturing plants in Europe and Asia will provide the physical and metaphorical 'catalyst' to move the business model into a new mode to maximise value over the next decade.

[+ Read more: Risks and uncertainties on pages 67 to 74](#)

Hydrogen, as a source of clean energy, is a necessary element in the transition to a clean, low carbon economy and JM has a unique competitive advantage for this transition. Over the last year, customers, governments, regulators and investors around the world increasingly have been seeing the importance of hydrogen and are coming to JM as a trusted expert in hydrogen production and fuel cell technologies. These aren't technologies that are still at a research scale; JM has well developed, scalable technologies in customer applications today. We have increased investment this year to accelerate our hydrogen strategy and in October, the board witnessed JM's capabilities first hand when we visited our Fuel Cells business in Swindon, UK.

We also spent time at our operations in China and five of us visited several US sites giving us ample opportunity to meet employees from all sectors. The technical competence of our people always impresses me, and my recent visits reinforce how deeply rooted it is right across JM. It is unusual for a company to be able to make that depth of technical expertise available to customers all around the world; the ability to do so is a genuine hallmark of JM.

We have met many more stakeholders and strengthened ways to understand their issues

The board makes it a priority to meet as many of JM's employees as we can as it is one of the most valuable ways of assessing the success of strategy delivery and getting a real feel for the culture of the organisation.

This year, as part of our response to the new UK Corporate Governance Code, we expanded and formalised our workforce engagement mechanisms so we can better understand the issues on the ground.

We spent time discussing how best to achieve this and, following a pilot session to test effectiveness, we introduced a programme of country engagement forums. We will run these regularly with employees from the UK, China, US and Germany and members of the board will be directly involved.

I've also met more of our shareholders this year. Discussions focused mostly on how we are managing and prioritising investments across our business opportunities and there was increased interest in our sustainability credentials and our role in enabling a hydrogen economy. JM's shareholders are among the most engaged I have met and show a genuine interest in the company. In January we also hosted an investor lunch where the board committee chairs and I met with around 25% of our top 20 institutional shareholders.

So, we have good mechanisms in place for the board to understand the views of shareholders, employees, customers and our other stakeholders. Alongside these, I will continue to be available to our major shareholders throughout the year, despite not having the opportunity to meet with some you in person at our AGM in July – which this time will be conducted virtually.

[+ Read more: Our stakeholders on pages 28 to 31](#)

[+ Read more: Our Section 172 statement on pages 32 to 33](#)

Strategic Report

Chair's statement continued

We have continued to create and shape the right culture and support strategy execution

Every interaction the board and I have had with employees and shareholders has taught us something about the company that is new and gives valuable insights on the potential of the organisation and on its culture.

In my experience, the culture at JM is open and innovative where people enjoy working together and are really connected with the amazing things the company does for the world. My board colleagues and I appreciate the role we play in defining culture and leading by example, especially when it comes to safety and doing the right thing. Throughout the year, we took time to agree how to evolve our culture to keep pace with strategy. We are developing and improving our understanding of how we can assess, monitor and test the culture of the organisation, particularly as it goes through such significant change as we accelerate our strategic initiatives. We still have room for improvement, but our site visits and other interactions with employees are extremely valuable, together with the feedback we get from employee surveys.

[+ Read more: Our culture ambition on page 41](#)

Robert and the leadership team have made good progress this year in executing our strategy for sustained growth and value creation, which has set us up well to be able to prioritise and accelerate our plans in the current climate. As a board, we have continued to engage in the development of strategy and ask the really challenging questions.

During the year, we have probed further into the strategies for each of our sectors and have increased the time spent on active and regular risk management in our meeting agendas. Exploring the risk landscape and being more rigorous in using risk as a lens in business decisions, especially on capital investments, has translated into specific mitigating actions, particularly in the eLNO investments.

Board changes have brought new perspectives and experience

Succession planning, not only at board level, is something we have spent more time on to ensure we have the depth of leadership capability required to support the cultural and business change.

At the board level, we have a good breadth of varied and strong skills, experience and diversity which bring richness to our discussions. During the last 12 months we welcomed Xiaozhi Liu and Doug Webb as Non-Executive Directors. As I reported in my statement last year, Doug will take over from Alan Ferguson as Chair of the Audit Committee upon Alan's retirement from the board at the end of the AGM in July which has allowed a good amount of time for a thorough onboarding and handover. I'd like to thank Alan for his wise counsel and contributions. We will all miss his challenge and his immense knowledge of the business. I'm pleased to say, though, that Doug has shown himself to provide equal challenge since he joined the team.

At the end of March, after a 36 year career with JM, including over six years as an Executive Director of the board, John Walker retired from the company. John led the Clean Air business successfully for a decade, and on behalf of the company and its stakeholders, I want to thank him for all he has done for JM. I am impressed by how professionally he has managed his handover to Joan Braca, ensuring that the Clean Air business remains set for continued success for many years to come.

This year, at the end of March, Simon Farrant, Legal Counsel and Company Secretary also retired after 26 years in JM during which he has successfully driven the compliance and governance agenda. Simon has contributed more than you could ask of any Company Secretary and I thank him for his many years of support.

Good governance is more important than ever

At this time of change and volatility, compounded by the COVID-19 pandemic, where we need to maintain financial strength, our priority is on good governance and retaining our dynamic risk management processes. This focus will ensure we ask the right questions of Robert and the team to support them in driving results for the short and medium term. We will build on our work last year on succession planning and culture to support business change and continue to set the tone on environment, health and safety with a focus this year on process safety improvement.

[+ Read more: Corporate Governance Report on pages 82 to 91](#)

Resilient for today with a successful future ahead

I'd like to personally thank our shareholders – including the several thousand employees who own company shares – for their strong interest in the long term opportunities that are key to the future of JM and for their interest in how we are managing the transition in our portfolio.

I also want to thank all our people for their dedication to safe operations, improving efficiency and embracing the accelerated strategic changes taking place across JM.

These are challenging and dynamic times but JM is in good shape and we have a sound approach to maintain financial strength in the short term. This means we can optimise value creation long term and make the world we all share, a cleaner, healthier place.



Patrick Thomas
Chair

Our COVID-19 commitments

Johnson Matthey has a clear vision – for a world that's cleaner and healthier; today and for future generations.

We have a strong set of values at the heart of our work, and these have guided our COVID-19 response.

That's why we've outlined a number of commitments to support our people, customers, suppliers, shareholders and communities.

People

We are ensuring the health, safety, and wellbeing of our 15,000 people.

- Upholding the highest standards of safety in all working practices.
- Pledging to make no member of staff redundant as a direct result of the impact of COVID-19 until the end of June.
- Committing not to use the UK Government's scheme for furloughed staff during April, May and June.



Customers and the relief effort

We are providing vital products in the world's most critical sectors and supply chains.

- Keeping operations running for customers where it's safe to do so.
- Producing:
 - products used in ventilators.
 - ingredients used in chronic pain relief medication.
 - catalysts used in the production of food and energy.



Suppliers

We are helping our value chain and suppliers navigate a difficult period.

- Maintaining our payment terms to support all our suppliers.
- Pledging to support any small supplier that is suffering hardship and requests early payment terms as a result of the impact of COVID-19 during April, May and June.



Communities

Our communities are at the heart of the fight against COVID-19, and we are playing our part.

- Matching all donations made by our employees to funding local relief efforts.
- Coordinating a local volunteering programme across JM.
- Manufacturing goggles and visors for community medical staff and donated spare PPE.



Science

We are looking longer term, creating a £1 million fund for STEM education.

- Creating a special fund for local and regional science education programmes.
- Supporting the fight against COVID-19, future outbreaks, and other global challenges.
- Improving access to a quality science education, and supporting our vision for a cleaner and healthier world.



Strategic Report

Chief Executive's statement

Guided by our values and supporting all our stakeholders in unprecedented times

Robert MacLeod
Chief Executive



Undoubtedly, the world is in a very different place today compared to 12 months ago. Throughout the year we have witnessed a shift in the urgency for action against climate change and net zero targets set by several countries around the world. Then, towards the end of the year, there has been the emergence of COVID-19.

This has brought unprecedented challenges to individuals and to all businesses but I am pleased at the way JM has stepped up to those challenges. In the early part of 2020, we started to see the spread of the virus in China. The actions we put in place there to look after our people and manage our operations in line with customer demand stood us in good stead as the virus took hold across the rest of the world during March. Our priority has been, and continues to be, the health and safety of our people, customers, suppliers and communities where we operate, and I would like to say a heartfelt thank you to all our employees for their dedication and efforts over the past few months.

We are playing our part to combat this pandemic, supplying crucial, but often hidden, components into many of the value chains providing vital products in the health, food or energy sectors. In addition, our people around the world have applied their initiative in numerous ways, from manufacturing goggles and visors and offering them to healthcare professionals, to lending unused gas storage tanks to hospitals for storing oxygen. JM and its people are also providing financial support and volunteering their time to help charity partners and communities as we work together through COVID-19.

It goes without saying that we have not experienced anything quite like this in our lifetime. However, we have been fortunate in being able to draw on our strong set of company values to guide our decisions, and ensure we consider our response and commitments to all our stakeholder groups.

[+ Read more: Our COVID-19 commitments on page 9](#)

We have taken immediate and decisive action to protect our long term financial health

Our immediate response to COVID-19 was to assess the risks and take decisive action to maintain good liquidity and a strong balance sheet. These measures, which included cost reduction, tightly managing our operations to optimise working capital and postponing non-strategic capex, also positively impacted our cash flow. In mid-March, we concluded the refinancing of £1 billion of our bank facilities.

We acted quickly, temporarily stopping production at our Clean Air plants, managing our raw materials purchases across the group and controlling intakes into our pgm refineries, all of which preserved our cash position. The effects of COVID-19 did, however, affect our performance towards the end of the year, adversely impacting our underlying operating profit by about £60 million overall.

Following the temporary closure of numerous automotive original equipment manufacturer (OEM) production plants due to government mandated closures and lower consumer demand, our Clean Air plants are now gradually resuming production across all regions. Across the remainder of our business, the vast majority of our plants are operational and we have adopted new working practices in line with local guidelines. Alongside maintaining our operations where it is safe to do so, we are balancing obligations to our stakeholders through maintaining payment terms with suppliers and offering support to small suppliers who may be facing hardship.

Accelerating our strategy to drive efficiency

These are challenging times, but we are well positioned in an uncertain world. We have a resilient and diverse portfolio, serving a range of end markets and geographies. As you would expect, we continue to assess the potential impacts and future scenarios in the wake of COVID-19 – we give more details on this on pages 65 and 66. This is a huge shock to the global system rather than a new structural challenge for our business. We expect that our markets will recover and we are continuing with our strategic investments, but a sustained economic slowdown is likely, and the way we navigate through this period will be critical to keeping JM healthy and in good shape.

We are also building on our recent investments to drive efficiency across our manufacturing footprint and our operations, accelerating areas of our strategy to drive further efficiency and strengthen our business. There are two areas of particular focus:

Consolidating Clean Air footprint

In Clean Air, we have been investing in new world class plants in Europe and Asia. These plants are identical and highly flexible, allowing us to drive efficiency and increase agility across our global footprint by consolidating some of our existing older capacity in Europe into this new capacity.

Driving organisational efficiency

In recent years we have been investing into our corporate functions. For example, we are rolling out our single global ERP (enterprise resource planning) system, and have invested into our global procurement and IT functions to increase our capability and standardise our processes. This is allowing us to review our group operating model to remove duplication of activities between the corporate centre and the sectors, and reduce complexity across the organisation. A simplified organisation will enable faster decision making and reduce costs.

We know, from our recent employee opinion survey, that this duplication can sometimes stifle their ability to do their jobs. By bringing forward this work to make the way we operate clearer and simpler, we hope to remove barriers for our people and create more fulfilling roles.

We are taking a coordinated approach to these initiatives to manage the risk and drive delivery of the change.

r Business transition risk on page 74

In total, the acceleration of our strategic initiatives will deliver annualised savings of at least £80 million over the next three years of which at least £30 million will benefit 2020/21. We go into more detail on the breakdown of the savings, along with the associated costs, on pages 61 and 62.

Pushing forward with our strategy – global trends remain firmly in place as drivers for growth

These developments do not change the global trends that will drive our longer term growth. Addressing climate change remains a priority and commitments to net zero are gathering pace across the world. The impact of the rising global population, increasing longevity and natural resource challenges also remain top of national and international agendas. With our continued investment in strategic growth projects and leading sustainable technologies, we remain uniquely positioned to address these key global trends, delivering significant value for our shareholders and society.

r Future growth risk on page 71

We made progress in the year against our strategic plans and are well placed in the medium term

The group made good progress in 2019/20 and excluding the effects of COVID-19 we delivered operating performance slightly ahead of market expectations.

In Clean Air, we continued to benefit from tightening light duty legislation, especially in Europe and Asia, maintained our strong market shares in our key segments and continued to invest in our new, highly efficient world class plants.

However, operating profit was down, primarily driven by a weak global heavy duty market, the impact of COVID-19, and inefficiencies within our manufacturing footprint due to phasing of the completion of our new plant in Poland. As COVID-19 spread, many of our OEM customers ceased production which had a knock on impact on our business at the end of the year. Although they are gradually ramping up their plants, visibility on the path of recovery remains low.

Efficient Natural Resources, boosted by both strong pgm prices and success in developing and commercialising new technologies, posted higher sales with significant growth in operating profit. However, the stronger pgm prices presented us with the challenge of managing high metal working capital. Thanks to a fantastic cross-JM team, we made strong progress in reducing the volume of precious metal working capital in our pgm refineries while ensuring continued supply to our Clean Air business and external customers.

Our Health Sector had a tough year overall because of a temporary disruption in the opioid addiction therapy market, although we are well placed for recovery thanks to new multi-year supply agreements with generic partners. We made further progress towards delivering an additional circa £100 million of operating profit from our pipeline of generic and innovator APIs by 2025, albeit subject to timing of individual drug launches. During the year we took the decision to deprioritise certain generic molecules and refocus our resources on the most attractive opportunities. Just after year end, we got the great news one of our customers received regulatory approval for its therapy for triple negative breast cancer which contains a drug linker manufactured by JM.

In New Markets, the Battery Materials team made significant progress with the development and commercialisation of eLNO, our portfolio of leading ultra high energy density cathode materials. We moved to full cell testing with two global automotive and two non-automotive customers, collaborating more intensively with them, which gives us further confidence that we have the materials our customers seek. We also broke ground on our first commercial plant in Konin, Poland, which is expected to be on stream in 2022 and supplying platforms in production in 2024. As part of the commercialisation process, we are also securing sources of renewable energy for the site in Poland. To further support development of eLNO, and our customers, we are also refocusing our business in lithium iron phosphate (LFP) battery cathode materials to concentrate on the high value segment of that market.

It is not only our technologies for battery powered vehicles that gathered pace this year. There is increasing momentum around the significant role that hydrogen will play in enabling the energy transition to a clean, net zero economy. Stemming from our science, we have a unique competitive advantage for this transition, with a number of market leading solutions across the hydrogen value chain including hydrogen production technologies and fuel cells.

We have developed a new, market leading process to produce low carbon hydrogen (LCH) or 'blue' hydrogen and we are already starting to commercialise this technology. We are collaborating on one of the UK's leading low carbon hydrogen projects which will use our LCH technology in a refinery for the first time.

Strategic Report

Chief Executive's statement continued

Fuel cell technologies will also play a key role in decarbonisation of transportation, or other power hungry applications, and it is an area we have built up considerable expertise over many years. Today, we supply fuel cells for non-automotive and automotive applications, including commercial vehicles in China, and we are working with a number of customers, including major automotive OEMs, on a variety of applications as this market develops. Not only did we see sales in our fuel cells business increase this year, we continue to invest in our technology and have committed £15 million to double our manufacturing capacity across the UK and China.

We are actively engaging with industry groups in the hydrogen space, contributing our unique expertise and experience to the decisions that are shaping this evolving market.

[+ Read more: Our operational performance in 2019/20 on pages 53 to 60](#)

[+ Read more about JM and hydrogen on page 33](#)

We stayed focused on safety and sustainable business

Health and safety are the bedrock of our licence to do business. An improved performance this year – equivalent to over 1,000 fewer lost days due to injuries and incidents – signals progress in our work to embed a culture of working safely and making sure we look after personal wellbeing across JM. Through our efforts on process safety we have continued to reduce the risks across our business arising from the hazardous processes we operate.

More broadly, our sustainable business framework and its six goals have continued to keep us true to our vision for a cleaner, healthier world. This year almost 86% of our sales came from products and technologies that make a positive contribution to the United Nations Sustainable Development Goals (UN SDGs).

[+ Read more: Our sustainability performance in Responsible business on pages 38 to 52](#)

[+ Read more: Our sustainable business framework on pages 24 to 27](#)

In the leadership team, we said goodbye to some colleagues and welcomed new ones

At the end of the year, JM said farewell and best wishes for retirement to the two longest serving members of my leadership team. John Walker, Sector Chief Executive, Clean Air retired after 36 years at JM, including a decade successfully leading our Clean Air Sector. Simon Farrant, General Counsel and Company Secretary also retired after 26 years' service. Under his leadership, JM's reputation for integrity has been upheld and remains a source of competitive advantage. I'd like to thank both John and Simon, on behalf of everyone in JM, for their huge contributions to the company over many years.

During the year we welcomed three new members to the JM team; Joan Braca as our Sector Chief Executive for Clean Air, Christian Günther, Chief Executive of Battery Materials and Maurits van Tol as Chief Technology Officer. We are already benefiting from their individual strengths and a stronger collective leadership team. Each has brought a refreshing new and diverse perspective and dynamic to the Group Management Committee (GMC) which is proving invaluable, especially as we navigate the current climate.

And we continued to listen and respond to what our people say so we can build a culture for success

As Patrick has already highlighted, we have moved further forward in shaping our culture for success, engaging our people at all levels in conversations about the behaviours and actions we need to dial up in order to deliver our strategy and achieve our vision. We have a clear view now of what that looks like – more emphasis on our purposeful vision, really driving and shaping the markets of the future and relentlessly driving for better performance. And we will use our strategy acceleration actions as a way to exemplify the culture that we are aiming for.

[+ Read more: Our culture for success on page 41](#)

We have continued to do even more this year to help our people achieve personal success through their work at JM. Much of what we do is shaped by the feedback they give us, including through our company-wide survey and in our pulse check this year, we got a clear steer on what people feel good about and where we need to focus next. People told us they were more engaged than before, which is a positive step. On the other hand, it was clear that people still feel there are barriers preventing them from doing their best work and our enablement score was flat. As I have already mentioned, our work on the group operating model is targeting precisely this and so I hope that people experience a positive shift as a result of those changes.

As we continue to move through the phases of our strategy, and in particular this period of accelerated change, the leadership team and I know that it will be unsettling for people in many parts of JM. Regrettably, we believe the impact of these changes will be fewer jobs across JM and we will be consulting with employee groups regarding estimated reductions of around 2,500 jobs globally over the next three years. The decisions we will take are the right ones for the future success of JM. I recognise it is difficult for our people and I give them my assurance that we will be transparent and open about our plans and we will act in line with our values.

Outlook for 2020/21 and priorities for the year

As I write to you towards mid-June, given the ongoing uncertainty, we are unable to provide financial guidance for the year ending 31st March 2021. Looking at each of our sectors:

Clean Air has a direct link to consumer demand. Following automotive OEM shutdowns earlier in the year, we are now seeing our customers gradually reopen their plants. Production in China is recovering towards prior year levels, and Europe and the US are now also gradually ramping up. However, visibility on the path of recovery remains low. This significant uncertainty has led to a wide range of forecasts for automotive and truck production for the coming year. External data currently suggests a decline of circa 25% in light duty for Europe and the US, but better in Asia, while for heavy duty the declines are slightly more. Although the actual outcomes could be materially different. We have a flexible cost base in Clean Air, enabling us to manage different levels of activity, with circa 75% of costs before mitigation being variable.

Efficient Natural Resources serves a diverse range of end markets and is subject to a broader range of variables. It is later cycle than Clean Air, so while we have seen little impact so far on the business from macroeconomic weakness, we expect this will come through as lower demand begins to affect the industries it serves and because of volatile feedstock dynamics.

Pgm prices will also influence operating performance. Operating leverage is greater here as the sector operates with a larger number of sites and higher fixed costs.

Health is relatively unaffected by changes in the macroeconomic environment. We expect to benefit from new supply agreements for APIs used in generic opioid addiction therapies as well as our continued work with innovator customers.

In **New Markets**, in our Battery Materials business, commercialisation of eLNO remains on track.

Our newly announced efficiency initiatives will deliver additional annualised savings of at least £80 million by 2022/23 for a cash cost of circa £80 million, with initial savings of at least £30 million supporting operating performance in 2020/21. We have a strong balance sheet and liquidity position and expect to generate further cash through precious metal working capital improvements as we continue to reduce refinery backlogs. We remain committed to our investment in our strategic growth projects which will support our medium term growth.

Building on the board's priorities outlined by Patrick on page 81, our strategic priorities for 2020/21 are to:

1. **Navigate COVID-19, maintaining focus on financial strength**
 - Maintain a strong balance sheet and liquidity position.
 - Generate further cash through precious metal working capital improvements.
2. **Accelerate our strategy to drive efficiency**
 - Finalise plans and commence consolidation of our Clean Air footprint.
 - Review our group operating model to remove duplication and reduce complexity across the organisation.
3. **Continue to invest in strategic projects for medium term growth, including growth driven by climate change**
 - Invest and build new growth opportunities to plan, prioritising Battery Materials, Health new product pipeline and Hydrogen.

In addition, we will continue to support our people, and in particular our leaders. We will enable them to manage business and cultural change and deliver our process safety improvement plans to further reduce risk in our hazardous processes.

So, to conclude

We have navigated the immediate impact of COVID-19, acting quickly and decisively to protect our stakeholders and our business.

At the same time, we continue to execute against our strategy and are accelerating this to take Johnson Matthey to the next stage of its evolution, creating a simpler organisation and enabling a greater focus on driving growth.

In an uncertain world, our science remains at the heart of JM and we are well positioned for future success with our leading sustainable technologies. As we drive towards our vision to create a cleaner, healthier world, I remain confident in the future.



Robert MacLeod
Chief Executive

Group Management Committee (GMC)



Joan Braca,
Sector Chief
Executive, Clean Air
Joined the GMC:
October 2019

Joan joined JM in October 2019 to lead our Clean Air Sector. Having joined from Tate & Lyle, and with previous experience in the speciality chemicals industry with Dow Chemical and the Rohm & Haas Company, Joan is now directing our strategy to deliver sustained growth in our largest business sector.



Christian Günther,
Chief Executive,
Battery Materials
Joined the GMC:
November 2019

Christian joined the company in November 2019 to lead our Battery Materials business having previously been at Tasnee in Saudi Arabia, and before that at McKinsey & Company. Christian leads the business' strategy for breakout growth through the commercialisation of JM's leading battery cathode materials technology.



Annette Kelleher,
Chief HR Officer
Joined the GMC:
May 2013

Annette is our Chief HR Officer, leading the group's people strategy. Joining from Pilkington Glass in May 2013, Annette is responsible for the programmes to build talent and capabilities across JM in line with our group strategy.



Robert MacLeod,
Chief Executive
Joined the GMC
and the board:
June 2009

Having joined JM as Group Finance Director in 2009, Robert has been leading JM since June 2014 when he became Chief Executive. Robert also has executive level responsibility for environment, health and safety and our sustainable business framework. Currently, our Health Sector is reporting to Robert while we are in the process of recruiting a Sector Chief Executive in this area.



Anna Manz, Chief
Financial Officer
Joined the GMC
and the board:
October 2016

Anna joined JM as Chief Financial Officer in October 2016 to lead the group's finance activities, risks and controls. Joining from Diageo, Anna also leads the group's corporate development activities, Procurement and IT functions.



Jane Toogood,
Sector Chief
Executive, Efficient
Natural Resources
Joined the GMC:
March 2016

Jane joined JM from Borealis in March 2016 and leads the Efficient Natural Resources Sector, directing the strategy to deliver market leading growth. Jane also has responsibility for security across JM and chairs the Brexit working group.



Maurits van Tol,
Chief Technology
Officer
Joined the GMC:
October 2019

Maurits joined JM in October 2019 and is responsible for R&D and innovation. Previously at Borealis and DSM, Maurits has a strong background combining science with business. Maurits leads strategy development to deliver value from our science and protect the value of our investment in R&D through intellectual property.

Strategic Report

Markets and opportunities

We serve markets where our inspiring science can have the greatest impact in solving our customers' complex challenges.

As a result, we create leading technology positions, often in niches within larger markets. These markets aggregate into four main global economic segments through which our science can enable a cleaner, healthier world. They are:

- **Transport** (principally automotive, with some marine and aerospace).
- **Energy** (fuels and electricity generation).
- **Chemicals** (including agrochemicals, food and beverage).
- **Healthcare** (both pharmaceuticals and medical).

[+](#) Read more about our business model to use our science to create value on pages 22 and 23

The four main economic segments we serve are undergoing major change as a result of global sustainability trends: The journey to pollution free roads; a growing and ageing population; the need for a secure supply of clean energy; and the continued demand for 'more', which is challenging the supply of natural resources.

The world is an increasingly uncertain place, even more so in light of COVID-19.

But even against this backdrop, these trends are continuing at pace, alongside the opportunities they represent for JM.

With the discussion about climate change intensifying, external support continues to rise for zero emission vehicles and the technology and infrastructure that will enable cleaner energy generation and storage, as well as the sustainable sourcing of the critical raw materials to drive change. And the world has never been more awake to the necessity of supporting and protecting an aging population.

The impact of COVID-19

The COVID-19 outbreak will have a significant impact on economies globally and, as for all companies, this is inevitably having a knock on effect for JM and its end markets. This is likely to be most pronounced in transport, where many automotive operations slowed or stopped due to government mandated closures and as consumer demand weakened.

Our immediate response was to take decisive action to maintain our strong balance sheet and strengthen our liquidity through cost reduction, tightly managing our operations to optimise

working capital, deferring non-strategic capex, and optimising working capital by reacting quickly and temporarily stopping production at our Clean Air plants. We are now gradually resuming production in Clean Air across all regions.

Future scenarios are uncertain, but JM is well positioned with a resilient and diverse business portfolio which is exposed to a range of end markets and geographies and our flexible cost base, particularly in Clean Air where circa 75% of our costs are variable, enables us to adapt quickly to changes in demand, reduce our costs and preserve cash.

Across the group, we have been investing to drive efficiency across our manufacturing footprint and our operations. We are now able to accelerate to a number of these initiatives. We are consolidating our Clean Air footprint and optimising our group operating model to create further organisational efficiency across the group. We are confident in our ability to manage the business through this difficult time and deliver on our strategy to achieve sustained growth and value creation.

Transport

JM sectors

Clean Air

New Markets

Key scientific capabilities

- Catalysis
- Electrochemistry

Outlook

In the short term, the impact of COVID-19 means sales will be lower in 2020, with demand likely to be uncertain for some years to come.

Following automotive original equipment manufacturers (OEM) shutdowns, we are now seeing our customers gradually reopen their plants. Production in China is recovering towards prior year levels, and Europe and the US are now also gradually ramping up. However, visibility on the path of recovery remains low. This significant uncertainty has led to a wide range of forecasts for automotive and truck production for the coming year.

[+](#) Read more: Going concern on page 65

Longer term, the automotive industry will continue its once in a lifetime transition to zero emission powertrains, driven by the commitments made by many countries to reach net zero and tightening legislation, particularly in Asia and Europe, with mobility one of the key areas where full decarbonisation is possible. To get there, there will be a balance of hybrid, full battery electric and fuel cell powertrains, and in the medium term internal combustion engine options will remain, particularly for heavy duty applications. For JM, this mix plays to our strengths.

Opportunity for JM

JM is at the very forefront of science that is enabling lower and zero emission vehicles. And we've translated that science into the broadest range of solutions for automotive industry customers.

- Extending our technology leadership and manufacturing capacity in emission control catalysts for cars, buses and trucks.
- Consolidating our Clean Air footprint to drive efficiency and increase agility.
- Innovating and commercialising eLNO, our portfolio of ultra high energy density battery cathode materials.
- Ramping up production of fuel cell technologies in Europe and beyond.

Energy

JM sectors

Efficient Natural Resources

Clean Air

New Markets

Key scientific capabilities

- Catalysis
- Electrochemistry
- Process design

Outlook

In the short term, the impact of COVID-19 has driven a fall in energy consumption and demand. In light of the economic uncertainty, and the resulting pressures on public and corporate finances, investment activity may be volatile for two to three years. But when markets begin to recover, and with zero carbon commitments still in place, the world will continue its drive to find solutions for the energy trilemma – the need for a secure supply of clean, affordable and universally accessible energy.

There is increasing recognition that hydrogen will be an important energy vector, but to unlock its potential the market must find ways of deploying the technology at scale to support the shift to a hydrogen economy – an area of opportunity for JM.

Opportunity for JM

JM is putting its science at the heart of solutions that support a cost effective transition to a secure and environmentally sustainable energy system.

- An established portfolio of market leading technologies for hydrogen production.
- A new, market leading process (the LCH process) to produce low carbon or 'blue' hydrogen, which makes carbon capture and storage easier and cheaper.
- Scale up of fuel cell technologies that enable hydrogen to be directly converted to electricity with water as the only by product.

Chemicals

JM sectors

Efficient Natural Resources

New Markets

Key scientific capabilities

- Catalysis
- Pgms and specialist metallurgy
- Process optimisation

Outlook

Economic uncertainty caused by COVID-19, alongside the continued weakness in oil prices, will have an effect on demand and throughput in the chemicals industry.

However, the long term drive towards sustainable and renewable solutions, alternative feedstocks and methods to achieve more with fewer natural resources will continue.

For JM, this means the development of alternative routes from feedstock to end product, new process technology, ongoing catalytic development and the opportunity to licence and support the buildout of new plants and equipment.

Opportunity for JM

With our scientific expertise, we are helping our customers transform, purify, recycle and use key natural resources such as oil, gas, biomass and platinum group metals (pgms) into materials that build and fuel the modern world, while reducing the impact of this activity on the environment.

- Catalysts and process technologies that drive efficiency in chemicals production.
- Innovating and investing to enable the shift to biobased feedstocks and renewables.
- Commercialising Fischer Tropsch (FT) technology to convert municipal waste into jet fuel, securing both process licence and catalyst sales income.

Healthcare

JM sectors

Health

New Markets

Key scientific capabilities

- Catalysis
- Process design
- Product formulation

Outlook

Healthcare demand will continue to rise alongside the world's population, the increase in average age in many countries and higher consumer expectations. And with people feeling the impact of COVID-19 across the world, there is a fresh understanding of the importance of healthcare and especially care for the elderly or those with chronic and underlying health conditions.

Unlike our other end markets, healthcare is not as directly impacted by economic shifts. For JM, this means a relatively stable customer base, disconnected from our other markets, and a potential source of growth.

Opportunity for JM

JM is a go-to partner for both innovator and generic pharmaceutical companies. We don't specialise in solutions for specific treatments, and we come into our own when tasked with complex API development. We can work at all stages of the drug development cycle, from conception right through to scale up and commercial manufacture.

- Continuing to invest in our product pipeline to bring new APIs to market.
- Advanced catalysts to the pharmaceutical and agricultural chemicals markets.

Critical raw materials

JM sectors

Efficient Natural Resources

Key scientific capabilities

- Pgms and specialist metallurgy
- Process optimisation

Outlook

Despite a short term decrease in material demand following COVID-19, in the longer term population growth and increased consumer expectations will continue to put pressure on our natural resources.

Consumers are increasingly looking for sustainable solutions, while at the same time demand for all kinds of products is increasing.

The balance of what materials are in demand will change, influenced by demand in other end markets. For example, increased adoption of battery electric vehicles will inevitably squeeze the supply of cobalt, while platinum will continue to be needed for a range of applications, including in hydrogen fuel cells.

Organisations are focused on finding new ways to do more with 'more with less', and create circular economies so more materials can be recycled and reused – an area of strength for JM.

Opportunity for JM

As a company with many years of experience in the efficient use and transformation of natural resources, JM is well positioned to support organisations looking to achieve more with less. The company already helped create one of the world's earliest circular economies in the use, reclaiming, refining and reuse of platinum.

- Applying our expertise in recycling and efficient transformations to create solutions to new challenges.
- Investing in our pgm recycling capability.

Strategic Report

Our strategy

For sustained growth and value creation

Driven by key global sustainability trends, our strategy is to use our world class science to solve customers' complex problems. This creates long term value for our shareholders and a cleaner, healthier planet for everyone.

Our vision

A cleaner, healthier world today and for future generations

Our drivers

Global trends – climate change, energy transition, population and longevity, resource scarcity

Our strategy

Use our world class science to solve customers' complex problems

Delivered through four global sectors

Clean Air

+ See page 56 for more information

Efficient Natural Resources

+ See page 57 for more information

Health

+ See page 58 for more information

New Markets

+ See page 60 for more information

Underpinned by

Being safe, more sustainable and doing the right thing

The outcomes:

- Enhanced technology leadership in our targeted markets.
- Three substantial, growing sectors with sizeable new opportunities realised through our New Markets Sector.
- Efficiency and excellence in everything we do.

Driving attractive returns over the longer term:

- Expanding return on invested capital (ROIC) to 20%.
- Mid to high single digit EPS CAGR.
- Progressive dividend.

Have made the world a cleaner and healthier place

Strategy progress 2019/20

Group

Good strategic progress and operating performance slightly ahead of market expectations excluding the effects of COVID-19.

- Adverse impact on underlying operating profit of around £60 million by year end reflecting lower demand in Clean Air, higher trade debtor provisions across the group and delayed sales due to logistical challenges in our other businesses.

More effective management of precious metal working capital across our businesses, reduced backlogs and reviewed commercial terms.

- Reduced precious metal working capital volumes by year end – equivalent to £345 million reduction at constant metal prices.

Efficiency initiatives – delivered £116 million of savings to date from previously announced global restructuring programme, procurement and the closure of Health Sector's Riverside plant.

- On track to deliver £145 million by end of 2022/23 (see page 19 for details of further savings from accelerating our strategic initiatives).
- Continued investment into corporate functions.
 - Continued roll out of single ERP (enterprise resource planning) system, increase capability and standardise our processes in procurement and IT.

Delivered action plans for future new growth opportunities in hydrogen and fuel cells.

Made progress towards three of our six sustainable business goals.

- 85.9% of sales from products that contributed to UN SDGs.
- Improved health and safety performance.
- Improved employee engagement by four points.
- Increased employee volunteering.
- Our goals relating to employee enablement, greenhouse gas reduction and responsible sourcing were broadly unchanged.

Took immediate and decisive action in response to COVID-19 to maintain balance sheet and strengthen liquidity.

- Cost reduction, tight management of operations to optimise working capital, deferred non-strategic capex.
 - Cost reduction measures included adjusting working patterns, reducing contractor spend and restricting travel costs.
- Balanced obligations to our stakeholders through maintaining payment terms with suppliers and offering support to small suppliers who may be facing hardship.
- As a result, at 31st March 2020 we had achieved:
 - Net debt to EBITDA¹ of 1.6 (at the bottom end of our target range of 1.5 to 2.0).
 - Material headroom in relation to debt covenants of 3.5 times² net debt to EBITDA¹.

Sectors

Clean Air

We continued to benefit from tightening legislation globally, especially in Europe and Asia. Strong market shares were maintained in our key light duty diesel and heavy duty segments. With the construction of our new plants in Europe and Asia largely complete, our global, efficient and flexible manufacturing footprint is enabling us to drive efficiencies across the sector.

[+ Read more: Clean Air operating results on page 56](#)

Efficient Natural Resources

We continued to focus our resource on selected, higher growth segments; target our R&D investment for future growth and drive operational efficiency. Our refinery upgrade programme, which will ensure our assets operate effectively and reliably, is progressing well. We made good progress in developing and commercialising new technologies, which includes our mono ethylene glycol technology, and business development projects, including battery materials recycling, to support longer term growth.

[+ Read more: Efficient Natural Resources operating results on page 57](#)

Health

We have agreed new multi-year supply agreements with generic partners for the supply of APIs used in generic opioid addiction therapies. On the innovator side, we saw recent success as our customer received regulatory approval for production of an immuno-oncology treatment for triple negative breast cancer and is now increasing their volumes in support of the commercial launch. We made further progress towards delivering an additional circa £100 million operating profit from our pipeline of generic and innovators APIs by 2025 although it may be delayed a year given the inherent uncertainty around the timing of individual drug launches. During the year we decided to deprioritise certain generic molecules and refocus our resources on the most attractive opportunities.

[+ Read more: Health operating results on page 58](#)

New Markets – Battery Materials

We are making significant progress in commercialising eLNO, our portfolio of leading ultra high energy density cathode materials, which will suit a broad range of applications, particularly in enabling greater adoption of long range, pure battery electric vehicles.

Feedback from testing with customers remains positive and in the year, we moved to full cell testing with two global automotive and two non-automotive customers.

In addition, we broke ground on our first commercial plant in Konin, Poland. We are also refocusing our lithium iron phosphate (LFP) business to the higher value segment of the market. This will better support eLNO customers and development of this business.

[+ Read more: New Markets operating results on page 60](#)

¹ For definition, see note 35 on page 198.

² The majority of our facilities contain a net debt to EBITDA covenant of 3.5 times. Two legacy loans (£41 million and £148 million maturing after 31st March 2021) contain a 3.0 times covenant and are expected to be amended. Our headroom assumes repayment of these legacy loans.

Strategic Report

Our strategy continued

Strategic update and focus for 2020/21

The COVID-19 pandemic has led to significant challenges across the world. We continue to work hard to respond to these unprecedented circumstances and actively manage the ongoing risks to our people, operations and customers.

[+ Read more: Risks and uncertainties on pages 67 to 74](#)

- 1 Resilient business portfolio with a strong balance sheet
- 2 Accelerating our strategy to drive efficiency
- 3 Continue to invest in strategic projects for medium term growth, including growth driven by addressing climate change

1 Resilient business portfolio with a strong balance sheet

The good progress made during 2019/20 and decisive actions taken in response to COVID-19 mean we are well positioned in an uncertain world. We have a resilient and diverse business portfolio which is exposed to a range of end markets and geographies and our flexible cost base, particularly in Clean Air where circa 75% of our costs are variable, enables us to adapt quickly to changes in demand, reduce our costs and preserve cash. When the macroeconomic environment weakens, our business model provides a natural hedge which strengthens our balance sheet and liquidity as we have significant precious metal working capital inflows when demand is lower.

We have a strong balance sheet with good access to liquidity of circa £1.3 billion. This includes a £1 billion five year sustainability linked revolving credit facility, which was concluded during 2019/20. In line with the group's vision, this facility contains sustainable performance targets linked to the group's environment, social and governance (ESG) objectives. More recently, in April 2020, we issued an additional US\$300 million of private placement notes to add further liquidity and increase our maturity profile.

[+ Read more: Our sustainable business framework on pages 24 to 27](#)

[+ Read more: Responsible business on pages 38 to 52](#)

~75%

variable costs in Clean Air

~£1.3bn

available liquidity

£1bn

sustainability linked finance



2 Accelerating our strategy to drive efficiency

Across the group, we have been investing to drive efficiency across our manufacturing footprint and operations. We are now able to accelerate a number of these initiatives. We are consolidating our Clean Air footprint and optimising our group operating model to create further organisational efficiency across the group.

In total, the acceleration of our strategic initiatives will deliver annualised savings of at least £80 million over the next three years of which at least £30 million will benefit 2020/21. Together with the £145 million of cost savings previously announced (of which we have already delivered £116 million), this will take total annualised cost savings to circa £225 million by the end of 2022/23. There will be associated one-off costs of circa £240 million related to these new savings which will be taken outside of underlying operating profit, of which the cash element will be circa £80 million.

r Business transition risk on page 74

+ Read more: Financial review on pages 61 to 64

~£225m

total annualised cost savings by end 2022/23

~£30m

benefit in 2020/21

~£240m

associated one-off costs

The key actions include:

Consolidating Clean Air footprint

In Clean Air, we have been investing in new world class plants in Europe and Asia. These plants are identical and highly flexible, allowing us to drive efficiency and increase agility across our global footprint by consolidating some of our existing older capacity in Europe into this new capacity. This will deliver circa £30 million of annualised cost benefits by the end of 2022/23.

Driving organisational efficiency

In recent years we have been investing into our corporate functions. For example, we are rolling out our single global ERP system, and have invested in our global procurement and IT functions to increase our capability and standardise our processes. This is allowing us to review our group operating model to remove duplication of activities between the corporate centre and the sectors and reduce complexity across the organisation. A simplified organisation will enable faster decision making and reduce costs. Overall, these measures are expected to deliver £50 million of annualised cost benefits by the end of 2022/23.

3 Continue to invest in strategic projects for medium term growth, including growth driven by addressing climate change

Through our leading positions in high margin, technology driven growth markets, we will deliver growth over the medium term. To support this growth, we continue to invest for the future in R&D and in our strategic growth projects including:

- Completion of our new world class Clean Air plants in Asia.
- Upgrading our platinum group metal refineries.
- Developing and commercialising new technologies, such as our Fischer Tropsch waste to aviation fuel technology.
- Delivering our Health new product pipeline.

Battery Materials

We will continue to develop and commercialise eLNO. Alongside our full cell testing with customers, we continue to work in the validation phase with a number of global automotive original equipment manufacturers (OEMs) and cell manufacturers. Work on our first commercial plant in Poland continues. The plant is expected to be on stream in 2022 and supplying automotive OEM platforms in production in 2024. Our total investment to first commercial production will amount to circa £350 million, although we are seeing some upward pressure as we finalise the design and build in more flexibility to meet our customers' requirements. Beyond this, scale up is likely to be phased as we match capacity to market demand.

Hydrogen economy

There is increasing momentum around the significant role that hydrogen will play in enabling the energy transition to a clean, low carbon economy. We have a unique competitive advantage for this transition, with our established portfolio of market leading solutions across the hydrogen value chain including hydrogen production technologies and fuel cells.

r Future growth risk on page 71

~£350m

total expected investment in eLNO commercialisation

£15m

committed investment in fuel cells technology to double manufacturing capacity

up to

£400m

expected capital expenditure across JM in 2020/21

Strategic Report

Our science in action

Science and technology, and our ability to translate them into solutions for our customers, are our competitive advantage

We focus on the complex and the difficult. We understand what is happening at the atomic level, so we can address complex problems on a global scale. And we win based on our technology. Our scientific capabilities provide the opportunities for us to drive growth.

We have over 1,500 dedicated scientists in Johnson Matthey with wide ranging expertise who give us a diverse perspective on the problems we tackle.

Small pore zeolite development for clean diesel

Johnson Matthey has been pioneering emission control catalysts for over 40 years. Our scientists apply their catalysis expertise to meet ever tightening emissions legislation. Recently, we turned our focus to the design and application of a new generation of selective catalytic reduction (SCR) catalyst for use on diesel vehicles. This new catalyst is even more effective at removing nitrogen oxides (NOx) emissions whether in slow speed city conditions or for high speed motorway driving.

SCR catalysts are manufactured using zeolites. These materials have a cage structure with a metal catalytic site and it is within these cages that the NOx emissions are reacted with ammonia to form harmless nitrogen.

Our researchers discovered it was the small pore nature of zeolites that gave the unique activity, thermal stability and poison tolerance compared with larger pore SCR zeolite catalysts.

Through extensive screening and modelling, we discovered a new, small pore metal zeolite catalyst with remarkable activity even when exposed to very high temperatures. We applied our innovative chemistry and engineering processing expertise to scale up from laboratory to mass production while using raw materials more efficiently and reducing water needs.

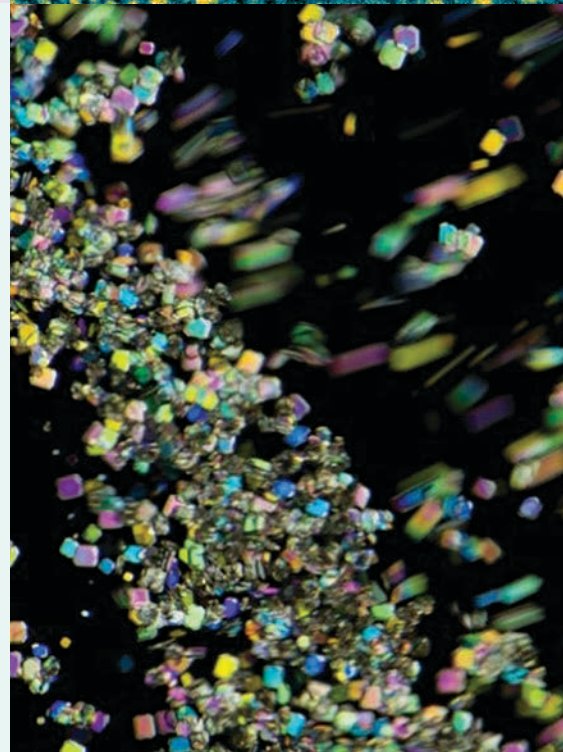
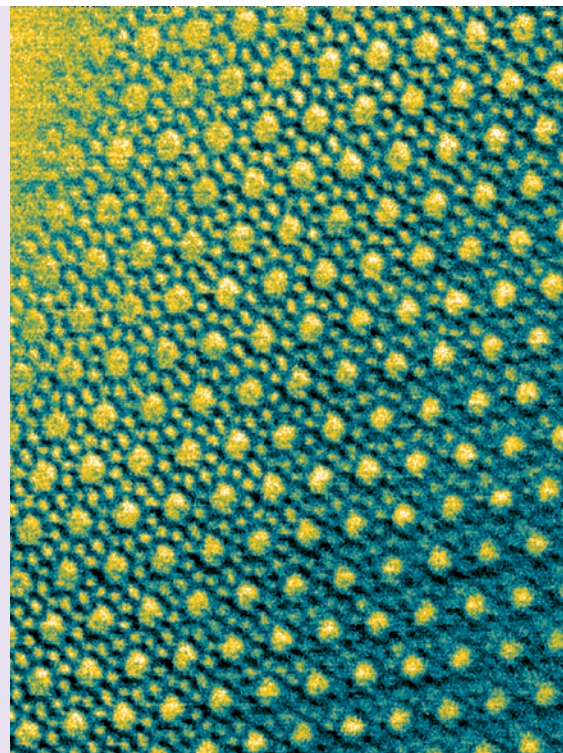
This catalyst is now being used in our flow-through SCR catalyst, and owing to its excellent durability, it is also incorporated within a diesel soot filter, called the selective catalytic reduction filter (SCRf), where very high temperatures are encountered. This SCRf can then be located close to the engine to remove both soot and NOx in the most energy efficient way.

Enhancing capabilities in particle engineering for pharmaceuticals

Johnson Matthey develops and makes active pharmaceutical ingredients (APIs) to treat a wide range of conditions, from severe pain to muscular dystrophy. But there is more to API development than just making a molecule. We apply our expertise in particle engineering to develop effective and reliable ingredients with the right solubility, consistency, and uniformity.

Particle engineering starts with identifying the right crystalline 'solid form' of the API molecule. Different forms can exhibit quite different solubility, stability and bioavailability (the amount of a dose that reaches the bloodstream) characteristics. We screen to identify and characterise them and select a preferred crystal form for the drug in question.

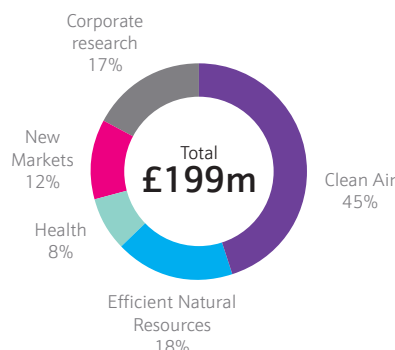
Once selected, particles must be produced with a defined shape, size, composition, structure and with desired surface characteristics. Sometimes, the solubility and bioavailability of a crystalline pharmaceutical compound is not enough to produce an effective drug product in the initial form. This can be improved by crystallizing or milling to achieve a small particle size, or dispersion and stabilisation. By a variety of particle engineering techniques, we can generate an API product of the desired particle size and uniformity, produced by a robust process, ready for formulation by our customers. Modelling plays an important role in our API development, and means we can be more efficient, deliver more robust processes, be confident in the scale up to manufacture and reduce the amount of API required for particle engineering development.



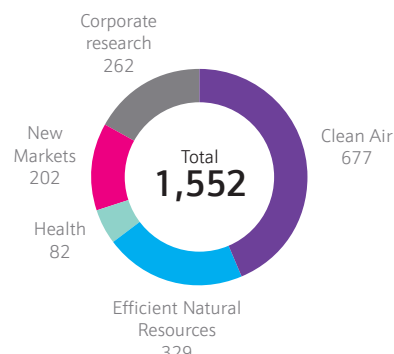
In 2019/20 we invested £199 million in R&D, including £23 million of capitalised R&D, which represents around 5% of our annual sales (2018/19: £190 million, including £19 million of capitalised R&D, representing around 5% of annual sales).

We increased our investment this year and we continued to invest in a more efficient and targeted way, and in alignment with our strategic aims.

R&D spend



R&D employees



Alternative feedstocks for a sustainable future

The world is calling out for sustainable manufacturing and new ways to produce the chemicals and fuels we need. Our expertise in the generation, purification and chemical modification of syngas opens the door to renewable feedstocks, efficient manufacturing and low carbon technologies.

Syngas is a mixture of hydrogen, carbon monoxide and carbon dioxide, produced by converting any carbon containing material into a gaseous form. JM technology is used to turn these gasified feedstocks into a wide range of useful materials such as ammonia, methanol, methane and waxes. JM has been doing this for years and has a bounty of expertise in the catalysts and processes.

Syngas traditionally comes from coal or natural gas, but now things like municipal solid waste or renewable biomass can be used to make syngas.

Through our partnership with BP, we introduced a process based on Fischer Tropsch (FT) technology to economically convert synthesis gas generated from such feedstocks into waxes suitable for the production of diesel and jet fuel.

Its modular design enables low risk scale up and simple operation, while the catalyst gives high productivity and selectivity. The unique design of stacked catalyst carriers cleverly manages heat transfer and pressure drop. Compared with conventional fixed bed tubular reactors, the new system reduces capital expenditure by around 50% and enables the FT process to be economically scaled down to a size suitable for waste and / or biomass gasification.



Batteries – a market enabled by technology

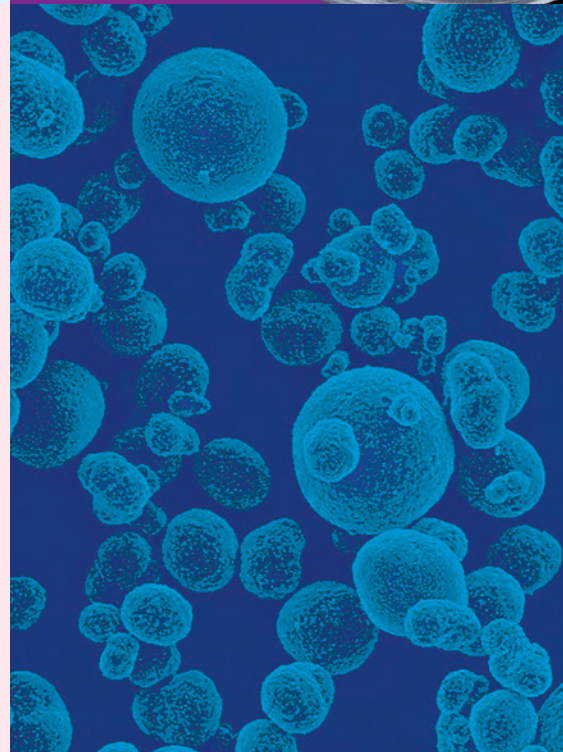
A battery might look simple, but inside complex reactions and electrochemistry are taking place. Electric vehicle (EV) batteries must have high energy, fast charging, long life, high reliability and be safe. Designing and engineering materials is one of JM's key capabilities. That's why we are developing innovative battery materials that will deliver all the key criteria required for battery electric vehicles.

We are using our expertise in materials design and engineering to develop our portfolio of high nickel cathode materials for lithium ion applications, eLNO, which offers advanced energy density, and performance demanded by battery electric vehicles.

Through understanding how materials work at an atomic level, how they behave in use, and how they interact with other materials, we design in and customise the properties needed for the performance, range and recharging demanded by customers.

Recently, we have acquired silicon based anode material intellectual property from 3M. JM is in a uniquely strong position to maximise the benefits of silicon technology by combining it with our leading cathode materials. Thanks to JM scientists' deep understanding of the electrochemistry interaction, we can bring out the best of the both worlds and develop optimised solutions for our customers.

Our leadership comes from our ability to customise materials with the right 'ingredients' and proprietary 'recipe' to deliver the specific characteristics that matter most to our customers. Building from the experience we have with our automotive customers in emission control technology, we know that OEMs have different performance requirements, so we use our expertise to tailor our materials – delivering what our customers need.



Strategic Report

Our business model

Creating long term value for our shareholders and for society

Our resources and relationships

Knowhow and intellectual capital

JM's competitive advantage is our science and technology. We use our industry leading capabilities across our sectors to create sustainable solutions. We own patents covering our science, technology and processes.

Financial

We invest for growth using equity from our shareholders, debt finance and cash flow delivered by our sectors.

Customer relationships

We draw on our deep relationships with customers to understand how best to apply our science to solve their problems.

Natural resources

We source raw materials responsibly and use them as efficiently as possible. We also recycle platinum group metals (pgms).

Manufacturing operations

We have a global network of manufacturing plants, application centres and laboratories.

People

Our ~15,350 people share a passion for creating a cleaner, healthier world. They bring the talent, expertise and innovative thinking needed to drive growth and efficiency in JM.

How we use them

Our world class **science and technology** gives us a competitive advantage

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

we scale and apply it in the most **effective** way

- Innovation
- Sustainable business
- Efficiency and excellence
- Values driven culture

to solve our customers' complex problems in these **key markets**

- Automotive
- Chemicals
- Pharmaceutical and medical
- Oil and gas
- Agrochemicals and fertilisers
- Food and beverage
- Energy generation and storage
- Other industrial

Underpinned by our values

Our values provide the strong foundation, driving behaviours, guiding our decisions and helping to shape the right culture to deliver our strategy.

Protecting people and the planet

Acting with integrity

We create sustained value and growth through the effective use of our resources and our relationships.

We act in line with our company values which, together with our focus on building a more sustainable business, drive us towards our vision for a cleaner, healthier world.

+ Read more: Markets and opportunities on pages 14 and 15

+ Read more: Risks and uncertainties on pages 67 to 74

+ Read more: Our strategy to use our world class science to solve customers' complex problems on pages 16 to 19

+ Read more: Viability on page 75

k Key performance indicators on pages 34 to 36

+ Read more: Sustainability of business model on page 84 of the Corporate Governance Report

How we create and share value

while creating value to be shared across all our stakeholders.

- Customers and innovation partners
- Our people
- Investors
- Governments and trade associations
- Suppliers
- Communities

For society

Value we create and share

- Cleaner, healthier world.

Key performance indicators

Operational carbon footprint

3.2 tonnes CO₂eq
per tonnes of output

Positive impact of JM's products

85.9%

sales from products contributing to UN SDGs

For shareholders and other stakeholders

Value we create and share

- Attractive returns.
- Taxes paid to authorities.

Key performance indicators

Sales

-2% to £4.2bn

Underlying operating profit margin

12.9%

Underlying earnings per share

199.2p

ROIC

13.3%

Average working capital (excluding precious metals)

63 days

For our people

Value we create and share

- Strong culture.
- Employment and opportunities.

Key performance indicators

Health and safety lost time injury and illness rate (LTIIR) of

0.35

Employee engagement score of

63

For our company

Value we create and share

- Cash to reinvest in our science, infrastructure and people.

Key performance indicators

Technology leadership through R&D investment

£199m

Working together

Innovating and improving

Owning what we do

Strategic Report

Our sustainability framework

The path to our vision

Through leading edge science and technology.

The route to a more sustainable future brings many challenges that must be tackled – challenges driven by global megatrends such as climate change, energy transition, population growth, and natural resource constraints. In setting our vision for a cleaner, healthier world, we have made it our business to use our leading edge science to create sustainable technologies that address these challenges.

Sustainability is therefore an integral part of our company, our strategy, and the decisions we take. It is at the heart of our brand and our employee promise. It is engrained in our company values and our culture ambition.








We have six goals to 2025 which we use to measure our progress towards our vision. Our goals drive sustainability through our whole value chain; they align with the material issues faced by our broader stakeholders and are oriented with the United Nations Sustainable Development Goals (UN SDGs) – a collection of 17 global goals to 2030 set by the United Nations General Assembly in 2015.

The awareness and demand for more sustainable products is increasing and we believe the sustainability credentials associated with our science-led solutions will become more and more attractive to customers and consumers. It also ensures our focus reaches beyond our operations and products and into the whole of our value chain.

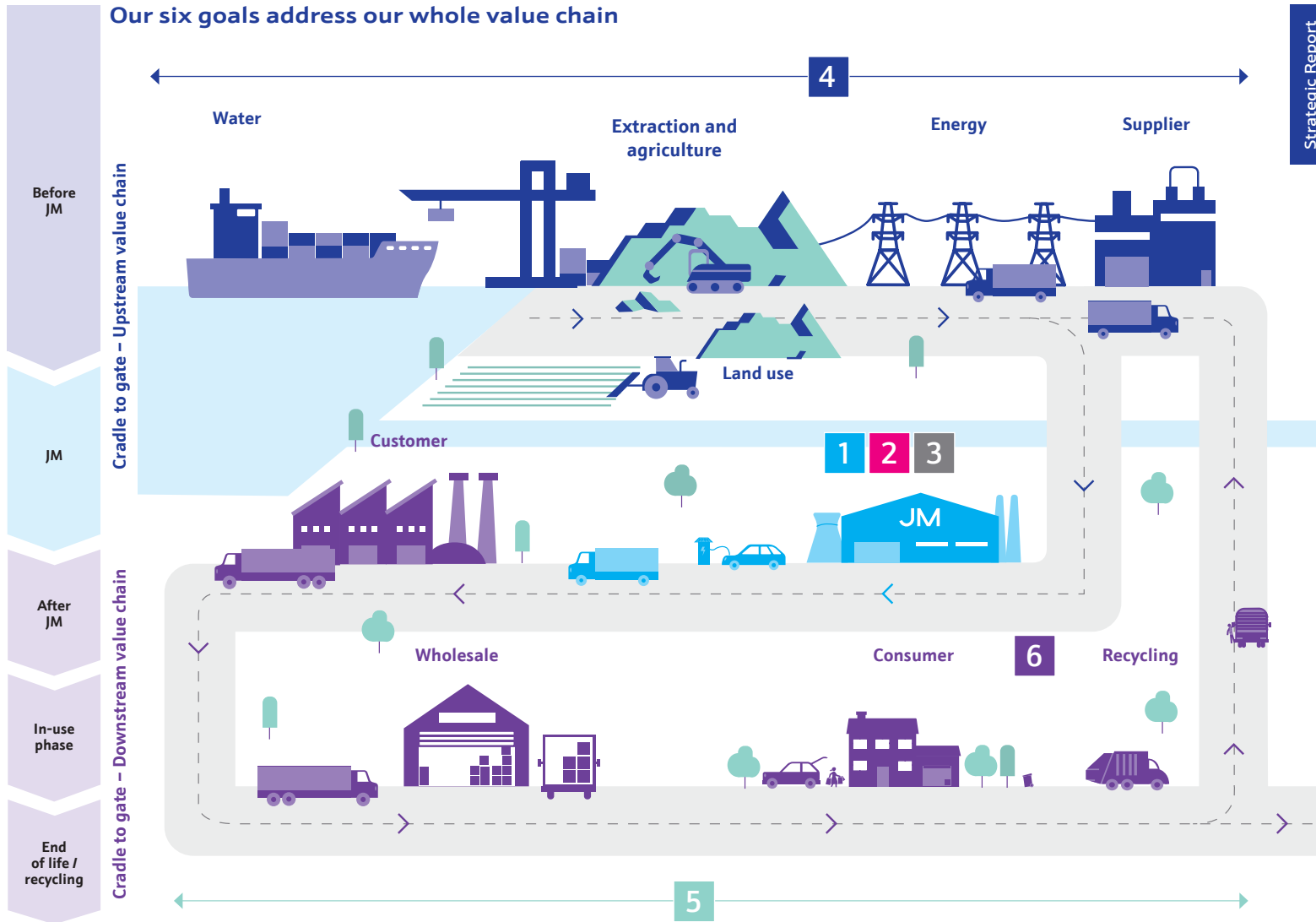
Our sustainable business framework embeds our vision for a cleaner, healthier world through all aspects of our key business processes and supply chains so that as we execute our strategy, we do so with a full understanding of the impact on people and planet.

- + Summary of our performance towards our six sustainable business goals on page 38
- + Read more: Responsible business section on pages 38 to 52
- + Read more: Climate change and Task Force on Climate-related Financial Disclosures on pages 46 to 49

Our six sustainable business goals

JM goal	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="background-color: #00a0e3; color: white; padding: 5px; text-align: center;"> Health and safety 1 </div>  </div> <p>For health and safety, aspire to zero harm.</p> <ul style="list-style-type: none"> + Read more on pages 39 to 40 k Page 36 	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="background-color: #e91e63; color: white; padding: 5px; text-align: center;"> Our people 2 </div>  </div> <p>Ensure JM is a truly inclusive organisation that fosters employee engagement and development within a diverse and global workforce.</p> <ul style="list-style-type: none"> + Read more on pages 41 to 45 k Page 36 	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="background-color: #808080; color: white; padding: 5px; text-align: center;"> Low carbon operations 3 </div>  </div> <p>Reduce our greenhouse gas (GHG) emissions per unit of production output by 25%.</p> <ul style="list-style-type: none"> + Read more on pages 46 to 50 k Page 35
UN SDG	<div style="background-color: #28a745; color: white; padding: 5px; text-align: center;"> 3 GOOD HEALTH AND WELL-BEING </div> <div style="background-color: #dc3545; color: white; padding: 5px; text-align: center;"> 8 DECENT WORK AND ECONOMIC GROWTH </div>	<div style="background-color: #dc3545; color: white; padding: 5px; text-align: center;"> 8 DECENT WORK AND ECONOMIC GROWTH </div>	<div style="background-color: #28a745; color: white; padding: 5px; text-align: center;"> 13 CLIMATE ACTION </div>

Our six goals address our whole value chain



Responsible sourcing
4



Improve sustainable business practices in our supply chains and, through collaboration, ensure full compliance with our minimum standards from strategic suppliers.

+ Read more on pages 49 to 50

k Page 36



Sustainable products
5



Double the positive impact that JM's products, services and technologies make to a cleaner, healthier world.

+ Read more on pages 50 to 51

k Page 35



Community engagement
6



Increase the use of volunteer days to support our community and charity partners through the JM employee volunteering programme.

+ Read more on page 52

k Page 36



Strategic Report

Our sustainability framework continued

Sustainable technologies with impact

Our contribution to the UN SDGs.

JM's purpose is to use its science and technology capabilities to create products and services that are vital to making the world cleaner and healthier; today and for future generations. In doing this we are taking action on climate change, providing clean air for all, shaping a new era of clean energy, achieving more from less, and helping people live longer, healthier lives.

We are immensely proud of what we do and the impact we make. We track our progress towards our vision for a cleaner, healthier world by measuring the percentage of our sales that come from products that make a positive contribution to the UN SDGs.

The 17 UN SDGs, together with the 169 sub targets they contain, cover social and economic development issues including poverty, hunger, health, education, global warming, gender equality, water, sanitation, energy, urbanisation, environment and social justice.

In 2019/20, 85.9% of our sales (2018/19: 87.3%) came from products and services that positively contributed to the UN SDGs. Our sustainable business goal 5 is to increase this to >90% by 2025.

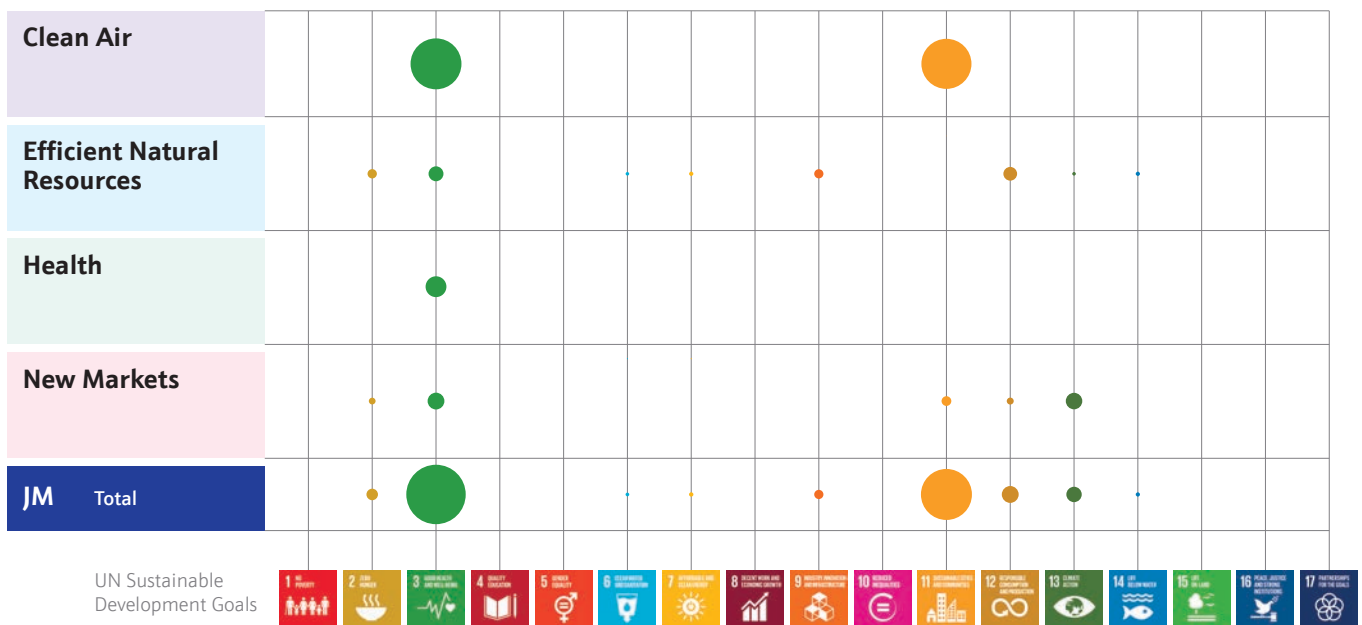
[k](#) Page 35

[+](#) Read more about our progress towards goal 5 on pages 50 and 51

How JM products and services are contributing to the UN SDGs

The chart below shows the breakdown of JM's sales across its businesses in 2019/20 and their relative contribution to each of the UN SDGs. The larger the coloured circle, the greater the sales value.

Sustainable products
5



In addition, our products and technologies have had a major positive impact on people and the planet over the last 12 months.

[+](#) Read more on pages 51 and 52

Clean air for all

2.96 million tonnes

of pollutants removed by JM's emission control catalysts in 2019/20.

Shaping a new era of clean energy

9.8 million tonnes

(CO₂ equivalent) of greenhouse gases removed in 2019/20 using JM's nitrous oxide abatement technologies.

Achieving more from less

225,000 tonnes

(CO₂ equivalent) of greenhouse gases avoided in 2019/20 using JM's battery materials and fuel cell technologies.

Longer, healthier lives

323,000 lives

positively impacted in 2019/20 as a result of recently launched drugs containing JM's APIs.

Meeting stakeholders' expectations

Our regular materiality assessment helps us to focus on the areas that matter most to our stakeholders and where we make the greatest positive or negative contribution to society. We are in regular dialogue with external stakeholders – customers, investors, employees, non-governmental organisations and other groups, about what is important for them. We actively participate and support third party benchmarking activities to compare ourselves with our peers and see where we are different. Periodically, we conduct more formal interviews with key stakeholders. This builds a picture of material issues which we review against our current strategy and action plans, and we adjust those plans when necessary.

What matters most

Through talking to stakeholders, JM has identified the topics that are 'material' to them. Our goals align with those topics.

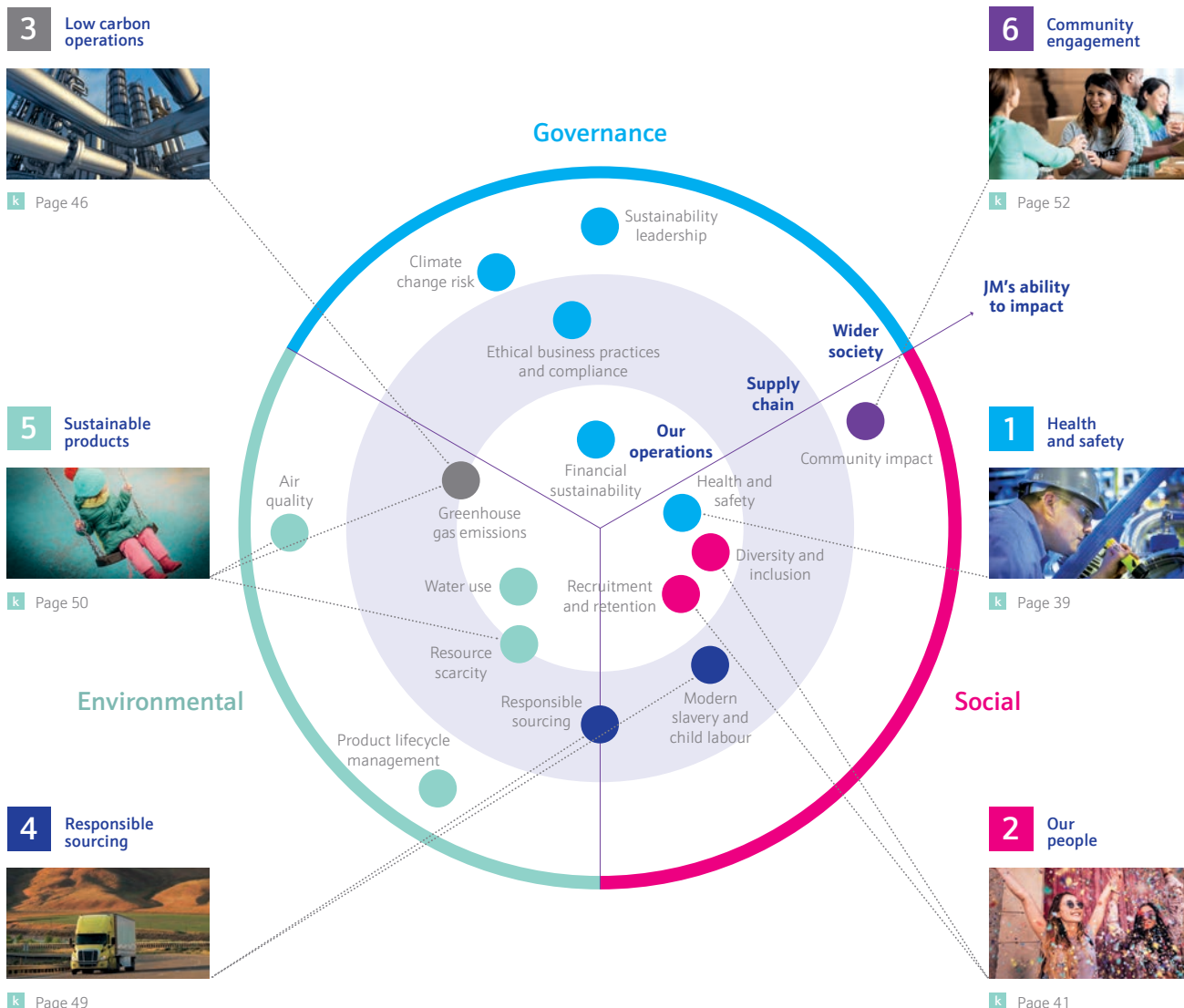
[+ Read more on pages 222 and 223 \(GRI Standard Content Index\)](#)

With our products and technologies contributing so clearly to a cleaner, healthier future, it is natural that we maintain high expectations on our whole sustainability agenda, and we see it as a driver for growth in the business. Our stakeholders also highlight leadership in sustainability among the sustainability themes that they consider material for JM. Therefore, it is important we hold ourselves to high standards of sustainability, using our sustainability framework.

Materiality map

The map below highlights the areas of environmental, social and governance (ESG) focus for JM which we have identified as key to our business and most important to our stakeholders. It shows how we have aligned these to our six sustainable business goals.

Each area of focus is identified by a coloured circle. The coloured circles closest to the centre of the map are focus areas which JM has the ability to impact most directly. Our ability to impact decreases from the centre of the map outwards.



Strategic Report

Our stakeholders

Working together to achieve our collective goals

We believe stakeholder engagement is important in maximising shared value and in securing our success and sustainability as we deliver on our vision, strategy and operational goals.

We proactively engage with and listen to our stakeholders to understand what's important to them. We tailor our engagement in different ways for our different stakeholders to make it as effective as we can. That way, we can factor their views into our business and boardroom discussions, consider the potential impact on each stakeholder group and consider their needs and concerns in pursuit of positive outcomes for all.

Our stakeholders

Customers and innovation partners

- k KPI – customer satisfaction on page 35
- + Science in action case studies on pages 20 and 21
- + Strategy on pages 16 to 19
- r Competitive advantage risk on page 71
- r Future growth risk on page 71

Our people

- k KPI – employee engagement on page 36
- + Sustainable business goal 2 on pages 41 to 45
- + Our COVID-19 commitments on page 9
- + Speak up Policy on page 45
- + Strategy on pages 16 to 19
- r People risk on page 72

How we engage

- Our teams work collaboratively in the development and application of new technology.
 - We organise, attend and speak at conferences and industry events, including virtual events.
 - Prior to current restrictions due to COVID-19, we would host customers at our manufacturing sites and our R&D centres.
 - We carry out regular satisfaction surveys with our customers.
 - We engage with science experts in industry and academia to further our technical expertise and support university research.
 - We produce industry leading reports on the platinum group metal (pgm) market.
-
- We publish global news via email and on our intranet and have discussions on Yammer (internal social network).
 - The Chief Executive hosts town hall meetings which we broadcast to all staff.
 - Annual JM Awards programme celebrates employees' successes.
 - Employee resource groups (ERGs) to champion the D&I agenda.
 - We have town halls, webinars, cascades, works councils and corporate social responsibility (CSR) committees within our sectors and sites.
 - We run regular opinion surveys and listening groups on key topics.
 - We have country engagement groups with which the board are directly involved.

The COVID-19 pandemic has led us to adapt our methods of engagement with stakeholders over the past few months with virtual meeting technologies taking the place of face to face interactions. From holding our annual internal R&D conference online, to supporting our customers by remotely overseeing an important reloading of catalyst, we are maintaining engagement and keeping JM and its stakeholders safe.

JM has, over many years, built valuable and trusting relationships with many stakeholders and stakeholder groups. This year, we have reviewed our engagement mechanisms with key stakeholder groups to check their effectiveness. We put particular emphasis on how effective they are in ensuring the board is able to consider the interests of our stakeholders when making decisions.

+ Read more: Read this stakeholder section in conjunction with our Section 172 statement on pages 32 and 33

+ Read more: Corporate Governance Report – stakeholder engagement and the board on page 85

Stakeholders' key interests

- How JM's science can provide the best solution to their complex problems.
- Understanding of JM's latest innovations and developments.
- Opportunities to partner in development of new sustainable technologies.
- That JM's products are manufactured in an effective and sustainable way.
- JM's leading market insight, such as the pgm market.

- Opportunities for development and career progression.
- Opportunities to collaborate, innovate and make a positive contribution to a cleaner, healthier world.
- Health, safety and wellbeing, particularly during COVID-19.
- An open and ethical culture.
- Diversity and inclusion.

2019/20 outcomes and highlights

- Customer satisfaction score of 8.0 above industry norm of 7.6.
- Further progress on commercialisation of Fischer Tropsch technology (which turns municipal waste into aviation fuel) in partnership with BP.
- New collaborations on innovation with Greentown Laboratories (US) and ESIL Technologies (Israel).
- Voluntary employee turnover of 9.3%.
- 33% of roles filled by internal candidates.
- New online learning portal launched and accessed by over 45% of employees in the year.
- Engagement score up 4 points to 63; enablement score flat at 63.
- UK gender pay gap reduced from 8.5% to 6.0% (vs national average of 17.3%)
- Disability employee resource group launched.
- 186 entries to JM Awards, 16% more than last year.



Images from top to bottom

JM joins Greentown Labs as gigawatt partner, February 2020.

JM's Battery Materials Pilot Plant opening, July 2019.

Strategic Report

Our stakeholders continued

Our stakeholders

Investors

- + Corporate Governance Report on pages 82 to 91
- + Shareholder engagement on pages 28 to 31
- + Dividend on page 64
- + Responsible business on pages 38 to 52
- k Group financial objectives on pages 34 and 35
- + Strategy on pages 16 to 19

Governments and trade associations

- + Responsible sourcing on pages 49 and 50
- + Strategy on pages 16 to 19
- r Environment, health and safety risk on page 71

Suppliers

- + Our COVID-19 commitments on page 9
- + Responsible sourcing on pages 49 and 50
- 4 Responsible sourcing
- r Supply failure risk on page 72

Communities

- + Our COVID-19 commitments on page 9
- + Community and social impact on page 52
- + Strategy on pages 16 to 19
- 6 Volunteering
- r Failure of operations risk on page 73

How we engage

- We attend investor events, host results presentations and capital market days.
 - We hold one-on-one and small group meetings with investors, including meetings hosted by the directors.
 - We keep investors up to date through our website, annual report and AGM.
-
- We actively contribute, at a senior level, with key national and international trade associations.
 - We attend meetings with governments to inform and contribute to debate, mostly in areas where our science and technology expertise can have a positive impact.
-
- We have strong partnerships with suppliers.
 - We engage with suppliers through our Supplier Code of Conduct to ensure responsible behaviours.
 - We work with suppliers through external initiatives such as CDP.
-
- We have CSR committees at many sites and these are active in their local communities.
 - Open days held at major sites.
 - We support science education programmes and have links with local schools.
 - Community ambassadors at each site facilitate volunteering in local communities and all staff have two days paid volunteering leave per year.
 - We engage with local government and the community on specific topics, such as potential investments in new plants.

Stakeholders' key interests

- Effective governance.
 - Liquidity and balance sheet.
 - Strategy, performance and future growth prospects.
 - Dividends.
 - Remuneration policy.
 - Sustainability credentials and environment, social and governance (ESG) performance.
-
- Open and transparent dialogue.
 - Opportunities for creating shared value for trade association partners.
 - Proactivity and compliance with regulations.
 - Insight on what is technically possible in areas such as emissions legislation.
 - Understanding how JM's technology can enable achievement of net zero targets.
-
- Long term partnerships.
 - Collaborative approach.
 - Fair payment terms, particularly as they navigate COVID-19.
-
- That operations are managed safely and responsibly.
 - That JM is a good employer and responsible neighbour.
 - Understanding of and openness about business developments.
 - Community involvement, partnerships and support that create positive impact and outcomes for society.

2019/20 outcomes and highlights

- Met with shareholders representing around 65% of issued share capital.
 - Final dividend of 31.125 pence proposed – balancing interests of stakeholders and uncertainty created by COVID-19.
 - Strong balance sheet with net debt of £1.1 billion; net debt to EBITDA of 1.6 times at 31st March 2020.
 - Votes from shareholders representing 78% of share capital at 2019 AGM.
 - Constituent of FTSE4Good and CDP scores of B (Climate Change), B- (Water) and D (Supply Chain).
-
- Became a member of the Global Battery Alliance.
 - JM appointed to the board of the Hydrogen Council.
 - Received £13 million of UK government funding for Hynet project to develop low carbon hydrogen technology.
-
- Maintained our payment terms to support all our suppliers through COVID-19 and promised early payment for any small supplier suffering hardship until June 2020 at least.
 - Updated Supplier Code of Conduct due to launch in 2020, together with a more robust supplier due diligence programme.
 - On-site audits (performed by our third party partner) of several prospective Tier 1 suppliers of cobalt and nickel for our eLNO battery materials as part of our pre-qualification process.
-
- £940,000 of charitable donations made by JM.
 - 2,682 volunteering days taken by JM employees.
 - Development of social impact strategy and creation of £1 million fund to support science education.



Images from top to bottom

JM's Capital Market's Day, September 2019.

Kwasi Kwarteng, Minister of State at the Department of Business, Energy and Industrial Strategy, visits JM's Chilton site, January 2019.

JM's inaugural Procurement Conference, June 2019.

Employees in Malaysia help out in their local community, October 2019.

Strategic Report

Section 172 statement

For sustained growth and value creation

The directors consider that they have acted, in good faith, in a way that is most likely to promote the long term success of the company for the benefit of its members as a whole.

In doing so, the board considers the interests of a range of stakeholders (as identified on pages 28 to 31) impacted by the business, as well as its duties as set out in law.

In their decision-making, the directors consider a number of factors, including:

- the likely consequences of any decision in the long term;
- the risks to the company and our stakeholders, including EHS, compliance and financial risk;
- the interests and wellbeing of our people;
- relationships with customers, suppliers and others with whom we do business;
- the views of governments and trade associations relevant to our operations;
- the importance of our reputation for high standards and business conduct; and
- the impact of our operations on the environment and on the communities where we are present.

Effective engagement starts with having the right channels in place to ensure the board can properly consider stakeholders' views. During the year the board reviewed its key stakeholders and how these relationships are managed. Further information about how we engage with our stakeholders and their key interests can be found on pages 28 to 31. The directors are mindful that some decisions can adversely affect one or more stakeholder group and therefore, when making such decisions, they seek to ensure the long term sustainable success of the company and endeavour to treat those impacted fairly.

Examples of how the directors have considered the views of various stakeholders in their decision making are shown in the case studies below. Further details on how the directors have had regard to the matters set out in section 172 of the Companies Act 2006, are also contained within the Governance Report on pages 83 and 85.

Approving construction of the first commercial scale battery materials manufacturing plant

In March 2019, JM announced the location of our first commercial scale eLNO battery cathode materials manufacturing plant. The site in Konin, Poland, around 200 km west of Warsaw, has the potential to expand JM's eLNO manufacturing capacity up to 100,000 MT per annum.

The board believed that the market for cathode materials was attractive and played to JM's core capabilities. In addition, the construction of the new manufacturing plant would further enable JM to scale up its operations in line with anticipated customer demand for eLNO. To ensure that the site would be beneficial in the long term, sustainability was considered in the building design and as part of supply chain discussions to ensure responsible sourcing.

As a significant investment for JM, the board reviewed in detail the overall business strategy, the learnings from other JM capital projects and the risks inherent with the investment. As a number of contractors and JM colleagues would be involved in the construction of the Konin plant, the board ensured strong controls were put in place for safe working practices.

In making its decision to approve construction, the board considered stakeholders' views provided by the Battery Materials business. The input came from the business' engagement with local government representatives and the local community in Konin. Engagement included an event hosted by JM in Konin which was attended by around 50 people. In that group meeting, we introduced JM, the battery electric vehicle market, our plans for the plant and how it would support the local economy. Attendees were supportive of JM's ambitions and we have been granted the relevant planning and permit approvals to date.

Since board approval of the construction, JM has continued to engage with government and business stakeholders in Poland, particularly in relation to the development of a clean energy infrastructure as most energy is currently derived from coal. JM will power our eLNO plant using renewable energy and, through working with Polish stakeholders to secure this for our own operations, we are supporting a shift to a lower carbon economy in Poland.

Supporting our stakeholders in challenging times

Our clear vision and strong values are the principles we are using to ensure we successfully navigate COVID-19 in the interests of our stakeholders and society.

We announced in April 2020 our plans to support our stakeholders and our COVID-19 commitments. The board discussed the importance of ensuring that our colleagues remain healthy and secure so that we can continue to serve the needs of our customers safely alongside supporting the local communities in which we operate.

The board considered the actions needed to preserve cash and strengthen our financial position to ensure the long term success of the business for all of our stakeholders. The board and the GMC continue to closely monitor developments in the COVID-19 pandemic to ensure we take the appropriate steps.

In addition, the Audit Committee reviewed the company's control and assurance process to ensure it was appropriate for the new working environment. Read more on page 101 about

the challenges in finalising and auditing the full year accounts and the measures put in place to provide assurance to the board and audit committee.

Every day we are putting our inspiring science to work to enhance lives, creating vital products and services for our customers that help to support the healthcare sector and keep our economy going. Our commitment to helping our stakeholders goes beyond business and we are determined to help in every way we can.

In recognition of the circumstances affecting many of JM's employees, customers, suppliers and communities, the board made a donation equal to 20% of their salaries and fees for the first quarter of 2020/21 to provide support to the company's special fund for science education.

Further information about our response to COVID-19 can be found on page 9 and on our website www.matthey.com

Enabling the transition to a net zero economy with hydrogen production technologies and fuel cells

In its review of future growth opportunities, the board discussed the role that JM could play in enabling the global shift to net zero through solving the problems of generating clean hydrogen and enhancing the efficiency of its applications in use. The board considered further ways to develop JM's position across the hydrogen value chain by demonstrating ways in which the company's hydrogen production and fuel cells technologies could be used.

The board reviewed the strategy of the Fuel Cells business, discussed in detail the fuel cells roadmap and the planned additional investment in our operations in the UK and China. The board heard about the benefits of the investments, including the impact on the wider stakeholder groups.

The board agreed that an operational presence in China with manufacturing capability alongside expanded production capability in the UK would ultimately benefit the company's customers, employees and shareholders.

The board also heard more about JM's hydrogen production technologies and how we are engaging with many stakeholder groups including customers, development partners, governments and trade associations.

In February 2020, the UK Government awarded £13 million to JM and our collaboration partners to fund two world-first hydrogen projects led by the HyNet consortium in the North West of England. The first is the UK's leading low carbon hydrogen project, involving JM as technology provider. The second project involves conducting live trials of hydrogen fuelling.

JM's innovative low carbon hydrogen process applies technology that we use in other applications to enable the cost-effective deployment of large-scale efficient hydrogen production. The projects aim to demonstrate that hydrogen can be used as a substitute fuel for natural gas in manufacturing processes. This will help the transition to a low carbon future and lead the way for others to follow, making an important contribution to a cleaner, healthier world.

Read more about JM's role in enabling a hydrogen economy on page 19

Defining JM's culture ambition

During the year, the board considered JM's culture ambition and how our vision and values connect to our culture. The board reviewed the company's current culture and considered information and feedback from engagement sessions with employees at all levels in the organisation. As a result, the board recognised that defining JM's culture ambition would help to differentiate JM and unlock business performance and, with the right culture JM could further improve employee engagement and be better placed to execute on strategy.

All levels of the organisation helped shape a culture ambition that aligns with the JM brand:

- **Passionately purpose driven;** Working together to make the world cleaner and healthier, being innovative and curious to create value from our science, learning and growing from what we do so JM can continue to evolve.

- **Creating shared value;** Courageously facing outwards we lead and shape markets, collaborating as one JM across boundaries to create great solutions for our customers and constantly finding smarter ways to achieve our goals.
- **Boldly drive performance;** Embracing change with a real sense of pace and focus, together we go the extra mile to deliver results. Because we care, we are open, honest, hold ourselves and others to account.

The board also spent time discussing how best to embed JM's culture ambition and how best to equip our senior leaders so that they can engage their teams in the day to day changes. Recognising the complexity of delivering cultural change, the board also reviewed the metrics that will measure progress.

Read more about workforce engagement and culture on pages 41 to 42 and 82

Strategic Report

Our KPIs

How we measure performance

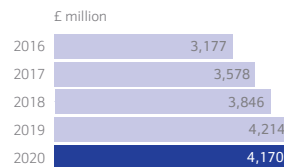
We have 13 key performance indicators (KPIs) which we use to measure our financial and non-financial performance. Our KPIs measure progress against our strategy. Our performance against our KPIs is explained below.

Group financial objectives

Growth in sales excluding precious metals (sales)

Monitoring sales growth at constant currency is a measure of the growth of the business. In many cases, variations in the value of the precious metals contained within our products are passed directly on to our customers. Therefore to measure the growth of the group, we use sales excluding the value of precious metals.

£4,170m



Performance in 2019/20

In 2019/20, sales at constant currency declined by 2% to £4,170 million (2018/19: increased 10%). The decline was driven by Clean Air and Health, partly offset by higher sales in Efficient Natural Resources and New Markets.

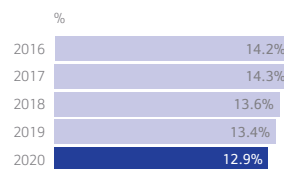
[+](#) Pages 53 to 60

[r](#) Future growth risk on page 71

Underlying operating profit margin

Underlying operating profit margin is a measure of how we convert our sales into underlying operating profit and a measure of efficiency in our business. We aim to increase our operating margin year on year as we improve our efficiency to take costs out, improve our effectiveness as we focus on higher value added products for our customers, and as we introduce new products through innovation to serve our customers' changing needs.

12.9%



Performance in 2019/20

In 2019/20, underlying operating margin was lower at 12.9% (2018/19: 13.4%) driven by a circa £60 million impact to underlying operating profit related to COVID-19.

[+](#) Pages 53 to 60

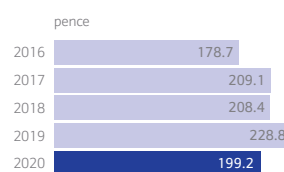
[r](#) Future growth risk on page 71

Underlying earnings per share

Underlying earnings per share is the principal measure used to assess the overall profitability of the group. The following items are excluded from underlying earnings as they do not allow for a consistent comparison of performance between financial years:

- Profit or loss on disposal of businesses.
- Gain or loss on significant legal proceedings together with associated legal costs.
- Amortisation and impairment of intangible assets arising on acquisition of businesses (acquired intangibles).
- Major impairment and restructuring charges.
- Tax on the above and major tax items arising from changes in legislation.

199.2p



Performance in 2019/20

This year, underlying earnings per share declined 13% to 199.2 pence reflecting lower underlying operating profit and increased net finance charges to fund higher average levels of precious metal working capital in the year. A reconciliation from underlying profit for the year to profit for the year is given on page 61.

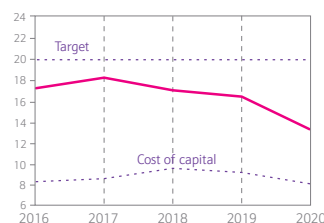
[+](#) Pages 53 to 60

[r](#) Future growth risk on page 71

Return on invested capital (ROIC)*

JM's business model of applying world class science efficiently to solve customers' complex problems generates high returns. We define ROIC as underlying operating profit divided by the monthly average of equity, excluding post tax pension net assets, plus net debt for the same period. ROIC for individual sectors is calculated using average monthly segmental net assets as the denominator.

13.3%



Performance in 2019/20

The group's ROIC decreased from 16.4% to 13.3%, mainly due to increased capital expenditure, higher average precious metal working capital through the year and lower underlying operating profit.

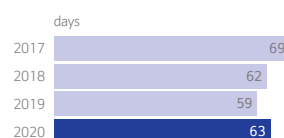
[+](#) Page 64

[r](#) Future growth risk on page 71

Average working capital (excluding precious metals)

Average working capital days (as defined on page 198) is a measure of efficiency in the business with lower days driving higher returns and a healthier liquidity position for the group. We exclude precious metals as our precious metal working capital is a function of our customers' choices and therefore not fully under our control. It can have a material effect on the group's working capital days.

63 days



Performance in 2019/20

Our average working capital days (excluding precious metal) increased by 4 days. We are targeting an improvement in average non-precious metal working capital to between 50 and 60 days over the medium term.

[+](#) Page 64

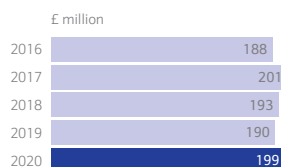
[r](#) Existing market outlook risk on page 70

Group non-financial objectives

Gross research and development expenditure

Johnson Matthey's strategy delivers sustainable growth through applying science and technology to meet the global challenges and opportunities from clean air, improved health and efficient use of natural resources. To maintain our competitive advantage and enable future growth, we invest in research and development.

£199m



Performance in 2019/20

The group's research and development expenditure was £199 million, including £23 million of capitalised R&D, around 5% of sales. Spend increased 5% as we invested in next generation technologies in Clean Air, the efficiency and resilience of our refineries in Efficient Natural Resources, our Health API product pipeline and our eLNO battery cathode material.

- + Page 61
- r Future growth risk on page 71
- r Competitive advantage risk on page 71
- r Intellectual property management risk on page 73

Customer satisfaction

Applying our world class science efficiently to solve our customers' complex problems creates leading market positions for JM. We track customer satisfaction as a measure of how we are maintaining our competitive advantage and to understand the health of our future business.

We use an external supplier to ensure a consistent and independent survey. We receive high quality analytics and feedback which is used to drive clear actions in the business.

Customer satisfaction (out of 10)

8.0

Performance in 2019/20

We continued to roll out our standardised satisfaction survey with customers. This year we engaged with customers across all four sectors representing around 75% of group sales. Our combined score of 8.0 out of 10 is above the industry norm of 7.6. We use the insight and feedback on how our customers view our offer and the strength of our relationships to agree and implement changes.

- r Competitive advantage risk on page 71

Positive impact of JM's products

JM uses its science and technology expertise to create products that have a positive impact on the planet. We track progress towards our vision for a cleaner, healthier world by measuring the percentage of our sales that come from products that make a positive contribution to the UN's sustainable development goals (UN SDGs). A detailed definition of this KPI is provided on pages 26 and 27.

5

% sales from products contributing to UN SDGs

85.9%

Performance in 2019/20

In 2019/20 the percentage of sales from products that positively contributed to the UN SDGs was 85.9%, slightly down from 87.3% last year. This is mainly due to a lower contribution from our Clean Air and Health sectors and an increased contribution from business activities which make a limited contribution to the UN SDGs, such as some areas within our PGM Services business. Our sustainable business goal is to increase this to >90% by 2025.

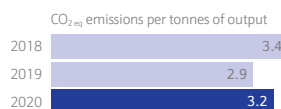
- + Pages 50 and 51
- r Future growth risk on page 71
- r Competitive advantage risk on page 71

Operational carbon footprint per unit of production output

Our operational carbon footprint, reported in tonnes of carbon dioxide equivalent (CO₂eq), includes Scope 1 and Scope 2 emissions. It is a measure of the carbon intensity of our operations. We normalise our carbon emissions based on production output which we define as 'tonnes of manufactured product sold externally'. Only sold products manufactured on JM premises are included. A detailed definition of this KPI is provided on pages 46 to 49.

3

3.2 tonnes CO₂ (eq)



Performance in 2019/20

This year the group's operational carbon footprint per unit of production output increased from 2.9 to 3.2 tonnes CO₂ equivalent per tonnes of output. Production output was lower but the need to keep certain energy intensive assets running for operational efficiency and safety reasons meant that our carbon intensity increased.

- + Pages 46 to 49
- r Competitive advantage risk on page 71
- r Environment, health and safety risk on page 71

Strategic Report

Our KPIs continued

Group non-financial objectives

Responsible sourcing – strategic suppliers assessed and in compliance with JM Supplier Code of Conduct

We seek to ensure sustainable and responsible business practices in our supply chains through measuring the percentage of our Tier 1 strategic suppliers assessed and compliant with JM's Supplier Code of Conduct. A detailed definition of this KPI is given on page 49.

4

% strategic suppliers assessed since 1st April 2017

17%

% in compliance with JM Supplier Code of Conduct

76%

Performance in 2019/20

We plan to launch a revised Supplier Code of Conduct in 2020 and with it a broader, more robust supplier due diligence programme. In preparation, we have temporarily paused our existing supplier due diligence programme, with the exception of our work with suppliers of critical and conflict minerals to support the strategy of our Battery Materials business.

As a result, under the definition of our goal 4 framework no further current suppliers were audited during 2019/20.

+ Page 49

r Supply failure risk on page 72

r Ethics and compliance risk on page 73

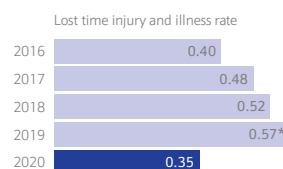
Health and safety

Making sure our people go home in the same, or better, state than when they came to work is everyone's responsibility in JM. That's why we place huge emphasis on health and safety. We drive the right behaviours through our values and through health and safety programmes across the group. Rigorous health and safety systems apply across all facilities and we actively manage our safety performance through monitoring the incidence and causes of accidents that result in lost time.

Lost time injury and illness rate (LTIR) is defined as the number of lost workday cases per 200,000 hours worked in a rolling year. A detailed definition of this KPI is provided on page 39.

1

LTIR of 0.35



* Restated, see page 40.

Performance in 2019/20

The group's LTIR reduced by 39% to 0.35. This improvement reflects our continued focus on driving a strong behavioral safety culture. Our leading indicators of performance have also continued to improve.

+ Pages 39 and 40

r Environment, health and safety risk on page 71

Employee engagement

An engaged workforce is a key driver of performance. Our global yourSay survey, carried out in full every two years and as a shorter 'pulse' survey more regularly, looks at the key drivers of employee engagement. Further details are provided on page 42.

We use employee engagement as a measure of how committed and motivated our people are to give their best to Johnson Matthey.

A detailed definition of this KPI is provided on page 42.

2

63

Performance in 2019/20

Our employee engagement score in November 2019 was 63 (September 2018: 59) as we delivered the action plans put in place last year. We continue to focus on improving the effectiveness of our employee engagement activities with the aim of increasing our employee engagement score to 73 by 2025, which is in line with the highest performing companies.

+ Pages 41 to 45: Further details of what we've been doing to engage our people over the last year

r People risk on page 72

Volunteering in the community

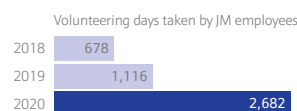
Caring for others in our communities is part of our culture and is reflected in our values. That's why we support employee volunteering and allow our people two days of paid volunteering leave each year. We measure the number of volunteering days taken by JM's employees per year.

This is part of our wider target of achieving a cumulative total of 50,000 days between 1st April 2017 and 31st March 2025. A detailed definition of this KPI is given on page 52.

6

Volunteering days taken by JM employees

2,682



Performance in 2019/20

In 2019/20 JM employees took 2,682 volunteering days (2018/19: 1,116 days). This increase reflects our efforts to raise awareness of the benefits of volunteering during the year. A particular focus was the globally recognised International Volunteer Day in December during which employees across 23 countries volunteered over 500 days of their time to volunteer in support of worthy causes.

When combined with the days taken since 1st April 2017, JM employees have taken 4,476 days of paid volunteering leave.

+ Page 52

r People risk on page 72

Non-financial information statement

JM has a range of different policies and standards in place to manage our principal risks, and which form part of our internal control framework. These are referenced throughout the Strategic Report. The table below shows how we meet the non-financial reporting requirements contained in sections 414CA and 414CB of the Companies Act 2006. It summarises the material policies identified in line with these reporting requirements and is intended to help our stakeholders understand our position on non-financial matters.

Reporting requirement	Policies and standards that govern our approach and controls	Relevant principal risk	Page reference
Environmental matters	• Task Force on Climate-related Financial Disclosures (TCFD) statement	4 5 10	47
	• Environment, Health and Safety Policy*		39
	• Policy on animal testing*		51
	• Ethical and Sustainable Procurement Policy*		49
	• Supplier Code of Conduct*		49
Employees	• Code of Ethics*	4 10	44
	• Equal Opportunities and Training and Development of People Policies*		44
	• Global Flexible Working Policy		44
	• Board Diversity Policy*		94
	• Speak up process		45, 101
	• Environment, Health and Safety Policy*		39
	• Eight lifesaving policies		39
	• Working Together Policy		41
	• Global Parental Leave Policy		44
	• Mental wellbeing commitment		44
	• Investigations Policy		44
	• Corporate Governance Framework		86-87
Social matters	• Employee Volunteering Policy	6	52
Respect for human rights	• Modern Slavery Statement*	5 10	45
	• Code of Ethics*		44
	• Data Protection Policy and Employee Privacy Notice		44
	• Ethical and Sustainable Procurement Policy*		49
	• Supplier Code of Conduct*		49
Anti-corruption and anti-bribery matters	• Anti-Bribery and Corruption Policy	10	45
	• Code of Ethics*		44
	• Trade and Export Controls Policy		44
	• Investigations Policy		44
	• Financial Crime Policy		44
	• Tax strategy		62
	• Conflict of Interests Policy		44
	• Competition Law Policy		44
Business model	–	1 2 3 4 5 6 7 8 9 10 11 12 13	22-23
Non-financial key performance indicators	–	2 3 4 5 6 10	35-36 216-218
	–		67-74

* Available on our website

Strategic Report

Responsible business

JM has long contributed to the sustainability of key global industries

Our vision of a cleaner, healthier world, today and for future generations, ensures sustainable business is embedded explicitly in what we bring to the world as well as how we conduct ourselves while making that contribution. The JM values, which we use to guide our actions, align with the UN SDGs.

Our sustainability framework embeds our vision in all that we do, and ensures we deliver on our strategy in a way that is best for our planet and those we share it with.

Its six goals are the indicators of progress in sustainability topics that are material to JM and these are summarised in the table below.

	Sustainable business goal	Sustainable business KPIs	Baseline measure	Baseline	2019/20	2025 target	More information
Health and safety 1	For health and safety, aspire to zero harm	Annual TRIIR	TRIIR in 2016/17	1.00	0.78	0.6	Page 40
		Annual LTIIR	LTIIR in 2016/17	0.48	0.35	0.2	Page 40
		Annual OSHA severity rate	Rate in 2016/17	18.5	18.5	6.0	Page 40
Our people 2	Ensure JM is truly inclusive, fostering employee engagement and development within a diverse global workforce	Employee engagement index score	2016/17	62	63	73	Page 42
		Employee enablement index score	2016/17	63	63	72	Page 42
		Diversity and inclusion plan implementation (%)	Refinitiv Diversity & Inclusion score in 2018	57	60.5	78	Page 44
Low carbon operations 3	Reduce our greenhouse gas (GHG) emissions per unit of production output by 25%	Tonnes annual GHG emissions (Scope 1+2) / tonnes manufactured product sold	CO ₂ eq emissions intensity for 2016/17	3.8	3.2	2.8	Pages 48 and 49
	Source 60% of our global electricity demand from renewable sources	% electricity from certified renewable sources	% electricity from renewable sources in 2018/19	24%	26%	60%	Pages 48 and 49
Responsible sourcing 4	Improve sustainable business practices in our supply chains	% Tier 1 strategic suppliers assessed in the last 3 years and compliant with Supplier Code of Conduct	% of Tier 1 strategic suppliers assessed in 2017/18	11%	17%	100%	Page 49
			% of these compliant with the code	73%	76%	100%	Page 49
Sustainable products 5	Double the positive impact that JM's products make on a cleaner, healthier world	% annual sales giving contribution to UN SDGs	2017/18 sales data against UN SDG indicators (% of group sales)	86.9	85.9%	>90%	Pages 26 and 50
		Annual aggregation of product sustainability benefits in key areas	2017/18 data relating to: Million tonnes of pollutants removed	3.59*	2.96	7.18*	Pages 50 and 51
			Number of lives positively impacted	138,000	323,000	920,000	Pages 50 and 51
			Million tonnes of GHGs removed (CO ₂ eq)	10.6	9.8	21.2	Pages 50 and 51
	Tonnes of GHGs avoided (CO ₂ eq)	213,000	225,000	426,000	Pages 50 and 51		
Community engagement 6	Increase our volunteer work within our local communities	Cumulative number of volunteer days across JM	Number of employee volunteer days across JM in 2017/18	678	4,476 (cumulative total)	50,000	Page 52

* Restated due to adjustment in scope of vehicles included in certain small markets.

+ Read more: Our KPIs on pages 35 and 36

+ Read more: Additional non-financial performance information is provided on pages 220 and 221

Health and safety

1



For health and safety, aspire to zero harm.

Health and safety

9 GRI 403

We are committed to conducting all our activities in ways that achieve high standards of health and safety for all employees and those affected by our operations.

In 2019/20 we continued to focus on process safety, which is about how we safely manage our most hazardous processes, and occupational health and safety, which is about incidents that happen more frequently but are usually less severe, like slips, trips, falls, cuts and sprains.

During the year we made good progress against our targets to reduce significant risk in our major hazard processes and on improving overall health and safety performance.

We have introduced personal safety action plans for leaders at all levels – from GMC to those at the front line. These plans include practical activities to promote a proactive safety culture by demonstrating more visible, higher quality safety leadership, leading to greater employee engagement and, in turn, improved health and safety performance. We have also increased the regularity and quality of our health and safety communications with targeted and measurable campaigns to drive awareness, engagement and personal ownership.

Health and safety is everybody's responsibility. Across JM, everyone is required to follow five clear and simple safety principles and, with a health and safety element a key requirement of all employees' performance reviews, we ensure it remains firmly on everyone's radar and that they are clear about what is expected from them.

Our Group Environmental, Health and Safety (EHS) Policy is supported by a core group of eight health and safety policies which we call 'lifesaving policies'. These policies are available in local languages and cover high risk topics, where policy breaches could endanger life or lead to serious injury. We have continued to provide guidance to our sites on how to implement them and monitor compliance through EH&S audits.

All sites have action plans for implementing our lifesaving policies and good progress is being made against those plans.

+ Read more: Governance processes relating to health and safety on page 46

r Environment, health and safety risk on page 71

Process safety

We use an industry-standard framework to manage our process safety risks. We have created a working infrastructure, with a group process safety team, subcommittees with defined responsibilities, and selected site process safety champions. We provide JM specific process safety training at all levels from senior executives to process operators and around 1,500 of our site-based staff completed the training in 2019/20.

By conducting site surveys, we have identified sites with process safety hazards and ranked these as high, medium or low to enable us to target our process safety efforts. All these sites with process safety risks have carried out maximum credible event (MCE) studies which identified the highest risks and put in place actions to mitigate the level of risk. Around 90% of all actions from these studies have now been completed which has resulted in significant reduction of risk and the remaining actions are on track.

Our Process Safety Risk Management audit programme continued this year using a revised set of risk-based audit protocols. All but one of our high hazard sites have now completed an audit. We maintained our programme of training and communications too, which included a four day global process safety conference in May 2019, attended by around 80 of our process safety champions.

At certain sites, we are investing in renewing and replacing older plant assets to address major risks. For those risks which are common across JM we take a more collaborative approach of developing and sharing best practice, such as for the use of chlorine where a working group is now in place to develop and maintain JM policy and guidance on the design and operation of chlorine systems.

We have made good progress on our journey to identify and continuously improve process safety risks. Our key lagging indicator, which is the industry standard ICCA (International Council of Chemical Associations) process safety incident severity rate, has reduced from 2.1 in March 2018 to 1.0 in March 2020.

However, positive metrics aside, there have been some process safety incidents in 2019/20 where the outcome could easily have been more severe. Although none of these incidents resulted in personal injury, there was damage to equipment. In all these incidents we quickly assessed the cause to prevent recurrence and learnings have been shared globally across JM. For example, following one particular incident we developed and launched specific guidance on the assessment of dust hazards and completed a gap analysis on 15 sites that were judged to be high hazard.

We will continue to reinforce our strong focus on implementing our process safety strategy, particularly in light of our experiences in 2019/20. We have recognised that our sites need time, support and resources to implement these changes and as a result we have launched new risk-based guidance and provided additional support to ensure that these improvements and the other elements of our process safety programme become fully embedded.

Occupational health and safety

Our sustained focus on behavioural safety has continued and after a few years where performance was flat, 2019/20 has shown improvements in both our leading and lagging indicators.

We have continued to reinforce reporting of learning events where we look at near misses, unsafe conditions and unsafe acts – or injuries that had only just been avoided. This year we again reported a greater number of learning events (up by 26%). These continue to provide valuable lessons and are helping us to successfully reduce our injury rates.

We have also continued to drive a positive safety culture and personal ownership at all levels of the organisation. At a leadership level, our EHS Leadership Committee assists the company in meeting its EHS responsibilities and in creating a positive safety culture across the whole of JM. Site visits, which include making safety observations, safety conversations, personal safety messages and reviews of EHS actions, highlight the visible involvement of leadership.

For the first time last year, leaders from the GMC down, set and shared their own personal safety action plans with their site leadership teams. These plans, prepared by the individual leaders, set out the activities they will undertake to show more visible safety leadership and promote a proactive safety culture.

Strategic Report

Responsible business continued

We have now integrated EHS leadership training into our leadership programmes at all levels and a global EHS induction programme for leaders and managers will launch this year as we embed health and safety culture from the start with new joiners. We also continued with our programme of regional EHS conferences with site operations staff.

We have a groupwide occupational health policy in place and provide guidance to sites for the management of chemical exposure.

The number of occupational illnesses reported each year across JM remains relatively low, reducing to 14 this year and a rate of 0.09 per 200,000 working hours in a rolling year (2018/19: 21 illnesses and a rate of 0.16). Following the introduction of mental wellbeing programmes and services globally during the year (see page 44), we are encouraged that the number of work related stress cases has reduced this year. However, ergonomic related injuries represented 22% of all our injuries over the last year. To address this, we have been rolling out a specific tool to help effectively assess ergonomic risk and held an ergonomics forum for all sites to provide support and understanding of correct ergonomic practices at work.

This year, our performance has improved. We have:

- Reduced our lost time injury and illness rate (LTIIR) by 39% from 0.57¹ to 0.35 vs our 2025 target of 0.2.
- Reduced our total recordable injury and illness rate (TRIIR) by 23% from 1.01¹ to 0.78 vs our 2025 target of 0.6.
- Reduced our severity rate² by 40% to 18.5 (at end of March 2020 compared with the 12 months to March 2020) vs our 2025 target of 6.0.
- Reduced the number of lost and restricted days during the last 12 months by 1,091 days.

There were no employee or contractor fatalities in the year.

¹ Data for 2018/19 has been restated due to injuries and illnesses that were reported or reclassified after the year end.

² Severity rate (as defined by the US Occupational Safety and Health Administration, OSHA) measures the average number of lost or restricted work days per injury event in the workplace.

With a number of major capital investment projects underway at the moment, we have a higher than usual number of contractors on our sites.

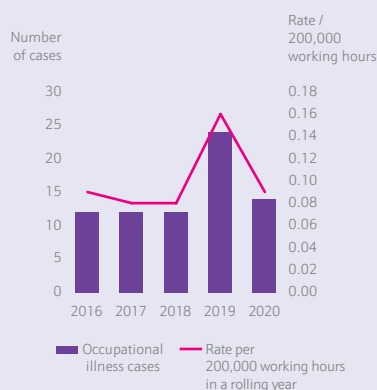
By clearly setting out our EHS expectations and monitoring them regularly with our capital construction partners, we have maintained our high standards and seen a reduction in our contractor lost time injury rate over the last 12 months.

[Read more: Contractor lost time injury and illness rates on page 221](#)

Response to COVID-19

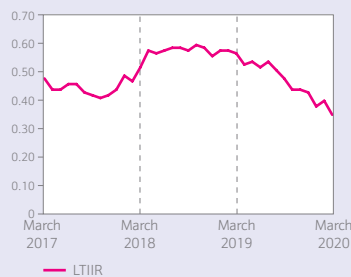
Protecting our people as the COVID-19 pandemic has developed has been a major priority and we acted quickly based on our learnings from our sites in China to put in place guidance globally on the implementation of the necessary controls that met local state and government requirements and JM standards. These included increased hygiene practices, social distancing, reduced workplace density and temperature monitoring before entry into site. We are continuing to develop and add to the guidance as the situation evolves. We are also making sure that there is strong reinforcement of health and safety culture as people return to work to help prevent any dips in performance. We know that the impact of COVID-19 on people's daily lives may also take its toll on their personal wellbeing and have been providing employees with more regular communications, tips and resources to support them through these more challenging times.

Occupational illness cases



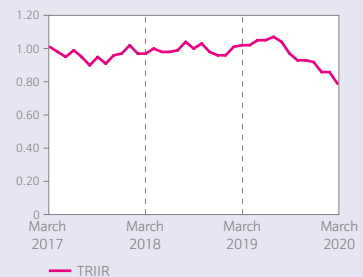
Lost time injury and illness rate (LTIIR)¹

per 200,000 working hours in a rolling year



Total recordable injury and illness rate (TRIIR)¹

per 200,000 working hours in a rolling year



¹ Data for 2018/19 has been restated due to injuries and illnesses that were reported or reclassified after the year end.

Our people
2



Ensure JM is a truly inclusive organisation that fosters employee engagement and development within a diverse and global workforce.

People

9 GRI 404

Our people are at the heart of JM's business strategy. For us to deliver solutions from our world class science and realise our vision, we are developing our culture further, where our people can be successful; a culture which attracts, retains and develops the very best talent.

Like many organisations, what JM needs from its people and what they demand from JM is being significantly impacted by the pace at which markets are moving as well as new business challenges. As JM executes its strategy, we are driving a period of transformative change to build an organisation which is more market focused, lean and agile, and a fulfilling place for our employees to work. Our people investments over the past few years have laid the foundations and we are now in a strong position to leverage these to accelerate change and reshape the way we work, in line with our strategy and vision.

People risk on page 72

Our culture ambition

Passionately purpose driven

Working together to make the world cleaner and healthier, being innovative and curious to create value from our science, learning and growing from what we do so JM can continue to evolve.

Creating shared value

Courageously facing outwards, we lead and shape markets, collaborating as one JM across boundaries to create great solutions for our customers and constantly find smarter ways to achieve our goals.

Boldly drive performance

Embracing change with a real sense of pace and focus, together we go the extra mile to deliver results. Because we care, we are open, honest, and hold ourselves and others to account.

A culture for success

Achieving our strategy requires us to have a culture in place that enables, engages and energises our employees. We recognise that to successfully transform as a company some elements of our culture need to change.

Our culture is an outcome of the way we work and the behaviours our people demonstrate. With the appropriate culture we can accelerate the change required to execute our strategy. Over the past 18 months we have engaged all levels of our organisation and external stakeholders to shape our culture ambition, aligning it to our vision and values and setting ourselves up for the future.

We will be embedding our culture ambition through everything we do at JM; it will support the way we work with one another and our customers, and the way we support our people to succeed.

Our culture ambition will be brought to life in our change programmes and by all our leaders who role model required behaviours and ways of working. We will monitor progress through employee perception, customer feedback and the successful execution of transformation.

Our values are aligned to the needs of our long term strategy and are embedded throughout our people processes.

A great place to work

Our ambition is to make JM an even greater place to work, where safety is a priority, diversity and inclusion are valued and development encouraged so that we deliver our results by effectively executing our JM strategy.

Our values

<p>Protecting people and the planet</p>	<p>Acting with integrity</p>	<p>Working together</p>	<p>Innovating and improving</p>	<p>Owning what we do</p>
<p>We practise the highest standards of health and safety, promote wellbeing for people both inside and outside of work, and seek to safeguard our planet.</p>	<p>We do the right thing, for people and for the world. We do what we say we'll do, expect the same of each other and speak up when there's a problem. We place importance on relationships internally and externally, treating others with respect and care.</p>	<p>We encourage collaboration inside JM and out, sharing and embracing diverse viewpoints. We tackle problems together, put our ideas into practice and take pride in combining our contributions to create something better for JM and our customers.</p>	<p>We adapt and embrace new ideas to make us stronger and our world cleaner and healthier. We are confident and resilient through change, growing and developing ourselves and JM, to ensure we are a leader in our chosen markets.</p>	<p>We take accountability for our own work, and know we are also part of something bigger. We take the initiative, seek clarity and demand high standards from ourselves and our colleagues.</p>

Strategic Report

Responsible business continued

This ambition is enabled by our key people aims which are to:

- Attract and retain the best and most suitable talents.
- Develop employees to achieve the highest levels of performance and achieve their career potential.
- Create an environment where employees are recognised and rewarded for their overall contributions.
- Foster a culture of success, where our values matter and are used as a guide for people to do the right thing.
- Support employees through an evolution of change and transformation.

We have implemented progressive, global people policies and practices, aligned to our vision, going beyond statutory requirements to recognise best practice. We review our people policies and risks in accordance with our governance framework, with the board being responsible for overseeing the overall people strategy. The Nomination Committee oversees talent and succession plans and decisions. The Remuneration Committee is responsible for overseeing and ensuring the Remuneration Policy is adhered to.

Attracting and retaining the best

Over the last year our overall headcount has increased (see table on page 43). Females make up 28% of our overall workforce in JM and 33% of new hires. While we continue to make progress on gender balance, we have lower proportions of females in our science and engineering roles. To address this, we have introduced gender balance objectives as part of our diversity and inclusion aspirations for 2025.

Building a robust talent pipeline for the future is important for us and we continue to hire graduates into science, operations and commercial disciplines. A new cohort of 33 graduates are set to join JM in the UK, US and China this year, 57% of whom are female.

Our voluntary employee turnover has reduced this year to 9.0%. Total employee turnover, including restructuring programmes and retirements, was 11.8% this year (2018/19: 13.2%).

Reward and recognition

We continue to ensure that our rewards are competitive and aligned with local markets. We have looked creatively at different ways that we can add benefits beyond purely monetary rewards.

We have enhanced our employee recognition schemes and this has had a positive impact on employee engagement scores. We celebrate our employees' achievements with the annual JM global awards. We also have an informal 'Say thanks' programme, which recognises individuals and teams by way of an e-card and awards that can be redeemed in the form of small gifts. In addition, we are also celebrating the loyalty our employees have shown to us through long service awards.

Talent and career management

A refreshed approach to talent management has been implemented at all manager levels over the last 18 months which will help us identify and accelerate a more diverse leadership talent pipeline in line with our business needs. It has revealed untapped potential in our mid-career pipeline and we plan to target development to accelerate talent and reduce our succession risk. We are delighted to have identified relatively higher numbers of females with development potential, which will support our 2025 gender balance aspirations.

Employee feedback highlighted the difficulties that some people experience in advancing their careers in JM. In response we have launched our career portal 'MyCareer'. This year we also ran a global JM careers week at all major locations, which many of our employees greatly appreciated. These events combined seminars, toolkits and speakers to highlight the rich and varied opportunities we have in JM and provide simple tools to help our people build personal career plans.

We have focused on reducing our reliance on external recruitment and our efforts are starting to have an impact. The percentage of internal vs external hires rose to 33% from 27% last year. Our transformation will require a workforce with multi-faceted skills and experiences and we will continue to focus on talent and career management this coming year.

Employee engagement

We continue to value and act on the feedback from our people about how engaged they feel working at JM. From our 2016 baseline scores of 61 for engagement and 62 for enablement, we set a goal to achieve respective scores of 73 and 72 by 2025, aligned with high performing companies. These targets form part of goal 2 of our sustainable business framework.

Following a mixed outcome when we remeasured in 2018 (59 for engagement

and 63 for enablement), we have invested significant energy to start to address the key issues.

Our most recent 2019 pulse survey shows significant improvement on engagement (up 4 points to 63) with step change improvements in trust in leadership and pride in the organisation. We have also seen engagement of our longer serving employees increase significantly. Our efforts to cascade clear priorities, recognise employees' efforts, prioritise wellbeing and maintain efforts on career and personal development conversations have all had a positive impact. However, enablement in our 2019 survey remained flat at 63. While the survey reveals that employees feel their work is more challenging, stimulating and fulfilling, there are employees at some of our sites who feel barriers are getting in the way of their productivity. This is valuable feedback that we are factoring into how we organise our operating models, aiming for a leaner and less complex organisation.

As part of the recent changes to the UK Corporate Governance Code, boards are expected to engage more fully with employees and understand the issues on the ground. The JM board already has several mechanisms to meet and talk to staff to build on. Following a review of options and a discussion on how best to achieve this, the JM board decided to implement country engagement focus groups as the mechanism through which to have two-way dialogue with the workforce.

Focus groups comprising a diverse mix of employees, chaired by senior members of the leadership team, were run in the US and China during November 2019. Feedback from these pilot sessions was consolidated with results of the employee opinion survey and a set of recommendations presented to the board including; improving prioritisation, line manager communications and raising the visibility of our diversity and inclusion (D&I) strategy. The board supported recommendations and asked to accelerate two-way dialogue in JM. As part of the response, country engagement forums will be run regularly in the UK, China, US and Germany and members of the board will be directly involved.

Learning and development

 GRI 404-2

Realising our growth ambitions by unlocking performance and creating a more agile organisation requires us to strengthen leadership capability.

Number of staff* as of 31st March

	Permanent employees		Temporary employees		Total (excluding agency staff)		Agency staff		Total	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Europe	7,445	6,714	316	397	7,761	7,111	1,056	1,185	8,817	8,296
North America	3,099	3,105	34	13	3,133	3,118	33	51	3,166	3,169
Asia	2,423	2,376	96	73	2,519	2,449	110	159	2,629	2,608
Rest of World	665	662	74	59	739	721	1	1	740	722
Total group	13,632	12,857	520	542	14,152	13,399	1,200	1,396	15,352	14,795

* For definitions see page 216.

Employees by gender and region as at 31st March 2020

	Permanent employees		Temporary employees		Total (excluding agency staff)	
	Male	Female	Male	Female	Male	Female
Europe	69%	31%	66%	34%	69%	31%
North America	76%	24%	50%	50%	76%	24%
Asia	81%	19%	74%	26%	81%	19%
Rest of World	66%	34%	55%	45%	65%	35%
Total group	73%	27%	65%	35%	72%	28%

Employee turnover by region

	Voluntary employee turnover 2020	Voluntary employee turnover 2019	Total employee turnover 2020	Total employee turnover 2019
Europe	8.3%	8.7%	10.0%	10.7%
North America	10.4%	12.5%	15.1%	18.3%
Asia	10.6%	13.1%	14.2%	14.7%
Rest of World	4.1%	8.4%	8.6%	9.8%
Total group	9.0%	10.4%	11.8%	13.2%

Gender diversity statistics

The table below shows the gender breakdown of the group's employees as at 31st March 2020.

As at 31st March 2020	Male	Female	Total	% male	% female
Board	7	3	10	70%	30%
GMC	5	4	9	56%	44%
Subsidiary directors	118	15	133	89%	11%
Senior managers*	47	16	63	75%	25%
New recruits	1,392	690	2,082	67%	33%
Total group	10,252	3,900	14,152	72%	28%

* Senior managers are defined as the direct reports of the GMC. For the purposes of the UK Corporate Governance Code 2018 disclosure, Senior managers are defined as the GMC and Company Secretary. This disclosure is stated within the GMC statistics above and their direct reports are included within this Senior managers disclosure. Some individuals are included in more than one category.

New joiners by gender and region

	Total joiners	Joiners male	Joiners female
Europe	1,215	63%	37%
North America	411	71%	29%
Asia	417	74%	26%
Rest of World	39	67%	33%
Total group	2,082	67%	33%

Trade union representation

	Average number of employees represented*	% represented
Europe	2,359	32%
North America	538	18%
Asia	192	8%
Rest of World	415	63%
Total group	3,504	26%

¹ Average number of employees who were covered by collective bargaining arrangements and represented by trade unions.

Strategic Report

Responsible business continued

We have now launched four of our five 'Aspire' leadership development programmes. Attended by a total of 486 line managers to date, these programmes provide consistent skills and behavioural development for our first line leaders right through to our executives. We recognise the impact coaching can have on employee engagement, productivity and enabling change. We plan to invest in developing coaching capability by implementing a new skills framework and high quality external coaching for our leaders at all levels.

Our online learning, available on our iLearn portal, has been accessed by more than 45% of employees in the last year. We have also seen significant increases in the take up of online learning during COVID-19. We see this increase as positive and plan to build on this further for the future.

Diversity and inclusion (D&I)

GRI 405

D&I is seen as a critical driver of business performance and we have set an ambition and roadmap to ensure D&I is embedded into our culture. As a part of goal 2 of our sustainable business framework, we have a target to achieve a ranking within the top 100 employers globally for D&I (within the Refinitiv, formally Thomas Reuters, index) and a gender balance target to have 40% of roles at mid-senior levels occupied by females by end 2025 from a base of 25%.

In line with our Equal Opportunities Policy, we recruit, train and develop employees who are the best suited to the requirements of the job role, regardless of gender, ethnic origin, age, religion or belief, marriage or civil partnership, pregnancy or maternity, sexual orientation, gender identity or disability.

People with disabilities can often be denied a fair chance at work because of misconceptions about their capabilities, and we work to enhance their opportunities by attempting, wherever possible, to overcome the obstacles. This might mean modifying equipment, restructuring jobs or improving access to premises, provided such action does not compromise health and safety standards. This is set out in our policy, which extends to employees who have become disabled during their employment and who will be offered employment opportunities consistent with their capabilities. We would also look to make reasonable adjustments for new recruits.

We have seen progress against our D&I ambition this year. We now have five employee resource groups (Pride, Gender, Disability, Black Employees and Early Careers) with whom we are working to actively drive our D&I agenda and we have joined the Valuable 500 network of global organisations committed to raising awareness of disability. Our global flexible working policies (including arrangements for parental and bereavement leave) introduced in 2018/19 marked a significant step forward in how we look after our employees and their families. These appear to be having a positive impact and part time working among our male and female colleagues has increased slightly. We were able to improve our Refinitiv Index score by 3.5 points to take us to 60.5. Gender balance at mid-senior levels has increased to 27% and we have seen increases in our Equileap ranking to #23 (up from #75).

+ Read more: Gender diversity statistics table on page 43

Gender pay gap

GRI 405-2

Johnson Matthey's combined UK gender pay gap has reduced from 8.5% to 6.0% and continues to be well placed against the national average gender pay gap of 17.3%. A full copy of our report can be found on our website.

matthey.com/gender-pay-19

Supporting employee wellbeing, including through COVID-19

Ongoing transformative change requires our workforce to be healthy and resilient and we are committed to the wellbeing of our employees. In response to increased numbers of stress cases last year, our focus in 2019/20 was mental wellbeing. Our core campaign, 'Time to talk', launched a global wellbeing platform giving all JM employees access to a wide range of wellbeing resources and our global employee assistance programme. We also marked World Mental Health Day on 10th October 2019 with events across the organisation. These efforts have shown positive signs with a reduced number of reported stress cases compared with the prior year (see page 40).

COVID-19 has required us to rapidly change the way we work and we recognise that it has presented a whole range of different challenges for our people. Alongside our focus on keeping people safe, we have worked hard to enable them to work effectively, whether that is remotely or on site.

Staying connected has been really important and our teams have come up with a whole host of ways to support each other. We continue to support employees' mental wellbeing, particularly in light of the impact of COVID-19, and are increasing our activities to support physical wellbeing. Underpinning all of this is our fantastic network of over 100 wellbeing ambassadors, who continue to support our wellbeing strategy locally.

Ethics and compliance

GRI 102-16

Our value of acting with integrity helps shape a strong ethical culture of 'doing the right thing' which is critical to delivering our strategy and vision. We aim to make our reputation for doing the right thing a strategic advantage for our business.

We set our standards for ethics and compliance globally, supported by our overarching 'Code of Ethics', and our approach has two pillars:

- (i) promoting an ethical culture across the company; and
- (ii) implementing a compliance programme underpinned by a framework applied to each risk area.

matthey.com/code-of-ethics

The programme is underpinned by a framework of policies, standards and our Code, all of which are aligned to each risk area and supported by training. The risk areas include bribery and corruption, data protection, export controls and sanctions, conflicts of interest, competition / anti-trust, financial crime (including the corporate criminal offence of failing to prevent the facilitation of tax evasion), and modern slavery (see page 45). The programme brings together how we approach risk management, internal controls and promoting an ethical culture across the company.

Ethics and compliance risk on page 73

We continually evaluate our ethics and compliance programme in relation to changes in legislation and to understand any gaps or weaknesses that require more attention. During the year we focused on further embedding the programme in China as a result of our understanding of some of the difficulties faced in doing business there. China is becoming an increasingly important market for us across all sectors and we held several workshops and training for our Chinese teams to address specific risks presented by this market.

We have also recently launched a new policy which sets a global standard on the use of third parties in some of our higher risk jurisdictions. Targeted training for those roles most impacted is planned for 2020/21 and we will also refresh our procedures for onboarding third party intermediaries to ensure alignment across all jurisdictions.

Creating a culture of doing the right thing

GRI 102-17

In April 2019 we retrained our employees on our refreshed Code of Ethics. All employees are required to take a code of ethics module annually, reinforcing the basics and taking a deeper dive into a selection of topics covered. Additional targeted training is provided to people whose roles expose them to specific risk areas.

Our growing global network of approximately 125 ethics ambassadors continue to drive our culture for doing the right thing and acting as a sounding board for employees and providing guidance on where to go for help or to raise a concern. This year, they played an important role in our first ever 'Ethics Week', celebrating Global Ethics Day on 16th October and World Values Day the day after.

We encourage our employees and anyone we do business with to speak up when they have a concern or are unsure about something, and they can do this through local management, their ethics ambassador, HR or the legal function.

We also provide employees (and third parties) with an independently run 'speak up' helpline (also available online) to raise concerns anonymously, where local law permits.

An Ethics Panel made up of senior leaders meets monthly to provide oversight of investigations into all speak ups received. The panel reports three times a year to the board, with a particular focus on identifying themes and opportunities to improve the way we do things.

+ Read more: Speak up reports on page 221

Anti-bribery and corruption risks

GRI 205

We believe the most significant compliance risk that JM faces is bribery and corruption based on JM's business activities and global reach. In February 2020 we launched our refreshed policy on Anti-Bribery and Corruption and a separate Gifts, Hospitality and Charitable Donations policy. These global policies reflect JM's continued zero tolerance approach to bribery and corruption and provide key guidance that reflects the bribery and corruption risks we encounter at JM today. Further policy training and role specific guidance, including additional focus work in China, continues to be rolled out.

JM uses third party intermediaries (TPIs) to support our business and customers and has policies and processes in place to manage the risks, especially in the area of bribery and corruption.

Human rights

We support the principles set out in the UN Universal Declaration of Human Rights and the International Labour Organisation Core Conventions, including the conventions on child labour, forced labour, non-discrimination, freedom of association and collective bargaining. We also support the principles endorsed under the UN Global Compact and the UN Guiding Principles on Business and Human Rights (the 'Ruggie' Principles).

We are working to embed them throughout our operations and whenever we enter into business in a new territory, make an acquisition or enter a joint venture. There were no human rights grievance reports made against Johnson Matthey during the year.

Modern slavery

GRI 408

In line with the UK Modern Slavery Act 2015, we make an annual public statement, which is posted on our website, describing the steps we have taken during the year to ensure that slavery and human trafficking are not taking place, either in our businesses or our supply chains.

These steps include public policies and codes (including our Code of Ethics and Supplier Code of Conduct), our supply chain due diligence programme and an independent confidential 'speak up' line available to all stakeholders to report concerns and grievances.

matthey.com/modern-slavery

After completing their online training, all staff are required to complete an online code acknowledgment confirming that they will work in accordance with the commitments in the code. In 2019/20, 66% employees completed this online code acknowledgment (2018/19: 62%). In addition, particularly for employees working in our manufacturing plants, we provide classroom training on the code and record code acknowledgment completion locally. We are putting in place mechanisms to enable us to centrally capture this information in future.

Celebrating Ethics Week at JM

This year we celebrated our first ever Ethics Week at JM. The week was an opportunity to get everyone at JM to think about ethics and the importance of doing the right thing.

Our global network of ethics ambassadors took the lead and organised a range of fun and engaging activities to ensure the ethics message reached everyone across JM sites. From quizzes and games to lunch and learns, the activities encouraged employees to consider what doing the right thing means in their role at JM.

We heard first hand from our sector chief executives, who provided insights on topics including leadership values, organisational reputation, good decision making and speaking out as well as speaking up. Employees also got the opportunity to ask questions of JM's senior leaders via a live yam jam.

This truly global effort helped to shine a spotlight on ethics across JM and employee feedback was very positive. So much so, Ethics Week is now a firm fixture in JM's annual calendar of events.



Strategic Report

Responsible business continued

Low carbon operations

3



Reduce our greenhouse gas (GHG) emissions per unit of production output by 25%.

Environment

JM's products and services have an overwhelmingly positive impact on the environment when they are used.

We reinforce the positive impact of the products we sell with a responsible approach to environmental management.

JM's manufacturing processes generate greenhouse gases (GHGs) through the burning of fossil fuels to generate the elevated temperatures required. Some of our processes also produce emissions that could, if not managed effectively, affect the local environment. These gases include nitric oxides and volatile organic chemicals.

JM consumes water for a variety of reasons, whether as a raw material in the production process, or for heating or cooling operations. In addition, certain operations generate waste, some of which can be hazardous and requires specialist treatment by external companies. Wherever possible we recover and recycle waste materials containing platinum group metals.

+ Read more: Full details of our environmental performance in these areas is included in the Additional non-financial performance information section on pages 220 and 221

Managing environmental performance

We have group policies, processes and systems which, together with our environmental strategy, ensure that our environmental performance is managed to a high standard. A total of 85% of JM manufacturing sites operate environmental management systems that meet the ISO14001:2014 standard. There are corporate standards set out in five key areas of environmental performance which are assessed during regular EHS audits. Our EHS Leadership Committee is responsible for agreeing the group's approach to carbon, GHG reduction strategy and reviewing environmental performance.

Many of JM's operations are covered by environmental permit or licence. JM, as a minimum standard, ensures it complies with all conditions placed on its businesses by the regulatory bodies.

JM measures key environmental indicators using an electronic reporting system and this data is used internally to drive performance improvements. This data is externally assured.

+ Read more: Independent greenhouse gas and health & safety assurance statement on page 219

Climate change

Addressing climate change requires a transition to a low carbon world, in the energy and mobility sectors, and also across other industries. JM fully recognises the Intergovernmental Panel on Climate Change (IPCC) science on climate change, is a signatory of the Paris Climate Pledge to keep global temperature rise below 2°C and is committed to the United Nations Sustainable Development Goals (UN SDGs). We have identified six of the UN SDGs for our particular focus, including SDG13 (Climate Action). We are proud of the contribution many of our products make to directly enable the transition to a low carbon economy (read more on pages 50 and 51).

This year we have taken the first steps to aligning our reporting to the Task Force on Climate-related Financial Disclosures (TCFD) framework and we are committed to implementing these voluntary recommendations in full by 2021.

Governance

Our governance processes cover the breadth of matters relating to environment, health and safety, including climate change.

The board is responsible for oversight of our strategic direction and progress against our strategic priorities to ensure we are positioned to deliver long term sustainable business performance. During discussions on strategy, the board considers the market drivers we are exposed to in our diverse business portfolio, including market responses to climate change, the resulting opportunities and challenges that can impact our business strategies and how we are responding. The board also reviews our sustainability and environmental risks and performance (and also risks and performance relating to health and safety) against our targets.

The Audit Committee supports the board and the Group Management Committee (GMC) by conducting regular reviews of our risk processes, and controls against our principal risks.

The GMC champions strategy development and risk management in line with the board's expectations on risk appetite, supported by individual sector management teams for review and execution, and addressing sector-specific dynamics.

Our diverse business portfolio means we consider climate change impacts predominantly via market responses and an environmental sustainability lens. We are further analysing the validity of an independent risk for climate change.

Strategy – Markets

Climate change results in different impacts on our diverse business portfolio. Our products, such as battery materials, fuel cells and hydrogen production technologies, represent opportunities as the mobility and energy markets respond to climate change by moving away from fossil fuels to more diverse power sources. Other areas, such as our Health Sector, are less directly exposed to climate change dynamics. Other markets are at risk of declining over time, such as the demand for our automotive emission control catalysts, if the mobility sector transitions heavily into electrified powertrains.

The rate and extent of change of our key markets in response to climate change is the subject of extensive ongoing scenario planning. For example, we have framed our scenario planning for the mobility sector to include different climate change scenarios, the impact of vehicle emission regulations and other market factors such as car sharing and urbanisation.

The diversity of our business portfolio and the strength of our science, operations and commercial activities builds resilience and positions us strongly to serve future demands.

Strategy – Operations

Regulations: Conducting the transition to a low carbon economy at pace may continue to drive additional regulatory requirements, both nationally and internationally. We monitor developments in this area and manage our activities to remain in compliance.

Energy: We actively monitor our energy use and implement energy efficiency programmes across all of our operating sites. Energy costs are included in budget planning cycles. During 2020/21 we are extending energy forecasting to include GHG forecasting, including energy procurement strategies and options into the forecast, to better plan mitigating actions.

TCFD-related references

Governance: Disclose the organisation’s governance around climate-related risks and opportunities	
Describe the board’s oversight of climate-related risks and opportunities.	Page 46: Climate change Pages 86 and 87: Board committees Pages 90 and 91: Board risk oversight
Describe management’s role in assessing and managing risks and opportunities.	Page 46: Climate change Page 13: Group Management Committee Pages 16 to 19: Our strategy
Strategy: Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation’s businesses, strategy and financial planning where such information is material	
Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term.	Page 46: Climate change Pages 67 to 74: Risks and uncertainties
Describe the impact of climate-related risks and opportunities on the organisation’s businesses, strategy and financial planning.	Page 46: Climate change Pages 16 to 19: Our strategy Pages 67 to 74: Risks and uncertainties
Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Page 46: Climate change Pages 16 to 19: Our strategy Pages 67 to 74: Risks and uncertainties
Risk: Disclose how the organisation identifies, assesses, and manages climate-related risks	
Describe the organisation’s processes for identifying and assessing climate-related risks.	Page 46: Climate change Pages 16 to 19: Our strategy Pages 67 and 68: Risk management approach
Describe the organisation’s processes for managing climate-related risks.	Pages 46: Climate change Pages 67 and 68: Risk management approach
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation’s overall risk management.	Page 46: Climate change Pages 67 and 68: Risk management approach
Metrics and targets: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	
Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Page 46: Climate change Pages 24 and 25: Sustainable business framework goals to 2025
Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Page 48: Greenhouse gas reduction Page 48: Greenhouse gas disclosure
Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Page 46: Climate change Pages 24 and 25: Sustainable business framework goals to 2025

During 2019/20 we took a strategic decision to maximise the amount of renewable energy sourced for our first commercial battery cathode materials manufacturing plant located in Konin, Poland. The use of low carbon energy to manufacture key components is beneficial to the whole lifecycle carbon footprint of an electric vehicle and ensures our business grows with minimal carbon impact.

Physical impacts: Climate change increases the risk of extreme weather events which can impact our operations or supply chains. We manage this disruption via our business continuity plans, which detail actions and alternate supply routes for various situations. Where there is an exposure to extreme weather events, such as hurricanes on the eastern seaboard of the USA, we have designated shelter areas for employees.

The impact of climate change on water availability is also important. We periodically assess our sites for water risks and manage our water use responsibly.

Risks

Climate change is incorporated into our risk management process as a driver of certain principal risks, especially 'Future growth', 'Environment, health and safety' and 'Failure of operations' and is considered when building those risks. We are also considering the validity of an independent risk for climate change. We recognise that effective management of climate change risks are crucial to deliver our growth strategy and inspire confidence in our stakeholders.

Future growth risk on page 71, Environment, health and safety risk on page 71 and Failure of operations risk on page 73

Metrics and targets

We follow the Greenhouse Gas Protocol when calculating our GHG emissions, dividing them into three scopes. Our Scope 1 emissions are from the burning of natural gas and other fuels as an energy source for our processes and facilities. Some of our processes also generate GHGs, and these are also included in Scope 1. Scope 2 emissions relate to our electricity purchases. Scope 3 emissions cover the different elements of our value chain.

Goal 3 of our sustainable business framework includes a target for our Scope 1 and 2 emissions intensity of 2.8 tonnes CO₂ equivalent per tonne of manufactured product sold by 2025. In 2019/20 our emissions intensity was 3.2. Using an intensity metric allows us to focus on the efficiency of our GHG footprint even in the face of changing product mix and demand. We remain on track to meet the goal.

Strategic Report

Responsible business continued

During 2019/20 we also set a renewable energy target, where 60% of our electricity must be certified renewable by 2025.

Greenhouse gas reduction

9 GRI 305

We lower our own contribution to GHG emissions with a combination of energy efficiency initiatives and low carbon / renewable electricity purchases.

In addition to our sustainable business goal 3 (see above and page 35), we also recognise that our absolute emissions of GHGs are an important metric. Since the launch of our sustainable business framework in 2017, we have achieved:

- 16% reduction in absolute Scope 1 and 2 emissions.
- 12% reduction in absolute Scope 1 emissions.
- 20% reduction in absolute Scope 2 (market based method) emissions.

This rate of reduction of our GHG emission intensity and our absolute Scope 1 and 2 emissions are key parts

of fulfilling our Paris Pledge for Action commitment.

We are currently assessing possible approaches to limit our value chain (Scope 3) emissions.

Renewable energy

We aim to source 60% of our electricity demand globally from renewable sources by 2025, and we continue to identify cost effective renewable electricity supply contracts. Since 1st April 2019, all our UK sites have been operating on grid-connected certified renewable electricity. Across JM globally in 2019/20, 26% of our electricity came from certified renewable sources where the energy source has a Renewable Energy Guarantee of Origin (REGO) certificate, the highest form of renewable energy validation (2018/19 restated*: 24%).

* Restated following review and reclassification of data submitted by some sites after the year end.

A total of 1.2% of our electricity came from local solar power facilities that are not grid connected.

Where we are not using renewable electricity, we actively manage our electricity purchasing to minimise the carbon footprint. Competitive electricity markets for the supply of grid electricity are operational at 72% of our sites. At 69% of these sites, the carbon intensity of electricity we purchased was lower than the national or regional average.

We are investigating the potential of power purchase agreements to help accelerate our access to renewable electricity, particularly in geographies with lower availability of renewable power over the existing grid. We have committed to maximising the amount of renewable energy for our first battery materials plant, currently under construction in Poland, from start up in 2022.

We disclose our environment, social and governance (ESG) performance through the Carbon Disclosure Project (CDP) climate change programme which looks at risks and opportunities of climate from the world's largest companies on behalf of institutional investors.

matthey.com/cdp-investor

Greenhouse gas disclosure – Operational carbon footprint

	2019/20			2018/19			% change (global)
	Global	UK only	Global (excl UK)	Global	UK only	Global (excl UK)	
Scope 1 (tonnes CO ₂ eq)	199,125	59,669	139,456	220,317*	58,907	161,410	-10%
Scope 2 – market based method (tonnes CO ₂ eq)	192,334	3,761	188,572	202,813*	11,049	191,764	-5%
Scope 2 – location based method (tonnes CO ₂ eq)	252,757	40,407	212,350	277,861*	50,898	226,963	-9%
Total operational carbon footprint – Scope 1 and 2 market based method (tonnes CO₂ eq)	391,459	63,430	328,028	423,123*	69,956	353,174	-7%
Total operational carbon footprint – Scope 1 and 2 location based method (tonnes CO ₂ eq)	451,882	100,076	351,806	498,178*	109,805	388,373	-9%
Total Scope 1 and 2 carbon intensity – market based (tonnes CO ₂ eq/tonnes sales)	3.2	2.6	3.3	3.0	Not measured	Not measured	+8%
Scope 3 – electricity transmission and distribution losses (tonnes CO ₂ eq)	20,461	2,879	17,582	22,183*	3,818	18,365	-8%
Scope 3 – business travel (tonnes CO ₂ eq)	9,015	4,613	4,401	Not measured	Not measured	Not measured	

Energy efficiency and consumption

9 GRI 302

	2019/20			2018/19			% change (global)
	Global	UK only	Global (excl UK)	Global	UK only	Global (excl UK)	
Total energy consumption (GJ)	4,879,064	1,519,125	3,359,939	5,201,603*	1,542,040	3,659,563	-6%
Total energy efficiency (GJ/tonne)	39.6	62.0	34.0	36.8*	Not measured	Not measured	+10%

* Restated following review and reclassification of data submitted by some sites after the year end.

Efficient use of energy is a key lever to minimise our GHG impact and lower costs. Where we are sourcing renewable / low carbon energy, we also recognise that using less of what is generated makes it more available for use by others, further helping the transition to a low carbon economy.

We spent £68 million on energy in 2019/20 (2018/19: £72 million*, restated). Energy use within our facilities decreased by 6%, with electricity use across the group decreasing by 6% and gas usage by 5%. This was due partly to the Riverside, US site closure during 2018/19, and due to lower use at our Clitheroe, UK site which did not run its generator for four months due to maintenance, and partly due to lower production output at some sites.

Our energy efficiency declined by 10% this year. Total mass of product produced in 2019/20 was lower than the prior year, but despite the lower output, some of our energy intensive assets – such as furnaces – had to be kept running for operational efficiency and safety reasons.

We have also progressed various projects around the world that directly benefit energy efficiency. These include installing high efficiency compressors in Japan and Brimsdown, UK, improved efficiency of a gas oven in Shanghai, China, and better drying equipment management in Mexico. We restarted our combined heat and power unit in Royston, UK, which resulted in less grid electricity being procured. Going forward, the recent introduction of an automated meter reading system there will also help identify additional energy saving opportunities.

[+ Read more: Energy generation and consumption on page 221](#)



Improve sustainable business practices in our supply chains and, through collaboration, ensure full compliance with our minimum standards from strategic suppliers.

Responsible sourcing

The value chain for the commodities that go into our products comprises our suppliers, and we have policies and processes in place to manage our key relationships and risks within both our Procurement function and as part of our ethics and compliance framework (see pages 44 and 45).

Due to the varied nature of JM's businesses, the principal risks in our supply chains depend on the nature of the business. However, JM's supply chains include metals identified as conflict minerals and other materials, containing minerals such as cobalt, which originate in parts of the world where there are well documented reports of serious human rights abuses, including modern slavery (see page 45) and conflict minerals (see below). Consequently, we place particular emphasis on how we manage and mitigate them.

Supplier sustainability assessment

[g](#) GRI 308 and GRI 414

We procure goods and services globally and our supply chains are multi-tiered. Supply failure is a principal risk and monitoring and understanding the risk is challenging but essential. Some of our strategic raw materials are available from only a limited number of countries.

[r](#) Supply failure risk on page 72

Our JM Supplier Code of Conduct is available in multiple languages on our website. We expect all our suppliers to comply with this code as a condition of contracting. During the year we have updated our Supplier Code of Conduct to incorporate more aspects of sustainability, particularly GHG management, material provenance and global data protection.

We plan to launch this revised code during 2020 and, with it, a broader, more robust supplier due diligence programme. In preparation for this, we have temporarily paused our existing programme, except for our work with suppliers of critical metals to support the strategy of our Battery Materials business and conflict minerals as detailed below. As a result, under the definition of our goal 4 framework, no further current suppliers were audited during 2019/20.

[matthey.com/supplier-code-of-conduct](#)

Conflict minerals

The term 'conflict minerals' refers to tin, tungsten, tantalum and gold (3TG) which originate from the Democratic Republic of Congo (DRC) and surrounding countries, in particular from areas of military conflict where most mining is artisanal and linked to serious human rights abuses.

Our conflict minerals due diligence process is based on the Organization for Economic Co-operation and Development (OECD) Guidelines and includes keeping records that enable us to track the suppliers of all the raw materials we use and identify which smelter the conflict minerals came from.

We are working towards being compliant with the new European Union Conflict Mineral Regulation, which was enacted in July 2017, ahead of the January 2021 deadline.

We only use material from refiners and smelters which conform to the Responsible Minerals Assurance Process (RMAP) assessment protocols and are listed on the Responsible Minerals Initiative (RMI) database. We have identified over 150 3TG smelters across all tiers of our supply chain and 100% are currently listed as conformant with the RMAP process.

We also use our in-house database to respond to customer requests for information on conflict minerals in our products and to provide them with a tailored answer to any query they have. This year we have responded to 104 customer requests for information, an increase of 21% on the previous year.

[matthey.com/conflict-minerals](#)

Critical metals for battery materials

We are committed to using only raw materials that have been ethically sourced in our cathode products. At present, the DRC holds about 50% of the global reserves of cobalt and although there are some mining companies which are operating ethically in the country, there is a significant amount of illegal artisanal mining in uncontrolled conditions, leading to serious human rights abuses.

In 2018 we partnered with third party experts RCS Global to develop and implement a world leading due diligence programme which ensures that we have full transparency 'back to mine' for all our raw materials that contain lithium, cobalt and nickel. During 2019 RCS Global performed on-site audits of several prospective Tier 1 suppliers of cobalt and nickel for our eLNO portfolio of battery materials as part of our pre-qualification process. We have also rolled out the due diligence programme to our suppliers of critical raw materials for our lithium iron phosphate (LFP) family of battery materials.

Our critical minerals supplier audit programme conforms to the standard laid out in the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (third edition) and provides assurance against the standards laid out in our Supplier Code of Conduct. All on-site audits of our suppliers are completed by RCS Global to the ISO 19011 standard.

To further our commitment to transparency in the battery materials supply chain, in early 2020 we joined the Global Battery Alliance (GBA).

Strategic Report

Responsible business continued

Together with 41 other global organisations, we agreed to ten guiding principles for a creation of sustainable battery value chains globally by 2030. Further details are set out GBA's 'A Vision for a Sustainable Battery Value Chain in 2030'.

We also joined the Cobalt Institute and will align our corporate reporting framework and policies with the Cobalt Industry Responsible Assessment Framework (CIRAF) guidance during 2020/21.

www.rcsglobal.com

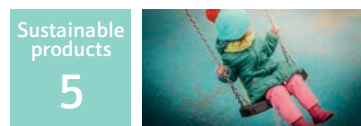
Platinum group metals

Johnson Matthey Plc and Johnson Matthey Inc are accredited as good delivery refiners on the London Platinum and Palladium Markets (LPPM). We have implemented their responsible platinum and palladium guidance for all material handled through our UK and US refineries. During the year we have partnered with third party experts to ensure our pgm due diligence programme complies fully with the standard.

Our Platinum and Palladium Supply Chain Policy Statement, which is available on our website, sets out our commitments and the steps that we take to fulfil them.

<https://matthey.com/platinum-and-palladium-supply-chain>

In addition to following LPPM's guidance, we work collaboratively with customers through the International Platinum Group Metals Association (IPA) to ensure that the pgms we source globally are obtained ethically and responsibly.



Double the positive impact that JM's products, services and technologies make to a cleaner, healthier world.

Sustainable products

Our business strategy is to use our science and technology capabilities to create products and services to solve our customers' complex problems that are vital to making the world cleaner and healthier; today and for future generations.

Goal 5 of our sustainable business framework measures our impact and in 2019/20, 85.9% of our sales came from products and services that positively contributed to the UN SDGs (2018/19: 87.3%). Our sustainable business goal 5 is to increase this to >90% by 2025.

This year, sales of products that have a direct impact on the UN SDGs made up a lower proportion of group sales, in particular as a result of lower sales of emission control catalysts and active pharmaceutical ingredients. Parts of the business with limited contribution to the UN SDGs, such as some areas within our PGM Services business and also our formaldehyde technologies, contributed a greater proportion to total group sales.

We also measure the positive impact that our key products have had on people and the planet over the last 12 months (see table opposite).

Across our portfolio, through our investments in new opportunities, there are new products, services and technologies in the pipeline that we expect will make a positive contribution to the UN SDGs in future years.

Product stewardship and toxicology

The products we sell to our customers often form an important part of the end product supplied to the user – a JM emission control catalyst being an important part of a car, for example. And while we do not manufacture the end product itself, we are concerned with the whole life of the JM product within it, with our responsibilities extending far downstream of our own operations.

This 'whole life' responsibility is what we call product lifecycle management. We set ourselves high standards; customers want to see evidence that we understand any hazards inherent in our products and that, through understanding their uses, we can, in turn, help them manage any consequent risks. Equally, our other external stakeholders want assurance that the potential impacts – on the environment, our employees and downstream users – are well managed.

Effective product lifecycle management is essential to our business to identify and mitigate any risk to our portfolio. Our social licence to operate depends on our compliance with chemicals regulations and on our voluntary stewardship of our products all the way down the value chain.

We aim to design-in green chemistries at the start of a product's life and we are increasingly integrating product stewardship into new product innovation and development.

We have well established systems to ensure the effective management of our products throughout their lifecycle. Our groupwide policies and guidance are aligned with the global framework set by the Strategic Approach to International Chemicals Management (SAICM) to promote chemical safety around the world.

We have procedures in place at group and sector level to identify regulatory obligations, both future and current, and create the documentation necessary to ensure compliance. Our internal committees assess hazard and exposure data to identify opportunities for risk reduction in our operations. Finally, business compliance with lifecycle management policies forms part of our EHS audits.

Safe use of substances

GRI 416

We seek to replace 'high hazard' substances – chemicals with significant potential, if poorly managed, to harm human health or the environment – where safer and economic alternatives are available. When replacement is not possible, through detailed risk assessment backed by extensive data packages, we ensure robust risk management measures are in place. We also work actively with other companies to provide regulators with the best available information on industry practice such that any regulatory restrictions can be properly evidence based.

Potential new products are assessed at an early stage of their development against safety and regulatory criteria. Higher hazard chemistries are subject to more detailed risk assessments and senior level review to potentially grant time-limited approvals for their use. Our policies, especially on new product innovation, emphasise the need to investigate whether safer alternatives are available.

We use or manufacture only a very limited number of substances considered regulated¹, or of international concern². As a proportion of our portfolio, approximately 5% of products consist of, or use in their production, such substances.

¹ e.g. SVHCs (substances of very high concern) under REACH, RoHS or California Prop 65 listed substances.

² e.g. controlled by the Montreal Protocol, Stockholm and Rotterdam Conventions, GHS category 1A/1B carcinogens, mutagens or reprotoxins, etc.

Clean air for all

2.96 million tonnes

of pollutants removed

(2018/19: 3.35 million tonnes*)
2025 target 7.18 million tonnes

The total tonnes of air pollutants (oxides of nitrogen, carbon monoxide, hydrocarbons and particulate matter) removed by our emission control catalyst products fell this year as fewer vehicles were produced globally.

Of the tonnes of pollutants removed, particulate matter represents only a small amount because of its low mass. However, the sheer number of small particulates produced by vehicles is cause for substantial public health concern and has been the target of tightening legislation globally.

Over the past year, we estimate that our products removed almost double the mass of particulate matter from gasoline direct injection vehicles compared with the prior year as the number of our particulate filter products sold increased.

Tightening emission legislation in Europe and Asia over the coming years is likely to increase demand for particulate filter products.

* Restated due to adjustment in scope of vehicles included in certain small markets.

Shaping a new era of clean energy

9.8 million tonnes

(CO₂ equivalent) removed

(2018/19: 10.1 million)
2025 target 21.2 million tonnes

The quantity of greenhouse gases (GHGs) removed by our products (CO₂ equivalent) was slightly reduced due to a lower contribution from our technologies that are used by customers to abate nitrous oxide, a highly potent GHG, from their chemical manufacturing plants.

Two of the customer plants we supply were shut down in the year. This was partially offset by two new installations, but these were only in partial operation for the year.

Achieving more from less

225,000 tonnes

(CO₂ equivalent) of GHGs avoided

(2018/19: 216,000 tonnes)
2025 target 426,000 tonnes

The quantity of GHGs avoided (CO₂ equivalent) by our products increased this year due to greater demand for our fuel cell technologies, reflecting the ongoing transition to cleaner power generation choices. In addition, we have supplied our lithium iron phosphate battery cathode materials to new automotive applications during the year.

Ongoing investments in both our next generation ultra high energy density battery cathode materials, eLNO, and our fuel cell components for automotive applications will continue to drive our contribution in this area.

Longer, healthier lives

323,000 lives

positively impacted

(2018/19: 154,000*)
2025 target 920,000 lives

The number of lives impacted by our recently launched pharmaceutical products increased this year as we benefited from a further expanded therapy base. New therapies containing our APIs included an extended release treatment for Attention Deficit Hyperactive Disorder (ADHD) and an exclusive treatment for Duchenne Muscular Dystrophy.

We continue to work with our partners and invest in R&D to develop and manufacture target molecules efficiently at scale, which will continue to increase our contribution to people's health.

* Restated to reflect updated market data.

Product regulatory compliance

During the year we put in place preparations to manage regulatory compliance in the event of the UK taking a hard / no-deal exit from the EU, based on our best understanding of the regulatory frameworks that would be in place at that time. We also actively liaised with representatives in UK government providing our industry perspective and expertise to inform their decision making. It increasingly appears that the UK will have its own REACH-like regulation and JM is advocating for a pragmatic approach to data requirements and regulatory deadlines to ensure our industry can comply in an efficient manner.

Internally, we are assessing the financial, operational and supply chain implications of compliance with a UK-REACH regulation and continue to provide support to UK government departments in their preparations for the post-transition period.

We work within trade associations and consortia as an effective way to support the application of best scientific methods to increase the understanding of our chemistries and products, and to communicate this within our supply chains. During the year we joined two new voluntary European Industry initiatives, one led by Cefic and one jointly led by Eurometaux and the European Chemicals Agency, to further improve the quality of the hazard, risk assessment and risk management information submitted in REACH registrations.

Regulations continue to be amended and new regulations are proposed that impact our operations and supply chains. We monitor and assess the impacts to ensure JM is well prepared. Efforts are ongoing to track, prepare and comply with developing legislative requirements in China, Russia and India, for example.

We use a systematic product responsibility reporting scheme to monitor the performance of our operations and maintain surveillance of the company's products and services. In 2019/20, there were no notifications of significant end user health effects involving our products. We did not identify any non-compliance with regulations or voluntary codes concerning health and safety impacts of products and services or product and service information, labelling and marketing communications.

Strategic Report

Responsible business continued

Community
engagement
6



Increase the use of volunteer days to support our community and charity partners through the JM employee volunteering programme.

Community and social impact

At Johnson Matthey we have a long tradition of supporting our local communities. Our initiatives are designed to empower our employees to achieve JM's vision through means beyond the reach of their jobs.

Goal 6 of our sustainable business framework aims to increase their reach even further through volunteering.

Our global volunteering policy grants employees two days each year to volunteer in their community with organisations they care about. We also double funds that our employees raise for charities of their choice through our match giving programme (up to £1,000 per employee per year).

This year our employees volunteered 2,682 days – well over double the previous year (2018/19: 1,116 days). This is thanks to a new global network of community investment ambassadors who have successfully mobilised volunteering, creating forces of good within their communities. In December we celebrated International Volunteer Day and employees collectively volunteered over 500 days across 23 countries.

JM is also pleased to have donated £77,000 to match money raised by employees in 2019/20.

In the community, our people lead the way and we've been inspired by their contributions to science, technology and engineering education over the years. Increasingly, the world needs science to make it cleaner and healthier and while we continue to respond to this demand with our technology, we are now ready to respond further.

Our reformed approach to social impact, which we will roll out in 2020/21, will support learners, particularly those at a socioeconomic disadvantage, to access better science education. We'll do this by building stronger connections between people and science – tackling key areas like perceptions, careers and teaching – to open more eyes to the thrill and important impact of our world changing industry.

COVID-19 is just one of many global issues highlighting the role of science in society more generally.

There are shortages of specific skills in science which must be addressed and, through our outreach, we're committed to promoting the science jobs that lack supply, so that our industry is best positioned to tackle future challenges.

In the short term, to support our communities through COVID-19, we're listening to our employees again. Our people have been eager to aid relief by using their paid volunteer leave, which we've encouraged where safe. This has included supporting vulnerable neighbours, delivering safety leaflets and making safety masks for healthcare workers. To meet their efforts, JM has committed to match employees' personal donations to the small and frontline charities in their communities that are most in need of support. We have also announced our dedicated £1 million fund for science education aimed at improving access to science education for children and young people. This fund is being strengthened further by personal donations committed by our Board of Directors.

Community investment summary

	Investment in 2019/20 £'000	Investment in 2018/19 £'000	% change
Direct expenditure	940	840	+12%
Corporate donations to charities	305	331	-8%
Donations by sites to local charities and community projects	635	509	+25%
Indirect expenditure	573	251*	+128%
Employee volunteering time	573	251*	+128%
Total group	1,513	1,091*	+39%

* Restated to include updated data following year end.

New science labs in India

In May 2019, 25 of our people travelled to India for a leadership training module. During the trip they volunteered at a disadvantaged school in Gurgaon. The group taught lessons to 75 students, who in return delivered presentations about air pollution. More than £16,000 was donated to the school from JM, some of which was raised (and matched) by the JM team. These funds have been used to construct a new science lab and computer space. The school's first science exhibition took place thanks to the new room, and in March this year a second science lab was constructed in one of the other school buildings, benefiting 120 additional students.



Financial performance review

Group performance review

Reported results

		Year ended 31st March		
		2020	2019	% change
Revenue	£ million	14,577	10,745	+36
Operating profit	£ million	388	531	-27
Profit before tax (PBT)	£ million	305	488	-38
Earnings per share (EPS)	pence	132.3	215.2	-39
Ordinary dividend per share	pence	55.625	85.5	-35

Underlying performance¹

		Year ended 31st March			% change, constant rates ²
		2020	2019	% change	
Sales excluding precious metals (sales) ³	£ million	4,170	4,214	-1	-2
Operating profit	£ million	539	566	-5	-6
Profit before tax	£ million	455	523	-13	-14
Earnings per share	pence	199.2	228.8	-13	

Notes

¹ 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 note 35 on page 198.

² 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.

³ Revenue excluding sales of precious metals to customers and the precious metal content of products sold to customers.

Summary

Reported results

- Reported revenue increased 36% driven by higher average precious metal prices.
- Reported operating profit declined 27% driven by a restructuring and impairment charge of £140 million and a circa £60 million impact related to COVID-19.
- Reported EPS declined 39%, reflecting lower operating profit and higher net finance charges.
- Cash inflow from operating activities was £598 million.

Underlying performance¹

- Sales declined 2% driven by Clean Air and Health, partly offset by higher sales in Efficient Natural Resources and New Markets.
- Underlying operating profit declined 6% primarily driven by a circa £60 million impact related to COVID-19. Excluding COVID-19, underlying operating profit grew 5%.
- Of the circa £60 million, circa £30 million reflected lower demand in Clean Air, and the remainder was due to higher trade debtor provisions across the group and delayed sales due to logistical challenges in our other businesses.
- Underlying EPS declined 13% reflecting lower underlying operating profit and higher net finance charges. Net finance charges grew primarily driven by increased average precious metal borrowings due to higher precious metal prices, on which we pay higher interest on average than the rest of our borrowings.
- Strong balance sheet with net debt of £1.1 billion; net debt to EBITDA of 1.6 times.
- Return on invested capital (ROIC) decreased from 16.4% to 13.3% mainly due to increased capital expenditure, higher average precious metal working capital through the year and lower underlying operating profit.

Strategic Report

Sector performance review

Overview of our sectors

Clean Air

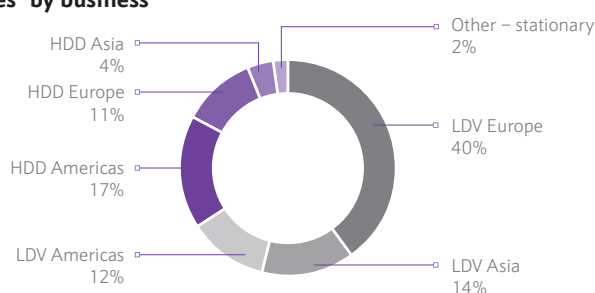
£2,618m

Sales¹ **-4%**²

£295m

Operating profit³ **-25%**²

Sales¹ by business



Heavy Duty Diesel (HDD)
Catalysts **32%**

Light Duty Vehicles (LDV)
Catalysts **66%**

A global leader providing catalysts to reduce harmful emissions from vehicles.

- **Light Duty Vehicles** – catalysts for gasoline and diesel light duty vehicles, including hybrids.
- **Heavy Duty Diesel** – catalyst systems for diesel powered trucks and buses and non-road machinery.
- **Other** – catalyst systems for stationary equipment.

13 manufacturing facilities and nine technical centres globally.

Customer profile

- Car companies.
- Heavy duty truck and engine manufacturers.
- Local Chinese producers.
- Global customer base.

Major competitors

- BASF
- Umicore
- Cataler

Margin **11.3%**

Return on invested capital **18.4%**

Employees **6,226**

¹ Sales excluding precious metals.

² At constant rates (see note 2 on page 53).

³ Underlying (see note 35 on page 198).

Efficient Natural Resources

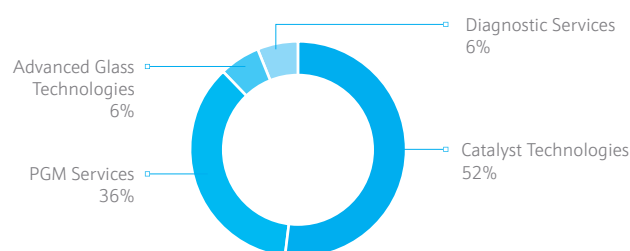
£1,079m

Sales¹ **+8%**²

£256m

Operating profit³ **+40%**²

Sales¹ by business



Creating value from efficient use and transformation of critical natural resources including oil, gas, biomass and platinum group metals (pgms).

- **Catalyst Technologies** – manufactures speciality catalysts and additives, licenses process technology and delivers services to the chemical and oil & gas industry.
- **PGM Services** – focused on platinum group metals. Activities cover recycling, refining, fabrication of end products and compounds, and trading.
- **Advanced Glass Technologies** – precious metal pastes and enamels primarily for the automotive industry.
- **Diagnostic Services** – for the oil and gas industry.

18 manufacturing facilities globally and six UK technical centres.

Customer profile

- JM businesses and their customers.
- Chemical companies.
- Engineering contractors.
- Oil and gas companies.
- Industrial pgm users.
- End of life autocatalyst collectors.
- Automotive industry suppliers.

Major competitors

- Haldor Topsøe
- Albemarle
- Umicore
- Clariant
- Grace
- Ferro
- BASF
- Heraeus

Margin **23.8%**

Return on invested capital **17.2%**

Employees **3,988**

Health

£223m

Sales¹ -15%²

£27m

Operating profit³ -38%²

Sales¹ by business



Leading provider of solutions to the complex problems of both generic and innovator companies.
 Develops and manufactures active pharmaceutical ingredients (APIs) for a variety of treatments.
 Operates in the large and growing outsourced small molecule API market.
 Four manufacturing facilities and three technical centres.

Customer profile

- Generic pharmaceutical companies.
- Innovator pharmaceutical companies.

Major competitors

- Noramco
- Cambrex
- Hovione
- Francopia
- AMRI
- Almac
- Siegfried
- Alcami

Margin 12.1%

Return on invested capital 5.3%

Employees 907

¹ Sales excluding precious metals.
² At constant rates (see note 2 on page 53).
³ Underlying (see note 35 on page 198).

New Markets

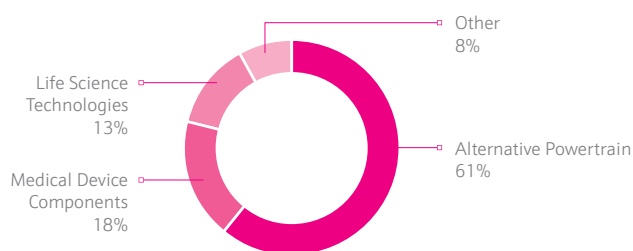
£389m

Sales¹ +7%²

£-1m

Operating loss³ n/a²

Sales¹ by business



Accessing new areas of potential growth aligned to global priorities of cleaner air, improved health and more efficient use of natural resources.

- **Alternative Powertrain** – provides battery materials, including eLNO, our leading ultra high energy density cathode material, for automotive applications, battery systems for a range of applications and fuel cell technologies.
- **Medical Device Components** – leverages our science and technology to develop products found in devices used in medical procedures.
- **Life Science Technologies** – provides advanced catalysts to the pharmaceutical and agricultural chemicals markets.

Customer profile

- Automotive and heavy duty vehicle companies.
- Lithium-ion cell manufacturers.
- Fuel cell manufacturers.
- High performance cordless tool and niche transport manufacturers.
- Medical device companies.
- Pharmaceutical, fine chemical and agrochemical companies.

Major competitors

- Umicore
- BASF
- LG
- BMZ
- WL Gore
- 3M
- Heraeus
- Evonik

Margin -0.2%

Return on invested capital -0.3%

Employees 1,952

Strategic Report

Financial performance review continued

Operating results by sector

Clean Air

	Year ended 31st March			
	2020 £ million	2019 £ million	% change	% change, constant rates
Sales				
LDV Europe	1,046	1,031	+1	+2
LDV Asia	381	361	+5	+4
LDV Americas	315	346	-9	-11
Total Light Duty Vehicle Catalysts	1,742	1,738	-	-
HDD Americas	443	476	-7	-10
HDD Europe	277	334	-17	-16
HDD Asia	111	128	-13	-14
Total Heavy Duty Diesel Catalysts	831	938	-11	-13
Other – stationary	45	44	+1	-
Total sales	2,618	2,720	-4	-4
Underlying operating profit	295	393	-25	-25
Margin	11.3%	14.4%		
Return on invested capital (ROIC)	18.4%	30.0%		
Reported operating profit	236	390	-40	

Sales outperformed in a weak market

- In light duty, Europe sales grew 2% and Asia sales grew 4%, both well ahead of markets that declined, as we benefited from tightening legislation which increased the value per vehicle.
- Globally, heavy duty sales declined 13% which was broadly in line with the market.
- Strong market shares were maintained in our key light duty diesel and heavy duty segments.
- Operating profit was down as guided, primarily driven by a weak global heavy duty market, COVID-19 related costs, infrastructure investment and one-off costs in the first half associated with manufacturing inefficiencies.

Light Duty Vehicle (LDV) catalysts

In LDV catalysts, we provide catalysts for emission control after-treatment systems for cars and other light duty vehicles powered by diesel and gasoline. Global sales were flat year on year, but well ahead of the decline in global light duty vehicle production of 10%, which was more pronounced in the second half as COVID-19 affected the global automotive market. Our customers first began to close their plants in China towards the end of January and then in Europe and the US from the middle of March.

In Europe, diesel accounts for around 80% of our LDV business. Sales of diesel catalysts were flat as we outperformed a market that declined, driven by the annualisation of our diesel market share gains. We maintained a market share of circa 65% in light duty diesel vehicles.

In Western Europe, diesel accounted for 31% of new passenger car sales in 2019/20, compared with 35% in the last financial 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 2019/20, compared with 42% in 2018/19.

Sales of gasoline catalysts were up in both Europe and Asia, significantly ahead of markets that declined 7% and 13% respectively. Growth was primarily driven by increased value per vehicle with the implementation of tighter legislative standards.

Americas LDV declined, driven by weaker performance in diesel largely due to the ramp down of a platform.

Heavy Duty Diesel (HDD) catalysts

In HDD catalysts, we provide catalysts for emission control after-treatment systems that reduce emissions for trucks, buses and non-road equipment. Global sales were down 13%, broadly in line with the decline in market production of 11%.

In Americas, the high value Class 8 truck cycle peaked in September, then declined sharply in the second half. Our Class 8 sales declined as expected, slightly behind the market due to product mix.

Our European and Asian HDD businesses also declined broadly in line with their respective markets. Over the medium term, tightening legislation in China and India will drive a significant uplift in value.

Consolidating Clean Air footprint

We have been investing in our world class plants in Europe and Asia and this is enabling us to drive further efficiency and agility across the sector by consolidating some of our existing older capacity in Europe into these new, more efficient plants. In the year, this gave rise to an impairment charge of £61 million on our older manufacturing assets, taken outside of underlying operating profit.

Underlying operating profit

Operating profit declined 25% and margin declined 3.1 percentage points. This was primarily driven by a weak global heavy duty market, circa £40 million of COVID-19 related costs (including circa £10 million higher trade debtor provisions) and higher costs of circa £20 million from investment in infrastructure and start up costs for new plants. There were also one-off costs of circa £15 million which

included additional freight costs and inefficiencies within our manufacturing footprint due to phasing of the completion of our new plant in Poland.

ROIC

ROIC was down 11.6 percentage points to 18.4% reflecting lower operating profit and higher invested capital from our new plants which are not yet yielding returns.

Efficient Natural Resources

	Year ended 31st March			
	2020 £ million	2019 £ million	% change	% change, constant rates
Sales				
Catalyst Technologies	556	567	-2	-3
PGM Services	389	281	+38	+36
Advanced Glass Technologies	70	75	-7	-7
Diagnostic Services	64	68	-6	-7
Total sales	1,079	991	+9	+8
Underlying operating profit	256	181	+41	+40
Margin	23.8%	18.3%		
Return on invested capital (ROIC)	17.2%	12.6%		
Reported operating profit	250	175	+43	

Significant growth in operating profit and margin expansion

- Sales grew 8% primarily driven by strong performance in PGM Services.
- Significant operating profit growth and margin expanded 5.5 percentage points. This reflected higher average pgm prices and strength in our PGM Services trading business in a more volatile price environment, partly offset by higher refining operating costs and further investment in our refineries.

Catalyst Technologies

Our Catalyst Technologies business licenses key process technology and manufactures high value speciality catalysts and additives for the chemical and oil and gas industries. We saw a small impact from COVID-19 in the year, with the vast majority of our Catalyst Technology plants maintaining operations. Sales were slightly down driven by refill additives and copper zeolites to Clean Air, partly offset by strong growth in first fill catalysts and licensing.

Refill catalysts and additives sales were slightly lower

This is recurring business which makes up the majority of sales within Catalyst

Technologies. Refill additives declined due to feedstock dynamics driving lower volumes. In refill catalysts, sales were stable. We saw good performance in ammonia and formaldehyde, ahead of the market. However, we saw lower sales in methanol following strong demand in the prior period and in hydrogen refill catalysts due to the lower oil price.

First fill catalysts almost doubled

First fill catalysts are lumpy in nature and driven by the start up of new plants. They are a lead indicator of future refill catalyst demand. In the year, we saw strong sales growth driven by methanol and ammonia catalysts with new plants in Asia coming onstream.

Licensing saw good growth

Our licensing business is dependent on new plant builds and revenue is recognised over the period of construction. We saw good performance in the period driven by formaldehyde and methanol following recent licence wins in these segments. We also began to recognise income from our newly developed mono ethylene glycol technology as we started work on the first project following the licence win last year. In the year, we signed four new licenses and are pleased with the progress we are making in developing and commercialising technologies.

Strategic Report

Financial performance review continued

PGM Services

PGM Services is the world's leading secondary refiner of platinum group metals and provides a strategic service to the group, mainly supporting Clean Air with security of metal supply in a volatile market. It comprises our pgm refining, recycling and trading activities and produces chemical compounds and industrial products containing pgms. Towards the end of the year, our pgm refineries continued to operate albeit at lower capacity due to compliance with local guidelines and new working practices in light of COVID-19.

PGM Services sales grew strongly, up 36%

In the year, sales grew 36%. We saw strong growth in our refinery and trading businesses due to higher and more volatile average pgm prices. Average palladium and rhodium prices were up 56% and 137% respectively, whilst the platinum price increased 5%, compared with the same period last year. Sales of chemical products grew driven by Clean Air which uses pgm materials in its catalyst products. However, sales of industrial products containing pgms were down.

Refinery backlog volumes improved

Following unscheduled downtime in one of our pgm refineries in 2018/19 which resulted in higher precious metal working capital, we made strong progress this year in reducing the volume of precious metal working capital in our refineries whilst ensuring continued supply to our Clean Air business and external customers. Our progress has been faster than expected and, as a result of the work we have done to improve our precious metal working capital efficiency, we now expect to remove at least a further £300 million¹ of precious metal working capital volume from our backlogs by the end of 2020/21.

As previously announced, the £100 million investment in our new refinery is underway. This will further reduce precious metal working capital, ensure our assets operate effectively and reliably, and strengthen 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 largely driven by the automotive segment as a result of the slowdown in global car production, impacted by COVID-19.

Diagnostic Services

Diagnostic Services provides specialised detection, diagnostic and measurement solutions for our customers in the petroleum industry. Sales were down as we saw an impact from the declining oil price and COVID-19.

Underlying operating profit

Operating profit grew significantly, up 40%, and margin expanded 5.5 percentage points. This was primarily driven by a £47 million benefit from higher average pgm prices and strength in our PGM Services trading business in a more volatile price environment, partly offset by higher refinery operating costs as we continue to work down our backlogs and further investment in our refineries.

ROIC

ROIC increased 4.6 percentage points to 17.2% reflecting higher operating profit.

Notes:

¹ Based on 31st March 2020 prices.

Health

	Year ended 31st March			
	2020 £ million	2019 £ million	% change	% change, constant rates
Sales				
Generics	134	171	-22	-23
Innovators	89	86	+5	+2
Total sales	223	257	-13	-15
Underlying operating profit	27	43	-37	-38
Margin	12.1%	16.7%		
Return on invested capital (ROIC)	5.3%	9.0%		
Reported operating profit	10	50	-80	

Performance affected by temporary disruption in the opioid addiction therapy market

- Generics declined as expected, affected by temporary disruption in the opioid addiction therapy market and lower sales of ADHD APIs. We have now agreed new multi-year supply agreements for opioid addiction therapies with generic partners from which we will begin to see the benefit in 2020/21.
- Innovators grew driven by a customer who received regulatory approval for a novel immuno-oncology treatment.
- Operating profit declined materially driven by weaker sales performance, partly offset by stock build to meet higher customer demand in 2020/21 and a net benefit from footprint optimisation.
- We made further progress towards delivering an additional circa £100 million of operating profit from our pipeline of generic and innovator APIs by 2025 although this may be delayed a year given the inherent uncertainty around the timing of individual drug launches.

Health

Given the nature of our Health business in providing critical products and services into the pharmaceutical sector, COVID-19 had limited impact in the year. We maintained the vast majority of our operations although we experienced some delays to shipment of orders following increased border controls.

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.

Agreed new multi-year supply agreements for opioid addiction therapies

Sales of controlled APIs were lower. Speciality opiates were broadly flat in the year. Following a strong first half, sales declined in the second half due to developments in the opioid addiction therapy market which drove lower demand in the short term for APIs used in generic opioid addiction therapies. Although these developments affected our performance in the year, we have now agreed new multi-year supply agreements with generic partners and we will start to see the benefit from these in 2020/21. Sales of APIs for ADHD treatments declined as one of our customers moved to dual sourcing for some high margin APIs. 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 provides custom development and manufacturing services for active ingredients of new drugs during their lifecycle, including for initial clinical evaluation and subsequently for commercial supply post regulatory approval.

Recent regulatory approval for our customer's novel immuno-oncology treatment

Our Innovators business grew slightly. This was primarily driven by higher sales in relation to our strategic partnership with Immunomedics for the manufacture of a drug linker used in the production of an immuno-oncology treatment for triple negative breast cancer. Immunomedics has recently received approval for this therapy from the FDA (Food and Drug Administration) and is now increasing volumes to support commercial demand.

API product pipeline

In the year, we continued to develop our new product pipeline across both our Generics and Innovators businesses. We made further progress towards delivering an additional circa £100 million of operating profit from this by 2025 although it may be delayed a year given the inherent uncertainty around the timing of individual drug launches.

We recently undertook a strategic review of our new product introduction process. Following this review, we made organisational changes, improved the new product introduction process and took the decision to deprioritise 21 generic molecules and refocus our resources on the most attractive opportunities. This gave rise to an impairment charge of £20 million in relation to previously capitalised development expenditure, taken outside of underlying operating profit.

Overall, our pipeline now comprises 54 molecules which includes generic APIs, innovator APIs and new applications. This includes four launched molecules and eight generics which are awaiting regulatory approval.

Specifically within Innovators, at the start of the year, we had four projects in late stage testing programmes. Of these, two projects – including Immunomedics – have now been approved, one project did not receive approval and has been cancelled and the remaining opportunity is still in late stage testing.

Underlying operating profit

Operating profit declined 38% driven by weaker business performance including temporary disruption in the opioid addiction therapy market and lower ADHD sales. This was partly offset by stock build to meet higher demand from customers in 2020/21 which led to a greater absorption of fixed costs into inventory on the balance sheet and a net benefit from footprint optimisation.

ROIC

ROIC declined 3.7 percentage points to 5.3% mainly driven by lower operating profit.

Strategic Report

Financial performance review continued

New Markets

	Year ended 31st March			
	2020 £ million	2019 £ million	% change	% change, constant rates
Sales				
Alternative Powertrain	237	206	+15	+16
Medical Device Components	72	70	+2	-
Life Science Technologies	50	49	+1	-
Other	30	37	-19	-20
Total sales	389	362	+7	+7
Underlying operating (loss) / profit	(1)	2	n/a	n/a
Margin	-0.2%	0.7%		
Return on invested capital (ROIC)	-0.3%	1.1%		
Reported operating loss	(62)	(15)	n/a	

Strong sales growth and continued progress in commercialising eLNO

- Sales up 7% driven by strong demand for fuel cells and non-automotive battery systems.
- Operating profit declined as we invested in the development of our Battery Materials business and recognised an £8 million one-off impairment in the first half in relation to our demo plant.
- Significant progress in commercialising eLNO as we broke ground on our first commercial plant and now have four customers in full cell testing.

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 materials. Sales grew 16%, with continued momentum in Fuel Cells and Battery Systems for e-bikes.

Significant progress in commercialising eLNO

We are making significant progress with the development and commercialisation of our portfolio of eLNO materials, which will compete with future ultra high energy density materials such as NMC 811. Feedback from testing with customers remains positive, specifically our ability to provide tailored solutions. In the year, we moved to full cell testing with four customers – two global automotive original equipment manufacturers (OEMs) and two non-automotive customers. Alongside this full cell testing, we continue to work with a number of automotive OEMs and cell manufacturers in the validation phase.

We broke ground on our first commercial plant in Konin, Poland, which is expected to be on stream in 2022 and supplying platforms in production in 2024. Our total investment to first commercial production will amount to circa £350 million, although

we are seeing some upward pressure as we finalise the design and build in more flexibility to meet our customers' requirements. Beyond this, scale up is likely to be phased as we match capacity to market demand. As part of the commercialisation process, we are also securing sources of renewable energy for the site in Poland.

Refocusing Lithium Iron Phosphate to support eLNO

We are focusing our science and innovative solutions on cathode materials that are truly market leading, principally eLNO our ultra-high energy density cathode material and our higher performing lithium iron phosphate (LFP). Sales of LFP grades for lower performance requirements declined in the year and we are now refocusing our LFP business to the high value segment and exiting the much larger lower value segment of the market, to better support our eLNO customers and the development of this business. These changes gave rise to an impairment charge of £57 million in the year, taken outside of underlying operating profit.

Fuel Cells saw significant growth in sales as we invest for growth

Sales in Fuel Cells grew 23% to £33 million and we delivered good operating profit growth driven by increased demand for both non-automotive and automotive applications in Asia. Today, our fuel cells

are now powering several hundred commercial vehicles and buses in China. We continue to invest in line with market demand and have committed circa £15 million to double our capacity in the UK and China.

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 flat in the year. At the end of the year, we saw a small increase in sales as some of our products are vital components used within ventilators.

Life Science Technologies

Our Life Science Technologies business provides advanced catalysts to the pharmaceutical and agricultural chemicals markets. Sales were flat in the year.

Underlying operating profit

Operating profit declined as we invested in the development of our Battery Materials business and recognised an £8 million one-off impairment in the first half in relation to our demo plant.

ROIC

ROIC decreased to -0.3% reflecting the operating loss as we invest in Battery Materials.

Financial review

Resilient performance and accelerating strategic initiatives

Anna Manz
Chief Financial Officer



In the year, we delivered a resilient performance and remain well positioned with our strong balance sheet. We have a strong track record of delivering efficiency and are now accelerating our strategy to drive further efficiency across the business, building upon the investments we have made in new manufacturing facilities and in our systems and processes.

Corporate

Corporate costs in the period were £38 million, a decrease of £15 million from 2018/19 due to lower legal costs and share based payments.

Research and development (R&D)

We invested £199 million in R&D in the year, including £23 million of capitalised R&D, around 5% of sales. Spend increased 5% as we invested in next generation technologies in Clean Air, the efficiency and resilience of our refineries in Efficient Natural Resources, our Health API product pipeline and our eLNO cathode 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 85% of the non-sterling denominated underlying operating profit in the year ended 31st March 2020, were:

	Share of 2019/20 non-sterling denominated underlying operating profit	Average exchange rate Year ended 31st March		% change
		2020	2019	
US dollar	40%	1.271	1.310	-3
Euro	33%	1.143	1.134	+1
Chinese renminbi	12%	8.85	8.81	-

Overall for the year, the impact of exchange rates increased sales by £36 million and increased underlying operating profit by £5 million, following a £47 million and an £8 million increase respectively in our first half.

If current exchange rates (£:\$ 1.233, £:€ 1.110, £:RMB 8.81) are maintained throughout the year ending 31st March 2021, foreign currency translation will have a positive impact of approximately £11 million on underlying operating profit. A one cent change in the average US dollar and euro exchange rates each have an impact of approximately £2 million on full year underlying operating profit and a ten fen change in the average rate of the Chinese renminbi has an impact of approximately £1 million.

Reconciliation of underlying operating profit to operating profit

(£ million)	Year ended 31st March	
	2020	2019
Underlying operating profit	539	566
Profit / (loss) on disposal of businesses ¹	2	(12)
Loss on significant legal proceedings ¹	-	(17)
Amortisation of acquired intangibles	(13)	(14)
Major impairment and restructuring charges ¹	(140)	8
Operating profit	388	531

¹ For further detail on these items please see pages 152, 199 and 200.

Summary of efficiency initiatives

Initiative £ million	Delivered to date	Annualised benefits by 2022/23
Procurement ¹	71	100
Restructuring	25	25
Health footprint optimisation	20	20
Previous initiatives beginning 2017	116	145
Clean Air footprint	-	30
Groupwide organisational efficiency	-	50
New initiatives	-	80
Total efficiency initiatives	116	225

¹ Around three quarters of procurement initiatives will benefit the income statement, of which around two thirds will be reinvested to drive growth.

Strategic Report

Financial review continued

Major impairment and restructuring charges

As we accelerate our strategy to drive efficiency, we will deliver annualised savings of at least £80 million over the next three years to 2022/23. Related to these new savings, we will be taking total impairment and restructuring charges of around £240 million by 2022/23. Of this, around £80 million is expected to be cash.

During the year we recognised impairment and restructuring charges of £140 million. These comprised the consolidation of our Clean Air footprint, our Lithium Iron Phosphate (LFP) business in Battery Materials and our Health product pipeline.

In Clean Air, we will consolidate some of our existing older capacity in Europe into our new, more efficient plants. In the year, this resulted in an impairment charge of £61 million on our older manufacturing assets.

We impaired our Lithium Iron Phosphate (LFP) business in Battery Materials, which gave rise to an impairment charge of £57 million in the period.

A strategic review of Health's new product introduction process was undertaken during the year which resulted in organisational changes and the deprioritisation of the development of 21 molecules. Development expenditure which had been capitalised in respect of the terminated molecules totalling £20 million has been written off during the year.

Future restructuring costs of around £100 million relate to the simplification of our organisation and consolidation of our Clean Air footprint.

See the table for a breakdown showing the impairment and restructuring charge and cash costs:

£ million	Annualised benefits by 2022/23 ¹	Total restructuring costs	Restructuring costs 2019/20	Future restructuring costs ²
Clean Air footprint	30	(91)	(61)	(30)
Groupwide organisational efficiency	50	(70)	-	(70)
Battery Materials LFP	-	(57)	(57)	-
Health product pipeline	-	(20)	(20)	-
Other restructuring costs	-	(2)	(2)	-
Total	80	(240)	(140)	(100)

¹ Annualised benefits from 2020/21 of at least £30 million.

² Includes cash costs of circa £80 million.

Profit / (loss) on disposal of businesses

Profit / (loss) on disposal of businesses is shown separately on the face of the income statement and excluded from underlying operating profit. In the year, we released a £2 million provision in relation to the disposal of Johnson Matthey Gold and Silver Refining Holdings in March 2015. In the year ended 31st March 2019, the group sold its water disinfection business, Miox. After costs, the net proceeds were £2 million which resulted in a loss on sale of £12 million.

Finance charges

Net finance charges in the year amounted to £86 million, up from £43 million in 2018/19. This was primarily driven by increased average precious metal borrowings due to higher precious metal prices, on which we pay higher interest on average than the rest of our borrowings.

Taxation

The effective tax rate on reported profit for the year ended 31st March 2020 was 16.4%, up from 15.3% in the prior year.

The tax charge on underlying profit before tax for the year ended 31st March 2020 was £72 million, an effective underlying tax rate of 15.7%, broadly unchanged from 15.9% in the prior year. This was around 2% lower than expected due to profit mix across different tax jurisdictions following the impact of COVID-19. The current year tax charge includes increases in provisions for uncertain tax positions, £12 million of which was recognised in the first half and relates to reassessments of prior years.

Our approach to tax

Johnson Matthey has developed a reputation over the last 200 years for integrity and our people take pride in doing the right thing across all aspects of our business. These principles underpin our approach to the management of tax.

We want to be clear and open on our approach to tax so that our stakeholders understand it. Today we have operations in over 30 countries and, for each of those countries, we endeavour to pay our fair share of tax. We follow the laws of the relevant country and our group tax strategy so that we pay the correct and appropriate amount of tax at the right time.

Through implementation of our tax strategy, we plan to:

- Maintain open, positive and cooperative relationships with governments and global tax authorities. We also partake in constructive discussions on taxation policies that are relevant to our business.
- Optimise global tax incentives and exemptions, such as those which support the research and development of our next generation of sustainable technologies. We will only engage in tax planning which is supported by a clear commercial rationale. We have a zero tolerance approach to tax evasion and the facilitation of tax evasion.
- Have clear and consistent tax policies and procedures to support our business strategy. All our tax policies and guidelines are managed and maintained by our professional tax function which is supported by external advisers. This ensures compliance and allows us to properly respond to global tax changes and developments.
- Proactively identify, evaluate, manage and monitor tax risks arising from our business operations to ensure they remain in line with the group's risk appetite, seeking external advice where necessary.
- Ensure that all tax returns are accurate, complete and are submitted in a timely manner through the activation of a thorough tax risk compliance management process.

The board approves our tax strategy each year. The tax strategy satisfies the requirements of paragraph 16(2) Schedule 19 Finance Act 2016.

Post-employment benefits

IFRS – accounting basis

At 31st March 2020, 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 £262 million.

The cost of providing post-employment benefits in the year was £49 million, down from £56 million last year. The post-employment benefits cost also included a past service credit of £20 million, which compared to a £9 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 future additional deficit funding contributions from the special purpose vehicle set up in January 2013. The valuation results as at 1st April 2018 allowed for the equalisation of Guaranteed Minimum Pension.

The last triennial actuarial valuation of the cash balance section as at 1st April 2018 revealed a surplus of £0.2 million.

In order to reduce the group's long term pension risk exposure a number of changes to the UK pension scheme became effective from 1st July 2018, including:

- Contributions from those employees who remain in the career average section increased and will further rise over the next few years to help fund the increased cost of providing these benefits.
- The accrual rate in the career average section reduced from 1/80th to 1/100th for each year of future service after this date.
- New benefit levels with varying employee contribution rates were introduced in the cash balance section.
- Employees in the career average section were given the option of switching to the cash balance section.

The latest actuarial valuations of our two US pension schemes showed a surplus of £1 million at 1st July 2019, an improvement from a £2 million deficit at 1st July 2018.

Capital expenditure

Capital expenditure was £465 million in the year, 3.1 times depreciation and amortisation (excluding amortisation of acquired intangibles). In the period, projects included:

- Clean Air manufacturing plants in Europe and Asia. This increased capacity will enable us to consolidate our manufacturing footprint to drive efficiency and improve flexibility, and support demand from tightening legislation in these regions.
- Investment in the development and commercialisation of eLNO. We broke ground on our first commercial plant in Konin, Poland for the first 10,000 metric tonnes which has the potential for expansion to 100,000 metric tonnes. We are on track to start production in 2022 and supply platforms in production in 2024.
- Upgrade to our core IT business systems.
- Investment in our Health manufacturing facilities and continued investment in our API product pipeline.
- Investment in the efficiency and resilience of our refineries within Efficient Natural Resources.

Capital expenditure for 2020/21 is expected to be up to £400 million as our investment into strategic growth projects continues. Key projects include:

- Investment in eLNO as we continue to commercialise our ultra high energy battery cathode material.
- Completion of our new Clean Air plants in China and India.
- Investment in the efficiency and resilience of our refineries within Efficient Natural Resources.
- Upgrade to our IT systems as we continue to roll out our single global ERP system.

Depreciation and amortisation (excluding amortisation of acquired intangibles) is expected to increase to around £200 million in 2020/21. This increase is largely due to the depreciation of our new Clean Air plants and our investment to upgrade our core IT systems.

Strategic Report

Financial review continued

Accelerating reduction of precious metal working capital

We have a disciplined approach to managing precious metal working capital and have accelerated our actions in this area. In the year, we made substantial progress in reducing precious metal volumes amounting to £345 million¹ which was achieved through:

- Progressing backlog reduction, with £162 million of precious metal volume removed.
- Optimising precious metal volumes across our businesses, particularly between Clean Air and Efficient Natural Resources, and reviewing commercial terms with pgm collectors as well as our Clean Air customers. This removed £49 million of precious metal volume.
- Substantial inflows of £134 million as a result of supply chain management in Clean Air, reducing metal at every stage so we were not sitting on excess inventory, as demand slowed due to the impact of COVID-19.

We are focused on further reducing precious metal working capital. We are now targeting at least a further £300 million² reduction in precious metal backlogs by 31st March 2021, although we expect this to be offset by higher demand in Clean Air depending on the path of recovery.

Notes:

¹ Based on 2019/20 blended prices.

² Based on 31st March 2020 prices.

Free cash flow and working capital

Free cash flow was an inflow of £52 million, an improvement on the prior year. This was primarily due to better net working capital where we saw an outflow of £1 million compared to an outflow of £224 million in the prior year.

Excluding precious metal, working capital days increased to 52 days at 31st March 2020 compared to 48 days in the prior year.

Average working capital days excluding precious metals increased by four days to 63 days. We are targeting an improvement in average non precious metal working capital to between 50 and 60 days over the medium term.

Dividend

The group has a strong balance sheet, good cash generation and liquidity headroom. However, given the heightened degree of current uncertainty and to balance the needs of all stakeholders, the board will propose a final ordinary dividend for the year of 31.125 pence at the Annual General Meeting on 23rd July 2020, representing half the level of the 2018/19 final dividend. This is not intended to be a rebasing; the board remains committed to a progressive dividend and anticipates restoring future dividend payments to levels seen prior to the COVID-19 pandemic when circumstances permit. Subject to approval by shareholders, the final dividend will be paid to shareholders on 4th August 2020, with an ex dividend date of 18th June 2020.

Return on invested capital (ROIC)

ROIC declined to 13.3% at 31st March 2020 from 16.4% in the prior year mainly due to higher capital expenditure, increased average precious metal working capital through the year and lower operating profit.

Capital structure

Net debt at 31st March 2020 was £1.1 billion. This is a decrease of £394 million from 30th September 2019 and an increase of £228 million from 31st March 2019. Net debt increased by £43 million to £1.1 billion when adjusted for the post tax pension deficits. The group's net debt (including post tax pension deficits) to EBITDA was 1.6 times (31st March 2019: 1.3 times), at the bottom end of our target range of 1.5 to 2.0 times.

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 and treasury policies

Going concern

The group has a strong balance sheet with over circa £1.3 billion of available cash and undrawn committed facilities at 31st March 2020. Leverage, measured by net debt (including post tax pension deficits) to EBITDA, was at the bottom of our target range at 1.6 times. COVID-19 has introduced unprecedented uncertainty to the market outlook and in response to this we have undertaken extensive reviews of our businesses and projections under a range of potential outcomes.

Our review used a number of external sources to identify a range of potential economic scenarios and assessed our headroom under each scenario against committed facilities and key financial covenants over the going concern period.

At a macro level we have used the GDP forecasts from a range of external parties for these scenarios, which are: (1) a deep recession base case which models an extended shutdown followed by an extended recovery period, and (2) a downside of a very deep recession comprising of a deeper shutdown with a challenging, stuttering recovery. The key macro assumptions for our financial year 20/21 are shown opposite.

Clean Air

With the legislative frameworks in place and assumed to remain for vehicle emissions in the markets in which we operate, our key market variable is the level of automotive production. Our scenarios utilise a range of external forecasts and our deep recession scenario assumes a decline of circa 25% in light duty production for Europe and the US but better in Asia, while for heavy duty, the declines are slightly more. In our very deep recession scenario, we assume a circa 35% decline in light duty production for Europe and the US, but better in Asia, while for heavy duty, the declines are again slightly more. For US truck sales, we assume that the bottom of the cycle will occur in 2021/22 in both scenarios and we keep our assumptions on battery electric vehicles (BEVs) consistent at 2% of all vehicles globally.

Within these market assumptions, we have planned for a much greater impact in the early part of 2020/21 and an increase in production over the year, with slower recovery in the very deep scenario.

2020/21 GDP growth projections aligned with the scenarios

Forecast	Deep recession	Very Deep recession
Description	<ul style="list-style-type: none"> Extended shutdown, followed by extended recovery period. 	<ul style="list-style-type: none"> Deeper shutdown impact with challenging, stuttering recovery.
Global	• (1.0%) to (2.0%)	• (3.5%) to (4.5%)
US	• (0.6%)	• (2.7%)
China	• 1.2%	• (3.0%)
Europe	• (6.5%)	• (~10.0%)

Source: JM analysis; Oxford Economics; McKinsey; IMF (International Monetary Fund); IEA (Institute of Economic Affairs); OBR (Office for Budget Responsibility) (UK); JPM Cazenove and Citi

With a high proportion of variable costs, we expect to mitigate a significant portion of the decline in sales. Working capital drops significantly in the short term before building again to support the growth to normalise by the end of the year. We also assume that we will continue with our strategic investments in the new facilities in China and India in the period.

Efficient Natural Resources

The impact on our Efficient Natural Resources Sector varies by sub-sector. The Catalyst Technologies businesses have seen little impact from the COVID-19 slowdown to date, but we do expect an impact as lower demand begins to impact the industries they serve. The key drivers for our businesses are diverse and will depend upon the specific markets they address as well as feedstock prices. At a market level we have assumed an oil price of \$25-35/bbl for our deep scenario and \$20-30/bbl for the very deep scenario, together with an overall decline in investment in the oil and gas sector of 35% and 50% respectively. In these businesses we have a higher proportion of fixed costs so the impact of lower demand on profitability will be greater.

Platinum Group Metal (PGM) Services is most impacted by pgm prices and for the purpose of our scenarios we assume lower prices, which adversely impacts profitability. The lower demand on our refineries in the short term in part due to lower Clean Air volumes under these scenarios will allow us to accelerate our progress on backlog reduction as well as meeting planned shutdowns for maintenance and stock counts. This in turn reduces the sensitivity of our working capital to pgm prices.

Health and New Markets

Health is relatively unaffected by COVID-19 with demand for many products unaffected.

Most of our businesses in New Markets see only short term impacts from disruption to manufacturing and supply chains whilst the underlying market demand remains e.g. fuel cells and medical devices. We assume that our strategic focus and investment in Battery Materials is maintained throughout the period.

Funding and available liquidity

The group has a robust funding position. JM signed a £1 billion five year committed revolving credit facility in March this year which secures liquidity for the next five years and was entirely undrawn at 31st March 2020. Our longer term funding comes from the US private placement market and other regional lenders including the European Investment Bank and KfW. The maturity profile at 31st March 2020 is excellent with only £130 million of term debt maturing before June 2021. In April 2020, we secured a further US\$300 million of funding from the US private placement market for the next five to seven years. JM has also secured access to the Bank of England's COVID Corporate Financing Facility (CCFF) which would provide additional back-stop liquidity for the next year if needed.

In addition, as a long time, highly rated issuer in the US private placement market, JM expects to be able to access additional funding in its existing markets should it need to. The group also has a number of additional sources of funding available including uncommitted lease facilities that can provide precious metal funding.

Strategic Report

Going concern and treasury policies continued

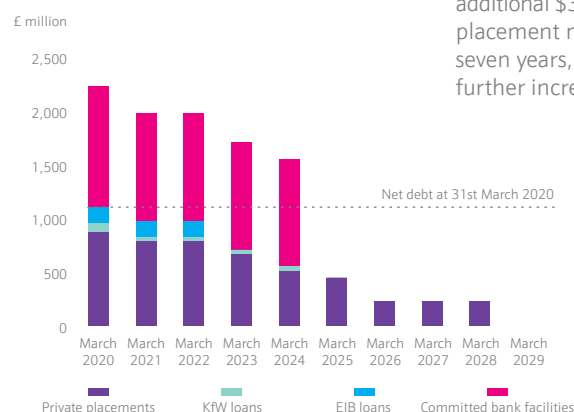
At 31st March 2020 the group had metal lease facilities of circa £800 million, of which £451 million (31st March 2019: £372 million) was drawn. As these metal leases are for periods of less than 12 months they have been excluded from our going concern assessment, with the assumption that when these leases mature they are replaced with our other existing committed credit facilities. The metal leasing market remains active and there is no indication that renewing these lease facilities when they mature will not be possible. Similarly, we have also excluded from our modelling the funding facilities obtained under the CCF. While metal leasing facilities and the CCF are excluded from our modelling under a normal situation, we would expect to have access to facilities such as these.

Conclusion

The group has a robust funding position and has tested its performance under a deep recession scenario and stress tested with a more extreme very deep scenario. In both scenarios, we have sufficient headroom against committed facilities and key financial covenants in the going concern period (15 months following 31st March 2020). There remain risks to the group including more extreme economic outcomes and our delivery of refinery backlog reductions. Against these the group still has a range of levers which it could utilise to protect headroom including delaying inventory builds, reducing capital expenditure and reducing future dividend distributions.

The directors are therefore of the opinion that the group has adequate resources to fund its operations for the period of 15 months following 31st March 2020 and so determine that it is appropriate to prepare the accounts on a going concern basis.

Maturity profile of debt facilities



Treasury policies

Treasury policies and financial risk management

Group Treasury is a centralised function within JM based in the UK and US. The role of Group Treasury is to secure funding for the group, manage financial risks and provide treasury services to the group's operating businesses. Group Treasury is run as a service centre rather than a profit centre. The group does not undertake any speculative trading activity in financial instruments.

Funding and liquidity risk

The group's policy on funding capacity is to ensure that we always have sufficient long term funding and committed bank facilities in place to meet foreseeable peak borrowing requirements. The group successfully refinanced its existing bank facilities in March 2020, consolidating into a £1 billion five year sustainability linked revolving credit facility. In line with the group's vision this facility contains sustainable performance targets.

At 31st March 2020 the group had cash and cash equivalents of £273 million and £1,125 million of undrawn committed bank facilities available to meet future funding requirements. The group also has a number of uncommitted facilities, including overdrafts and metal lease lines, at its disposal. The maturity dates of the group's debt and committed borrowing facilities as at 31st March 2020 are illustrated in the chart below.

Of the committed bank facilities, £125 million have a final maturity date within the 15 months to 30th June 2021 (the going concern period). In addition, term debt of £41 million matures in December 2020 and £89 million matures in January 2021. These term debt repayments will be financed using existing bank facilities.

In April 2020, the group secured an additional \$300 million from the US private placement market for the next five to seven years, adding further liquidity and further increasing the maturity profile.

Foreign currency risk

JM's operations are located in over 30 locations, providing global coverage. A significant amount of profit is earned outside the UK. In order to protect the group's sterling balance sheet and reduce cash flow risk, the group has financed a significant portion of its investment in the US and Europe by borrowing US dollars and euros respectively. Additionally, the group uses foreign currency swaps to hedge a portion of its assets. The group uses forward exchange contracts to hedge foreign exchange exposures arising on forecast receipts and payments in foreign currencies. Details of the contracts outstanding on 31st March 2020 are shown on pages 164 and 182.

Interest rate risk

At 31st March 2020 the group had net borrowings of £1,018 million of which 84% was at fixed rates with an average interest rate of 3.6%. The remaining 16% of the group's net borrowings was funded on a floating rate basis. A 1% change in all interest rates would have a £2 million impact on underlying profit before tax.

Precious metal prices

Fluctuations in precious metal prices have an impact on JM's financial results. Our policy for all manufacturing businesses is to limit this exposure by hedging against future price changes where such hedging can be done at acceptable cost. The group does not take material price exposures on metal trading.

A proportion of the group's precious metal inventories are unhedged due to the ongoing risk over security of supply.

Credit risk

The group is exposed to credit risk on its commercial and treasury activities. As COVID-19 impacted we acted quickly to tightly manage our credit exposures and closely monitor our risks. Counterparties are assessed against the appropriate credit ratings, trading experience and market position to define credit limits. Our exposures are monitored frequently and mitigating actions taken where appropriate. In treasury and precious metal management, these exposures include the mark to market of outstanding transactions and potential settlement risks.

Pages 70 to 74: Our principal risks

Risks and uncertainties

JM applies a holistic risk approach which enables the business to protect value, proactively manage threats to the delivery of strategic and operational objectives while enhancing the realisation of opportunities. The COVID-19 pandemic has altered the external environment and specifically our response in some areas where risk has increased. The long term impact of the COVID-19 pandemic on JM is uncertain and we have been working through a number of scenarios to understand the potential impacts. While we are confident that our business model is resilient, we remain cognisant of the challenges created by the pandemic. We have further identified specific areas where our principal risks could be impacted and, as they evolve, we are working with management to further provide JM's board with the line of sight in order to plan ahead and take appropriate action.

Managing JM's risks

Effective risk management is central to JM's decision making process as it enables:

- Planning through the lens of prioritisation to deliver strategic objectives.
- Consideration of risk and reward in establishing and implementation of the relevant controls in the areas that matter most.
- Assurance resources to be focused on specific areas of risk and uncertainty.
- Opportunities to be pursued while continuing to mitigate JM's risks in a rapidly changing external environment. This includes effective incident response to emerging risks, such as COVID-19.
- Compliance with UK Corporate Governance Code requirements.

JM's risk approach



JM's Board of Directors has overall responsibility for the risk management process. Together with the Group Management Committee (GMC) they have performed a robust assessment of the principal and emerging risks facing the business to ensure that the risks align with goals and strategic objectives. The Audit Committee assists the board in monitoring the effectiveness of the risk management and internal control policies, procedures and systems.

The risk management framework incorporates both a top down approach to identify the company's principal risks and a bottom up approach to identify operational risks.

Each principal risk is sponsored by a member of the GMC who drives progress through regular review considering related emerging risk factors, current responses and further mitigating actions to reach appetite. The GMC also periodically focuses on selected risks and performs deep dive reviews to support relevant strategic topics on the GMC agenda. The risk reviews are embedded within the relevant business and / or functional reviews to ensure that they are considered in the context of JM's values and strategic objectives. In response to the outbreak of the global pandemic, a dedicated Group Incident Management Team was deployed which is discussed further on page 69, to specifically oversee and direct JM's response to COVID-19.

Risk framework

Strategic enablers

Application against our risks:

- Innovation
- Efficiency and excellence
- Values-driven culture
- Sustainable business

Current risks

Risks we are actively managing that could stop us achieving our strategic objectives.

Emerging risks

Risks with a potential future impact from internal or external opportunities or threats. It also now includes 'black swan' events for example global pandemics.

What we assess

- **Risk ownership:** each risk has a named sponsor and owner.
- **Gross risk score:** unmitigated position.
- **Net risk score:** current position.
- **Risk appetite:** desired position.
- **Mitigating actions:** suitability for achieving appetite.
- **Risk score movements:** positive / negative.

Strategic Report

Risks and uncertainties continued

How we manage risk

All risks are described, analysed and reported using a standardised framework across the business. Likelihood of occurrence and the potential impact on objectives are considered and scored using a broad range of impact measures. The effectiveness and adequacy of controls are assessed regularly with assigned risk sponsors and owners, and reported at least twice a year.

Furthermore, functional leaders, sectors and site teams are responsible for identifying, assessing and prioritising their risks, considering the likelihood of occurrence and the potential impact to JM's objectives.

Site risks are aggregated and analysed for trends and anomalies which are reviewed by sector leadership teams. Risk insights are then incorporated into strategic planning and budgeting. The Group Risk Register is subject to a detailed review and discussion by the GMC, and this includes discussion of emerging risks.

The board assesses the outputs from this process and takes confidence from the 'three lines of defence' risk assurance model. The first line represents operational management who own and manage risk on a day to day basis, utilising effective internal controls. Group functions and sectors monitor and oversee these activities, representing governance and compliance at the second line. The third line is the independent assurance over these activities provided by the Corporate Assurance function.

Process developments during 2019/20

JM continually works to improve risk management practices and over the last 12 months the following key enhancements have been made, which have also supported the coordination of our responses to the COVID-19 pandemic:

- Introduced dashboards to improve principal risk reporting. Dashboards were developed to consolidate risk data including current net and appetite scoring as well as the actions required to support achievement of desired outcome. This has improved the quality of risk focused discussions across the business.
- Enhanced risk appetite statements. GMC risk sponsors have developed more detailed and focused appetite statements for principal risks. They have been reviewed by the board and the GMC, and have been embedded into risk reporting dashboards to further improve visibility of the journey towards the appetite.
- Improved key risk indicators (KRIs) methodology. Developed approach in detailing metrics for each principal risk measured in time and cost. This provides the board, risk sponsors and owners an ability to track mitigation maturity, costs and timescales associated with driving the net positions towards the defined appetites.
- Further sub-sector risk analysis. Conducted JM wide analysis on group and sector risks such as root cause and correlation against their likely principal risks to provide information as to where risks are originating from and how they can be effectively mitigated.
- Continued horizon scanning for emerging risks. Reviewed internal and external environment changes / movements at the board and GMC to ensure that the top down risk management process is fully informed.

How we manage risk



COVID-19

JM has been proactive in its response to COVID-19. The Group Incident Management Team has been swiftly deployed to manage the response to the current pandemic. While coordinated and closely overseen by GMC, the team has implemented several specific measures including a groupwide pandemic response plan, a groupwide alert level status matrix and a comprehensive site pandemic response measures playbook. These measures have ensured that operations are able to continue safely and in accordance with government policy and regional guidance. JM has also specifically focused actions in managing cash flow, reducing cost and working capital to ensure the group remains robust, with sufficient liquidity.

The board and GMC have further directed the updating of JM's principal risks to reflect the impact of this pandemic. In most instances, risk definitions have not been changed as the pandemic has not changed the longer term coverage of each risk. However, it should be noted that additional actions have been defined and where appropriate implemented to reflect the impact of COVID-19. Consideration has also been given as to whether COVID-19 should be treated as an individual risk. The board agreed that the pandemic would be more effectively managed through articulating its impact within each of the existing principal risks rather than a stand alone item.

JM recognises that the current COVID-19 pandemic is an evolving situation and we will need to continue to be agile in managing this risk. Furthermore, we will continue to review and challenge the principal risks providing an ongoing consideration as to whether it needs to be recognised as a stand alone risk in the future.

The crisis has also accelerated our learnings on how differently we can use technology to connect, collaborate and engage with our customers, suppliers and employees across the globe. We intend to use these lessons, to ensure that as lockdown eases, we are embracing new habits and opportunities this change has created.

JM's principal risks and uncertainties

Principal risks are critically assessed to ensure that JM meets the challenges facing the business and strategic objectives. The COVID-19 pandemic, which has altered the external environment, has impacted the risks JM manages including supplier disruption, rise in mandatory / voluntary work from home and a shift in customer behaviours. JM has taken decisive action to protect its people, support its communities across the globe and manage the continuity of the business to deliver its vision for a cleaner, healthier world.

Specifically, in this context, managing today's financial performance is imperative as it further underpins the future success of JM. The board and GMC are continually assessing the potential impact of COVID-19 on the business with the assumption that the global economy, JM's customers and suppliers will be affected for far longer than the next few months and that some changes may well be permanent. This is explored further within the Viability section on page 75. Also, in the same way as governments around the world are planning their COVID-19 exit strategies, JM is too. This means, first and foremost, continuing to keep all people safe, then focusing on the choices and actions to put JM in the best position to deliver the long term future strategy.

To understand the current risk universe for JM, GMC risk sponsors have assessed changes to their risks, prioritising principal risks as required, with updated plans to mitigate them. This has been enabled by the risk management process facilitated by the Corporate Assurance function and additionally through the COVID-19 Group Incident Management Team.

It further contributed to discussions by the board and GMC to ensure JM's operational posture reflects the current environment.

The following key changes, additions and updates on JM's principal risks and uncertainties in 2019/20 have been considered:

- The 'Existing market outlook' risk has been reassessed to include both the short term market risk that can be foreseen and reacted to and longer term 'black swan' events where the quality of response is the important factor. COVID-19 has increased the volatility and uncertainty of our outlook in our existing markets but over time we would expect both of these elements to reduce with revised market understanding.
- The 'Future growth' risk has been refined to focus on the main elements that drive our growth (identifying opportunities, developing the products and services required and building the capability to deliver). This has provided clearer ownership, accountability and monitoring of differing risk exposures in strategic investments and / or delivery of expected business cases. We have improved our visibility and awareness of our Fuel Cells business' risks and uncertainties as it executes its ambitious growth plans.
- The assessment criteria for the 'Environment, health and safety' risk has been enhanced to drive stronger alignment with the Environment, health and safety (EHS) strategy and maintaining strong focus on JM's aspiration of zero harm. The risk has also been updated to reflect greater environmental actions. COVID-19 has created unprecedented challenges in the working environment around us. As the health, safety and wellbeing of our employees is vital, JM reacted quickly to take relevant actions such as implementing global travel restrictions, restricting attendance / organisation of large events, increasing remote working at scale and enhancing process safety measures. JM has further instigated frequent employee communications and engagement around the importance of safety in the context of COVID-19 and issued additional guidance for process safety measures. JM has also leveraged its global presence to learn from our colleagues in China. It enabled an early start of our COVID-19 preparations around the globe to implement measured responses to the pandemic across all of JM facilities.
- Climate change is incorporated into our risk management process as a driver of certain principal risks, especially 'Future growth', 'Environment, health and safety', 'Supply failure' and 'Failure of operations'. We recognise that effective management of climate change risks are crucial to deliver our growth strategy and inspire confidence from our stakeholders. The rate and extent of change of our key markets in response to climate change is the subject of extensive scenario planning and we are further analysing the validity of a stand alone risk for this area.

Strategic Report

Risks and uncertainties continued

- Metal liquidity and supply – JM continues to refine and enhance the Precious Metal Management (PMM) team's approach to both the financial processes which govern metal management, and operational processes. Significant advances have been made in reducing the amount of working capital absorbed by metal prior to the impact of COVID-19, as well as strengthened governance including additional specialist resources to the PMM team. While the pandemic disruption has been a factor that JM considered in metal supply, it has not had an immediate impact on our supply positions. We continue to monitor the situation with our suppliers including potential shortages of supply created by mine closures.
 - Battery Materials – recognising the significant strategic potential of the Battery Materials business in developing and bringing to market eLNO, JM is creating a leading risk and governance capability to focus on managing programme and business risks. The priority is to ensure that business and programme risks receive appropriate management attention and are addressed quickly and effectively in this complex environment.
 - Within the 'Applications, systems and cyber' risk, key cyber security technologies have been deployed to increase our ability to predict, prevent, detect and respond to cyber threats.
- These have been fine tuned for the increased risk of attack associated with COVID-19 as we anticipate a continued increase in volume and scale of financially motivated cyber attacks where the pandemic is used as a cover. We have increased the level of communication and awareness activities to ensure our employees are more alert. We continue to track external threats working with governments, law enforcement and industry specialists as appropriate.
- Brexit – JM is continuing to monitor and assess the potential impact of the UK's exit from the European Union on current operations and strategy. Plans are well developed, and JM is confident that the acute demands of managing the COVID-19 response will not reduce the ability to respond to changes caused by Brexit.

The following table sets out the principal risks and uncertainties facing the group and the mitigating actions we have in place. It also details any profile changes for each principal risk during the course of the year.

Strategic risks are listed first followed by operational risks. Each risk has a GMC sponsor who is responsible for the risk and to ensure controls are adequate and prioritised effectively. Each principal risk is also linked to one or more of our strategic enablers – 'Efficiency and excellence', 'Sustainable business', 'Innovation' and 'Values-driven culture'.

Key

- | | |
|---|---|
| E Efficiency and excellence | I Innovation |
| S Sustainable business | V Values driven culture |

1 Existing market outlook

E S I V

Risks, opportunities and impact

The impact of changing assumptions in our key markets is either unplanned or unforeseen and we are not agile enough to respond to them. This risk includes potential impact of legislative changes (e.g. those caused by Brexit), other market movements outside of our predictions, the extended impact of global pandemics such as COVID-19 and emerging trends such as the imposition of tariffs as well as regional and global slowdowns to which our business may be sensitive.

Key mitigations

- Execution of the strategic planning process to assess and understand external trends and assessment of the associated impacts across our sectors (including the balance, scale and focus of investments).
- Regular review of our portfolio is undertaken to ensure that each part of the business is providing value to the group. In turbulent times the resilience of this portfolio demonstrates their benefits.
- Integration of strategic risk within the strategic planning process to challenge implicit assumptions and drive proactively the consideration of different market outcomes.
- Monitoring of key viability and liquidity metrics (including balance sheet strength) as part of budgeting and going concern testing.
- Technology road mapping to understand our response options to evolution in our markets and associated scientific and technological requirements.
- Monitoring of changes to key drivers (including GDP and market assumptions), scenario planning and adjusting business plans accordingly.

Changes since 2019 annual report

We continue to monitor global macroeconomic factors and we are improving our sensitivity analysis through the strategic planning and budgeting process. The agility of this process has allowed us to re-plan quickly and efficiently. COVID-19 has changed our market outlook through supply disruption, plant shutdowns and changing consumer demands.

We have so far seen significant impact to our business throughout Q1 2020/21 driven by COVID-19. Other than the health, safety and wellbeing of our employees, we have specifically focused our actions in managing cash flow, reducing cost and working capital to ensure JM remains robust, with sufficient liquidity.

COVID-19 has increased the volatility and uncertainty of our outlook in existing markets but over time we would expect volatility to reduce and with revised market understanding uncertainty to decline. While putting our own business strength and continuity first, we have also been assessing opportunities created by these market conditions.

GMC sponsor: Christian Günther

2 Future growth

E S I V

Risks, opportunities and impact

Failure to deliver planned growth and value creation through ineffective execution of strategic initiatives and investments.

GMC sponsor: Robert MacLeod

Key mitigations

- A clear strategy, which is continuously reviewed in the light of new information, and a business review process to track execution of that strategy (Transformation Office).
- Ongoing reviews and monitoring of new technologies and market competitiveness.
- Targeted investment in research and development, capital projects and people with the specific skills necessary to deliver effectively and support the realisation of our strategy.
- Proactive engagement with current and potential customers as well as industry bodies, for example the Hydrogen Council, to understand future needs and potential product / market evolution.
- Regular reviews of all strategic capital projects by dedicated group capital projects team.

Changes since 2019 annual report

This risk has been refined to focus on the main elements that drive our growth (identifying opportunities, developing the products and services required and building the capability to deliver).

We have reviewed our growth choices, timing of investments and execution risks in light of COVID-19. Specifically, we have conducted detailed assessments of the impact on projects delivery and start up due to limitations on resource and equipment availability. We continue to ensure that our future growth is aligned with global macro trends (including climate change) such as fuel cell technology.

3 Competitive advantage

E S I V

Risks, opportunities and impact

Failure to maintain our competitive advantage in existing markets and, as a result, not meeting customers' evolving needs as effectively and profitably as our competitors.

GMC sponsor: Maurits van Tol

Key Mitigations

- Strong customer relationships due to JM's technical proposition, good market reputation and a high level of technical service.
- Regular engagement with customers at multiple levels and performing satisfaction surveys.
- Regular strategy reviews including a review of our competitive position and competitors' moves.
- Research and development as well as capital management process ensuring resources are prioritised against the areas of greatest opportunity.
- Strong innovation portfolio with new technology platform and product development process.

Changes since 2019 annual report

We are delivering and tracking our major capability building programmes including commercial, procurement and digital transformation.

We have processes in place to enable effective decisions to allocate innovation resource and capital. Through our innovation excellence programme, we continuously improve the processes that further expand JM's product, application and technology toolbox.

COVID-19 has provided both challenges and opportunities to our business. We have therefore also been focused with our response on emerging opportunities that would transform our business at pace.

4 Environment, health and safety (EHS)

E S V

Risks, opportunities and impact

As per similar high hazard manufacturing companies, our business operations are subject to a wide range of challenging health, safety and environmental laws, standards and regulations from government and non-governmental bodies around the world.

If we fail to operate safely, we could injure our people or breach applicable laws which could adversely impact our employees. This could result in lost production time and potentially attract negative interest from the media and regulator.

GMC sponsor: Robert MacLeod

Key mitigations

- Embedded health and safety culture, including clear policies and standards, continual training and awareness activities and audits.
- Continue to operate process safety reviews on applicable sites.
- Investigations carried out to determine the root cause of incidents and accidents and the development of remediation plans.
- Reporting and management of environmental data.

Changes since 2019 annual report

The health and safety of our employees continues to be our absolute priority across the business. We have made progress in embedding our policies across the business and continue our execution of all EHS improvement plans in a controlled manner, with rigorous and regular tracking which has resulted in improved leading and lagging indicators across the group.

This risk has been updated to clearly articulate the way we are managing our health and safety exposure, and specifically to encompass all relevant areas such as our environmental impact.

COVID-19 has impacted the ways of working for many of our employees. We have deployed new EHS policies and guidelines to protect our employees and we have further developed our wellbeing support programme.

Strategic Report

Risks and uncertainties continued

Key

- | | |
|------------------------------------|--------------------------------|
| E Efficiency and excellence | I Innovation |
| S Sustainable business | V Values driven culture |

5 Supply failure

E S I V

Risks, opportunities and impact

The nature of JM's operations means there are limited suppliers from which to source certain strategic raw materials including precious metals. Any significant breakdown in the supply of these materials would lead to an inability to manufacture and satisfy customer demand. The impact of COVID-19 has reduced customer demand and increased its volatility while simultaneously impacting the entire supply chain. It has changed the nature of this risk as it requires JM to respond at pace to the changing external environment.

GMC sponsor: Jane Toogood (metal) and Anna Manz (other sourcing)

Key mitigations

- Supplier relationship management through formalisation of regular reviews to discuss their constraints and quality management processes.
- Where deemed appropriate, we carry strategic stocks of raw materials and monitor those levels regularly in the context of the external environment.
- Strategic materials and key suppliers potentially susceptible to COVID-19 related supply disruption in and across geographies identified and hyper care plans in place to ensure continuity and future strength of our supply chain.
- Groupwide co-ordination of sourcing and sharing of resources to ensure personal protective equipment (PPE) continuity of supply and operations to protect our people.
- Improving resilience on supply chain logistics, goods security in particular.
- Regular investigation of alternative materials as part of research and development.
- Prioritised ramp up plans in place to ensure agile response to resumption in demand.
- Continued investment in our pgm refining business to ensure access to recycled precious metals.
- Ongoing market research to understand and monitor the impact of short term events on longer term supply of metal.

Changes since 2019 annual report

We have made progress in the implementation of our procurement strategy and sharpened our understanding of supply chain across the sectors including our capital projects supply chain.

We have committed, through Q1 of 2020/21, to support suppliers, particularly our smaller suppliers who may suffer hardship as a result of COVID-19. We are also placing greater emphasis on the customer and consumer impact of our supply chain and potential supply failure (e.g. to a major OEM).

We have reduced the precious metal backlogs in our refineries, providing access to precious metal meaning that we are currently able to continue servicing critical customers.

6 People

E V

Risks, opportunities and impact

To successfully execute our strategy and deliver growth, we need to ensure that we have the breadth and depth of leadership and the appropriate skills and capabilities to drive a motivated, inclusive and engaged workforce.

GMC sponsor: Annette Kelleher

Key mitigations

- Values and behaviours embedded in all internal processes including hiring and performance reviews.
- Culture focused sessions arranged with leadership and development of culture statement roadmap.
- Ongoing leadership development and wellbeing programmes.
- Global employee engagement survey conducted every two years followed by development and delivery of targeted action plans.
- Pulse surveys carried out to test the progress being made in specific areas and course correct as necessary.

Changes since 2019 annual report

We are continuing to invest in our leadership by clarifying the capabilities and behaviours required through the development at all levels of the organisation.

We have undertaken a further employment engagement survey and are implementing action plans relevant to local sites, as well as global programmes focused on communication, development and ways of working.

We have in place several mitigating actions in response to COVID-19. These include prioritising our employees' safety and health, social distancing and enabling a significant number of colleagues to work from home as well as necessary crisis cover. In the short term, while our leaders navigate the COVID-19 situation, we have put our leadership development programmes on hold and increased our focus on their resilience and wellbeing.

We have a series of leadership engagement and employee communications planned on a regular basis to support colleagues in times of uncertainty and maintain motivation across the group.

7 Security of metal / highly regulated substances**E****Risks, opportunities and impact**

The group has significant quantities of high value precious metals or highly regulated substances on site and in transit. Loss or theft due to a failure of the security management systems associated with the protection of metal or highly regulated substances may result in financial loss and / or a failure to satisfy our customers which could reduce our customers' confidence in JM and potential legal action.

GMC sponsor: Jane Toogood

Key mitigations

- Continue execution of the security roadmap which sets out the three year plan to further strengthen the function.
- Implementation and application of the Group Security policies across all sites.
- Execution of security assessments and audits.
- Threat evaluation and horizon scanning regularly carried out.
- Insurance coverage in place.
- Ongoing security awareness campaigns and training including rigorous follow up of thefts and continuous learnings.

Changes since 2019 annual report

Our level of control will increase through the delivery of the security roadmap, which includes implementation of control measures across our critical sites.

In light of COVID-19, we have accelerated certain aspects of the security plan and are ensuring full and comprehensive security cover.

8 Intellectual property management**E S I****Risks, opportunities and impact**

Failure to adequately manage our own, and third party, intellectual property, knowledge and information could lead to a loss in business advantage, loss of freedom to operate and reputational damage associated with litigation.

GMC sponsor: Maurits van Tol

Key mitigations

- Portfolio management of intellectual property and technology enabled governance.
- Continued training and awareness of Information Classification Policy.
- Implementation of business intellectual property management strategies.
- Intellectual property lawyers used to provide specialist guidance including in the use of intellectual property as a business tool.

Changes since 2019 annual report

The intellectual property landscapes for the technologies in which JM operates remains inherently challenging as, for example, sustainable technology development is a very dynamic space.

We have made progress implementing mitigating actions, notably rolling out the information security policies including information classification, a robust stage gating process and in developing intellectual property strategies on a per sector / business basis as appropriate.

9 Failure of operations**E S****Risks, opportunities and impact**

We will experience interruptions which result in delays in the manufacturing and supply of our products. This may result in lost sales and / or profit affecting our financial performance and reputation.

GMC sponsor: Joan Braca

Key mitigations

- Continuous implementation of Group Business Continuity Policy and Manual, and manufacturing excellence programme across all sites.
- Regular maintenance of critical machinery and continued investment in infrastructure.
- Continue to develop comprehensive response plans with annual testing.

Changes since 2019 annual report

The Group Business Continuity Policy and Manual are embedded across all sites, personal process safety performance has been further enhanced.

In addition we have successfully implemented our Group Incident Management Team to manage our response to the current global pandemic and implemented a number of COVID-19 specific measures including a groupwide pandemic response plan, site operational procedures (focusing on social distancing measures), a groupwide alert level status matrix and a comprehensive site pandemic response measures playbook.

10 Ethics and compliance**S V****Risks, opportunities and impact**

Failure to comply with ethical and regulatory compliance standards leading to reputational damage, possible criminal / legal exposure for the company or for individuals.

GMC sponsor: Robert MacLeod

Key mitigations

- Implementation of a refreshed Code of Ethics supported by continued training and tone from the top, set by senior leadership.
- Assurance programme in place to monitor business unit and sector compliance with key controls.
- Ethics panel and 'speak up' facility available and any issues fully investigated, and any recommended actions implemented.
- Use of internal and external subject matter experts to identify risks, set standards and provide advice and training.
- Annual ethical working practice certification by all management with any issues raised investigated.

Changes since 2019 annual report

We have launched several refreshed key policies (Gifts, Hospitality and Charitable Donations, Anti-bribery and Corruption) with aligned training.

We have also developed a more detailed action plan to address all identified risks.

We have increased the level of awareness activities to ensure our employees are aware of the heightened risk due to the additional financial pressures that people and companies may be suffering due to the impact of COVID-19 pandemic.

Strategic Report

Risks and uncertainties continued

Key

E Efficiency and excellence

I Innovation

S Sustainable business

V Values driven culture

11 Business transition

E S I V

Risks, opportunities and impact

Failure to manage and deliver change in a controlled manner to achieve expected business benefits.

Key mitigations

- Strategic Transformation Office set up to ensure appropriate governance across key initiatives to coordinate and drive delivery of change in a controlled manner.
- Monitoring of JM wide risks and interdependencies of the change.
- Support from subject matter experts in the execution of business change.
- Independent assurance on key change programmes.
- Implementation of project management framework across all key initiatives.

Changes since 2019 annual report

We have implemented strategic oversight of the key change initiatives by the creation of a Chief Transformation Officer role. This role orchestrates cross group initiatives and supports leaders to drive forward the delivery of the expected benefits creating an agile and efficient business, providing flexibility to consistently deliver to our people, customers and stakeholders.

Key programme themes are manufacturing footprints and target operating model reviews, customer and growth, innovation, people and culture. There has been minimal direct impact on these programmes due to COVID-19 and there is opportunity to accelerate in some areas to drive efficiency going forward.

We have introduced and embedded change in managing strategic capital projects and our procurement excellence programme has become part of business as usual activities.

Although we have continued to implement our global ERP solution (Unify) with a number of sites going live during 2019 in the Clean Air Sector, we have paused deployment in the US to prioritise resource in light of COVID-19.

GMC sponsor: Robert MacLeod

12 Product quality

E S I V

Risks, opportunities and impact

Our products are used in a wide range of applications, processes and systems. The quality of these products is crucial to ensuring they function as intended and meet the established quality criteria. Should a product fail to perform as expected or have quality defects, we could cause harm to consumers or expose ourselves to liability claims. This could lead to loss of future business, reputational damage and loss of licence to operate.

Key mitigations

- Monitoring and reporting of quality performance, taking corrective action where required.
- Continue to develop robust manufacturing and preventative maintenance systems supported by standardised processes.
- Global quality management systems embedded and supported with training and regular communications.
- Embed quality-by-design into new product introduction and product change management processes.

Changes since 2019 annual report

The regulatory environment continues to tighten, and our customers are experiencing greater scrutiny and in-use testing.

We have progressed our thinking in understanding continuous improvement opportunities and how we apply inherently different quality management systems across our sectors.

In the context of post COVID-19 potential surges in demand, we have enhanced our planning to ensure product quality is maintained whilst we react and manage potential impacts to our supply base.

GMC Sponsor: Robert MacLeod

13 Applications, systems and cyber

S I V

Risks, opportunities and impact

Risks that our applications and systems security is inadequate or fails to adapt to changing business requirements and / or external threats. The impact of these may adversely affect our financial position and could harm our reputation.

JM's response to COVID-19 has increased employee remote working and presented new demands on applications, systems and cyber security. This has resulted in increased risks in the operational management of IT systems and cyber risks as malicious actors look to exploit the pandemic.

Key mitigations

- Key cyber security technologies have been deployed to increase our ability to predict, prevent, detect and respond to cyber threats. These have been tuned for the increased risk of attack associated with COVID-19.
- Continued delivery of our Cyber Security and Infrastructure Improvement Programme (CSIIP) to increase our organisational resilience and we have prioritised this investment in the context of COVID-19. Controls have been increased in areas where we perceive the risk to be heightened.
- Implementation of key policies and standards across JM.
- Continued support and assurance from third party specialists.

Changes since 2019 annual report

We have continued to invest heavily in our cyber security and IT general controls providing better visibility and governance to support a more efficient business.

CSIIP programme deliverables have been met in a controlled manner, meeting the milestones set. Risk mitigations have been adjusted in light of COVID-19.

We have increased the level of communication and awareness activities to ensure our employees are more alert to the increased external risk associated with the exploitation of the COVID-19 pandemic. We continue to track external threats working with governments, law enforcement and industry specialists as appropriate.

GMC sponsor: Anna Manz

Viability

In accordance with provision 31 of the UK Corporate Governance Code 2018, the directors have assessed the viability of the company over a longer period than the 15 months to June 2021 covered by the 'Going Concern' statement. In view of the highly uncertain times following the COVID-19 outbreak we have based our assessment on the severe but plausible deep recession scenario that is described in detail in the going concern review.

During the year the board has carried out a robust assessment of the principal and emerging risks affecting the company, particularly those which could threaten the business model. The risks and the actions taken to mitigate them are described in the previous section on 'Risks and Uncertainties'. To reach the viability statement conclusion we have undertaken the following process:

- The Audit Committee annually reviews the risk management process to ensure its continuing effectiveness;
- A rolling programme is in place of deep dives which allow the GMC and board to review the company's principal and emerging risks. In the case of board reviews, a presentation is made on the risk and the progress of mitigations, from the accountable GMC risk sponsor;
- In September and March, a presentation is made to the board from the Corporate Risk and Assurance Director, explaining the process followed by management to identify, assess and manage risks throughout the business. At this time, all our principal and emerging risks are considered along with the linkages between them; and
- Throughout the year, a risk-based internal audit plan is executed by the Corporate Assurance and Risk Team, the results of which were presented to and discussed by the Audit Committee. This includes assessment of root cause, controls effectiveness, and assurance.

The group's prospects are assessed through the annual strategic and business planning processes. This process includes a review of assumptions made and the ongoing assessment of annual and longer term plans, including appraisal of the group strategy and significant capital investment decisions. Reviews are led by the Group Chief Executive and CFO in conjunction with Sector Chief Executives.

In addition, the board reviews the Sector strategies throughout the year. During these reviews, the group's current position and its prospects over the forthcoming years is reviewed which allows reaffirmation of the group strategy.

The directors have determined that a three year period to 31st March 2023 is an appropriate period over which to assess the group's viability as it is in line with the group's annual detailed planning. In making the viability assessment, we have considered a number of stress scenarios linked to the group's principal and emerging risks.

As stated earlier the impact of COVID-19 is included in all scenarios with the assumption of a deep recession scenario. This models an extended shutdown followed by an extended recovery period as outlined in the going concern review. Over the longer period considered for viability analysis, our scenario assumes a recovery in the markets in which Clean Air operates in 2022/23 and 2023/24 following the steep decline assumed in 2020/21. Efficient Natural Resources serves a range of markets by sub-sector. The catalyst markets in which we operate are assumed to have a much slower recovery over 2022/23 and 2023/24. In PGM Services we maintain an assumption of low metal prices throughout the period. Health and New Markets are relatively unaffected over the period.

We have analysed the impact of the following three hypothetical stress scenarios as well as considered all of them occurring at the same time:

Scenario 1: Existing market outlook – this scenario considers the impact of changes in key business assumptions, either unplanned or unforeseen, where JM is not agile enough to respond. Under this scenario we evaluated the impact of a further downgrade in the global economic outlook beyond the deep recession scenario caused by COVID-19. This is the very deep recession scenario as described in our going concern analysis. This scenario also includes movements in commodity markets and the potential impact from a faster than expected uptake of electric vehicles.

Scenario 2: Future growth – this scenario models the failure to grow through new opportunities as a result of ineffective execution. This scenario assesses failing to deliver new growth in new markets and technologies.

Scenario 3: Competitive advantage – this scenario considers the failure to maintain competitive advantage in existing markets together with the impact of other risks identified in the group's principal risks, including intellectual property related risks, poor management of capital projects, significant production losses due to downtime at a major site, the inability to improve certain businesses or sites, and unmitigated Brexit risks. Due to the wide range of risks included we have applied an overall probability weighting to this set of risks to derive a potential financial impact.

Our evaluation took account of the group's current financing arrangements and assumes no refinancing of maturing debt although in practice we would fully expect to refinance these well ahead of maturity. Our stress testing showed that under each of the three scenarios the group had headroom under its committed facilities and financial covenants. Only in the most extreme case of all three scenarios occurring simultaneously would there be a potential breach of a key covenant. We consider this outcome to be extremely unlikely and are satisfied that there are mitigating actions that we can take and capacity for additional financing to allow JM to effectively respond to the negative impact from a combination of these stress scenarios.

We have also undertaken a reverse stress test in order to identify what additional or alternative scenarios and circumstances would threaten our current financing arrangements. This shows that the group has headroom against either a further decline in profitability beyond the very deep recession or a significant increase in borrowings.

Based on the results of our assessment, the directors have a reasonable expectation that the company will be able to continue in operation and meet its liabilities as they fall due over a period of at least three years.

The Strategic Report from page 2 to page 75 was approved by the board on 11th June 2020 and is signed on its behalf by:



Robert MacLeod
Chief Executive



Governance

The Governance section, introduced by our Chair, contains details about the activities of the board and its committees during the year.



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Governance

Board of Directors

An experienced team delivering our strategic vision



**Patrick Thomas –
Chair**

Appointed to the board:
June 2018

Experience and contribution

Between 2015 and May 2018 Patrick was Chief Executive Officer and Chairman of the board of Management of Covestro AG. Between 2007 and 2015 he was also Chief Executive Officer of its predecessor, Bayer MaterialScience, prior to the demerger from Bayer AG. He is a fellow of the Royal Academy of Engineering.

Patrick has deep experience of leading international specialty chemical businesses. He also brings a track record of driving growth through science and innovation across global markets.

Other current appointments

Non-Executive Director at Akzo Nobel N.V

International experience

Belgium, Germany, UK

Sector experience

Automotive, Chemicals, Manufacturing, Oil and Gas, Pharmaceuticals, Technology



**Robert MacLeod –
Chief Executive**

Appointed to the board:
June 2009

Experience and contribution

Robert was appointed as Chief Executive in June 2014. He joined Johnson Matthey as Group Finance Director in 2009. Previously he was Group Finance Director of WS Atkins plc and a Non-Executive Director at Aggreko plc. He is a Chartered Accountant with a degree in Chemical Engineering.

Having been with JM for 11 years and as Chief Executive for 6 years, Robert has a proven track record of delivering success and driving change for the organisation. He has strong experience across JM, its culture and its markets and as Chief Executive, has led our Health and New Markets teams.

Other current appointments

Non-Executive Director at RELX PLC

International experience

UK, US

Sector experience

Chemicals, Oil and Gas, Professional Services



**Anna Manz –
Chief Financial Officer**

Appointed to the board:
October 2016

Experience and contribution

Anna joined Johnson Matthey as Chief Financial Officer in October 2016. Previously she was Group Strategy Director and a member of the Executive Committee at Diageo plc. During 17 years at Diageo, Anna held a series of senior roles, including Finance Director Spirits North America, Group Treasurer and Finance Director Asia Pacific. Anna is a qualified management accountant with a degree in Chemistry.

Anna has strong credentials in financial leadership and brings international experience and deep commercial awareness to the board. She also leads the group's activities in respect of our risks and controls and has been at the centre of the work to drive efficiency and effectiveness across our business.

Other current appointments

Non-Executive Director at ITV plc

International experience

China, India, Ireland, Kenya, Korea, Nigeria, Singapore, UK, US

Sector experience

Chemicals, Consumer, Media



**Alan Ferguson –
Senior Independent Director**

Appointed to the board:
January 2011

Experience and contribution

Alan was appointed a Non-Executive Director in January 2011 and as Senior Independent Director in July 2014. Previously he was Chief Financial Officer and a Director of Lonmin Plc. Prior to this he was Group Finance Director of The BOC Group plc. Before joining BOC, he worked for Inchcape plc for 22 years and was Group Finance Director from 1999 until 2005. From 2011 to 2018 he was a Non-Executive Director and Chairman of the Audit Committee at The Weir Group PLC and from 2011 to 2020 he was Chair of the Audit Committee and Senior Independent Director (from 2017 to 2020) at Croda International Plc. He is a Chartered Accountant and sits on the Business Policy Panel of the Institute of Chartered Accountants of Scotland.

Alan brings recent and relevant financial experience to the board, making him ideally suited to chairing the Audit Committee and acting as its financial expert. He also brings experience of the precious metals and automotive sectors.

Other current appointments

Non-Executive Director of AngloGold Ashanti Limited. Senior Independent Director and Chairman of the Audit Committee at Marshall Motor Holdings plc

International experience

South Africa, UK

Sector experience

Automotive, Chemicals, Manufacturing, Metals and Mining



**Xiaozhi Liu – Independent
Non-Executive Director**

Appointed to the board:
April 2019

Experience and contribution

Xiaozhi is the founder and Chief Executive of ASL Automobile Science & Technology, a position she has held since 2009. She is also a Non-Executive Director of Autoliv Inc, an automotive safety supplier, and Non-Executive Director of InBev SA/NV.

Xiaozhi has deep knowledge and perspective on technology driven businesses in China and globally, and brings strong experience of the automotive sector, particularly in China, as well as in Europe and the US.

Other current appointments

Chief Executive of ASL Automobile Science & Technology, Non-Executive Director of Autoliv Inc and InBev SA/NV

International experience

China, Sweden, US

Sector experience

Automotive, Battery Technologies



**John O'Higgins – Independent
Non-Executive Director**

Appointed to the board:
November 2017

Experience and contribution

John was previously Chief Executive of Spectris plc, a position he held from January 2006 to September 2018. Prior to this he worked for Honeywell in a number of management roles, including as president of automation and control solutions, Asia Pacific. He began his career as a design engineer at Daimler-Benz in Stuttgart. Between 2010 and 2015, John was a Non-Executive Director of Exide Technologies Inc.

John brings extensive business and industrial experience to the board, including experience of battery technologies. He has a track record of portfolio analysis and realignment, driving growth both organically and through mergers and acquisitions, as well as improving operational efficiencies.

As announced on 28th May 2019, John will be appointed as the Senior Independent Director with effect from the close of the 2020 AGM.

Other current appointments

Senior Independent Director of Elementis plc, Non-Executive Director of Oxford Nanopore Technologies Ltd and Trustee of the Wincott Foundation

International experience

Belgium, China, Germany, UK, US

Sector experience

Automotive, Chemicals, Energy, Manufacturing, Oil and Gas, Technology





Chris Mottershead – Independent Non-Executive Director

Appointed to the board: January 2015

Experience and contribution

Chris is Senior Vice President of Quality, Strategy and Innovation at King's College London and Director of King's College London Business Limited. Prior to joining King's College in 2009, Chris had a 30 year career at BP, most recently as Global Advisor on Energy Security and Climate Change. Before this, he was Technology Vice President for BP's Global Gas, Power and Renewables businesses. He is a Chartered Engineer and Fellow of the Royal Society of Arts.

Chris brings a wealth of relevant industrial and academic knowledge to the board, as well as experience in energy technology and related global sustainability issues. As Chair of the Remuneration Committee, Chris is a sounding board for JM's Human Resources function.

Other current appointments

Non-Executive Director of TEDI London, Director of Kings College London Business Limited

International experience

UK, US

Sector experience

Energy, Oil and Gas, Technology



Linda Bruce-Watt – Company Secretary

Joined Johnson Matthey: March 2020

Experience

Appointed Company Secretary on 1st April 2020. She is a solicitor experienced in company law and corporate governance.



Jane Griffiths – Independent Non-Executive Director

Appointed to the board: January 2017

Experience and contribution

Jane previously held a number of roles at Johnson & Johnson (J&J) from 1982 until her retirement in 2019, including international and affiliate strategic marketing, sales management, product management, general management and clinical research. Most recently, she was the Global Head of Actelion, a Janssen pharmaceutical company of J&J.

Jane brings significant experience and understanding of the management of global strategy to the board, particularly across the pharmaceutical sector, together with a strong interest in diversity.

Other current appointments

Non-Executive Director of BAE Systems plc

International experience

Africa, Europe, Middle East, UK

Sector experience

Pharmaceuticals



Doug Webb – Independent Non-Executive Director

Appointed to the board: September 2019

Experience and contribution

Doug was most recently Chief Financial Officer at Meggitt plc between 2013 to 2018. Prior to this he held the position of Chief Financial Officer at London Stock Exchange Group plc from 2008 to 2012 and QinetiQ Group plc from 2005 to 2008. Before that he held senior finance roles at Logica plc. Doug began his career at Price Waterhouse within its audit and businesses advisory team. He is a Fellow of the Institute of Chartered Accountants in England and Wales.

Doug brings a strong background in corporate financial management and recent and relevant financial experience to the board, along with a deep understanding of technology and engineering sectors. He chaired the Audit Committee at SEGRO plc for nine years until April 2019.

As announced on 28th May 2019, Doug will become Chair of the Audit Committee following the conclusion of the 2020 AGM.

Other current appointments

Non-Executive Director and Audit Committee Chair of The Manufacturing Centre Ltd. Non-Executive Director, Senior Independent Director and Audit Committee Chair of BMT Group Ltd

International experience

UK, US, Sweden, Canada

Sector experience

Engineering, Technology, Aerospace and Defence, Real Estate



Key

Chairman of the Committee

Member of the Nomination Committee

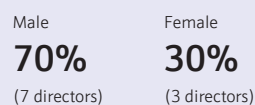
Member of the Audit Committee

Member of the Remuneration Committee

Governance

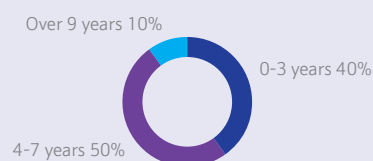
The board at a glance – as at 31st March 2020

Gender diversity*

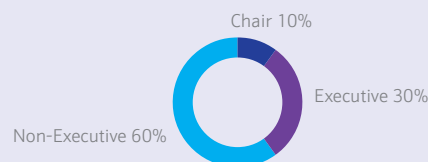


* As at the date of signing this report, 11th June 2020, the board comprised 7 male directors (70%) and 3 female directors (30%).

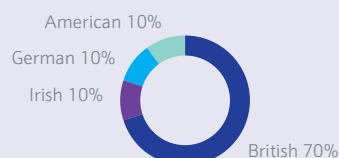
Tenure



Role



Nationality



Board skills

Leadership 7	Finance 4	Health and safety 3	People 2	International 7
Strategy 7	Risk 2	Commercial 2	Technology 2	Growth / transformation 3

The above table shows some of the skills held by our board members following a self-assessment, whereby each director was asked to identify their areas of strength, by indicating if they hold a high, medium or low level of expertise in that area. The numbers shown in the table above illustrate the skills in which our directors hold a high level of expertise.

+ Further information is set out in each director's biography on pages 78 to 79

+ You can read more about our board's skills matrix in the Nomination Committee report on page 94

Board attendance

	Role	Date of appointment to board	Number of meetings eligible to attend	Number of meetings attended	% attended
Patrick Thomas	Chair	1st June 2018	11	11	100
Robert MacLeod	Chief Executive	22nd June 2009	11	11	100
Odile Desforges ¹	Non-Executive Director	1st July 2013	4	4	100
Alan Ferguson	Non-Executive Director	13th January 2011	11	11	100
Jane Griffiths	Non-Executive Director	1st January 2017	11	11	100
Xiaozhi Liu	Non-Executive Director	1st April 2019	11	11	100
Anna Manz	Chief Financial Officer	17th October 2016	11	11	100
Chris Mottershead	Non-Executive Director	27th January 2015	11	11	100
John O'Higgins	Non-Executive Director	16th November 2017	11	11	100
John Walker ²	Executive Director	9th October 2013	11	11	100
Doug Webb	Non-Executive Director	2nd September 2019	7	7	100

¹ Odile Desforges stepped down from the board at the end of the Annual General Meeting on 17th July 2019.

² John Walker stepped down from the board on 31st March 2020.

Since the end of the year, the board has met three times and all board members attended.

Letter from the Chair

Patrick Thomas
Chair



Governance highlights

The board's focus areas this year have included:

- Continued focus on environment, health and safety (EHS).
- Culture.
- Execution of strategic priorities.
- Continued monitoring of financial performance.
- Reviews of principal risks.

The board's focus areas for 2020/21 include:

- Navigating COVID-19.
- Continued focus on EHS, particularly process safety improvement.
- Culture and the group operating model.
- Transformation.
- Senior leadership talent.
- New growth opportunities, including battery materials and hydrogen.

During the year under review, we welcomed the UK Corporate Governance Code 2018 (the code). The board recognises the increasing emphasis on corporate purpose, culture, risk, stakeholder relations and the evolving landscape of the audit profession. The code focuses on demonstrating how the governance of a company contributes to its long term sustainable success. We continue to develop our governance and strategy in ways that support our vision – a world that is cleaner and healthier; today and for future generations.

I have encouraged open and constructive debate at our meetings, to enable the board to develop JM's strategy and support its operations, customers and people. You can read more about our board's effectiveness on page 89.

The board and the nomination committee continue to dedicate considerable time to succession planning. This year, that involved a review of the board composition in light of John Walker's retirement as an Executive Director on 31st March 2020. As part of a structured and continuous process of board refreshment, we welcomed two new Non-Executive Directors to the board in 2019. Xiaozhi Liu and Doug Webb joined the board in April and September 2019 respectively. Alan Ferguson, our Senior Independent Director and Audit Committee Chair, will retire from the board following the 2020 Annual General Meeting. Alan will be succeeded by John O'Higgins as Senior Independent Director and by Doug Webb as Audit Committee Chair. I would like to thank Alan for his significant contribution to the board over the past nine years. In addition, Simon Farrant our General Counsel and Company Secretary retired after 26 years at JM on 31st March 2020 and the board welcomed Linda Bruce-Watt as interim Company Secretary.

The board has an important role in defining the culture of the group. Understanding the current culture provides a deeper insight into the organisation. I have found the culture at JM to be open, engaged and innovative. My board colleagues and I share a common purpose in leading by example and acting with integrity, in order to demonstrate the values and behaviours that make JM a company to be proud of. Throughout the year, the board agreed JM's culture ambition and continue to monitor progress against this. This has included how we look at talent and succession planning (page 94), diversity and inclusion (page 44) and workforce engagement (page 82).

I'm confident that our high standards of governance will support the business as we navigate through the unprecedented times, resulting from the COVID-19 pandemic.

Patrick Thomas
Chair

Governance

Corporate Governance Report

The UK Corporate Governance Code 2018

The code sets standards of good practice in relation to all areas of corporate governance. The code applied to Johnson Matthey from 1st April 2019. Prior to this, the board reviewed the code and welcomed the changes, including the emphasis on stakeholder relations, culture and diversity which the board considers to be key to the success of the company. In this annual report we report on how we have applied the main principles of the code and complied with its relevant provisions. Johnson Matthey has complied with all relevant provisions throughout the year ended 31st March 2020 and from that date up to the date of approval of this annual report. The code is publicly available at www.frc.org.uk.

Introduction

Our board is responsible to our shareholders for setting a strategy that delivers the company's purpose, underpinned by values and behaviours that shape the culture and the way JM conducts its business. An appropriate and well managed governance framework is integral to this. This Corporate Governance Report, together with the Nomination Committee Report, the Audit Committee Report and the Remuneration Report, describe how we have complied with the provisions of the code and applied its main principles during the year.

Board leadership and company purpose

Company purpose

Johnson Matthey's vision is for a world that is cleaner and healthier; today and for future generations. JM uses its position as a global leader in sustainable technologies to create solutions for our customers that make a real difference to the world around us. To deliver this, the board has set its strategy through four sectors which, enabled by our science, create long term value for our shareholders. This is underpinned by the values and behaviours that shape the culture and the way we conduct business.

Culture

Culture sets the tone and encourages the behaviours we look for in our people; it drives engagement and, as a result, leads to a motivated and productive workforce. The board believes that creating the right culture is key to achieving JM's vision and

that together, the directors have an important role of setting the tone from the top and leading by example. During the year, the board considered the current culture across the group and how this needs to evolve to deliver our strategy and purpose.

Our culture is an outcome of the way we work and the behaviours our people demonstrate. It is shaped through the decisions we take about our environment, the stories we tell and our leadership role modelling. With the right culture we can improve our employee engagement even further, address our enablement challenges and strengthen our ability to execute our strategy.

As part of the ongoing review of JM's culture in the context of the wider transformation, the board considered the current culture across the group through the mix of topics discussed by the board and the activities referred to on page 83, including visiting sites and meeting with employees. The board also received updates on the results of JM's 'pulse' global employee survey and feedback from key stakeholders.

Our culture ambition, described on page 41, builds on the things our customers and employees' value about our existing culture. By using the passion that exists around our unique purpose we will shape ways of working to drive even more value from our innovative science, be more courageous in the way we shape the market and bolder in the way we drive performance. We will do this by harnessing the deep sense of pride and care that we feel about what we do in JM.

There has been significant engagement at all levels of the organisation to create our culture ambition. Internal workshops were held to discuss our values to ensure that our culture ambition would resonate with people across different geographies, sectors, functions and job roles.

The board will continuously monitor culture through metrics such as JM's 'pulse' global employee survey, customer satisfaction, customer behaviour statistics, financial results and progress against our key transformation project milestones. Cultural change in a global, complex organisation like Johnson Matthey takes time and the board acknowledges the importance of leading by example, and applying our values to our decisions, behaviours and operations. Further details on how the board will enable this cultural change and invest in our workforce are set out on pages 41 to 42.

Workforce engagement

The board is committed to engaging with the workforce in order to understand the culture, issues and challenges across our businesses. Meeting with local management, both formally and informally, allows a deeper insight into views and provides opportunities to receive informal feedback. With a large, global, diverse workforce, the board has determined that engagement should be led by executive management with oversight from and linkage to the board. Country engagement focus groups have been set up in the UK, US, China and Germany, in order to engage in a two-way dialogue on key topics, gather insights on factors impacting the workforce at a local level and to obtain recommendations on ways in which engagement with the workforce can be further enhanced. These groups comprise a diverse group of people drawn from all sectors and functions, job type, age, tenure and gender and are sponsored by senior leaders. Initial meetings have been held in all countries and going forward, it is intended that each focus group meets twice a year. The board receives feedback from the focus groups via the Chief HR Officer. While acknowledging that this form of engagement is not one of the methods specified by the code, the board considers that it is more direct and effective in providing a range of views from our people all around the world.

The board holds two meetings a year at operational sites and as part of this, ensures there is the opportunity to meet with the workforce typically over lunch and dinner, providing an opportunity for open discussion.

Principal board activities

The board sets its annual agenda plan by reference to its strategy, ensuring there is sufficient time to discuss and develop strategic proposals and monitor performance. The table below highlights some of the areas of focus for the board during the year, the stakeholder groups central to those decisions and the associated principal risks. Further details on how the board considers stakeholders in its decision-making process are included in our Section 172(1) statement on pages 32 and 33.

+ Pages 67 to 75: Risks and uncertainties

+ Pages 28 to 33: Our stakeholders and Section 172(1) statement

Role of the board

To set the company's strategic aims.
To approve major capital projects.
To ensure the long term success of the company.

To ensure that the needs of our customers are integral to our strategy.
To ensure the long term success of the company.
To maintain oversight of the group's financial performance.
To establish transparent arrangements to apply to corporate reporting, risk management and internal controls.

To determine the nature and extent of the principal risks and the group's risk appetites.
To facilitate effective, entrepreneurial and prudent management of the business.

To establish the culture, values and ethics of the company.
To ensure the board is effective, with an appropriate balance of skills, experience and independence.
To undertake a rigorous annual performance evaluation.
To ensure remuneration promotes the long term success of the company.

Decision or outcome

- Reviewed the company's strategy and the timeline for key company decisions.
- Reviewed and approved each sectors' strategy, including capital investment projects that support the sectors' strategic aims.
- Assessed the group's portfolio of businesses against JM's strategic framework to ensure their strategic fit.

- Received regular updates from the Chief Executive and Chief Financial Officer.
- Reviewed arrangements and actions on the impact of Brexit for JM and the impact on our customers.
- Reviewed and approved the group budget and three year plan.
- Approved full year results, half year results and the annual report.
- Approved the going concern and viability statements.
- Approved the payment of an interim dividend and the recommendation of a final dividend.

- Reviewed the board's responsibilities in relation to assessing and monitoring risk management and internal control systems.
- Reviewed the cyber security risk and progress made in our IT systems and infrastructure through the implementation of a groupwide enterprise resource planning (ERP) system.
- Reviewed the principal risks and risk appetite.
- Reviewed and approved a revised group corporate governance framework and delegated authorities framework.

- Considered and approved JM's culture ambition and received regular updates on our people.
- Reviewed EHS performance at each meeting and considered significant incidents, including management responses and actions, and the outcome of safety audits.
- Considered board succession.
- Reviewed the key findings and actions following the board and committee effectiveness review for 2018/19 and undertook an internal review for 2019/20.

Stakeholders considered

- Customers and innovations partners
- Investors
- Governments and trade associations
- Suppliers
- Our people
- Communities

- Customers and innovations partners
- Investors
- Suppliers and other partners
- Our people

- Customers and innovations partners
- Investors
- Governments and trade associations
- Suppliers and other partners
- Our people
- Communities

- Investors
- Our people
- Customers and innovations partners

Principal risks

1	2	3
4	5	6
7	8	9
10	11	12
13		

1	2	3
4	5	6
7	8	9
10	11	12
13		

1	2	3
4	5	6
7	8	9
10	11	12
13		

1	2	3
4	5	6
7	8	9
10	11	12
13		

Governance

Corporate Governance Report continued

In addition, when receiving presentations on strategy, the board ensures that the Sector Chief Executive or key functional head, and where relevant, members of their teams, attend the board meeting so their views can be heard and considered.

During 2019, a 'pulse' employee engagement survey was carried out and we were pleased to see overall engagement levels continue to improve and significant upturns in company pride. Following the survey, smaller workshops were held to help provide valuable insight into how strategic and culture change is being embedded across different business sectors.

We have processes in place for the workforce to be able to raise concerns in a confidential manner. Further details on our speak up arrangements are set out on pages 45 and 101. The board receives regular reports on speak up matters, which are overseen by the Ethics Panel and provide further insight into the culture across the group.

Further information on our workforce engagement is detailed in our people on pages 41 and 42

Sustainability of business model

The board acknowledges that long term value creation is key to the sustainability of our business model (pages 22 to 23) and our strategy (pages 16 to 19).

Through considering the matters outlined in the principal board activities table on page 83 and closely monitoring performance, the board ensures that its actions promote the long term sustained success of the company and that the group's business model remains sound. The board also undertakes a detailed annual review of the sustainability and viability of the group's business model, further details on this can be found on page 75.

Teach-ins

Periodically, we hold business 'teach-ins' for our board. These are separate from board meetings and are attended by a range of managers from the relevant business. They are designed to give the board a more in depth insight into our businesses and their customers than is possible during board meetings. This deeper understanding enhances our Non-Executive Directors' ability to challenge, debate and contribute to strategy at board meetings.

During the year the board received a teach-in on use of data analytics and how this could further support the audit by developing capabilities with PwC and Internal Audit.

Site visits

In October 2019, the board toured the Fuel Cells site in Swindon, UK and received presentations on the strategy and business performance, including our Hydrogen strategy.

The board was due to visit the Royston site in April 2020. However due to COVID-19 the site visit was postponed and the board meeting was held online. During its meeting, the board received an update on IT developments planned for the wider group. In January and February 2020, Patrick Thomas, Jane Griffiths, Xiaozhi Liu, John O'Higgins and Doug Webb visited our sites in West Deptford, Devens and Devon in the US, where they met with local management and toured the Health, Clean Air and Efficient Natural Resources operations.

Board inductions

Each new director receives a tailored and comprehensive induction programme upon joining the board.

During the year, Xiaozhi Liu and Doug Webb received an induction pack which included a broad range of information including historical board and committee papers and minutes. Both Xiaozhi and Doug met with a number of senior managers from the group and visited some of our site operations. This provided both with an in-depth understanding of the operations of the business. In addition to the board site visit to Swindon mentioned earlier, details of some of the induction site visits and introduction meetings that took place during the year are included in the table below.

Induction business area / site visits	Topics covered
Governance overview	<ul style="list-style-type: none"> Relevant JM policies and processes. Governance framework. Historic board and committee papers and minutes. Overview of directors' duties and guidance.
Royston site visit	<ul style="list-style-type: none"> Clean Air overview and meeting with Sector Chief Executive. Efficient Natural Resources overview and meeting with Sector Chief Executive. Tour of the old and new refineries with Managing Director, Platinum Group Metal Services. Tour of the Clean Air Technology Centre with the Technology Director, Europe, Research and Development Management. Tour of the Clean Air plant with the Environment, Health and Safety Manager.
Sonning technology centre site visit	<ul style="list-style-type: none"> Recycling and separation technologies. Clean Air. New applications. Catalysts and materials. Electrochemistry materials group. Analytical. Technology forecasting and information.
Devens JM Health Sector site visit	<ul style="list-style-type: none"> Health Sector overview and meeting with the Sector Chief Executive. Innovator business overview and meeting with the Vice President, Innovator Products and Solutions. Site tour with the Vice President, Development Operations and Site Director.
West Deptford JM Health Sector site visit	<ul style="list-style-type: none"> Generics overview and meeting with Vice President, Generic Products and Solutions. Organisation effectiveness update with US Corporate HR Director. Site tour with Global Operations Director and Global Director Supply Chain.
Wayne corporate centre and Clean Air Sector site visit	<ul style="list-style-type: none"> Meetings with corporate teams. Tour of Clean Air site with President of Clean Air Americas.

Stakeholders

We believe that stakeholder engagement remains vital to building a sustainable business. The board recognises the need to foster business relationships with suppliers, customers and others. During the year, the board reviewed its key stakeholders and methods of engagement, to ensure they remain effective. The table below illustrates some of the engagement methods used by the board during the year.

+ Further information about how we engage with our stakeholders and how the board consider their interests in the context of principal decisions can be found on pages 28 to 33

Shareholders	<p>The board welcomes the opportunity to openly engage with shareholders and help them to understand our business. Patrick Thomas takes overall responsibility for ensuring that the views of our shareholders are communicated to the board and that our directors are made aware of major shareholders' issues and concerns, so these can be fully considered. Since his appointment, the Chair has met with institutional investors representing approximately 35% of JM's shareholder base, to discuss strategy, performance and governance. He is committed to engaging with our shareholders on a regular basis.</p> <p>Contact with major shareholders is principally maintained by the Chief Executive and the Chief Financial Officer, who have a regular dialogue with institutional shareholders on performance, plans and objectives through a programme of one to one and group meetings. Our Investor Relations team acts as a focal point for contact with investors throughout the year. During 2019/20, the Investor Relations team, together with members of the board and senior management, held over 250 meetings with institutions and potential investors. The Chair, Senior Independent Director and the other Non-Executive Directors are available to discuss matters if requested.</p> <p>During the year an informal lunch was held for investors with the Chair, Senior Independent Director, Audit and Remuneration Chairs and their successors. All attendees were available to answer questions independently on any topic. The event received positive shareholder feedback. In addition, we held our AGM and Capital Markets Day, which are detailed on page 126.</p>
Workforce	<p>The board has engaged with the workforce through several formal and informal channels. JM's people strategy continues to develop our cultural environment and future capabilities which are key in the successful delivery of our strategy. The board seeks to ensure that we maintain high standards of business conduct, supported by our values and our culture, our people are encouraged to act with integrity at all times. JM's policies and processes further support this and the board has delegated responsibility to the Remuneration Committee for ensuring that workforce policies and practices are consistent with the company's values and support JM's purpose and long term success.</p> <p>+ Further details on our workforce engagement can be found on page 82</p>
Customers	<p>Understanding customers' complex problems helps us research, develop and apply our science to give them the best solutions to their challenges. The board considers this as part of its review of strategy and capital investment proposals.</p> <p>In addition, JM tracks customer satisfaction as a measure of how we are maintaining our competitive advantage and to understand the health of our future business. Read more about our non-financial objectives on page 35.</p>
Suppliers	<p>Working well with our suppliers is essential to our business. It ensures a responsible approach to our supply chain and mitigates risks. During the year the board approved Johnson Matthey's Modern Slavery and Human Trafficking Statement which sets out the steps taken to prevent modern slavery in our business and supply chains.</p> <p>The Audit Committee reviews and challenges the payment practices, policies and performance of the company and certain UK subsidiaries.</p> <p>matthey.com/modern-slavery</p>
Communities	<p>Local communities and the environment are considered in reviewing capital investment proposals and other strategic decisions. JM's sustainability framework, on page 52, ensures that we deliver our strategy in a way that is best for our planet and those we share it with.</p> <p>In April 2020, as part of our response to the COVID-19 pandemic, JM announced the creation of a special fund to improve access to a quality science education. JM has committed £1 million to the fund which will be donated to local and regional programmes in the areas local to JM facilities. The directors have also donated 20% of their salaries and fees to the fund for at least the first quarter of 2020/21.</p>

Governance

Corporate Governance Report continued

Division of responsibilities

JM's corporate governance framework and processes ensure that the execution of strategy and key decisions receive appropriate challenge and review by providing a mechanism for decision-making ensuring that risk is appropriately managed and is supported by an internal control framework. It also clarifies the roles and responsibilities of key individuals and decision-making bodies.

Our corporate governance structure is summarised below. Full details of the roles of the board and its committees, as well as each committee's terms of reference and the statement of division of responsibilities between the Chair and Chief Executive are published on our website at matthey.com/corporate-governance.

Our governance framework

Board

Role

- Provides entrepreneurial leadership of the company and direction for management.
- Has collective responsibility and accountability to shareholders for the long term success of the group.
- Reviews the performance of management and the operating and financial performance of the group.
- Sets strategy.
- Determines risk appetite.
- Ensures that appropriate risk management and internal control systems are in place.
- Sets the company's culture, values and behaviours.
- Ensures good governance.

Chair

Patrick Thomas

Key responsibilities

- Leads the board.
- Ensures an effective board, including contribution and challenge from the directors.
- Ensures that JM maintains effective communications with its shareholders.

Senior Independent Director

Alan Ferguson

Key responsibilities

- Provides a sounding board for the Chair.
- Acts, if necessary, as a focal point and intermediary for the other directors.
- Ensures that any key issues not addressed by the Chair or the executive management are taken up.
- Is available to shareholders should they have concerns.
- Leads the annual appraisal of the Chair's performance.

Independent Non-Executive Directors

Alan Ferguson, Jane Griffiths, Xiaozhi Liu, Chris Mottershead, John O'Higgins, Doug Webb

Key responsibilities

- Constructively challenge the Executive Directors in all areas.
- Scrutinise management's performance.
- Help develop proposals on strategy.
- Satisfy themselves on the integrity of financial information and on the effectiveness of financial controls and risk management systems.
- Determine appropriate level of remuneration for Executive Directors.

Chief Executive

Robert MacLeod

Key responsibilities

- Has day to day responsibility for running the group's operations.
- Recommends to the board and implements group strategy.
- Applies group policies.
- Promotes the company's culture and standards.

Chief Financial Officer

Anna Manz

Key responsibilities

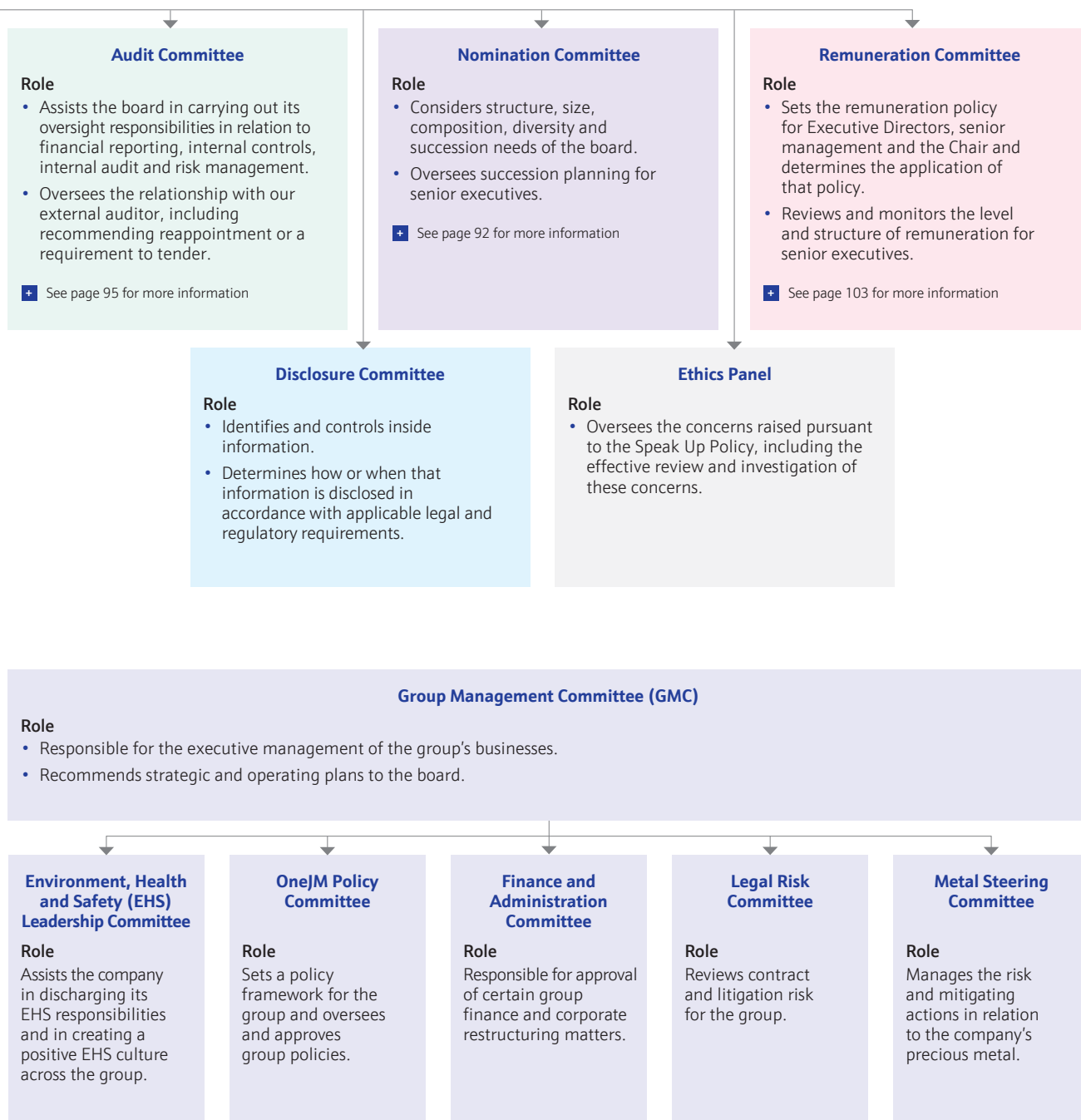
- Has day to day responsibility for the management of the finance function.
- Leads the group's finance activities, risks and controls.

Company Secretary

Linda Bruce-Watt

Key responsibilities

- Together with the Chair, keeps the effectiveness of the company's and the board's governance processes under review.
- Provides advice on corporate governance issues.



More detail on the role and responsibilities of our committees can be found on our website [matthey.com](https://www.matthey.com)

Governance

Corporate Governance Report continued

Independence

The board recognises the importance of maintaining independence of the board through the Chair and Non-Executive Directors, to challenge and scrutinise management's performance and ensure the integrity of financial information and controls for the benefit of our stakeholders.

Patrick Thomas was appointed as Chair of the board in July 2018 and the board took steps to ensure he was considered independent on appointment, in accordance with the requirements of the code. Details on the appointment process for Patrick are set out in the 2018/19 Annual Report and Accounts which is available on our website at matthey.com/ar19.

The board reviews Non-Executive Director independence annually. The board considers all relevant relationships and circumstances, including those defined in the code that could affect, or appear to affect, their independent judgement. Each of our Non-Executive Directors is determined by the board to be independent in character and judgement.

The Senior Independent Director, Alan Ferguson, will retire and be succeeded by John O'Higgins at the end of the AGM in July 2020. The Senior Independent Director is responsible for leading annual appraisal of the Chair's performance. This review was most recently carried out in April 2020 and included obtaining feedback from all board members. The Chair was considered to be effective in discharging his responsibilities.

Time commitment of directors

The board recognises that it is vital that all directors should be able to dedicate sufficient time to Johnson Matthey to effectively discharge their responsibilities. The time commitment required by Johnson Matthey is considered by the board and by individual directors on appointment. The letters of appointment of the Chair and of each Non-Executive Director set out the expected minimum time commitment for their roles. The minimum time commitment considered by the board to be necessary for a Non-Executive Director, who does not chair a committee, is two days per calendar month following induction.

The other significant commitments of the Chair and of each Non-Executive Director are disclosed to the board before appointment, with an indication of the time involved and are periodically reviewed. The board has put in place procedures to ensure that directors seek prior approval from the board before accepting any additional external appointment or significant commitment.

During the year, the board approved additional external appointments for Doug Webb, Jane Griffiths, Patrick Thomas and John O'Higgins. The board considered the expected time commitments of each external appointment while considering each director's current responsibilities. After review, the board was comfortable that the individuals would be able to dedicate sufficient time to JM and that their additional appointments would benefit the board by adding to its experience and expertise.

+ Details of the directors' other significant commitments can be found on pages 78 to 79

Directors' conflicts of interest

We have established procedures in accordance with our Articles of Association to ensure we comply with the directors' conflicts of interest duties under the Companies Act 2006 and for dealing with situations in which a director may have a direct or indirect interest that conflicts with, or may conflict with, the interests of the company.

In March 2020, the board undertook an annual review of potential conflict matters including in respect of directors' external appointments. In each case, the review was undertaken by directors who were independent of the matter. The board concluded that there were no new matters which constituted a conflict. All conflicts and potential conflicts will continue to be reviewed by the board on an annual basis.

The board confirms that JM complies with its procedures to authorise conflict situations and is satisfied that its powers to authorise conflict situations are being exercised properly and effectively, and in accordance with its Articles of Association.

Composition, succession and evaluation

Composition

The board continues to comprise a majority of independent Non-Executive Directors and believes that both it and its committees have the appropriate range and balance of skills, experience, knowledge and independence to enable them to carry out their duties and responsibilities effectively and create long term shareholder value. The size and composition of the board is regularly reviewed by the Nomination Committee.

The board, through the Nomination Committee, follows a formal, rigorous and transparent procedure to select and appoint new board directors. For further details on this, please refer to the Nomination Committee Report on page 92.

Annual re-election of Directors

In accordance with the code, all directors retire at each AGM and are proposed for election or re-election by shareholders.

Doug Webb joined the board as a Non-Executive Director on 2nd September 2019 and, as required by the Articles of Association, will retire at the 2020 AGM and be proposed for election. Alan Ferguson will step down from the board at the end of the 2020 AGM and therefore will not stand for re-election. All other directors will be proposed for re-election.

As at the date of approval of this annual report, our six Non-Executive Directors are each determined by the board to be independent directors in accordance with the criteria set out in the code. The board considers that their skills, experience, independence and knowledge of the company enable them to discharge their respective duties and responsibilities effectively. Biographies of each of the directors standing for election or re-election, including details of their contributions to the board, can be found on pages 78 to 79.

Evaluation

An evaluation of the board and its committees is carried out on an annual basis and externally facilitated every three years. The last external review led by independent consultants, Manchester Square Partners, was in 2017/18. This year, the Chair, supported by the Company Secretary, led an internal review in order to reflect on the effectiveness of the board, consider each director's own contribution and performance, and to identify areas for further improvement.

The review comprised a questionnaire compiled by Independent Audit, a specialist corporate governance consultancy, covering certain key topics including strategy, risk, board dynamics, culture and leadership. The Chair then held individual discussions with each member of the board regarding the board and its effectiveness. These conversations were open, honest and confidential. The Chair, with the support of the Company Secretary, compiled the results which were presented to the board for discussion, on an unattributed basis.

Overall, the board is considered to be effective, with strong engagement, a high degree of openness and trust, and the right balance between challenge and support. Board members consider that the board continues to make a difference and that there had been significant improvements in how the principal risks are reviewed, as well as progress on culture and discussions on strategic priorities.

Progress from the 2018/19 evaluation and insight into the 2019/20 evaluation is set out below.

	2018/19	2019/20
	Action	Insight and update
Strategy	Continue to review the board's agenda plan to ensure there is sufficient time to allow the board to debate different scenarios and assumptions to refine strategy.	The board discussed the benefits of sharing strategic plans and initial thoughts at an early stage, to gain input to decisions. In addition, the board felt that more time could be spent considering the external drivers.
Risk management	Further work was needed to embed risk management culture and ensure adequate time is allocated on the board's agenda to consider the 'what ifs' that could impact our business.	The board has reviewed and challenged each of its principal risks throughout the year and considered emerging risks. Risk management continues to develop across the group and the board recommended that stress testing in areas such as crisis management continue. In addition, JM's risk universe has been reviewed in light of COVID-19. + Read more about our principal risks on pages 70 to 74
Board composition	Continue to keep the balance of skills and diversity on the board and committees under review.	During the year, the board reviewed the board Diversity Policy and the board skills matrix. The 2019/20 evaluation highlighted the need to monitor succession plans at all levels of the company rather than just for senior management to identify talent and future leaders of the company. + Read more in the Nomination Committee Report on page 92
Board dynamics	Review the number of preparatory and teach-in sessions to further Non-Executive challenge, support and contribution.	The board attended a number of site visits and teach-in sessions during the year and feedback on these was positive. A number of suggestions were made for future teach-ins. Board papers would be improved by clearly highlighting key issues in a comprehensible and succinct manner. + Read more about the board site visits and teach-in sessions on page 84
People	Continue to keep company culture and employee engagement under review and assess the way the workforce is treated in line with our values.	A number of site visits took place during the year which allowed the Non-Executive Directors the opportunity to meet the wider workforce. In addition, the board reviewed the results of the employee engagement survey, speak up responses and agreed JM's culture ambition. + Read more about our people on page 41 and our workforce engagement on page 82

Following the board's discussion of the 2019/20 review, an action plan will be agreed. These actions are likely to be in the areas of:

- Strategy development in relation to the business portfolio in addition to business unit strategy.
- Supporting senior executives in prioritising effectively by agreeing group priorities in the context of significant change and a volatile environment.
- Regularly reviewing leadership, talent and succession planning, to ensure plan and strategy delivery.
- Continue to improve risk management and review.
- Develop more ways of monitoring culture globally across all activities.

We will report on the actions and progress made next year.

Governance

Corporate Governance Report continued

Review of the Chair's performance

The Non-Executive Directors recognise that the Chair's effectiveness is vital to that of the board. Led by Alan Ferguson, the Senior Independent Director, the Non-Executive Directors are responsible for performance evaluation of the Chair and for providing a fair and balanced assessment to shareholders.

In April 2020, the Non-Executive Directors, led by Alan Ferguson, met without Patrick Thomas being present to discuss his performance as Chair. Having considered his leadership of the board, including feedback from the Executive Directors, it was concluded that Patrick remained an effective Chair, with strong leadership and who facilitates open and constructive challenge.

Audit, risk and internal control

The Audit Committee

The board has established an Audit Committee of independent Non-Executive Directors. Details of its composition and work during the year are set out in the Audit Committee Report (pages 95 to 102).

The board is satisfied that as at the date of this report, two members of the Audit Committee, Alan Ferguson and Doug Webb, have recent and relevant financial experience including competence in accounting, and that the Audit Committee as a whole has competence relevant to the sectors in which the company operates.

Fair, balanced and understandable reporting

In its reporting to shareholders, the board recognises its responsibility to present a fair, balanced and understandable assessment of the group's position and prospects.

The process to determine whether the 2019/20 annual report is fair, balanced and understandable was reviewed by the Audit Committee and was considered to be effective. For further details on the process please refer to page 99.

The board considered the results of an assessment by management to ensure the annual report was critically reviewed and was satisfied that the narrative reporting presents the full story and is consistent with the financial reporting, statutory and adjusted measures are clearly explained, and that key messages and significant issues are highlighted and appropriately linked throughout the annual report.

The directors concluded that the 2019/20 annual report taken as a whole is fair, balanced and understandable, and provides the information necessary for shareholders to assess the group's position and performance, business model and strategy.

Risk management and internal control

The board acknowledges that it is accountable for determining the extent and nature of the risks it is prepared to take in order to achieve JM's strategic objectives.

The board has overall responsibility for JM's approach to risk management, determines the appetite for each risk and ensures appropriate mitigating actions are in place, in accordance with the Guidance on Risk Management, Internal Control and Related Financial and Business Reporting, issued by the Financial Reporting Council in September 2014 (FRC Guidance) and the requirements of the code.

The board has responsibility for JM's internal controls systems. These systems comprise policies, procedures and practices, including the appropriate authorisation and approval of transactions, the application of financial reporting standards and the review of financial performance and significant judgements. This process has been in place throughout the year and up to the date of the approval of this annual report.

The internal controls systems meet the group's needs to manage risks to which it is exposed, including failure to achieve business objectives and the risk of material misstatement or loss. Our systems can only provide reasonable, but not absolute, assurance. They can never completely protect against factors such as unforeseeable events, human fallibility or fraud.

Risk governance

The board

- Assesses principal risks and determines risk appetite.
- Responsible for the approach to risk management and internal controls.

Audit Committee

- Reviews the adequacy and effectiveness of internal control systems and risk framework.

Group Management Committee

- Champions risk management through sponsoring risk definitions, mitigation plans and monitors progress towards the appetite through our GMC risk sponsors.

Group Assurance function

- Provides independent advice and constructively challenges the range of risks identified and their materiality. Particular focus is provided to the progress of mitigating actions / projects in terms of their successful implementation and their likely effectiveness in reducing risk in line with our appetite.

Effectiveness of the group's risk management and internal control systems

The board delegates oversight of the adequacy and effectiveness of risk management and internal controls responsibility to the Audit Committee. Regular reviews are undertaken to ensure that JM is identifying, considering and mitigating risks appropriately.

The role and work of both the Audit Committee and the group's Assurance and Risk function are described in the Audit Committee Report on pages 100 and 101.

In line with the board's responsibilities to effectively manage risk, a robust assessment of JM's principal and emerging risks is carried out on a bi-annual basis to ensure goals and strategic objectives are aligned. The board periodically reviews selected principal risks in line with strategic deep dives performed by the GMC.

Progress is monitored to ensure appropriate controls are in place to reduce the risk in line with appetite. The Chair of the board, the Chief Executive and Company Secretary, ensure that all significant areas of risk, risk appetites and the related risk management and internal control systems are reviewed and considered during the course of the year.

The board of directors, through the Audit Committee, confirms that a robust assessment of JM's risk management and internal control systems has been carried out and no significant failings or weaknesses have been identified. This assessment covered all material controls, including financial, operational and compliance controls, and financial reporting processes, for the year. This review process accords with the FRC Guidance.

The COVID-19 pandemic has altered the external environment and has impacted the risks JM manages. These include supplier disruption, rise in mandatory / voluntary work from home and shifts in customers' behaviour. A dedicated Group Incident Management team was deployed in response to the pandemic to support a review of JM's risk universe and the impact of the pandemic has been detailed for each principal risk. The board's view of JM's key strategic and operating risks, and how the company seeks to manage those risks at board and management level with further details of the principal risks and the risk assessment process are set out on pages 67 to 74.

Going concern

The code requires the board to state whether it considers it appropriate to adopt the going concern basis of accounting in preparing the financial statements and identify any material uncertainties to the company's ability to continue to do so over a period of at least 12 months from the date of approval of the financial statements. COVID-19 has introduced unprecedented uncertainty to the market outlook and, in response to this, we have undertaken extensive reviews of our businesses and projections under a range of potential outcomes. The group has a robust funding position and has tested its performance under a deep recession scenario and stress tested with a more extreme very deep recession scenario. In both scenarios, we have sufficient headroom against committed facilities and key financial covenants in the going concern period (15 months following the balance sheet date). Based on the group's business activities, its cash flow forecasts and projections, the board confirms it has a reasonable expectation that the group has adequate resources to continue in operational existence for the period, and accordingly, has adopted the going concern basis in preparing the financial statements for the year ended 31st March 2020.

Further detail on the group's going concern statement and the audit committee's assessment of that statement can be found on pages 65 to 66 and 99.

Viability statement

The directors have assessed the prospects of the company over a three year period following a robust assessment of the principal and emerging risks affecting the company, the business model, forecasts and strategic plans. In making the viability assessment a number of severe but plausible stress scenarios were considered and details of this process are set out on page 75. The directors have a reasonable expectation that the company will be able to continue in operation and meet its liabilities as they fall due over the three year period under review.

Remuneration

The board has established a Remuneration Committee. The composition and role of the Remuneration Committee is set out in the Annual Report on Remuneration. The Remuneration Committee ensures that the Remuneration policies and practices are designed to support the company's strategy and promote long term sustainable success. The company will be putting a new Remuneration Policy to shareholders at the 2020 AGM, further details can be found on pages 103 to 122.

Governance

Nomination Committee Report



Chair of the Nomination Committee

Patrick Thomas

Members



Alan Ferguson



Jane Griffiths



Xiaozhi Liu¹



Chris Mottershead



John O'Higgins



Doug Webb²

Key objective:

To lead the process for board appointments and ensure the development of a diverse pipeline for succession.

Principal responsibilities:

- To review the structure, size and composition of the board.
- To ensure adequate succession planning for board and GMC members.

2020/21 priority:

- Ensuring the continued effectiveness of the board as a whole.

A board for success

Ensuring the balance of diversity of skills, experience and knowledge to deliver our strategy and support the long term success of the company.

This is my second report as Nomination Committee Chair and I'm pleased to report on the progress we've made in 2019/20. The committee continues to focus on succession planning to ensure the board and senior management have the right capabilities to develop and execute our strategy, and deliver the change required to sustain growth and create value.

We welcomed two new Non-Executive Directors to the board in 2019/20, Xiaozhi Liu and Doug Webb. Both bring a diverse range of skills and expertise to the board. Following Alan Ferguson's retirement at the end of our 2020 Annual General Meeting (AGM), Doug will take over Alan's responsibilities as Chair of the Audit Committee. In addition, John O'Higgins will succeed Alan as Senior Independent Director. The board would like to thank Alan for his significant and valued contribution over the past nine years.

During the year, we considered board succession and evaluated the directors' skills and expertise in order to identify the criteria for future appointments. We also reviewed succession, development and talent management for the Group Management Committee (GMC) and their direct reports, recognising the importance these roles play in delivering the group's strategy and embedding the desired culture across JM.

Role

The principal role of the committee is to keep under review the structure, size and composition of the board and to make appropriate recommendations to the board with respect to any necessary changes. This includes evaluating the balance of skills, knowledge, experience and diversity on the board and considering the effectiveness of the succession planning process for board members.

We also consider the effectiveness of senior management development and succession planning, including the processes for identifying and developing the future senior management pipeline.

Further details on our role and responsibilities can be found in our terms of reference which were reviewed in March 2020.

matthey.com/corporate-governance

Composition

As at the date of this annual report the committee has seven members; myself as Chair and all of the independent Non-Executive Directors. Only members of the committee have the right to attend meetings. The Chief Executive and the Chief HR Officer, as well as external advisers and others, attend for all or part of our meetings by invitation when appropriate. The Company Secretary acts as secretary to the committee.

¹ Appointed 2nd April 2019

² Appointed 2nd September 2019

Committee meetings during the year

Our committee typically meets immediately prior to or following board meetings and on other occasions as needed. We met five times during 2019/20. The attendance of members at meetings during the year is set out below.

	Date of appointment to committee	Number of meetings eligible to attend	Number of meetings attended	% attended
Patrick Thomas	1st June 2018	5	5	100%
Odile Desforges ¹	1st July 2013	2	2	100%
Alan Ferguson	13th January 2011	5	5	100%
Jane Griffiths	1st January 2017	5	4 ²	80%
Xiaozhi Liu	2nd April 2019	5	5	100%
Chris Mottershead	27th January 2015	5	5	100%
John O'Higgins	16th November 2017	5	5	100%
Doug Webb	2nd September 2019	2	2	100%

¹ Odile Desforges retired from the board and the committee on 17th July 2019.

² Jane Griffiths could not attend one Nomination Committee meeting due to an unavoidable diary clash.

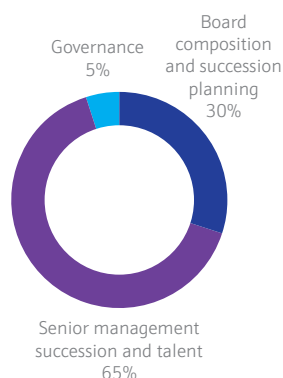
Since the end of 2019/20, the committee has met once and all members attended.

Committee activities

Our principal activities during 2019/20, and up to the date of approval of this annual report, were as follows:

Board composition	Discussed and recommended proposed changes to the board and its committees. This included reviewing the number of Executive Directors in light of John Walker's retirement on 31st March 2020.
Non-Executive Director succession	Recommended to the board that Alan Ferguson's term of appointment be extended from 14th January 2020 until the end of the company's AGM on 23rd July 2020, including the necessary determination of whether Alan remained independent.
Election and re-election of Directors	Recommended to the board that Doug Webb be proposed for election as a non-executive director and that all other current directors be re-elected at the 2020 AGM, excluding Alan Ferguson who would not be proposed for re-election.
Talent management framework	Reviewed and discussed the refreshed approach to talent review which has been rolled out across management, the areas of focus and the next steps for 2020 onwards.
Succession planning and senior management changes	Reviewed the 2020 succession and development plans in respect of the GMC including the Chief Executive and other senior executives in each sector and group function.
Review of performance and effectiveness during 2019/20	Undertook an internal review of the committee's performance and effectiveness.
Nomination Committee Report	Reviewed and approved the 2020 Nomination Committee Report.
Board skills matrix	Reviewed the directors' skills, experience and diversity by way of self-assessment to ensure that the board as a whole remains balanced and to identify any areas for development and support succession planning.
Terms of Reference	Recommended that the Nomination Committee terms of reference be approved by the board.

The graph below shows an estimate of how the committee has spent its time during the year.



Governance

Nomination Committee Report continued

Diversity

The benefits of diversity, in its broadest sense, are carefully considered when making any new board appointment. All appointments to the board are made on merit, against agreed objective selection criteria. We also consider board balance and composition, the required mix of skills, background and experience as well as the need to maintain board cohesiveness, diversity and a positive culture.

In adopting the Diversity Policy, the board has not set express gender or other related diversity quotas or measurable objectives. However, the board and the committee seek to encourage applications from a diverse range of candidates, subject to the selection criteria being met. The board's Diversity Policy is available on the company's website.

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Since the launch of the board Diversity Policy in 2013, the board has made progress in broadening the diversity of the board and senior management. The committee is pleased to report that as at the date of this report the board consists of 3 females (33%), and the GMC consists of 4 females (57%). During the year the board has continued to promote diversity at all levels of the organisation, including in the boardroom, to promote an inclusive culture across JM.

The gender balance of the board as at 31st March 2020 is shown on page 80 and of those in senior management positions and their direct reports, on page 43. For the purposes of the code, the direct reports of senior management, defined as the GMC and the Company Secretary, are stated in the senior managers disclosure on page 43. For further details on diversity and inclusion across JM, including our Equal Opportunities Policy, see page 44.

Board skills matrix

The committee reviewed the skills, diversity and capabilities of the current board members, as part of the board and committee appraisal process. This involved self-assessment by each director of the skills, areas of functional expertise and sectoral experience they have. The results were compiled by the Company Secretary and used to consider any gaps, areas for future development and skills needed in future appointments to the board, in order to support, challenge and develop the group's strategy. The skills held by our board are summarised on page 80.

Succession planning

Executive succession

One of the committee's key roles is to ensure that plans are in place for the orderly and progressive refreshing of the board and to identify and develop individuals with potential for board and GMC positions. During the year under review, the committee oversaw the search for a new executive to succeed John Walker. John retired from the company and stepped down from the board on 31st March 2020 after a 36-year career with Johnson Matthey. Following a competitive search process, Joan Braca was chosen as the new Sector Chief Executive, Clean Air. Joan joined from Tate & Lyle and has significant experience in running complex businesses, driving growth in emerging markets and delivering efficiencies in more mature markets. On a regular basis the committee reviews the performance and development plans of the GMC members as well as understanding the capabilities and potential of the reports to the GMC. In March 2020 the committee carried out a more thorough review of executive succession and put in place a series of actions to ensure succession is being appropriately planned. Also, a refreshed approach to our talent review has been rolled out across management and approximately 1,500 leaders / managers have been assessed using the new model. The resulting data has been used to review succession for leadership roles.

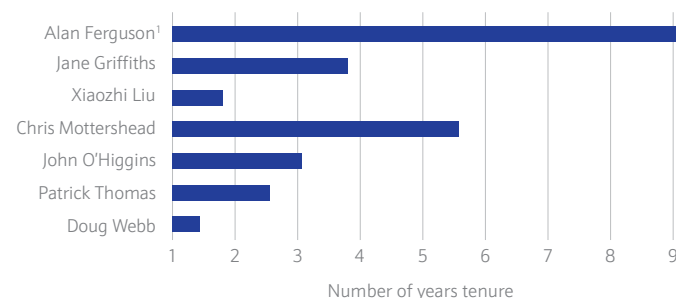
The committee will continue to monitor the cultural factors that impact talent strategies and influence a positive and productive culture, creating a career destination of choice for current and future talent.

[Read more about our values on page 41](#)

Non-Executive Director succession

In accordance with the code, the committee monitors the tenure of the Non-Executive Directors against the recommended nine-year term to ensure an orderly succession. This is illustrated in the table below.

Tenure of our Non-Executive Directors as at 31st March 2020



¹ Alan Ferguson's appointment was extended past the nine year term following an assessment of Alan's independence which is described in detail in the 2019 Annual Report.

In line with our succession planning, we made a number of changes to the board in 2019/20. Odile Desforges stepped down in July 2019 and Xiaozhi Liu and Doug Webb joined the board as Non-Executive Directors in April and September 2019, respectively.

In addition, the committee recommended to the board that Alan Ferguson's term of appointment be extended from 14th January 2020 until the end of the company's 2020 AGM when he would step down from the board and John O'Higgins would take over as Senior Independent Director. This followed the board's determination that Alan would still be considered independent as, notwithstanding his length of tenure, it was felt that he would continue to demonstrate challenge and probe management to ensure they are held accountable.

Committee effectiveness

In January 2020, I led an internal review of the effectiveness of our board and its committees. The review covered the committee's role, responsibilities and operations. The review showed that the committee continues to operate effectively, particularly in setting the tone and culture with management. The recent challenges in recruiting for certain executive roles was noted, reinforcing the importance of continuing to develop internal talent.

The 2020/21 review of the effectiveness of the board and its committees will be externally facilitated and the results and any recommendations will be presented to the board and respective committees.

The Nomination Committee Report was approved by the Board of Directors on 11th June 2020 and signed on its behalf by:

Patrick Thomas
Chair of the Nomination Committee

Audit Committee Report



Chair of the Audit Committee

Alan Ferguson

Members



Jane Griffiths



Xiaozhi Liu¹



Chris Mottershead



John O'Higgins



Doug Webb²

Key objective:

To provide oversight of financial reporting and internal controls.

Principal responsibilities:

- Monitor the integrity of the company's financial reporting.
- Review the effectiveness of internal controls.
- Oversee the relationship with the external auditor.
- Oversee the execution and effectiveness of the internal audit function.

2020/21 priorities:

- Monitor controls around new enterprise resource planning (ERP) system as more of these migrate to automated controls.
- Review systems and controls in a COVID-19 environment.
- Review revised processes on group metal requirements and associated key performance indicators.

Accounting in a challenging environment

This report shares some of the committee's discussions during the year and provides insight into its essential role in maintaining the integrity of financial reporting and reviewing the effectiveness of internal controls.

This is my final report to you as Chair of the Audit Committee. Having joined the board in January 2011 and been appointed as Chair of the committee in July 2011, I will retire at the end of the company's forthcoming Annual General Meeting. I will hand over to Doug Webb, who joined the board and the committee in September 2019.

During my tenure, I have seen the role of the committee evolve as stakeholders seek greater assurance over the robustness of controls and the integrity of financial reporting. This is reflected in the evolution of JM, as we have strengthened controls, commenced the implementation of a new enterprise resource planning (ERP) system and enhanced our risk management processes to adapt to a changing external environment. I would like to thank members of the committee, the executive management team, and the external and internal auditors for their efforts and support over the year, and indeed the last nine years, it has been a privilege to work with all of them. Of course, this year we cannot ignore the impact of COVID-19 on our business and this is dealt with elsewhere in this report. However, it is important to state upfront the committee's appreciation of both the finance community within JM, and our auditor PricewaterhouseCoopers LLP (PwC), for having the adaptability, confidence and resilience to deliver this set of accounts in a virtual world. It could only have been achieved by agile, yet detailed, planning, teamwork and sheer hard work and the committee is extremely grateful for their combined efforts.

During the year as part of our programme of deeper dives, we looked in more detail at the effectiveness of the control environment of the Health and Clean Air Sectors, together with key challenges and financial risks. We also spent time considering and challenging metal governance and controls, credit controls and credit risk, ERP key controls and the key control questionnaire results.

As Chair of the committee, I am pleased to say that the committee continues to operate well and remains informed of relevant changes and developments in the external audit market. Looking ahead to next year, the committee will continue to monitor controls around the new ERP system during the migration to greater automated controls. The committee will also review the systems and controls in a COVID-19 environment, as well as revised processes on group metal requirements and associated key performance indicators.

Role

Our principal role is to assist the board in carrying out its oversight responsibilities in relation to financial reporting, internal controls and risk management, internal audit and assurance, and in overseeing the relationship with the external auditor. More details on our role and responsibilities can be found in our terms of reference which were reviewed in April 2020 and are available on our website.

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¹ Appointed 2nd April 2019

² Appointed 2nd September 2019

Governance

Audit Committee Report continued

Composition

Our committee currently comprises six members; myself as Chair and all of the independent Non-Executive Directors. Odile Desforges resigned from the board and the committee in July 2019, and I thank her for her contribution. We welcomed Xiaozhi Liu to the committee in April 2019 and Doug Webb in September 2019, who, as mentioned previously, will succeed me as committee Chair. Both Doug and I have

significant financial expertise and are experienced Chartered Accountants. Doug has a background in corporate financial management and has served as Chief Financial Officer of three listed companies. Doug is currently a Non-Executive Director and Chairman of the Audit Committee of The Manufacturing Centre and BMT Group Limited.

As a committee, we have a broad range of knowledge, skills and experience gained

from a variety of backgrounds, as detailed on pages 78 to 80. This diversity is essential to the effective discharge of our duties.

The board has agreed that the committee has experience relevant to the sectors in which we operate and that both Doug and I have recent and relevant financial experience, including competence in accounting, as required by the provisions of the code.

The Company Secretary acts as secretary to the committee.

Committee meetings during the year

The committee met five times during the 2019/20 financial year. Attendance at these meetings was as follows:

	Date of appointment to committee	Number of meetings eligible to attend	Number of meetings attended	% attended
Alan Ferguson	13th January 2011 ¹	5	5	100%
Odile Desforges ²	1st July 2013	2	2 ³	100%
Jane Griffiths	1st January 2017	5	5 ³	100%
Xiaozhi Liu	2nd April 2019	5	5	100%
Chris Mottershead	27th January 2015	5	5	100%
John O'Higgins	16th November 2017	5	5	100%
Doug Webb	2nd September 2019	2	2	100%

¹ Alan Ferguson was appointed Chair of the committee on 19th July 2011.

² Odile Desforges retired from the board and the committee on 17th July 2019.

³ Odile Desforges and Jane Griffiths could not attend part of one committee meeting due to an unavoidable diary clash.

Since the end of the 2019/20 financial year, the committee has met three times and all members attended. The committee's meetings coincide with key events in the company's financial calendar. Following each meeting, I report on the main discussion points and findings to the board.

The Chief Executive, the Chief Financial Officer and the Group Assurance and Risk Director attend all of our meetings and other senior managers attend to support the committee's activities and provide technical or business information as necessary. It is critical that we have the opportunity to openly discuss with management any matter which falls within our remit, and probe and

challenge where necessary in order to ensure that the interests of shareholders are properly protected in relation to financial reporting and internal control.

Our meetings are also attended by the lead audit partner, and other representatives from the external auditor, PwC. Their attendance is essential as it gives us the opportunity to seek their independent and objective views on matters which they encounter during their audit.

At least once a year, the committee meets separately with the lead audit partner and with the Group Assurance and Risk Director, who manages the internal audit function, to discuss matters without executive management being present.

On a more frequent basis, I meet separately with the Chief Financial Officer, the Group Assurance and Risk Director and with the auditors. In addition, I hold meetings with the Chief Financial Officer, the Group Financial Controller and the auditors prior to the full and half year committee meetings as this means any issues or concerns can be raised at an early stage, which enables me to ensure that sufficient time is devoted to them at the subsequent committee meeting.

Communication between the committee, management and the internal and external auditors is open and constructive, with an appropriate degree of challenge.

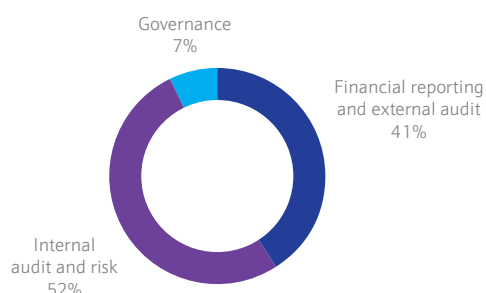
Committee activities

In order to discharge our responsibilities, our principal activities during the year, and up to the date of approval of this annual report, were as follows:

Responsibility	Activity
Published financial information	
To monitor the integrity of the reported financial information and to review significant financial issues and judgements	<ul style="list-style-type: none"> Reviewed the group's full year results and half-yearly results and considered the significant accounting policies, principal estimates and accounting judgements used in their preparation. Reviewed the matters, assumptions and sensitivities in support of preparing the accounts on a going concern basis and assessed the long term viability of the group. Reviewed the financial reporting framework of the parent company financial statements. Considered a paper which detailed how we plan to respond to the points raised in the annual letter from the Financial Reporting Council to Audit Committee Chairs and Chief Financial Officer's on key matters that are relevant to this year's reporting season.

Responsibility	Activity
(continued)	<ul style="list-style-type: none"> Assessed the process which management put in place to support the board when giving its assurance that the 2020 Annual Report and Accounts, taken as a whole, is fair, balanced and understandable. Reviewed reports from the General Counsel on group litigation and disputes. Reviewed reports on credit controls and credit risks. Approved the 2020 Audit Committee Report. Reviewed and recommended the approval of elements of the 2020 Annual Report and Accounts to the board. Reviewed and challenged the payment practices, policies and performance of the company and certain UK subsidiaries.
Risk management and internal control	
To review the group's internal financial controls and its risk management systems, and to monitor the effectiveness of the group's internal audit function	<ul style="list-style-type: none"> Received reports from the group Assurance and Risk Director on the group assurance, risk reviews and risk management processes. Monitored progress against the 2019/20 group assurance and risk plan and agreed the 2020/21 plan. Reviewed and approved the three year strategy for the group Assurance and Risk function. Reviewed the assurance framework to determine whether risk management and internal controls effectively meet the group's needs and manage risk exposure. Reviewed an assessment of the control environment based on the results of the key control questionnaire and management's plans to address areas requiring further improvement. Determined that the system of internal controls could be relied upon. Monitored the effectiveness of the group Assurance and Risk function, including the results of a self-assessment against the Institute of Internal Auditors' standards. Reviewed precious metal governance and controls. Received presentations from the Health and Clean Air Finance Directors. Received reports on the ERP system control environment following implementation at a number of sites. Met with the group Assurance and Risk Director without management present.
External auditor	
To oversee the relationship with the external auditor, to monitor its independence and objectivity to approve its fees, recommend its reappointment or not and to ensure it delivers, based on a sound plan, a high quality effective audit	<ul style="list-style-type: none"> Approved, after due challenge and discussion, PwC's audit plan and fees for 2019/20. Discussed and agreed to an extension to the year end reporting timetable to allow for the inefficiencies arising from having to undertake a virtual audit. Considered reports from the auditors, including their views on our accounting judgements and control observations. Approved the provision of permissible non-audit services from PwC in respect of immigration services until 1st January 2020 and implemented a new and much more restrictive policy for non-audit services. Further information on this can be found on page 102. Received updates on external audit market reviews, including the Brydon review, the Competition and Markets Authority's market structure study, the Kingman review and the BEIS Select Committee report on 'The Future of Audit'. Met with the external auditor without management present. Considered and reviewed indicators of audit quality and recommended the reappointment of PwC as auditor.

The graph below shows an estimate of how the committee has spent its time during the year until 31st March 2020.



Governance

Audit Committee Report continued

Published financial information

Significant issues considered by the Committee in relation to the group's and company's accounts

Acting independently from management to ensure that the interests of shareholders are properly protected in relation to financial reporting is fundamental to our role. In preparing the accounts, there are a number of areas which require management to exercise a particular judgement or a high degree of estimation. The Committee assesses whether the judgements and estimates made by management are reasonable and appropriate.

Significant current year issues in relation to the accounts	Work undertaken	Outcome
COVID-19 pandemic		
<p>The COVID-19 pandemic has impacted many countries in which the group operates, with measures taken by governments to contain the spread of the virus, including travel bans, quarantines, social distancing and closures of non-essential services, significantly disrupting business activity and resulting in a severe economic slowdown.</p> <p>The Clean Air Sector, in particular, has been impacted by the pandemic, temporarily closing most of its manufacturing plants outside China from March to June in response to the temporary closures of the manufacturing facilities of its global automotive customers.</p>	<p>We received a report from management which explains the accounting and disclosure implications of the pandemic. The report was reviewed and discussed with management and PwC to ensure that the committee was satisfied with its conclusions.</p>	<p>The group has updated its budgets and plans to reflect the impact of the economic slowdown and these have been used in its viability and going concern assessment and annual goodwill impairment testing, and to identify other asset impairments. No goodwill or other asset impairments have been identified as a direct result of COVID-19, although headroom has reduced (see below), and the group continues to prepare its accounts on a going concern basis.</p> <p>Notwithstanding a track record of insignificant bad debts, the group has recognised increased provisions for expected credit losses on trade and contract receivables reflecting the risk that it will incur bad debt losses in the future.</p> <p>Whilst stock market values have reduced, the group has not experienced a reduction in the value of its pension assets as a result of its strategic asset allocation and hedging arrangements.</p> <p>The Annual Report includes additional disclosures, in particular, in respect of viability and going concern, goodwill impairment testing, idle assets, pension assets and expected credit losses.</p> <p>We concluded that the financial impact of the COVID-19 pandemic has been appropriately accounted for and disclosed in the group's accounts.</p>
Significant recurring issues in relation to the accounts		
Impairment of goodwill, other intangibles and other assets		
<p>Key judgements are made in determining the appropriate level of cash generating unit (CGU) for the group's impairment analysis. Key estimates are made in relation to the assumptions used in calculating discounted cash flow projections to value the CGUs containing goodwill, to value other intangible assets not yet being amortised and to value other assets when there are indications that they may be impaired. The key assumptions are management's estimates of budgets and plans for how the relevant businesses will develop or how the relevant assets will be used in the future, as well as discount rates and long term average growth rates for each CGU.</p>	<p>We received a report from management which explains the methodology used, assumptions made and significant changes from those used in prior years, including the impact of the COVID-19 pandemic on the group's budgets and plans. The key assumptions and sensitivities were discussed with management and assessed for their reasonableness.</p> <p>The impairment reviews were an area of focus for PwC who reported their findings to us.</p>	<p>Management identified impairments in respect of:</p> <ul style="list-style-type: none"> the planned restructuring of three manufacturing plants in Clean Air (£61 million); the refocusing of our Battery Materials Lithium Iron Phosphate (LFP) CGU in New Markets (£57 million) as LFP commodities; and the termination of the development of 21 molecules following a fundamental review of the new product pipeline in Health (£20 million). <p>Whilst the other annual impairment tests did not result in impairments, the headroom over the carrying value of the net assets of the material CGUs has been reduced, in particular for the impact of COVID-19 on the group's budgets and plans.</p> <p>We concluded that management's key assumptions and disclosures are reasonable and appropriate.</p>

Significant recurring issues in relation to the accounts	Work undertaken	Outcome
Refining process and stock takes		
When agreeing commercial terms with customers and establishing process loss provisions, key estimates are made of the amount of precious metal that may be lost during the refining and fabrication processes. Refining stock takes involve key estimates regarding the volumes of precious metal-bearing material in the refining system and the subsequent sampling and assaying to assess the precious metal content.	<p>We received a report from management which summarises the results of the refinery stock takes in the US and India. The report was reviewed to ensure that the results were in line with expectations and historic trends and, where this was not the case, explanations were provided by management.</p> <p>As a result of the continued focus on backlog reduction, as planned, there was no refinery stock take in the UK during the year and, therefore, we reviewed the additional controls and procedures performed by both management and PwC. The results of the refinery stock take performed at the recently constructed plant in China in January 2020 will be reported to the Committee in November 2020.</p> <p>The refining process and stock takes were an area of focus for PwC who reported their findings to us.</p>	We concluded that management's accounting for refining stock take gains and losses was in accordance with the agreed methodology and that the additional controls and procedures performed in the absence of a UK refinery stock take were appropriate.
Post-employment benefits		
Key estimates are made in relation to the assumptions used to value post-employment benefit obligations, including the discount rate and inflation.	We received a report from management which summarises the key assumptions used to value the liabilities of the main post-employment benefit plans. The assumptions were compared with those made by other companies and PwC's assessment of the reasonableness of the assumptions was considered.	<p>Past service credits totaling £20 million were recognised in underlying operating profit as a result of changes to two of the group's post-employment benefit plans during the year.</p> <p>We concluded that the assumptions used, and accounting treatment, are appropriate for the group's post-employment benefit plans.</p>
Tax provisions		
Key estimates are made in determining the tax charge in the accounts where the precise impact of tax laws and regulations is unclear.	<p>We received a report from management which explains the issues in dispute, or at risk of this, with tax authorities across the business, the calculation of tax provisions and relevant disclosures. The calculations were discussed and challenged.</p> <p>Tax provisioning was an area of focus for PwC who reported their findings to us.</p>	<p>IFRIC 23 uncertainty over income tax treatments was adopted with the cumulative effect of adoption, a £5 million decrease in tax provisions (including interest) recognised in the groups reserves on 1 April 2019.</p> <p>Tax provisions increased as a result of a £12 million provision recognised during the year following developments in respect of an open matter with the tax authorities, partly offset by a £6 million provision released on settlement of a long standing matter with the tax authorities. We concluded that management's estimates and disclosures are reasonable and appropriate.</p>
Provisions and contingent liabilities		
Key estimates are made in determining provisions in the accounts for disputes and claims which arise from time to time in the ordinary course of business. Key judgements are made in determining appropriate disclosures in respect of contingent liabilities.	<p>We received a report from management which provides information in respect of disputes and claims, and identifies the accounting and disclosure implications which were discussed and challenged.</p> <p>Provisioning for, and disclosure of, disputes and claims was an area of focus for PwC who reported their findings to us.</p>	We concurred with management's conclusions regarding provisioning and contingent liability disclosures.

Fair, balanced and understandable

We reviewed and assessed the process which management has put in place to support the board when giving its assurance that the 2020 Annual Report and Accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the company's position and performance, business model and strategy.

This process included detailed reviews by senior managers with responsibility for key sections and a separate independent review by the Group Assurance and Risk Director. Group Accounts completed validation and tick back of all numbers and key sections are also reviewed by our external advisers. Following our review, we confirmed to the board that the process put in place by management was effective.

The board's assessment on whether the 2020 Annual Report and Accounts is fair, balanced and understandable is set out on page 90.

Going concern and viability statement

In order to appropriately assess going concern and viability during the COVID-19 pandemic this process was started earlier than usual as early engagement with the auditors, and indeed with the committee, on the scenarios being modelled was critical.

Governance

Audit Committee Report continued

We reviewed the matters, assumptions and sensitivities in support of assessing both the going concern basis and the long term viability of the group. This included assessing the risks which would threaten our business model, the current funding position and different stress scenarios and mitigating actions. As part of this, we also considered the risks associated with the UK's exit from the European Union (Brexit) which were well known to the board as they had received regular updates during the year from the company's Brexit working group. Further details on our going concern and viability, and the scenarios considered, are set out on pages 65-66 and 75.

Following review, we concluded that the group would be able to continue in operation and meet its liabilities as they fall due over a period of at least three years. The committee therefore recommended to the board that the accounts be prepared on a going concern basis and that the viability statement be approved.

Risk management and internal control

The committee assists the board in its overall responsibility for the group's internal controls by reviewing the adequacy and effectiveness of controls and risk management systems. The Group Assurance and Risk Director, who has a direct reporting line to me, is responsible for providing independent assurance that our risk management and internal control processes are operating effectively. She provides regular oversight of risk matters that affect our business, makes recommendations to address key issues and ensures that any mitigation actions are properly tracked, challenged and reported on.

Key control questionnaire

The company's key control questionnaire is an annual, bottom up process that requires management of our material businesses to certify the existence and effectiveness of key controls, which are set out in our policies. The questionnaire continues to be a critical component of our governance and assurance framework, describing the minimum set of controls our businesses need to keep our people safe, ensure compliance with the standards and regulations expected of us and protect our assets (physical and intellectual).

Key control questionnaire process



The businesses assess themselves against the questions and the results are then reviewed at sector, function and group levels as detailed in the diagram below. The committee assessed the effectiveness of the process and considered the nature and quality of responses, the level of challenge to the responses, significant findings, areas for improvement and how management intended to address findings.

Sector and functional control reviews

The committee receives updates from individuals responsible for maintaining controls over financial risk areas across the group so that we can gain confidence that these are managed effectively. During the year, we received an update from the new Health Sector Finance Director who updated the committee on plans to enhance the control environment. The committee reviewed the key challenges and financial risks facing that sector, including inventory management. In addition, the committee received an update on the implementation of our ERP system in the Clean Air Sector and reviewed the plans to enhance the sector's control capabilities and ERP effectiveness. The committee also spent time reviewing the precious metal governance framework and controls associated with the balances of precious metal held in the businesses, including strategic metal holdings, policies, leases and the levels of working capital across the group.

Sector and functional reviews allow us to meet with, challenge and probe senior management. This provides the committee with both a better understanding of the control framework in these areas, but also provides exposure to levels of management below the group team. This is important in assessing the depth and quality of management within the organisation.

Group assurance and risk

The Group Assurance and Risk Director, who is new to JM, has brought a fresh perspective. She is present at every Audit Committee meeting and we have the opportunity to ask detailed questions and challenge her. She provides regular reports on internal audit reviews undertaken during the period, including the key findings, the actions to address the findings and progress made by management in implementing them.

We pay particular attention to the level of engagement of all our managers, whether at local, sector or executive level, in implementing corrective actions and in strengthening the control framework across our sites, irrespective of site location, size and activity.

The Group Risk and Assurance Director presented her three year strategy for the function which built on the strong foundations already established. The purpose of the function was defined as to "assure, protect, advise and anticipate" with the focus areas being to improve efficiency and flexibility through the broader use of technology and to introduce a subject matter experts model to focus on key areas of risk like IT, metal and transformation.

Group assurance and risk annual plan

We spend a significant amount of time reviewing the group assurance and risk annual plan to ensure it is comprehensive, reflects the challenges and changes to our business, and provides the appropriate level of assurance. In reviewing the 2020/21 plan, we considered the group's risk profile, the maturity of existing internal controls, including where these had been enhanced and standardised across the group, and the work planned by sector management or the group functions to review the controls in place, as required by policies. As part of the detailed planning process, information from a variety of sources was analysed to assess levels of risk. This included output from the key control questionnaire process, speak up concerns, previous internal audit findings, including environment, health and safety and security audits, as well as input from JM's leadership, strategy and investor relations teams.

The plan was mapped against the principal risks and root causes, which allowed us to see how much coverage there would be on each risk. This year, the majority of our plan covers operational (including IT), legal, regulatory, commercial and business transformation risk areas. The committee believes the 2020/21 plan addresses JM's key risks, where additional assurance is needed and that its coverage is appropriate for the size and nature of the group. On the basis of our review, we approved the plan.

The plan was prepared on a business as usual basis but recognising the uncertainties from COVID-19 it will be flexed to reflect conditions as the impact of the pandemic unfolds in our key markets.

Group assurance and risk effectiveness

The committee reviews the effectiveness of the Group Assurance and Risk team throughout the year using a variety of inputs including audit reports, interaction with committee members and management, and monitoring progress of the internal audit plan. We pay attention to whether the function has adequate standing across the group, is free from management influence or other restrictions and is sufficiently resourced. We discuss the calibre, knowledge and experience of individual auditors with particular focus on the leader of the function. The performance of the function is reviewed annually. As noted above, the committee appointed a new Director of Group Assurance and Risk during the year and as part of her onboarding, she has undertaken an internal review of the function, considered the results of a self-assessment against the Institute of Internal Auditor's standards of integrity, objectivity, confidentiality and competence performed in the previous year and proposed a revised strategy for the function. The strategy has been reviewed and approved by the committee and we will be monitoring its execution accordingly. A formal review of the function, in line with the requirements of the Institute of Internal Auditors will be considered in the next year or so.

Risk management

Working with the board, the risk assurance processes (including the assurance framework and key control questionnaire) were reviewed and refined. We concentrate primarily on reviewing the mitigating controls and the levels of assurance over these, whereas the board is directly responsible for managing risks and establishing levels of risk appetite for the group's principal risks. The board may ask for additional assurance to be provided and this can be carried out by the Group Assurance and Risk function which reports back on this to the committee.

Speak up issues

The committee receives an update on the speak up (whistleblowing) process, where we review the procedures to ensure they are proportionate and independent. The committee reports the findings of this review to the board as appropriate.

External auditor

Tenure

PwC was appointed as the group's external auditor by shareholders in July 2018 following a formal tender process. This is the second year the group has been audited by PwC, Mark Gill continues to be the lead audit partner.

External audit plan

In developing the external audit plan for 2019/20, PwC performed a risk assessment to identify the potential risks of material misstatement to the financial statements. This considered the nature, magnitude and likelihood of each risk identified and the relevant controls in place, in order to identify the audit risks. The key audit matters are referred to in the independent auditor's report on pages 205 to 209 and formed the basis of the plan.

In determining the scope of coverage, consideration was given to management reporting, the group's legal entity structure, the financial results as at 31st March 2019 and the forecast for 2019/20. Details of the coverage and the agreed scope are set out in the independent auditor's report on page 210. The procedures to be performed at a global level and the planned site visits were also reviewed. Materiality was agreed at approximately 5% of three-year average profit before tax adjusted for loss on disposal of businesses, loss on significant legal proceedings, major impairment and restructuring charges.

Following discussion and challenge, we concluded that the proposed plan was sufficiently comprehensive for the purpose of the audit of the group's accounts and approved the proposed fee.

Due to the impact of COVID-19, the plan subsequently required changes to adapt to the new working environment. The auditors for example could not attend some stock takes due to remote working and greater focus was required on areas such as impairment, the recoverability of accounts receivables and going concern. Further information on our year end process is included in the case study below.

How we reviewed PwC's performance

The committee reviews the ongoing effectiveness and quality of the external auditor and audit process throughout the year, based on its reports to the committee, the performance of Mark Gill and his team both in and outside committee meetings, how they interact with and challenge management and how they are building relationships with the internal audit teams. This year the impact of COVID-19 required more extensive interaction with PwC and this included more direct conversations between myself and Mark as well as an additional committee meeting subsequent to the year end.

Where possible, the Chief Financial Officer and / or myself meet with the local audit partner when travelling to overseas sites to better understand the issues they see locally in terms of reporting, control and the quality of our finance teams. Importantly it also gives us the ability to judge the quality and commitment of the individual. A note of these meetings is then shared with the committee. The committee have also requested PwC to keep the committee informed of the work carried out by PwC's Quality Review partner.

The challenges faced when compiling audited the year end accounts in a virtual world due to the COVID-19 pandemic

The original external audit plan prepared, agreed and communicated throughout the organisation required significant and timely rework as the impact of COVID-19 spread across the world in February and March.

The audit for this year had several challenges given a number of sites across the group were closed due to government lockdown restrictions spanning the majority of the period of the audit such as those in South Africa and India.

In addition, even though many sites did continue to operate across the group, as they were regarded as essential operations under many government regulations on COVID-19, PwC was not permitted to travel to sites to conduct audit procedures.

The restrictions placed on our staff and auditors resulted in alternative audit processes being adopted, for example:

- An inventory count, an essential audit procedure, is typically performed by management and attended in person by the auditor. To ensure this integral part of the audit was completed, PwC performed inventory counts remotely via live feed cameras, which they were directing, while JM staff conducted the counts procedures including specific testing on behalf of PwC.
- The audit testing of documents was also carried out remotely by PwC. Although the majority of documentation is held electronically there are a number of sites with documentation in paper form resulting in additional administrative activities with staff scanning documents (where they had access) to PwC document portals. A greater portion of audit testing would normally have been performed on site.

Additional procedures were incorporated into the audit by PwC to ensure both the robustness of the audit testing and that the required evidential support was obtained whilst delivering the right level of coverage across the income statement and balance sheet. Additional virtual meetings were scheduled with overseas management and audit teams to maintain robust oversight procedures given in person meetings were not possible. COVID-19 also meant that discussions relating to forward looking judgements were much more challenging due to the uncertainties created by the pandemic.

Finally, we all had to adjust to virtual meetings, which whilst working well are less efficient than face to face communication in an office environment.

Despite all of these challenges, the accounts and audit were delivered just two weeks after the originally planned announcement date which was a credit to all involved.

Governance

Audit Committee Report continued

In addition, the committee feels it is important to understand management's opinion of audit quality and effectiveness and a feedback questionnaire on the external auditors is completed annually by the Executive Directors and senior management.

Provision of non-audit services

Following the FRC issuing a major revision to the ethical guidance for auditors in December 2019 the committee has adopted a revised policy on the provision of non-audit services. The group's auditors are now only able to provide additional services directly linked to audit and our policy is fully aligned with the new guidance. The revised policy came into effect on 15th March 2020. This policy also sets out the circumstances in which a former employee of PwC can be employed by JM and the procedure for obtaining approval for such employment. The policy ensures that the provision of non-audit services does not create a threat to PwC's auditor independence and objectivity.

When the auditor can be invited to provide a permitted non-audit service the policy sets out how approval should be obtained prior to PwC being engaged. The Audit Committee has pre-approved non-audit services up to £100,000. Services likely to cost £25,000 or less must be approved by the Chief Financial Officer, services likely to cost more than £25,000 but £100,000 or less must be approved by myself as committee Chair. Services likely to cost over £100,000 must be approved by the committee. During the year, the committee

approved the continued engagement of PwC to provide certain immigration advisory services (this work commenced before PwC were appointed as auditors) which ceased with effect from 1st January 2020.

Compliance against the policy and the provision of non-audit services and details of the non-audit services provided by PwC and associated fees were reviewed during the year. Non-audit fees in the year were £0.6 million compared with audit fees of £3.4 million, representing 18% of the audit fee. The non-audit fees predominantly comprised global immigration services (see above). More information on fees incurred by PwC for non-audit services, as well as the split between PwC's audit and non-audit fees, can be found in note 3 to the accounts, on page 151.

Objectivity and independence

The committee is responsible for monitoring and reviewing the objectivity and independence of the external auditor to ensure this is safeguarded. The committee considered the information provided by the auditor, confirming its staff involved with the audit have no links or connections to JM and that the FRC's Revised Ethical Standard was complied with. The committee concluded that PwC was independent.

Proposed re-appointment of PwC

Following the work undertaken by the committee in assessing PwC's performance and independence, the Committee agreed that PwC had a robust and professional

working relationship with management and demonstrated strong technical knowledge. As a result, a resolution proposing PwC's re-appointment as the company's auditor and authorising the committee to determine PwC's remuneration is included in the company's Notice of the Annual General Meeting.

Statement of compliance

The committee confirms that during the financial year ended 31st March 2020, the company complied with the applicable provisions of the Competition and Markets Authority's Statutory Audit Services for Large Companies Market Investigation (Mandatory Use of Competitive Tender Processes and Audit Committee Responsibilities) Order 2014.

Committee effectiveness

The committee's performance was reviewed as part of the 2019/20 internal board review. The committee was considered to be operating effectively, with progress made against the areas identified in the 2018/19 review, particularly with regard to the development of the assurance functions. More details on how the review was carried out can be found on page 89.

Our priorities

In last year's annual report we set out our priorities, over and above our business as usual work, for 2019/20. Below, we report on the status of these and set out our priorities, over and above our business as usual work, for 2020/21.

2019/20	Comments
<ul style="list-style-type: none"> The committee will continue to monitor control processes associated with the new global ERP system, as the rollout accelerates. 	<ul style="list-style-type: none"> We received updates on the control processes through specific sector updates, internal and external audit.
<ul style="list-style-type: none"> The committee will review the progress being made in increasing controls over the management of cyber risk, given the significance of this risk. 	<ul style="list-style-type: none"> The committee received a specific update on security events and considered further improvements for the management of cyber risk.
<ul style="list-style-type: none"> The committee will monitor the company's progress to increase its use of data analytics by our assurance providers. 	<ul style="list-style-type: none"> During the year, a 'teach-in' on the use of data analytics was led by PwC. The committee continues to monitor the ongoing work to develop data analytic capabilities with PwC and Internal Audit.
2020/21	
<ul style="list-style-type: none"> Monitor controls in and around the ERP system as more of these migrate to automated controls. Review systems and controls in a COVID-19 environment. Review revised processes on group metal requirements and associated key performance indicators. 	

The Audit Committee Report was approved by the board of Directors on 11th June 2020 and signed on its behalf by:



Alan Ferguson
Chair of the Audit Committee

Remuneration Report



Chair of the Committee
Chris Mottershead

Members



Patrick Thomas



Alan Ferguson



Jane Griffiths



John O'Higgins



Xiaozhi Liu¹



Doug Webb²

Key objective:

To ensure that our remuneration arrangements align with shareholders' interests, reward directors and senior executives for performance and are well managed in line with good governance.

Principal responsibilities:

- Sets remuneration policy for Executive Directors, Senior Management and the Chairman and determines the application of that policy.
- Oversight of workforce remuneration policies and their alignment with culture.

2020/21 priorities:

- Monitor the impact of COVID-19 on the business and resulting remuneration outcomes.
- Review alignment of reward with culture.
- Broader employee pay and incentive review.

¹ Appointed 2nd April 2019

² Appointed 2nd September 2019

Aligning performance and reward

The Committee's purpose is to ensure the remuneration structure and policies motivate and reward fairly and responsibly with a clear link to performance and the delivery of long term strategy and value.

Introduction

As Chair of the Committee, I am pleased to present our report for the year ended 31st March 2020. It comes at a time when the global community is navigating uncharted territory because of the onset of coronavirus (COVID-19). None of us yet know quite how broad its impact will be, or how deeply it will be felt. What we do know is that our industry, like many others, is seeing a significant demand and supply-side shock.

In light of these challenges, the board is monitoring the impact of COVID-19 on the business and is responding dynamically as the situation evolves having regard to financial performance but also the impact on our employees, customers, suppliers, communities and shareholders. Our existing Remuneration Policy, which we have reviewed during the year, includes the necessary flexibility and discretions to ensure that remuneration outcomes will be reflective of overall performance and that pay outcomes can also be adjusted to take account of our stakeholders' experiences. This year's policy review provided the opportunity to stress test these factors. In addition, the policy review also enabled the committee to make a number of refinements to our current policy to ensure that we continue to support our long term growth strategy at the same time as taking account of institutional investor feedback and general market developments.

Our approach to remuneration

The overall objective of Johnson Matthey is to deliver sustained superior shareholder value using our world class science and our competitive strengths, contributing to a cleaner, healthier world.

We aim to achieve this by focusing on delivering long term growth and value creation through leveraging our leading positions in high margin, technology driven growth markets. A key contributor to our future success will also be how well we deploy investment capital across our existing sectors and in our Battery Materials business. At the same time as managing growth over both the medium and long term and the impact of COVID-19, we are particularly focused on driving efficiency savings and cost control.

Our remuneration strategy focuses on motivating our talent to achieve our strategic objectives; delivering on customer commitments; inspiring employees; and driving value for our shareholders through long term success and growth. This long term focus is supported by our Remuneration Policy, which includes an incentive structure that is purposefully weighted towards long term performance and includes shareholding guidelines for Executive Directors.

We also give consideration to how performance is delivered when determining incentive plan outcomes with appropriate consideration given to any environmental, social and governance risks to ensure that the performance delivered is sustainable and fully aligned with our company values.

Our remuneration strategy is also designed to be competitive in the various markets in which we operate and compete for talent.

Governance

Remuneration Report continued

Remuneration review

Our current Remuneration Policy was submitted to shareholders at our 2017 Annual General Meeting (AGM) and we appreciated the high level of support we received at that time (92.3% in favour). The 2020 AGM will mark the third anniversary of our Remuneration Policy and as a result, in line with the current regulatory framework, we will seek shareholder approval for an updated Remuneration Policy.

During 2019, the committee conducted an extensive review of the effectiveness of our current Remuneration Policy. We started with a 'blank sheet of paper' to be sure we were bringing the latest thinking to the process. In terms of overall design principles, our review confirmed that the current construct of base salary, annual incentive and long term incentives remains appropriate. As we looked at alternatives, we could not find value in changing that construct at the current time given the specific purpose each element is designed to play. Nevertheless, we do believe that some fine tuning of our Remuneration Policy and structure is in order. The review also considered recent developments in institutional investors' best practice expectations and the remuneration updates included in the 2018 UK Corporate Governance Code. A number of the changes to our policy are in response to these factors.

Pension

In light of (i) a broad review of employee pension arrangements; (ii) institutional investor expectations in relation to the alignment of Executive Director pensions with those of the wider workforce and (iii) changes to the UK Corporate Governance Code, Executive Director pensions are being reduced. Executive Directors will see their pension cash supplement reduce from 25% to 15% of salary by 1st April 2023 in three steps. The first reduction (to 23%) took place on 1st April 2020. The cost to the company of our standard pension provision to all UK employee is 15%.

Annual incentive plan

There is no change to the annual bonus opportunity and the structure will continue to operate using the same overall framework as the current Remuneration Policy. Bonuses earned will continue to be based on performance against a challenging range of financial and, where appropriate, non-financial targets. A substantial proportion will be based on key financial measures, including underlying profit before tax (PBT). The committee will continue to retain discretion to adjust bonus outcomes to ensure that any bonus earned is reflective of overall company performance and the experience of our stakeholders, in particular employees and shareholders.

Long term incentive plan

Awards are expected to be granted in 2020 at the same levels as those awarded in 2019 at 200% of salary for the Chief Executive and 175% of salary for the Chief Financial Officer. In determining the award sizes, the committee considered the degree of stretch in the targets which are considered at least as challenging as those set in prior years as set out below.

We plan to introduce relative Total Shareholder Return (TSR) alongside the existing performance measure of underlying earnings per share (EPS) growth and our return on invested capital (ROIC) underpin. This change will ensure that in addition to being aligned with achieving our earnings targets that there is also direct alignment with the benefits of delivering on our strategic business plans.

As part of our review of the long term Performance Share Plan (PSP), the committee also considered the inclusion of a third performance measure based on sustainability and / or strategic objectives that aligns to our value proposition of supporting our purpose of delivering 'a world that is cleaner and healthier today and for future generations'. It is proposed that this measure would represent no more than one-third of the overall award and would be based on quantifiable metrics. Work continues on the detail of the precise metrics for this element and so this measure will be introduced into future awards, and at the latest, by the time awards are granted in connection with the 2022/23 financial year.

With regard to the performance targets to operate for the 2020 awards, these are expected to be as follows:

- 50% of the award will vest based on EPS growth targets. The targets require EPS growth of 3% pa for 15% of this part of the award to vest, rising to 100% vesting for EPS growth of 8% pa. Growth will be measured over the three year performance period ending 31st March 2023. The performance range has changed relative to the 2019 awards, however the Committee is satisfied that the proposed range is at least as challenging to those set in 2019 noting the current and projected challenging commercial context.
- 50% of the award will vest based on relative TSR performance. The targets will require our TSR to be at least median when compared against the companies ranked 31 to 100 (excluding financial services companies) in the FTSE 100 Index over the three year performance period ending 31st March 2023. Achieving median performance will result in 25% of this part of the award vesting, rising to 100% vesting for upper quartile (or better) TSR performance.

In determining the above quantum and targets, the committee also intends to include in the award documentation a provision that enables the committee to reduce the value of awards on vesting if there has been a windfall gain arising from a quicker than expected general market recovery from COVID-19. While this is not expected to be used in practice, given current circumstances and the consequent challenge in setting targets the committee consider this a prudent approach.

During the year the committee has been involved in a number of discussions relating to the hiring of members of the company's senior leadership team including the appointment of Joan Braca (succeeding John Walker as Sector Chief Executive, Clean Air), Christian Günther (Chief Executive, Battery Materials) and Maurits van Tol (Chief Technology Officer). This experience highlighted that to get the talent required, the company is under increasing pressure to match often higher long term incentive opportunities. As a result, to ensure that the committee has the necessary flexibility to compete for executive talent in the future it is increasing the maximum award under the PSP to 250% of base salary. There is no intention that the higher award levels will apply to existing Executive Directors unless the committee pre-consults with shareholders, but the change will help support future Executive Director appointments if required.

The committee also intends to include a minimum two year holding period on future vested long term PSP awards. This approach was voluntarily adopted for the 2019 award outside of the current policy but is now being formally included within our policy.

Post-cessation shareholding guideline

From 1st April 2020 we have introduced a post-cessation shareholding guideline that applies to future share awards that vest, which we believe will ensure the continued alignment of Executive Directors even after they cease employment with the company and to reflect developments in the UK Corporate Governance Code. This guideline will require the executives to retain future vested shares to the value of the current share ownership guidelines for two years from the date of cessation of employment.

Salary Review

In light of the impact of COVID-19 a decision was made to freeze pay levels in 2020 and as such the Executive Directors will not receive an increase in their base salary in 2020, and neither will the Non-Executive Directors receive an increase in their fees in 2020.

Voluntary Contribution

In recognition of the circumstances affecting many of our employees, customers, suppliers and communities as a result of COVID-19, the board members each voluntarily donated 20% of their salary for April, May and June 2020 to a special charitable fund to support science education.

2019/20 incentive plan outcomes

During the year Johnson Matthey delivered a solid set of results albeit impacted by COVID-19 toward the end of the year. It also continued to implement its strategy; market leading growth and commercialisation of new technologies in our Efficient Natural Resources Sector; progress on the delivery of our product pipeline in our Health Sector; and good progress on the development of our Battery Materials business. We have also made a number of key capital investments in both our Clean Air Sector and Battery Materials business in line with our strategy.

Based on our analysis of performance outcomes, the Executive Directors missed the group underlying PBT target but performed strongly against the group working capital days financial target and their non-financial objectives. Delivery against the objectives was also underpinned by demonstrating expected leadership behaviours aligned to our values and achieving a satisfactory health and safety record over the year. Further details on the performance against the annual targets is set out within our Implementation Report.

Consequently, the bonuses becoming payable are 26% of the maximum for Robert MacLeod, 26% of the maximum for Anna Manz and 20% of the maximum for John Walker.

In the context of a challenging market environment, the progress made against our long term strategy, and our shareholder's experience, the Committee considered the level of annual bonus payout appropriate, and as such no discretion was exercised given the overall relationship between performance and rewards achieved.

The formulaic outcome for the vesting of the long term PSP awards granted on 1st August 2017 was zero. It was not felt appropriate to adjust the outcome and as such there is zero PSP vesting for the Executive Directors.

Single figure results

The 2019 single figure of total remuneration for Robert MacLeod is £1,462,000, Anna Manz is £885,000 and John Walker is £809,000, as reported on page 115. These outcomes represent a 47% decrease for Robert, a 46% decrease for Anna, and a 51% decrease for John, reflecting reductions in annual and long term incentive outcomes. The lower remuneration is consistent with the lower share price and the experience of shareholders and as such we deem these outcomes reasonable.

Board changes

In June 2019 we announced John Walker's intention to retire from Johnson Matthey on 31st March 2020, after a long and distinguished career.

The remuneration terms agreed by the committee in respect of John's retirement are in line with our policy and include no special arrangements. Given John's cessation of employment related to retirement, he was a good leaver for the purpose of outstanding incentives which all remain subject to their original performance conditions and vesting terms. Full details are set out on page 115.

With John's retirement the board has taken the opportunity to reduce its size. As a result the committee did not need to consider any remuneration arrangements of new Executive Directors during the year.

Group employee considerations

The committee has had the opportunity to understand the remuneration of the wider workforce during the year. In addition, we reviewed the pay levels of employees below the board, particularly in relation to equal pay and the UK gender pay gap. We have made good progress with our UK gender pay gap reducing from 8.5% to 6.0%. Despite this good progress the company remain committed to continue to tackle the root causes of our gender imbalance and to ensure a truly inclusive culture that supports diversity.

2020 Annual General Meeting

The committee has appreciated the feedback from our major shareholders through the consultation on our Remuneration Policy, which has helped shape our proposed policy.

I ask you to support our new Remuneration Policy and 2019/20 Annual Report on Remuneration at our forthcoming AGM on 23rd July 2020. We believe that our policy remains simple, transparent and effective, strongly supporting our business strategy with remuneration outcomes aligned to the shareholder experience.



Chris Mottershead

Chair of the Remuneration Committee

Governance

Remuneration Report continued

Remuneration overview

Remuneration Policy

Below we publish the Remuneration Policy table, which includes the elements of directors' remuneration. For each element we describe its purpose and its link to strategy, how it works, the opportunity, boundaries and performance measures and any clawback or withholding conditions which may apply. This Remuneration Policy which was informed following consultation with our key shareholders during the year will, subject to a shareholder approval, take effect immediately following the 2020 AGM and apply to all remuneration for the financial year 1st April 2020 onwards.

The previous remuneration policy was approved by shareholders in July 2017, with 92.3% votes cast in favour. The only significant changes between the new policy and that previously approved by shareholders are:

- A reduction in the pension cash supplement from 25% to 15% to align with the pension contribution paid to the wider workforce in the UK. From 1st April 2020 the cash supplement will be 23%, it will then reduce to 20% in April 2021 and reduce to 15% in April 2022.
- The introduction of Total Shareholder Return (TSR) as an additional measure in the Performance Share Plan (PSP) with the option to include further performance metrics and / or refine metrics as our strategy evolves. This is expected to include targets relating to sustainability during the policy period subject to shareholder consultation. The TSR comparator group is the FTSE 31-100 (excluding financial services companies).
- A change to PSP such that awards will vest, subject to meeting the performance conditions, over the three year performance period, after which the directors will be required to hold any vested shares until the fifth anniversary of the award. This change was introduced for the awards in 2019 but is now being formally included in the policy to apply to all future PSP awards.
- In light of our revised approach to performance targets under the PSP, we are to provide flexibility to set threshold vesting at 25% of that part of the award to reflect normal market practice. For the FY 2020/21 awards, the new TSR element will operate with 25% of this part of the award vesting at the threshold performance level with the EPS element continuing to operate with 15% of this part of the award vesting at the threshold performance level. The committee will review the appropriate level of threshold vesting at the time of making awards each year in light of the degree of stretch in the targets set for the following three-year period. An increase to the maximum award level under the PSP to 250%. There is no intention to increase the award levels to current Executive Directors. If a new Executive Director is appointed during the policy period, this increased maximum may apply if necessary for recruitment purposes (both in connection with their appointment and on an ongoing basis). Any adjustment to the ongoing annual award level would be subject to appropriate dialogue with our shareholders.
- The requirement for executives to have a post-cessation shareholding in line with current guidelines (250% of salary for the Chief Executive and 200% of salary for the Chief Financial Officer, or their holding on leaving if lower than the guideline) for a period of two years after leaving. This post-cessation shareholding requirement applies to shares acquired after 1st April 2020 only.

Approach to designing the Remuneration Policy

The committee is responsible for the determining, and agreeing with the board, the Directors' Remuneration Policy and has oversight of its implementation. The committee has clear terms of reference and works with management and independent advisers to develop proposals and recommendations and exercises independent judgement when making decisions. This process is considered to manage any potential conflicts of interest.

When considering how to structure and position the remuneration packages for the Executive Directors, the committee firstly considers the company's strategy and business objectives and then also takes into account market data from a range of sources that includes both UK-listed companies of a similar size and complexity and international peers. The committee also reviews information from the Chief HR Officer on pay and employment conditions applying to other group employees, consistent with the group's general aim of seeking to reward all employees fairly according to the nature of their role, their performance and market forces.

In designing an appropriate incentive structure for the Executive Directors and other senior management, the committee seeks to set challenging performance criteria that are aligned with the group's business strategy and the generation of sustained shareholder value. The committee is also mindful of the need to avoid inadvertently encouraging risky or irresponsible behaviour, including behaviour that could raise environmental, social or governance issues.

The committee considered the principles listed in the 2018 UK Corporate Governance Code when reviewing the Directors' Remuneration Policy and took these into account in its design and implementation:

Clarity: Remuneration arrangements have defined parameters which can be transparently communicated to shareholders and other stakeholders.

Simplicity: Remuneration arrangements for Executive Directors consist of salary, a fixed pension contribution set to reflect the typical rate provided to the UK workforce, participation in the annual bonus scheme, a portion of which is deferred into shares, and annual long term incentive plan awards which provide focus over the longer term performance. Unnecessary complexity is avoided by the committee in operating the arrangements.

Risk: The remuneration arrangements are designed to have a robust link between pay and performance thereby mitigating the risk of excessive reward. In addition, behavioural risks are considered when setting targets for performance related pay and the arrangements have safeguards to ensure that pay remains appropriate including committee discretion to adjust incentive outturns, deferral of incentive payments in shares, recovery provisions and share ownership requirements.

Predictability: The committee set specific targets for different levels of performance which are communicated to the individuals and disclosed to shareholders.

Proportionality: The annual bonus and long term incentive plans have performance metrics that are aligned with the company's KPIs and the payouts reflect achievement against the targets. The committee may reduce payouts under the bonus and long term incentive plan if they are not considered aligned with underlying performance. Safeguards are identified to ensure that poor performance is not rewarded.

Alignment to culture: The directors' remuneration arrangements are cascaded down through the organisation ensuring that there are common goals. The committee review remuneration arrangements throughout the company and take these into account when setting directors' remuneration.

Policy table

Purpose and link to strategy	Operation (and changes if appropriate) of the element	Potential value of element and performance measures
Base salary		
<p>Base salary is the basic pay for doing the job. Its purpose is to provide a fair and competitive level of base pay to attract and retain individuals of the calibre required to lead the business.</p>	<p>Base salaries will be reviewed annually and any changes normally take effect from 1st April each year.</p> <p>In determining salaries and salary increases, the Remuneration Committee will take account of the performance of the individual director against a broad set of parameters including financial, environmental, social and governance issues.</p> <p>The Remuneration Committee will also take into account the director's knowledge, contribution to the role, length of time in post, and any additional responsibilities since the last salary review, as well as the level of salary increases awarded to the wider Johnson Matthey workforce.</p> <p>Salaries across the group are benchmarked against a comparator group of similarly sized companies within the FTSE, with a comparable international presence and geographic spread and operating in relevant industry sectors.</p> <p>New appointments or promotions will be paid at a level reflecting the executive directors' level of experience in the particular role and experience at board level. New or promoted executive directors may receive higher pay increases than typical for the group over a period of time following their appointment as their pay trends toward an appropriate level for their role.</p>	<p>Maximum opportunity</p> <p>No salary increase will be awarded which results in a base salary which exceeds the competitive market range.</p> <p>Details of the current salaries for the Executive Directors are shown in the Annual Report on Remuneration on page 115.</p>
Annual Incentive Plan		
<p>The Annual Incentive Plan (AIP) provides a strong incentive aligned to strategy in the short term. It allows the board to drive and reward both financial and non-financial metrics, including leadership behaviours, in order to deliver sustainable growth in shareholder value.</p> <p>The AIP bonus plays a key part in the motivation and retention of Executive Directors, one of the key requirements for long term growth.</p> <p>Bonus deferral as well as malus and clawback provisions ensure that longer term considerations are properly taken into account in the pursuit of annual targets.</p>	<p>The Remuneration Committee sets the AIP performance measures and targets for each new award cycle. At the end of the year, the Remuneration Committee determines the extent to which these have been achieved. The Remuneration Committee retains the discretion to reduce any bonus award if, in its opinion, the underlying financial performance of the company has not been satisfactory in the circumstances.</p> <p>Deferral</p> <p>Of any bonus paid, 50% is paid in cash and the remaining 50% is deferred into shares for a three year period as an award under the deferred bonus plan. No further performance conditions apply to awards under the Deferred Bonus Plan. Dividends that accrue on the deferred shares during the vesting period will be paid in either cash and / or shares at the time of vesting.</p> <p>Malus and clawback</p> <p>The cash and deferred elements of the bonus are subject to malus and clawback provisions such that they can be forfeited or recouped in part or in full in the event of a misstatement of results, error in the calculation, misconduct by the individual or serious reputational damage.</p> <p>Adjustments</p> <p>The Remuneration Committee retains discretion to change the performance targets if there is a significant and / or material event which causes the committee to believe the original targets are no longer appropriate (e.g. to reflect material acquisitions or disposals).</p> <p>The Remuneration Committee also retains discretion to amend the level of annual bonuses determined by the performance condition to seek to ensure that the incentive structure for Executive Directors does not raise environmental, social and governance risks by inadvertently motivating irresponsible behaviour. For example, reducing or eliminating bonuses where the company has suffered reputational damage or where other aspects of performance, including leadership behaviour, has been unacceptable.</p> <p>The Remuneration Committee retains the ability to increase bonus awards from the formulaic outcome where there is identifiable and exceptional performance by the Executive Director. Bonus payments in such circumstances would remain within the maximum bonus opportunity and shareholders would be fully informed of the justification.</p>	<p>Performance measures</p> <p>Bonuses are based on the achievement of demanding financial and, where appropriate, non-financial targets. The committee may use different performances and / or weightings for each performance cycle as appropriate to take into account the strategic needs of the business. However, a substantial proportion will be based on key financial measures, including underlying PBT.</p> <p>Targets are set on a robust bottom up process to achieve full accountability. The financial performance targets are retrospectively published in the immediately following Annual Report on Remuneration. Details of last year's bonus awards are on page 116.</p> <p>The performance period for annual bonus purposes matches the financial year (1st April to 31st March).</p> <p>Maximum opportunity and vesting thresholds</p> <p>Chief Executive – 180% of base salary.</p> <p>Other Executive Directors – 150% of base salary.</p> <p>Threshold vesting will result in a bonus of 15% of maximum opportunity. On-target performance will result in 50% payment of the maximum opportunity.</p>

Governance

Remuneration Report continued

Purpose and link to strategy

Operation (and changes if appropriate) of the element

Potential value of element and performance measures

Performance Share Plan

The Performance Share Plan (PSP) is designed to ensure that executives take decisions in the interest of the longer term success of the group. Having measures that look at profitable growth and performance relative to a comparator group over the longer term ensures that the interests of executives are aligned with shareholder wishes for long term value.

Shares may be awarded each year and are subject to performance conditions over a three year performance period. Subject to the performance conditions being met the shares will vest after which the directors will be required to hold any vested shares until the fifth anniversary of the award.

The performance targets are set by the Remuneration Committee based on internal and external growth forecasts to ensure they remain appropriate and aligned with shareholder expectations.

The awards are granted in accordance with the rules of the plan approved by shareholders. The maximum award level is 250% of base salary. Awards may be granted in the form of conditional shares, nil or nominal cost options or cash (where the awards cannot be settled in shares). Dividends that accrue during the post-vesting holding period will be managed in accordance with our dividend re-investment process.

Malus and clawback

Performance Share Plan awards are subject to malus and clawback provisions that can apply in the case of a misstatement of results, error in the calculation, misconduct by the individual, serious reputational damage, failures of risk management or corporate failure.

Adjustments

The Remuneration Committee has the power to adjust the annual award level, for example in the event of a material fall in share price, as well as the power to adjust the vesting level of an award based on the underlying performance of the company.

The Remuneration Committee may adjust the performance measure to reflect material changes (e.g. significant acquisitions or disposals, share consolidation, share buy-backs or special dividends). Any such change would be fully explained to shareholders.

Performance measures

PSP awards vest over a three year performance period and will be subject to financial and / or shareholder return targets. In addition, strategic and / or sustainability targets may also be included for a minority of future awards. In all cases, at least two-thirds of awards would be subject to financial and / or total shareholder return targets.

It is expected that during the policy period the following two metrics will form the majority of awards:

- the compound annual growth rate (CAGR) of underlying EPS; and
- the Total Shareholder Return (TSR) relative to a comparator group (e.g. the FTSE 31-100 excluding financial services companies)

Both of the above will be subject to a discretionary ROIC underpin and vesting is also subject to a broad Committee discretion that will enable the Committee to adjust the extent to which an award vests by overriding formulaic outcomes in order to reflect the wider financial circumstances of the group.

The prospective weightings, targets and measures for the year commencing 1st April 2020 are shown on page 122.

The Remuneration Committee retains the discretion to amend the weightings, targets and the performance measures detailed on page 122 for future awards as appropriate to reflect the business strategy and intends to look to include a further measure relating to sustainability during the Policy period. However, it is not anticipated that this would relate to more than 20% of a future award.

Any material changes to the approach set out on page 122 will be subject to appropriate dialogue with major shareholders.

Awards levels and vesting thresholds

Chief Executive – 200% of base salary.

Other Executive Directors – 175% of base salary.

There is no intention to increase the award levels to current executive directors beyond the levels noted. If a new executive director is appointed during the policy period, awards may be granted up to 250% of salary if necessary for recruitment purposes (both in connection with their appointment and on an ongoing basis). Any adjustment to the ongoing annual award level would be subject to appropriate dialogue with our shareholders.

Threshold vesting will result in a payment of up to 25% of the award. The actual threshold vesting will depend on the performance metric and the performance range set for the specific award.

Purpose and link to strategy	Operation (and changes if appropriate) of the element	Potential value of element and performance measures
Benefits		
<p>To provide a market aligned benefits package.</p> <p>The purpose of any benefit is to align with normal market practices, and to remove certain day to day concerns from Executive Directors, to allow them to concentrate on the task in hand.</p>	<p>Benefits include medical, life and income protection insurance, medical assessments, company sick pay, and a company car (or equivalent). Other appropriate benefits may also be provided from time to time at the discretion of the Remuneration Committee.</p> <p>Directors' and officers' liability insurance is maintained for all directors.</p> <p>Directors who are required to move for a business reason may, where appropriate, also be provided with benefits such as relocation benefits (e.g. the provision of accommodation, transport or medical insurance away from their country of residence) and schooling for dependents. The company may pay the tax on these benefits.</p> <p>Directors may be assisted with tax advice and tax compliance services.</p> <p>The company will reimburse all reasonable expenses (including any tax thereon) which the Executive Director is authorised to incur whilst carrying out executive duties.</p>	<p>Benefits are not generally expected to be a significant part of the remuneration package in financial terms and are there to support the director in his or her performance in the role. In general, benefits will be restricted to the typical level in the relevant market for an Executive Director.</p> <p>Car benefits will not exceed a total of £25,000 per annum.</p> <p>The cost of medical insurance for an individual Executive Director and dependents will not exceed £20,000 per annum.</p> <p>Company sick pay is 52 weeks' full pay.</p>
Pension		
<p>Provides for post-retirement remuneration, ensures that the total package is competitive and aids retention.</p>	<p>All Executive Directors will be paid a cash supplement in lieu of membership in a pension scheme.</p>	<p>The maximum supplement is 15% of base salary for new Executive Directors. This is aligned to the cost of providing pension benefits to other employees in the UK.</p> <p>Current Executive Directors will see their pension cash supplement reduce from 25% to 15% over the next few years as follows:</p> <p>1st April 2020 – 23.0% of base salary 1st April 2021 – 20.0% of base salary 1st April 2022 – 15.0% of base salary</p>
All employee share plan		
<p>Encourages share ownership.</p>	<p>Executive Directors are entitled to participate in the company's all employee plan under which regular monthly share purchases are made and matched with the award of company shares, subject to retention conditions.</p> <p>Executive Directors would also be entitled to participate in any other all employee arrangements that may be established by the company on the same terms as all other employees.</p>	<p>Executive Directors are entitled to participate up to the same limits in force from time to time for all employees.</p>
Shareholding requirements		
<p>To encourage Executive Directors to build a shareholding in the company and ensure the interests of management are aligned with those of shareholders.</p>	<p>Executive Directors are expected to build up a shareholding in the company over a reasonable period of time, and upon cessation of employment are expected to retain a shareholding for a period of up to two years.</p> <p>Shares that count towards achieving these guidelines while an Executive Director include: all shares beneficially owned by an Executive Director or a person connected to the executive as recognised by the Remuneration Committee; deferred bonus shares and PSP awards which have vested and so are no longer subject to performance conditions but are within a holding period.</p> <p>Shares that count toward achieving the post-cessation guideline include the same as those while an Executive Director, except that only shares owned after 1st April 2020 count toward the post-cessation guideline. Executive Directors are expected to retain at least 50% of the net (after tax) vested shares that are released under the PSP and Deferred Bonus Plan until the required levels of shareholding are achieved.</p> <p>Executive Directors are not required to make personal share purchases should awards not meet the performance conditions and so a newly appointed director may take longer to reach the expected level, depending on the company's performance against targets over the period. In addition, a director who ceases employment with the company is not required to purchase shares to satisfy the post-cessation shareholding requirement.</p>	<p>The minimum shareholding requirement while an Executive Director and for the two year period after cessation of employment is as follows:</p> <p>Chief Executive – 250% of base salary. Other Executive Directors – 200% of base salary.</p> <p>If the Executive Director has not been able to build up their shareholding prior to cessation they are not required to purchase shares upon cessation to satisfy the requirement.</p> <p>There is no requirement for Non-Executive Directors to hold shares but they are encouraged to acquire a holding over time.</p>

Governance

Remuneration Report continued

Purpose and link to strategy	Operation (and changes if appropriate) of the element	Potential value of element and performance measures
Non-Executive Director fees		
<p>Attracts, retains and motivates Non-Executive Directors with the required knowledge and experience.</p>	<p>Non-Executive Director fees are determined by the board and the Non-Executive Directors exclude themselves from such discussions. The fees for the Chairman are determined by the Remuneration Committee taking into account the views of the Chief Executive. The Chairman excludes himself from such discussions.</p> <p>Non-Executive Directors are paid a base fee each year with an additional fee for each committee chairmanship or additional role held.</p> <p>Non-Executive Director fees are reviewed every year. Any increase will take into account the market rate for the relevant positions within the comparator group of similarly sized companies with a comparable international presence and geographic spread and operating in relevant industry sectors, the experience of the individuals and the expected time commitment of the role.</p> <p>In exceptional circumstances, additional fees may be payable to reflect a substantial increase in time commitment.</p> <p>The company will also reimburse the Chairman and Non-Executive Directors for all reasonable expenses (including any tax thereon) incurred whilst carrying out duties for the company.</p>	<p>Details of the current fee levels for the Chairman and Non-Executive Directors are set out in the Annual Report on Remuneration on page 115.</p> <p>The fee levels are set subject to the maximum limits set out in the Articles of Association.</p>

Selection of performance targets

Annual Incentive Plan

Financial performance targets under the Annual Incentive Plan are set by the Remuneration Committee with reference to the prior year and to the budgets and business plans for the coming year, ensuring the levels to achieve threshold, target or maximum payout are appropriately challenging. The performance targets for 2020/21 are predominantly based on financial measures (80% of maximum opportunity) including budgeted underlying PBT and working capital to ensure that there is strong attention paid to delivery of current operational plans and operational efficiency. Commercial sensitivity precludes the advance publication of the actual bonus targets but these targets will be retrospectively published in the Annual Report on Remuneration for 2020/21.

Performance Share Plan

The performance targets under the PSP are set to reflect the company's longer term growth objectives at a level where the maximum represents genuine outperformance. The performance measures are currently based on underlying EPS and TSR.

Underlying EPS is considered a simple and clear measure of absolute growth in line with the company's strategy. It is also a key objective of the company to achieve earnings growth only in the context of a satisfactory performance on ROIC. Accordingly, the Remuneration Committee makes an assessment of the group's ROIC over the performance period to ensure underlying EPS growth has been achieved with ROIC in line with the group's planned expectations.

Total Shareholder Return is considered a simple and clear performance relative to a comparator group (FTSE 31-100 excluding financial services companies).

Group employee considerations

The Remuneration Committee considers the directors' remuneration, along with the remuneration of the Group Management Committee (GMC), in the context of the wider employee population and is kept regularly updated on pay and conditions across the group. The company has not consulted directly with employees with respect to directors' remuneration. Increases in base salary for directors will take into account the level of salary increases granted to all employees within the group.

The general principle for remuneration in Johnson Matthey is to pay a competitive package of pay and benefits in all markets and at all job levels in order to attract and retain high quality and diverse employees. The proportion of variable pay increases with progression through management levels with the highest proportion of variable pay at executive director level, as defined by the Remuneration Policy.

The key elements of variable pay cascade down through the next tiers of senior management with appropriate reductions in opportunity levels based on seniority. The group's senior executives plus senior and middle managers (1,592 employees) participate in the annual incentive plan (with performance conditions similar to those described in the Remuneration Policy). In addition, the group's senior executives and senior management participate in the PSP in line with the same EPS and TSR performance conditions.

Executive Directors are required to hold any shares that vest until the fifth anniversary of the award, subject to the three year performance conditions being met and Executive Directors, members of the GMC and senior management are subject to deferral of annual bonus. Certain senior management also participate in a long term Restricted Share Plan (RSP) which has no performance conditions attached. No Executive Director is eligible to participate in this RSP.

There are also a number of country and business dependent arrangements under which bonuses may be paid to the

entire business unit workforce where performance conditions associated with profitability are met.

Johnson Matthey operates a number of pension arrangements around the world, relevant to the local conditions and arrangements.

The key element of remuneration for those below senior management grades is base salary and Johnson Matthey's policy is to ensure that basic salaries are fully competitive in the local markets. General pay increases take into account local salary norms, local inflation and business conditions.

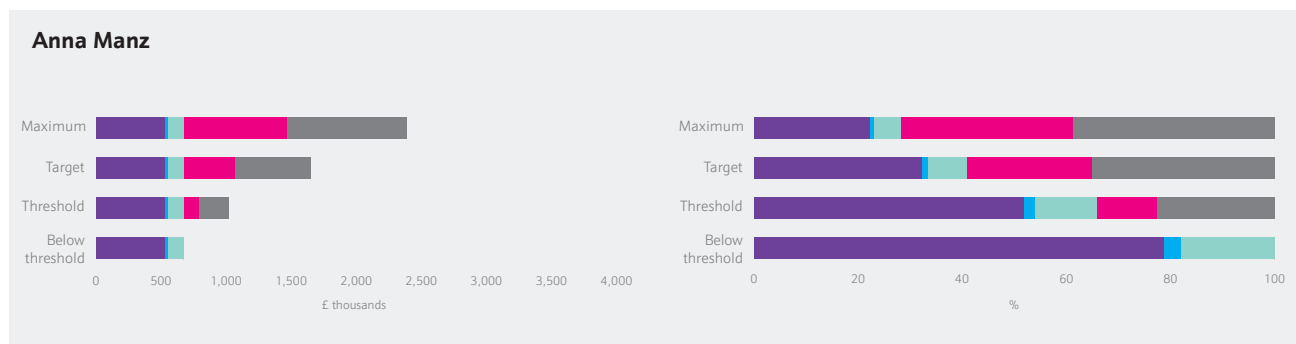
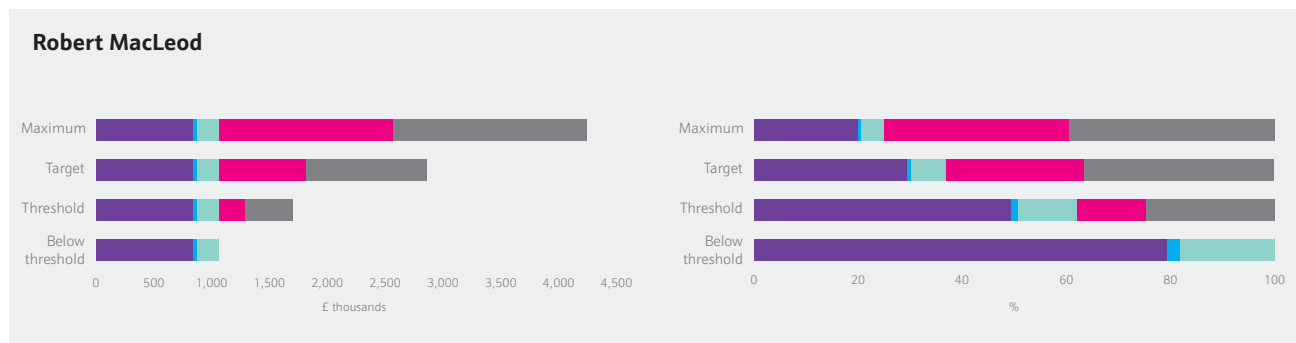
Johnson Matthey's 2019 UK gender pay gap was 6.0% (down from 8.5% in 2018). Johnson Matthey continues to focus on embedding a truly diverse and inclusive culture and we have seen some positive shifts in our Gender Pay Gap since last year. We know that a diverse workforce will enhance our innovation, decision making, product development and help us attract and retain the best talent. The full report, including details of what we are doing to eliminate the gap can be found on our website.

Remuneration scenarios

Below is an illustration of the potential future remuneration that could be received by each Executive Director for the year commencing 1st April 2020, both in absolute terms and as a proportion of the total package under different performance scenarios. The value of the PSP is based on the award that will be granted in August 2020.

Value of package

Composition of package



Legend: Base salary (purple), Benefits (blue), Pension (green), Bonus (red), PSP (grey)

If JM's share price increased by 50%, maximum remuneration would be £5,082,000 for the Chief Executive and £2,850,000 for the Chief Financial Officer.

Governance

Remuneration Report continued

Approach to recruitment remuneration

The recruitment policy provides an appropriate framework within which to attract individuals of the required calibre to lead a company of Johnson Matthey's size, scale and complexity. The Remuneration Committee determines the remuneration package for any appointment to an Executive Director position, either from within or outside Johnson Matthey.

The following table sets out the various components which would be considered for inclusion in the remuneration package for the appointment of an Executive Director and the approach to be adopted by the Remuneration Committee in respect of each component.

Area	Policy and operation
Overall	The policy of the board is to recruit the best candidate possible for any board position and to structure pay and benefits in line with the Remuneration Policy set out in this report. The ongoing structure of a new recruit's package would be the same as for existing directors, with the possible exception of an identifiable buy-out provision, as set out below.
Base salary or fees	Salary or fees will be determined by the Remuneration Committee in accordance with the principles set out in the policy table on page 107.
Benefits and pension	An Executive Director shall be eligible for benefits and pension arrangements in line with the company's policy for current Executive Directors, as set out in the policy table on page 109.
Annual Incentive Plan	The maximum level of opportunity is as set out in the policy table on page 107. The Remuneration Committee retains discretion to set different performance targets for a new externally appointed Executive Director, or adjust performance targets and / or measures in the case of an internal promotion, to be assessed over the remainder of the financial year, in which case any bonus payment would be made at the same time as for existing directors, such award to be pro-rated for the time served in the performance period.
Performance Share Plan	The maximum level of opportunity is as set out in the policy table on page 108. In order to achieve rapid alignment with Johnson Matthey's and shareholder interests, the Remuneration Committee retains discretion to grant a PSP award to a new externally appointed Executive Director on or soon after appointment if they join outside of the normal grant period.
Replacement awards	The Remuneration Committee retains discretion to grant replacement buy-out awards (in cash or shares) to a new externally appointed Executive Director to reflect the loss of awards granted by a previous employer. Where this is the case, the Remuneration Committee will seek to structure the replacement award such that overall it is on an equivalent basis to broadly replicate that foregone, using appropriate performance terms. If granted, any replacement buy-out award would not exceed the maximum set out in the rules of the 2017 Performance Share Plan (350% of base salary). If the Executive Director's prior employer pays any portion of the remuneration that was anticipated to be forfeited, the replacement awards shall be reduced by an equivalent amount.
Other	The Remuneration Committee may agree that the company will meet certain mobility costs, relocation costs, including temporary living and transportation expenses, in line with the company's prevailing mobility policy for senior executives as described in the policy table on page 109.

In the case of an internal promotion to the board, the company will honour any contractual commitments made prior to the promotion.

Service contracts and policy on payment for loss of office

The following table summarises relevant key provisions of Executive Directors' service contracts and the treatment of payments on termination of employment. The full contracts of service of the Executive Directors (as well as the terms and conditions of appointment of the Non-Executive Directors) are available for inspection at the registered office of the company during normal business hours as well as prior to and during the forthcoming AGM.

In exceptional circumstances, the Remuneration Committee may authorise, where it considers it to be in the best interests of the company and shareholders, entering into contractual arrangements with a departing Executive Director, for example a settlement, confidentiality, restrictive covenant or other arrangement, pursuant to which sums not set out in the following table may become payable. Full disclosure of the payments will be made in accordance with the remuneration reporting requirements.

The table on the following page describes the contractual conditions pertaining to the contracts for Robert MacLeod, Anna Manz and John Walker and for any future Executive Director.

Summary of key provisions of Executive Directors' service contracts and treatment of payments on termination

	Robert MacLeod	Anna Manz	John Walker ¹
Date of service agreement	31st January 2014	25th July 2016	31st January 2014
Date of appointment as director	22nd June 2009	17th October 2016	9th October 2013
Employing company	Johnson Matthey Plc		
Contract duration	No fixed term.		
Notice period	No more than 12 months' notice, with equal notice from the company and director except for directors who joined before 1st January 2017 where the director's notice period is six months and the notice period from the company is 12 months.		
Post-termination restrictions	<p>The contracts of employment contain the following restrictions on the director for the following periods from the date of termination of employment:</p> <ul style="list-style-type: none"> – non-compete – six months; – non-dealing and non-solicitation of client / customers – 12 months; – non-solicitation of suppliers and non-interference with supply chain – 12 months; and – non-solicitation of employees – 12 months. 		
Summary termination – payment in lieu of notice (PILON)	<p>The company may, in its absolute discretion, terminate the employment of the director with immediate effect by giving written notice together with payment of a sum equivalent to the director's base salary and the value of his contractual benefits as at the date such notice is given, in respect of the director's notice period, less any period of notice actually worked.</p> <p>The company may elect to pay the PILON in equal monthly instalments. The director is under a duty to seek alternative employment and to keep the company informed about whether they have been successful. If the director commences alternative employment, the monthly instalments shall be reduced (if appropriate to nil) by the amount of the director's gross earnings from the alternative employment. A PILON paid to a director who is a US taxpayer would be in equal monthly instalments.</p>		
Termination payment – change of control	<p>If, within one year after a change of control, the director's service agreement is terminated by the company (other than in accordance with the summary termination provisions), the company shall pay, as liquidated damages, one year's base salary, together with a sum equivalent to the value of the director's contractual benefits, as at the date of termination, less the period of any notice given by the company to the director.</p>		
Termination – treatment of annual incentive awards	<p>Annual bonus awards are made at the discretion of the Remuneration Committee. Employees, including executive directors, leaving the company's employment will receive a bonus, pro-rata to service, unless the reason for leaving is resignation or misconduct. Any bonus awarded would continue to be subject to deferral as set out in the Remuneration Policy.</p> <p>In relation to deferred bonus awards which have already been made, shares will be released on the normal vesting date unless one of the following circumstances applies, and subject to the discretion of the Remuneration Committee:</p> <ul style="list-style-type: none"> • the participant leaves as a result of misconduct; or • the participant, prior to vesting, breaches one of the post-termination restrictions or covenants provided for in his employment contract, termination agreement or similar agreement. <p>In which case the deferred awards will lapse on cessation of employment.</p> <p>The Remuneration Committee has the discretion to accelerate vesting of a deferred award if appropriate to do so to reflect the circumstances of the departure. It is intended that this would only be used in the event of a departure due to ill health (or death).</p>		
Termination – treatment of long term incentive awards	<p>Employees, including executive directors, leaving the company's employment will normally lose their long term incentive awards unless they leave for a specified 'good leaver' reason, in which case their shares will be released on the normal release dates, subject to the performance condition. The Remuneration Committee has discretion to accelerate vesting, in which case the performance condition would be assessed based on available information at the time. In either case, unless the Remuneration Committee determines otherwise, the level of vesting shall be pro-rated to reflect the proportion of the performance period which has elapsed to the date of leaving. In the post-vesting deferral period, only those who leave due to misconduct will lose their shares.</p>		
Redundancy arrangements	<p>The director is not entitled to any benefit under any redundancy payments arrangement operated by the company.</p>		
Holiday	<p>Upon termination for any reason, directors will be entitled to payment in lieu of accrued but untaken holiday entitlement.</p>		

¹ John Walker is eligible for continuing post-retirement medical benefits provided he satisfies the conditions of this plan and retires directly from Johnson Matthey.

Governance

Remuneration Report continued

Chairman and Non-Executive Directors

The Chairman and each of the Non-Executive Directors have letters of appointment. The letters of appointment do not contain any contractual entitlement to a termination payment and the Non-Executive Directors can be removed in accordance with the company's Articles of Association. Directors are required to retire at each AGM and seek re-election by shareholders.

The details of the service contracts, including notice periods, contained in the letters of appointment in relation to the Non-Executive Directors who served during the year are set out in the table below. Neither the Chairman or the Non-Executive Directors has provisions in his or her letter of appointment that relate to a change of control of the company.

Non-Executive Director	Committee appointments	Date of appointment	Expiry of current term	Notice period by the individual	Notice period by the company
Patrick Thomas (Chairman)	R, N	1st June 2018	31st May 2021	6 months	6 months
Odile Desforges	A, R, N	1st July 2013	17th July 2019	1 month	1 month
Alan Ferguson	A, R, N	13th January 2011	23rd July 2020	1 month	1 month
Jane Griffiths	A, R, N	1st January 2017	31st December 2019	1 month	1 month
Chris Mottershead	A, R, N	27th January 2015	26th January 2021	1 month	1 month
John O'Higgins	A, R, N	16th November 2017	15th November 2020	1 month	1 month
Xiaozhi Liu	A, R, N	2nd April 2019	1st April 2022	1 month	1 month
Doug Webb	A, R, N	2nd September 2019	1st September 2022	1 month	1 month

A: Audit Committee R: Remuneration Committee N: Nomination Committee

Annual Report on Remuneration

This section provides details of how the 2017 Directors' Remuneration Policy was implemented during 2019/20 and how we intend to apply the 2020 Directors' Remuneration Policy (subject to approval) in 2020/21.

About the Remuneration Committee

The Remuneration Committee is a committee of the board and comprises all the independent Non-Executive Directors of the company as set out above including the group Chairman Patrick Thomas. Details of attendance at committee meetings during the year ended 31st March 2020 is shown below.

	Date of appointment to committee	Number of meetings eligible to attend	Number of meetings attended	% attended
Chris Mottershead ¹	27th January 2015	5	5	100
Odile Desforges ²	1st July 2013	2	1	50
Alan Ferguson	13th January 2011	5	5	100
Jane Griffiths	1st January 2017	5	5	100
John O'Higgins	16th November 2017	5	5	100
Patrick Thomas	1st June 2018	5	5	100
Xiaozhi Liu	2nd April 2019	5	5	100
Doug Webb	2nd September 2019	2	2	100

¹ Chris Mottershead was appointed as Chairman of the committee on 16th November 2017.

² Odile Desforges stepped down from the board as a Non-Executive Director on 17th July 2019.

Since the end of the year, the committee has met four times. All committee members attended the meetings.

The Remuneration Committee's terms of reference, can be found in the Investor Relations / Corporate Governance section of our website and include determination on behalf of the board of fair remuneration for the Chief Executive, the other Executive Directors and the group Chairman (in which case the group Chairman does not participate). In addition, the committee receives recommendations from the Chief Executive on the remuneration of those reporting to him as well as advice from the Chief HR Officer, who acts as secretary to the committee.

Advisers to the committee

In determining the remuneration structure, the committee appoints and receives advice from independent remuneration consultants on the latest developments in corporate governance and the pay and incentive arrangements prevailing in comparably sized industrial companies. Korn Ferry are our sole advisor in relation to the advice to the Remuneration Committee. The total fees paid to Korn Ferry in respect of its services to the committee during the year were £73,860 plus VAT. The fees paid to Korn Ferry are based on the standard market rates Korn Ferry have for Remuneration Committee advisory services.

Korn Ferry also provides consultancy services to the company in relation to certain employee HR and benefit matters to those below the board. Korn Ferry is a signatory to the Remuneration Consultants Group Code of Conduct.

The committee is satisfied that the advice provided by Korn Ferry was independent and objective and that the provision of additional services did not compromise that independence. The committee is also satisfied that the team who provided that advice do not have any connection to Johnson Matthey that may impair their independence and objectivity.

Herbert Smith Freehills is the committee's legal advisor. There was no requirement during 2019/20 for Herbert Smith Freehills to provide advice to the committee. The committee is aware that Herbert Smith Freehills is one of a number of legal firms that provide legal advice and services to the company on a range of matters.

A statement regarding the use of remuneration consultants for the year ended 31st March 2020 is available on our website.

Remuneration for the year ended 31st March 2020

Single figure table of remuneration* (this table is auditable along with any subsequent information marked with a *)

The table below sets out the total remuneration and breakdown of the elements each director received in relation to the year ended 31st March 2020, together with a prior year comparative. An explanation of how the figures are calculated follows the table.

	Base salary / fees £'000		Benefits £'000		Annual incentive £'000		Long term incentive £'000		Pension ⁴ £'000		Total £'000		Total fixed remuneration		Total variable remuneration	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Executive Directors																
Robert MacLeod	838	818	22	28	392	660	-	1,086	210	205	1,462	2,784	1,070	1,051	392	1,733
Anna Manz	528	515	19	22	206	369	-	599	132	129	885	1,627	679	666	206	961
John Walker	480	468	65	64	144	328	-	525	120	117	809	1,496	665	649	144	847
Non-Executive Directors																
Patrick Thomas	369	256	-	-	-	-	-	-	-	-	369	256	-	-	-	-
Odile Desforges ¹	20	65	-	-	-	-	-	-	-	-	20	65	-	-	-	-
Alan Ferguson	98	93	-	-	-	-	-	-	-	-	98	93	-	-	-	-
Jane Griffiths	67	65	-	-	-	-	-	-	-	-	67	65	-	-	-	-
Chris Mottershead	84	89	-	-	-	-	-	-	-	-	84	89	-	-	-	-
John O'Higgins	67	65	-	-	-	-	-	-	-	-	67	65	-	-	-	-
Xiaozhi Liu ²	64	-	-	-	-	-	-	-	-	-	64	-	-	-	-	-
Doug Webb ³	39	-	-	-	-	-	-	-	-	-	39	-	-	-	-	-

¹ Odile Desforges stepped down from the board as a Non-Executive Director on 17th July 2019.

² Xiaozhi Liu joined the board as Non-Executive Director on 2nd April 2019.

³ Doug Webb joined the board as a Non-Executive Director on 2nd September 2019.

⁴ Represents a cash allowance in lieu of a pension.

Explanation of Figures

Base salary / fees	Salary paid during the year to Executive Directors and fees paid during the year to Non-Executive Directors.
Benefits	All taxable benefits such as medical and life insurance, service and car allowances, matching shares under the all employee share incentive plan and assistance with tax advice and tax compliance services where appropriate.
Annual incentives	Annual bonus awarded for the year ended 31st March 2020. The figure includes any amounts deferred and awarded as shares.
Long term incentives	The 2019 figure represents the value of the shares that satisfied performance conditions on 31st March 2019 and will be released on 1st August 2019, 1st August 2020 and 1st August 2021. This value is calculated using the actual share price for shares that vested on 1 August 2019 (3,166 pence) and the average share price from 1st January 2019 to 31st March 2019 (3,058 pence) for the unvested portion of the award. The 2020 figure represents the value of the shares that satisfied performance conditions on 31st March 2020.
Pension	The amounts shown represent the value of the increase over the year of any defined benefit pension the Executive Director may have in the Johnson Matthey Employees Pension Scheme (JMEPS) plus any cash supplements paid in lieu of pension membership.

Payments to former directors*

There were no payments made to, or in respect of, any former director in 2019/20 that haven't been previously disclosed.

Payments for loss of office*

Mr Walker was paid £9,692 for accrued but untaken holiday at the date he retired. This was the only payment for loss of office made in the year.

The remuneration payable to Mr Walker following his retirement is as follows:

Annual Incentive Plan

Subject to the performance conditions of the Annual Incentive Plan being met, Mr Walker will receive a bonus for the year ended 31st March 2020 on the normal bonus award date in 2020. The maximum level of bonus possible was 150% of annual base salary, and the actual amount payable was 30% of annual base salary (20% of maximum). In accordance with the rules of the plan, a proportion of any bonus will be awarded as shares which will be deferred for a period of three years.

Mr Walker was awarded 4,521 shares under the Deferred Bonus Plan (DPB) in 2017, 6,309 shares under the DBP in 2018 and 5,215 shares under the DBP in 2019. These shares will be released to him on their normal release dates in August 2020, August 2021 and August 2022 respectively.

Dividend equivalent shares will accrue on deferred bonus awards during the relevant vesting period.

Governance

Remuneration Report continued

Performance Share Plan

Shares allocated to Mr Walker in August 2016 under the PSP met the performance conditions and are being released to him in three equal tranches of 5,562 shares. The first tranche was released in August 2019 and the second and third tranches will be released in August 2020 and August 2021 respectively.

The 2017 PSP award of 26,521 shares will not be pro-rated as Mr Walker will have been employed for the entire performance period. However, the 2018 PSP award of 21,980 shares and 2019 PSP award of 26,711 shares will be pro-rated to 14,653 and 8,903 shares based on his completed service since the start of the relevant performance period.

In all cases, final vesting will be determined by reference to the achievement of the relevant performance conditions and subject to those conditions being met the 2017 and 2018 PSP awards will vest in three equal tranches on the third, fourth and fifth anniversary of the award. The 2019 PSP award will vest on the fifth anniversary of the award.

Dividend equivalent shares will accrue on awards between the end of the three year performance period and the date the shares finally vest and are released to Mr Walker.

No PSP award will be made to Mr Walker in 2020.

Variable pay – additional disclosures, including bases of calculation and outcomes*

1 Annual bonus for the year ended 31st March 2020

The Executive Directors were eligible for a maximum annual bonus opportunity of 180% of base salary for the Chief Executive and 150% of base salary for the other Executive Directors. The on target bonus opportunity was set at 50% of the maximum opportunity and the threshold bonus opportunity was 15% of the maximum opportunity.

The performance measures and weightings for the annual bonus were as follows:

	Percentage of bonus available			
	Group underlying PBT	Clean Air underlying operating profit	Group working capital days	Strategic objectives ¹
Chief Executive	60%	–	20%	20%
Chief Financial Officer	60%	–	20%	20%
Sector Chief Executive, Clean Air	40%	20%	20%	20%

Performance targets under the annual bonus plan are set with reference to the prior year and to the budgets and business plans for the coming year, ensuring the levels to achieve threshold, target or maximum payout are appropriately challenging. Financial budgets are built from the bottom up and are subject to a rigorous process of challenge before final proposals are considered by the board. Further information is used in the determination, including a consensus of industry analysts' forecasts, provided by Vara Research.

In relation to the range of profit targets set for the Group as a whole and for the Clean Air sector (i.e. threshold at 95% of the targeted profit number and maximum at 105%), the range was set following consideration of the challenging nature of the bonus target number (which was circa 2% above the targets set for 2018/19). Given the challenging environment, the Remuneration Committee was comfortable that the ranges of financial targets set were similarly challenging to those operated in prior years.

The strategic objectives are set based on well defined key deliverables that support our strategy relating to science, customers, operations and people.

Achievement against the performance targets for the year ended 31st March 2020 are set out in the tables below.

Financial targets¹

Performance measure		Threshold	Target	Maximum	Actual	Actual % of target
Group underlying PBT ²	£ million	509 (95% of Target)	536	563 (105% of Target)	454	84.7
Clean Air underlying operating profit ²	£ million	375 (95% of Target)	395	415 (105% of Target)	299	75.9
Group total working capital days (including precious metal) ³	days	53 (105% of Target)	51	48 (95% of Target)	44	87.1
Group working capital days (excluding precious metal) ³	days	59 (105% of Target)	56	53 (95% of Target)	63	112.3

¹ All figures in the table have been rounded to the nearest whole number except the actual % of target.

² Group underlying PBT and Clean Air underlying operating profit is measured using budget foreign exchange rates.

³ Group working capital days is measured 50% against total working capital days including precious metal and 50% against working capital days excluding precious metal. This is to ensure that appropriate focus is put on metal management.

Strategic objectives¹

	Robert MacLeod	Anna Manz	John Walker
Objective	Deliver key milestones for Battery Materials commercialisation plan. Continued development of leading eLNO material and clearly articulate and deliver against Battery Materials scale-up strategy.	In line with the Board's agreed strategy, review the company's business portfolio and implement plans to maximise shareholder value.	Deliver a step change in our gasoline technology demonstrated by customer feedback and, where applicable, business wins across all regions.
Summary outcome	The strategy has been clearly articulated and associated capital projects are progressing. There has been good progress during the year with certain OEMs including the achievement of full cell testing in some cases.	Good progress made with a number of strategic reviews completed, action plans put in place, with progress to enhance value ongoing.	Some good progress made with our technology development, plus a number of new gasoline business wins achieved.
	Outcome: 20% out of 25%	Outcome: 20% of 25%	Outcome: 10% of 25%
Objective	Ensure further enhancements in Commercial Excellence delivering budgeted benefits plus the implementation of consistent group wide customer satisfaction metrics; the utilisation of customer value proposition tools; and meeting OTIF requirements.	Deliver Operational Excellence targets of at least £30m improvements.	Deliver £19m of value from the Manufacturing Excellence deliverables for Clean Air.
Summary outcome	Good progress made overall. Customer satisfaction metrics rolled out across the group, with key insights learned and being acted on. Commercial benefits of £23.5m delivered compared with budget of £16m.	Delivered savings of £36m against identified projects.	Delivered £26m savings compared with a budget of £19m.
	Outcome: 20% of 25%	Outcome: 20% of 25%	Outcome: 20% of 25%
Objective	Continue to improve senior talent across the organisation. In particular ensure a successful succession for Clean Air plus new appointments to Battery Materials and Technology, as well as defining and developing the New Business Development organisation.	Ensure that the Cyber Security Infrastructure Improvement Plan is on track to deliverable milestones and in line with budget.	Ensure that the Clean Air capital projects, including the ramp up of production in Poland and Zhangjiagang, are on budget and delivered in line with milestones.
Summary outcome	New appointments made in all key areas at the senior management level, with some progress made at the next level within the organisation improving the overall leadership strength.	Excellent progress made, with all milestones achieved with the program delivering tangible benefits across all areas within scope.	Poland is completed and Zhangjiagang is almost complete. The investments in these projects was more than originally budgeted. There were some delays, however these delays were outside our control.
	Outcome: 20% of 25%	Outcome: 25% of 25%	Outcome: 10% of 25%
Objective	Drive employee engagement focusing on the key factors to drive a 2-point improvement in engagement.	Successfully deploy SAP Unify at 6 sites with 4 deployment GO-Live dates. Mexico, Zhangjiagang, Poland, USA, South Africa and Shanghai. Deliver efficiency savings identified.	Successfully deploy SAP Unify at 6 sites with 4 deployment GO-Live dates. Mexico, Zhangjiagang, Poland, USA, South Africa and Shanghai. Deliver efficiency savings identified.
Summary outcome	An overall increase in ownership of employee engagement amongst management, which supported an increase of four points in employee engagement.	The SAP Unify system was deployed in UK Corporate, Mexico, South Africa and Poland. The roll out of the systems across the rest of the group will continue, with the deployment team well placed to deliver this efficiently.	The SAP Unify system was deployed in Mexico, South Africa and Poland. Business readiness issues in Clean Air complicated and delayed some further deployments.
	Outcome: 20% of 25%	Outcome: 15 % of 25%	Outcome: 10% of 25%
	80% achievement	80% achievement	50% achievement

¹ Each strategic objective has an equal weighting of 25%.

Governance

Remuneration Report continued

Based on performance against the above targets, bonuses for the year ended 31st March 2020 were:

	£'000	% salary
Robert MacLeod, Chief Executive	392	47
Anna Manz, Chief Financial Officer	206	39
John Walker, Sector Chief Executive, Clean Air	144	30

In accordance with the rules of the plan, 50% of the bonus payable is awarded as shares and deferred for three years. There are no further performance conditions attached to the deferred element.

2 Long term incentive vesting for the three year performance period ended 31st March 2020*

The table below sets out the performance targets for the long term incentive awards made in August 2017 with a three year performance period which ended on 31st March 2020. After the performance period, shares are no longer subject to performance conditions and where the performance conditions are met the shares will vest in equal instalment on the third, fourth and fifth anniversary of the award.

Required underlying EPS performance	Proportion of award which may vest
Threshold 4% CAGR	15%
Maximum 10% CAGR	100%

The awards vest on a straight line basis between threshold and maximum. In addition to the EPS performance condition, the Remuneration Committee considers the performance of ROIC over the performance period to ensure that earnings growth is achieved in a sustainable and efficient manner.

The performance over the period was a compound annual growth in underlying EPS of -1.6% per annum. As a result, no shares will vest. The table below shows the vesting outcomes based on this performance.

	% of base salary awarded	Shares awarded	% of award to vest	Shares to vest	Estimated value on vesting £
Executive Directors					
Robert MacLeod	200	52,955	–	–	–
Anna Manz	175	28,451	–	–	–
John Walker	175	26,521	–	–	–

3 Variable pay awarded during the year ended 31st March 2020* (Long term incentive awards subject to future performance)

In 2019/20 long term incentive awards were made to the Executive Directors in respect of the three year performance period to 31st March 2022. The table below sets out the opportunity and performance targets for these awards.

Required underlying EPS performance	Proportion of award which may vest	Chief Executive ¹	Other Executive Director ¹
Threshold 4% CAGR	15%	30%	26.25%
Maximum 10% CAGR	100%	200%	175%

¹ Represents a % of base salary.

The table below sets out the details of the actual conditional long term incentive awards made as a percentage of base salary.

	Date of grant	Award size (% of base salary)	Number of shares awarded	Face value ¹ £
Robert MacLeod	1st August 2019	200	53,324	£1,676,880
Anna Manz	1st August 2019	175	29,382	£923,976
John Walker	1st August 2019	175	26,711	£839,981

¹ Face value is calculated using the award share price of 3,144.7 pence, which is the average closing share price over the four week period commencing on 30th May 2019.

4 Prior year long term incentive awards and outcomes

The table below shows the history of long term incentive awards granted since 2010.

Year of award	Year of vesting ¹	% salary awarded to Chief Executive	% salary awarded to other Executive Directors	Threshold EPS growth target	Stretch EPS growth target	Compound annual growth in underlying EPS in the period	% of award vested
2010	2013	150	120	7%	16%	20.2%	100
2011	2014	175	140	7%	16%	13.3%	75
2012	2015	175	140	7%	16%	6.07%	–
2013	2016	175	140	6%	15%	7.85%	33
2014	2017	200	175	6%	15%	7.39%	28
2015	2018	200	175	6%	12%	5.14%	–
2016	2019	200	175	4%	10%	7.66%	67
2017	2020	200	175	4%	10%	-1.6%	–
2018	2021	200	175	4%	10%	n/a	n/a
2019	2022	200	175	4%	10%	n/a	n/a

¹ Awards from 2014 are subject to tranche vesting and so the year shown is the vesting of the first tranche

Pension entitlements*

No director is currently accruing any pension benefit in the group's pension schemes. Instead they receive an annual cash payment in lieu of pension membership, equal to 25% of base salary in 2019/20. However, Robert MacLeod and John Walker have each accrued a pension entitlement in respect of a prior period of pensionable service in one or more of the group's pension arrangements.

Robert MacLeod ceased pensionable service in JMEPS on 31st March 2011.

John Walker joined JMEPS on 1st September 2012 and ceased pensionable service in this scheme on 9th October 2013. Prior to joining JMEPS he was a member of the US Johnson Matthey Inc. Salaried Employees Pension Plan.

Details of the accrued pension benefits of the Executive Directors as at 31st March 2020 in the UK and US pension schemes are given below:

	Total accrued annual pension entitlement at 31st March 2020 £'000 ³
Robert MacLeod ¹	10
Anna Manz	–
John Walker ²	89

¹ Pension payable from age 65 based on pensionable service in the UK pension scheme up to 31st March 2011.

² Pension payable in respect of pensionable service in the UK and US pension schemes payable from age 65 and 62 respectively. The pension payable from the US pension scheme will be paid in local currency.

³ No director would gain any additional benefit by retiring early in line with the scheme rules.

Statement of directors' shareholding*

The table below shows the directors' interests in the shares of the company, together with their unvested scheme interests, as at 31st March 2020.

	Ordinary shares ¹	Subject to ongoing performance conditions ²	Not subject to further performance conditions ³
Executive Directors			
Robert MacLeod	59,335	150,162	56,649
Anna Manz	5,961	82,007	27,647
John Walker	17,765	75,212	27,351
Non-Executive Directors			
Patrick Thomas	8,194	–	–
Odile Desforges	1,416	–	–
Alan Ferguson	2,078	–	–
Jane Griffiths	2,671	–	–
Chris Mottershead	2,809	–	–
John O'Higgins	1,500	–	–
Xiaozhi Liu	–	–	–
Doug Webb	1,600	–	–

¹ Includes shares held by the director and / or connected persons, including those in the all employee share matching plan and 401k plan. Shares in the all employee share matching plan may be subject to forfeiture in accordance with the rules of the plan.

² Represents unvested long term incentive shares within three years of the date of award.

³ Represents unvested deferred bonus shares and unvested long term incentive shares between the third and fifth anniversary of award, where performance conditions have been assessed but vesting has not occurred.

Governance

Remuneration Report continued

Directors' interests as at 11th June 2020 were unchanged from those listed above, other than that the trustees of the all employee share matching plan have purchased a further 36 shares for Robert MacLeod and 39 shares for Anna Manz.

Executive Directors are expected to build up a shareholding in the company. The minimum shareholding requirement for the year ended 31st March 2020 was 200% of base salary for the Chief Executive and 150% of base salary for the other Executive Directors. The table below shows the extent to which the proposed minimum shareholding requirements have been satisfied:

	Shares held as at 31st March 2020 (% of base salary) ^{1,2}
Robert MacLeod	350
Anna Manz	161
John Walker	238

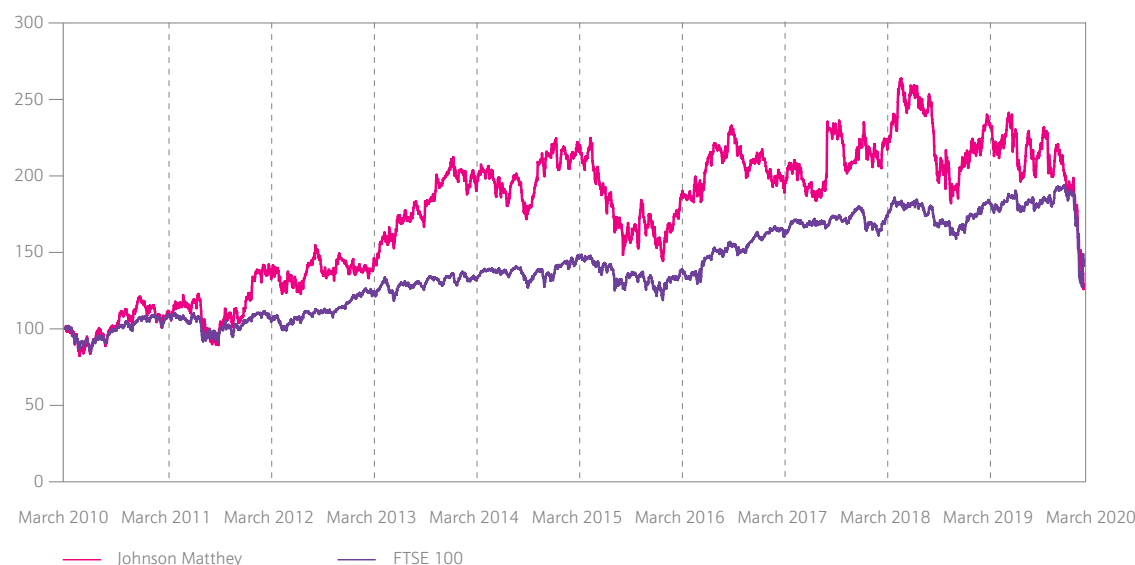
¹ Value of shares as a percentage of base salary is calculated using a share value of 2,529.80 pence, which was the average share price prevailing between 1st January 2020 and 31st March 2020.

² The director's total shareholding for the purposes of comparing it with the minimum shareholding requirement includes shares held beneficially by the director and any connected persons (as recognised by the Remuneration Committee) together with deferred shares awarded under the annual bonus rules for which there are no further performance conditions and any unvested long term incentive shares between the third and fifth anniversary of award, where performance conditions have been assessed but vesting has not occurred (this is not subject to continued employment, but the passage of time).

Performance graph and comparison to Chief Executive's Remuneration

Johnson Matthey and FTSE 100 Total Shareholder Return Rebased to 100

The following chart illustrates the total cumulative shareholder return of the company for the ten year period from 1st April 2010 to 31st March 2020 against the FTSE 100 as the most appropriate comparator group, rebased to 100 at 1st April 2010.



As at 31st March 2020, Johnson Matthey was ranked 91 by market capitalisation in the FTSE 100.

Historical data regarding Chief Executive's remuneration

	2010/11	2011/12	2012/13	2013/14 ¹	2014/15 ²	2015/16 ³	2016/17	2017/18	2018/19	2019/20
Single total figure of remuneration	2,095	1,870	3,025	3,855	2,539	1,429	1,971	2,013	2,784	1,462
Annual incentives (% of maximum)	100	75	–	71	54	15	40	69	45	26
Long term incentives (% of award vesting) ⁴	52	100	100	75	–	33	28	–	67%	–

¹ Figures prior to 2014/15 are in respect of Neil Carson.

² The figures for 2014/15 are in respect of both Robert MacLeod and Neil Carson, who both held the position of Chief Executive in the year. The single total figure of £2,539 comprises £1,594 for Robert MacLeod and £945 for Neil Carson.

³ Figures from 2015/16 onwards are in respect of Robert MacLeod.

⁴ Vesting of long term incentive awards whose three year performance period ended in the financial year shown.

The above data is calculated according to the same methodology as applied in the single figure table on page 115.

Change in Chief Executive's remuneration

The table below shows how the remuneration of the Chief Executive has changed over the year ended 31st March 2020. This is then compared to a group of appropriate employees, being those based in the UK. This comparator group was used because the Remuneration Committee believes it gives a reasonable understanding of the underlying increases, based on similar annual bonus performance measures, while at the same time reducing the distortion from currency fluctuations and the distortions that would arise from including all of the many countries in which the group operates with their different economic conditions.

	Chief Executive	Comparator group ¹
Salary	An increase of 2.5%	An increase of 6.5%
Bonus	A decrease of 41%	A decrease of 61% ²
Benefits	No change in benefits policy. No change on overall costs between 2018/19 and 2019/20.	No change in benefits policy. No change on overall costs between 2018/19 and 2019/20.

¹ This includes market adjustments and promotions.

² Bonus data was estimated for the comparator population as it was not administratively possible to calculate the bonus due for 2019/20 before publication of this report.

Relative spend on pay

The table below shows the absolute and relative amounts of distributions to shareholders and the total remuneration for the group for the years ended 31st March 2019 and 31st March 2020.

	Year ended 31st March 2020 £ million	Year ended 31st March 2019 £ million	% change
Payments to shareholders – special dividends	–	–	–
Payments to shareholders – ordinary dividends	167	156	7%
Total remuneration (all employees) ¹	743	730	3%

¹ Excludes termination benefits.

CEO to employee pay ratio

The table below shows the ratio of CEO to employee pay for 2019/20. We have compared the single total figure of remuneration for the CEO to the total pay and benefits of UK employees who are ranked at the lower quartile, median and upper quartile across all UK employees as at 31 March 2020.

CEO pay ratio	2020
Method	A – total pay and benefits in 2019/20
CEO Single figure	1,462,000
Upper quartile	22:1
Median	29:1
Lower quartile	37:1

Bonus data for UK employees was omitted from the calculation as it was not administratively possible to calculate these bonuses before the publication of this report. However, the calculation will be revised to include these bonuses once available and will be disclosed in the 2020/21 report. Excluding the 2019/20 bonus payable to the CEO from the calculation would result in the following pay ratios: lower quartile – 27:1, median – 21:1 and upper quartile – 16:1.

The salary and total pay for the individuals identified at the lower quartile, median and upper quartile positions in 2020 are set out below:

2020	Salary	Total Pay
Upper quartile individual	£52,291	£66,873
Median individual	£42,324	£50,771
Lower quartile individual	£35,071	£40,029

Our principles for pay setting and progression are consistent across the organisation as a whole. Underpinning our principles is a need to provide a competitive total reward so as to enable the attraction and retention of high calibre individuals without over-paying and providing the opportunity for individual development and career progression. The pay ratios reflect the changes in individual accountability which is recognised through our pay structures which include greater variable pay opportunity for more senior positions. This is reflected in the fact that the CEO's variable pay opportunity is higher than those employees noted in the table reflecting the weighting towards long term value creation and alignment with shareholder interests inherent in this role. We are satisfied that the median pay ratio is consistent with our wider pay, reward and progression policies for employees. All our employees have the opportunity for annual pay increases, career progression and development opportunities.

Governance

Remuneration Report continued

Implementation of the Directors' Remuneration Policy for 2020/21

The table below sets out how the Remuneration Committee intends to apply the Directors' Remuneration Policy for the year ended 31st March 2021.

Salary	The Executive Directors will not receive a salary increase for 2020/21, which is in line with the policy applied to all other UK employees.
Benefits	No change to policy applied in 2020/21.
Pension	New Executive Directors will have a maximum pension cash supplement of 15%. Current Executive Directors will see their pension cash supplement reduce from 25% to 15% over the next few years as follows: 1st April 2020 – 23.0% of base salary 1st April 2021 – 20.0% of base salary 1st April 2022 – 15.0% of base salary
Annual incentives	The maximum bonus opportunity for 2020/21 remains unchanged at 180% of salary for the Chief Executive and 150% of salary for the other Executive Directors. 2020/21 bonus will be based on underlying profit before tax (60%), working capital (20%) and 20% weighting to non-financial objectives. Targets for the Chief Executive and Chief Financial Officer will be based on group performance. The range around targeted performance levels to apply to the 2020/21 annual bonus have been broadened versus 2019/20 and the absolute level of profit needing to be achieved has also been reset to better reflect the current challenging market outlook given the impact of COVID-19. The recalibration of targets has been set with reference to both internal and external planning. The 2020/21 targets are considered similarly challenging to those set in 2019/20 allowing for current market conditions. The Remuneration Committee considers the forward looking targets to be commercially sensitive but full retrospective disclosure of the actual targets will be included in next year's Directors' Remuneration report. As set out in the Policy Report, 50% of any bonus paid will be deferred in shares for three years and the payment of any bonus is subject to appropriate malus and clawback provisions.
Long term incentives	Award levels remain unchanged at 200% of salary for the Chief Executive and 175% of salary for the other Executive Directors. The long term Performance Share Plan awards will be based on EPS growth targets, subject to achieving a satisfactory level of return on capital employed and relative TSR performance. The 2020 Performance Share Plan award will be 50% based on EPS growth targets and 50% on TSR performance. The EPS target will be 15% vesting for 3% p.a. underlying EPS growth, increasing on a straight line basis to 100% vesting for 8% p.a. underlying EPS growth or above. EPS growth targets set for the period to 31 March 2023 have been set after having regard to the medium to long term impact of COVID-19 on our markets. In the context of the significant demand and supply side shocks in our markets, the range of targets set, which took account of internal planning and external expectations for our performance (where available), are considered similarly challenging to those set on prior years allowing for current circumstances. The Committee also noted the ROIC underpin and the more general discretion to adjust vesting based on group performance when setting the targets which, overall, is seen to provide a demanding financial performance targets for the next three year period. The TSR target will be 25% vesting for median performance, increasing on a straight line basis to 100% vesting for upper quartile performance. The TSR peer group will be the FTSE 31 – 100 (excluding financial services companies). In relation to the performance targets, the Committee retains discretion to adjust vesting outcomes. This may include adjusting TSR vesting if it was not considered aligned with the underlying financial performance of the Company during the performance period or adjusting EPS vesting outcomes for relevant events (e.g. material acquisitions and divestments or material changes in corporation tax rates) with the objective of any adjustments being to ensure that the performance targets fulfilled their original intent and were no more or less challenging but for the relevant events taking place during the performance period. Any use of discretion would be detailed in the 2023 Directors' Remuneration Report. Awards vest in year three and are then subject to a two year holding period.
Chairman and Non-Executive Director fees	Non-Executive Directors will not receive a fee increase in 2020/21, in line with treatment of Executive Directors and wider global workforce.

Statement of shareholder voting

We monitor carefully shareholder voting on our Remuneration Policy and its implementation. We recognise the importance of ensuring that our shareholders continue to support our remuneration arrangements.

The tables below show the results of the polls taken of the resolution to approve the Remuneration Policy at the July 2017 AGM and Directors' Annual Report on Remuneration at the July 2019 AGM.

Resolution	Number of votes cast		For	Against	Votes withheld
Remuneration Policy	136,108,674	125,583,227 (92.3%) ¹		10,525,447 (7.7%) ¹	3,139,449
Remuneration Report	149,380,783	147,872,019 (98.99%) ¹		1,508,764 (1.01%) ¹	1,370,852

¹ Percentage of votes cast, excluding votes withheld.

The Remuneration Committee believes that the 92.3% vote in favour of the Directors' Remuneration Policy at the 2017 AGM and the 98.99% vote in favour of the Annual Report on Remuneration at the 2019 AGM showed strong shareholder support for the group's remuneration arrangements at that time.

This Remuneration Report was approved by the Board of Directors on 11th June 2020 and signed on its behalf by:



Chris Mottershead
Chair of the Remuneration Committee

Directors' Report

The Directors' Report required under the Companies Act 2006 (the 2006 Act) comprises this Corporate Governance Report (pages 78 to 122) including the Responsible Business section for disclosure of our carbon emissions in the Strategic Report (pages 38 to 52). The management report required under Disclosure Guidance and Transparency Rule 4.1.8R comprises the Strategic Report (pages 4 to 75) which includes the risks relating to our business and the Directors' Report. This Directors' Report fulfils the requirements of the corporate governance statement required under Disclosure Guidance and Transparency Rule 7.2.

Directors

The names of the directors who held office during the year are set out on page 80.

The biographies of all the directors serving at the date of this annual report are shown on pages 78 and 79.

Indemnification of directors

Under Deed Polls dated 31st January 2017, Johnson Matthey has granted indemnities in favour of each director of the company and of its subsidiaries in respect of any liability that he or she may incur to a third party in relation to the affairs of the company or any group company. These were in force during the year for the benefit of all persons who were directors of the company or of its subsidiaries at any time during the year. They remain in force as at the date of approval of this annual report. The company has appropriate directors' and officers' liability insurance cover in place in respect of legal action against, amongst others, its Executive and Non-Executive Directors. Neither the company nor any subsidiary has indemnified any director of the company or a subsidiary in respect of any liability that they may incur to a third party in relation to a relevant occupational pension scheme.

Appointment and replacement of directors

The rules about the appointment and replacement of directors are contained in our Articles of Association (the Articles), which are available on our website. These include:

- directors may be appointed by a resolution of the members or a resolution of the directors; and

- at each Annual General Meeting (AGM) all of the directors will retire and be eligible for re-election (except any director appointed by the directors after the notice of that AGM meeting has been given and before that AGM has been held).

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Powers of the directors

The powers of the directors are determined by the Articles, UK legislation including the 2006 Act and any directions given by the company in general meeting.

The directors are authorised by the company's Articles to issue and allot ordinary shares and to make market purchases of its own shares. These powers are referred to shareholders for renewal at each AGM. Further information is set out in the Directors' Report under the heading 'Purchase by the company of its own shares'.

Directors' interests in the company's shares

The interests of persons who were directors of the company (and of their connected persons) at 31st March 2020 in the issued shares of the company (or in related derivatives or other financial instruments), which have been notified to the company in accordance with the Market Abuse Regulation, are set out in the Remuneration Report on page 119. The Remuneration Report also sets out details of any changes in those interests between 31st March 2020 and 11th June 2020.

Directors' interests in contracts

Other than service contracts, no director had any interest in any material contract with any group company at any time during the year. There were no contracts of significance (as defined in the FCA's Listing Rules) during the year to which any group undertaking was a party and in which a director of the company is or was materially interested.

Dividends

The interim dividend of 24.50 pence per share (2019: 23.25 pence) was paid in February 2020. The directors recommend a final dividend of 31.125 pence per share in respect of the year (2019: 62.25 pence), making a total for the year of 55.625 pence per share (2019: 85.50 pence), payable on 4th August 2020 to shareholders on the register at the close of business on 19th June 2020.

Other than as referred to under 'Employee share schemes' on page 124, during the year there were no arrangements under which a shareholder has waived or agreed to waive any dividends nor any agreement by a shareholder to waive future dividends.

Dividend payments and DRIP

Dividends can be paid directly into shareholders' bank accounts. A Dividend Reinvestment Plan is also available. This allows shareholders to purchase additional shares in the company with their dividend payment. Further information and a mandate can be obtained from our registrar, Equiniti, whose details are on page 223 and on our website.

Asset reunification

The board is committed to proactively seeking to unite shareholders promptly with their shares and dividend payments. To date, we have successfully reunited £0.5 million of share and dividend payments through our registrar, Equiniti, and its partner ProSearch.

Share capital

Capital structure

As at 31st March 2020, the issued share capital of the company was 193,533,430 ordinary shares of 110 ⁴⁹/₃₂ pence each (excluding treasury shares) and 5,407,176 treasury shares. There were no purchases, sales or transfers of treasury shares during the year.

Share allotments

There were no share allotments during the year.

Purchase by the company of its own shares

At the 2019 AGM shareholders authorised the company to make market purchases of up to 19,353,343 ordinary shares of 110 ⁴⁹/₃₂ pence each, representing 10% of the issued share capital of the company (excluding treasury shares). Any shares so purchased by the company may be cancelled or held as treasury shares. This authority will cease at the date of the 2020 AGM.

During the year and up until the date of approval of this annual report, the company did not make any purchases of its own shares or propose to, or enter into any options or contracts to, purchase its own shares (either through the market or by an offer made to all shareholders or otherwise), nor did the company acquire any of its own shares other than by purchase.

Governance

Directors' Report continued

Rights and obligations attaching to share

The rights and obligations attaching to the ordinary shares in the company are set out in the Articles.

As at 31st March 2020 and as at the date of approval of this annual report, except as referred to below, there were no restrictions on the transfer of ordinary shares in the company, no limitations on the holding of securities and no requirements to obtain the approval of the company, or of other holders of securities in the company, for a transfer of securities.

The directors may, in certain circumstances, refuse to register the transfer of a share in certificated form which is not fully paid up, where the instrument of transfer does not comply with the requirements of the company's Articles, or if entitled under the Uncertificated Securities Regulations 2001. As at 31st March 2020 and at the date of approval of this annual report:

- no person held securities in the company carrying any special rights with regard to control of the company;
- there were no restrictions on voting rights (including any limitations on voting rights of holders of a given percentage or number of votes or deadlines for exercising voting rights) except that a shareholder has no right to vote in respect of a share unless all sums due in respect of that share are fully paid;
- there were no arrangements by which, with the company's cooperation, financial rights carried by shares in the company are held by a person other than the holder of the shares; and
- there were no agreements known to the company between holders of securities that may result in restrictions on the transfer of securities or on voting rights.

Nominees, financial assistance and liens

During the year:

- no shares in the company were acquired by the company's nominee, or by a person with financial assistance from the company, in either case where the company has a beneficial interest in the shares (and no person acquired shares in the company in any previous financial year in its capacity as the company's nominee or with financial assistance from the company); and
- the company did not obtain or hold a lien or other charge over its own shares.

Allotment of securities for cash and placing of equity securities

During the year the company has not allotted, nor has any major subsidiary undertaking of the company (broadly an undertaking that represents at least 25% of the group's aggregate gross assets or profit) allotted, equity securities for cash. During the year the company has not participated in any placing of equity securities.

Listing of the company's shares

Johnson Matthey's shares have a Premium Listing on the London Stock Exchange and trade as part of the FTSE 100 index under the symbol JMAT.

American Depositary Receipt programme

Johnson Matthey has a sponsored Level 1 American Depositary Receipt (ADR) programme which BNY Mellon administers and for which it acts as Depositary. Each ADR represents two ordinary shares of the company. The ADRs trade on the US over-the-counter market under the symbol JIMPLY. When dividends are paid to shareholders, the Depositary converts those dividends into US dollars, net of fees and expenses, and distributes the net amount to ADR holders. Contact details for BNY Mellon are on page 223.

Interests in voting rights

The following information has been disclosed to the company under the FCA's Disclosure and Transparency Rules (DTR 5) in respect of notifiable interests in the voting rights in the company's issued share capital:

	Nature of holding	Total voting rights ¹	% of total voting rights ²
As at 31st March 2020:			
Ameriprise Financial Inc.	Direct	84,408	0.04%
	Indirect	9,727,409	5.03%
BlackRock, Inc.	Indirect	20,181,149	9.85%
	Financial Instrument (CFD)	209,763	0.10%
Standard Life Aberdeen plc affiliated investment management entities with delegated voting rights on behalf of multiple managed portfolios	Indirect	14,528,304	7.51%

¹ Total voting rights attaching to the issued ordinary share capital of the company (excluding treasury shares) at the time of disclosure to the company.

² % of total voting rights at the date of disclosure to the company.

Other than as stated above, as far as the company is aware, there is no person with a significant direct or indirect holding of securities in the company. The information provided above was correct at the date of notification. However these holdings are likely to have changed since the company was notified. Notification of any change is not required until the next notifiable threshold is crossed, and no changes have been notified to the company between 31st March 2020 and 11th June 2020.

Employee share schemes

At 31st March 2020, 4,395 current and former employees were shareholders in the company through the group's employee share schemes. Through these schemes, current and former employees held 2,667,797 ordinary shares, 1.38% of issued share capital, excluding treasury shares as at 31st March 2020. Also as at 31st March 2020, 1,355,834 ordinary shares had been awarded but had not yet vested under the company's long term incentive plan to 268 current and former employees.

Shares acquired by employees through the company's employee share schemes rank equally with the other shares in issue and have no special rights. Voting rights in respect of shares held through the company's employee share schemes are not exercisable directly by employees. However, employees can direct the trustee of the schemes to exercise voting rights on their behalf. The trustee of the company's employee share ownership trust (ESOT) has waived its right to dividends on shares held by the ESOT which have not yet vested unconditionally to employees.

Contracts with controlling shareholders

During the year there were no contracts of significance (as defined in the FCA's Listing Rules) between any group undertaking and a controlling shareholder and no contracts for the provision of services to any group undertaking by a controlling shareholder.

Change of control

As at 31st March 2020 and as at the date of approval of this annual report, there were no significant agreements to which the company or any subsidiary was or is a party that take effect, alter or terminate on a change of control of the company, whether following a takeover bid or otherwise.

However, the company and its subsidiaries were, as at 31st March 2020 and as at the date of approval of this annual report, party to a number of commercial agreements that may allow the counterparties to alter or terminate the agreements on a change of control of the company following a takeover bid. These are not deemed by the company to be significant in terms of their potential effect on the group as a whole.

The group also has a number of loan notes and borrowing facilities which may require prepayment of principal and payment of accrued interest and breakage costs if there is change of control of the company. The group has entered into a series of financial instruments to hedge its currency, interest rate and metal price exposures which provide for termination or alteration if a change of control of the company materially weakens the creditworthiness of the group.

The Executive Directors' service contracts each contain a provision to the effect that if the contract is terminated by the company within one year after a change of control of the company, the company will pay to the director as liquidated damages an amount equivalent to one year's gross base salary and other contractual benefits less the period of any notice given by the company to the director.

The rules of the company's employee share schemes set out the consequences of a change of control of the company on participants' rights under the schemes.

Generally the rights will vest and become exercisable on a change of control subject to the satisfaction of relevant performance conditions. As at 31st March 2020 and as at the date of approval of this annual report, there were no other agreements between the company or any subsidiaries and its or their directors or employees providing for compensation for loss of office or employment (whether through resignation, purported redundancy or otherwise) that occurs because of a takeover bid.

Branches

The company and its subsidiaries have established branches in a number of different countries in which they operate.

Political donations and expenditure

It is the group's policy not to make political donations or to incur political expenditure. During the year, there were no political donations made to any EU or non-EU political party, EU or non-EU political organisation or to any EU or non-EU independent election candidate. During the year, no EU or non-EU political expenditure was incurred.

Suppliers

We recognise the importance of good supplier relationships to the overall success of our business. Further information on our payment practices can be found on the Government's reporting portal.

In addition, the company pledged in April 2020 to support any small supplier that is suffering hardship and requests early payment terms as a result of the impact of COVID-19 during April, May and June 2020.

Information set out in the Strategic Report

In accordance with section 414C(11) of the 2006 Act, the directors have chosen to set out in the Strategic Report the following information required to be included in the Directors' Report:

- **Employee engagement**

A description of the action taken by the company during the year relating to employee engagement. Read more on page 42.

- **Employment of disabled persons**

Information on the company's policy applied during the year relating to the recruitment, employment, training, career development and promotion of disabled employees. Read more on page 44.

- **Research and development activities**

An indication of the activities of the group in the field of research and development. Read more on pages 19 to 21 and 61.

- **Likely future developments**

An indication on likely future developments in our business. Read more on pages 4 to 75.

- **Stakeholder engagement and Section 172 statement**

Information about our stakeholders, how the board considers their views in regard to principal decisions and can be found on pages 28 to 33 and page 85.

- **Greenhouse gas emissions**

Disclosures relating to greenhouse gas emissions. Read more on page 48.

- **Use of financial instruments**

Information on the group's financial risk management objectives and policies, its exposure to credit risk, liquidity risk, interest rate risk and foreign currency risk and its use of financial instruments. Read more on pages 65 to 66 and pages 180 to 186.

- **Human rights and anti-bribery and corruption**

Disclosures relating to the group's human rights and anti-bribery and corruption policies. Read more on page 44.

- **Diversity**

Read more about the group's diversity on pages 43 and 44.

- **Non-financial key performance indicators**

Read more about the group's non-financial key performance indicators on pages 35 and 36.

Governance

Directors' Report continued

Disclosures required by Listing Rule 9.8.4R

Disclosures required by the FCA's Listing Rule 9.8.4R, can be found on the following pages:

Information required	Sub-section of Listing Rule 9.8.4R	Page reference
1. Interest capitalised	(1)	Page 156
2. Publication of unaudited financial information	(2)	Not applicable
3. Details of long term incentive schemes established to specifically recruit or retain a director	(4)	Not applicable
4. Waiver of emoluments by a director	(5) (6)	Not applicable
5. Allotments of equity securities for cash	(7) (8)	Page 124
6. Participation in a placing of equity securities	(9)	Not applicable
7. Contracts of significance	(10)	Not applicable
8. Contracts for the provisions of services by a controlling shareholder	(11)	Not applicable
9. Dividend waiver	(12) (13)	Page 123
10. Agreements with controlling shareholder	(14)	Not applicable

Important events since 31st March 2020

There have been no important events affecting the company or any subsidiary since 31st March 2020.

2020 Annual General Meeting

Our 2020 AGM will be held on 23rd July 2020 at 5th Floor, 25 Farringdon Street, London EC4A 4AB. At the AGM, we propose separate resolutions on each substantially separate issue. For each resolution, shareholders may direct their proxy to vote either for or against or to withhold their vote. A 'vote withheld' is not legally a vote and not counted in the calculation of the proportion of the votes cast. All resolutions at the AGM are decided on a poll carried out by electronic means. The results are announced as soon as possible and posted on our website. This shows votes for and against as well as votes withheld.

Our board welcomes the opportunity for face to face communication with our shareholders. However, given the uncertain circumstances following the COVID-19 pandemic and in light of the UK Government guidance to avoid public gatherings, shareholders will not be able to attend and vote at the AGM in person.

Therefore, we strongly encourage all shareholders to cast their votes by submitting their proxy forms either electronically or by post. Shareholders should appoint the Chair of the Meeting as their proxy in order for their vote to be counted at the AGM. Shareholders are invited to send their questions relating to the business being dealt with at the meeting to the company via the website or by email jmir@matthey.com. Answers to questions will be published on our website as soon as practicable following the meeting. Further information can be found within the Notice of AGM.

[matthey.com/agm20](https://www.matthey.com/agm20)

Reporting of results and Capital Markets Day

We report formally to our shareholders when we publish our full and half-year results. Following publication of our results, our Executive Directors give presentations in meetings with institutional investors, analysts and the media in London. Live webcasts and transcripts of these presentations are available on our website.

In September 2019, we also held a Capital Markets Day for our institutional investors and analysts. The transcript, presentation and factsheet are available on our website.

[matthey.com/cmd-19](https://www.matthey.com/cmd-19)

Articles of Association

The Articles may only be amended by a special resolution at a general meeting of the company. The company's current Articles were adopted on 17th July 2019 and are available on our website at [matthey.com/corporate-governance](https://www.matthey.com/corporate-governance).

Auditor and disclosure of information

The auditor of the company is PricewaterhouseCoopers LLP.

So far as each person serving as a director of the company is aware, at the date this Directors' Report was approved by the board there is no relevant audit information (that is, information needed by the auditor in connection with preparing its report) of which the company's auditor is unaware. Each such director confirms that he or she has taken all the steps that he or she ought to have taken as a director in order to make himself or herself aware of any relevant audit information and to establish that the company's auditor is aware of that information.

The Directors' Report was approved by the board on 11th June 2020 and is signed on its behalf by:

Linda Bruce-Watt

Linda Bruce-Watt
Company Secretary

Responsibilities of Directors

Statement of directors' responsibilities in respect of the Annual Report and Accounts

The directors are responsible for preparing the annual report and the group and parent company accounts in accordance with applicable law and regulations.

Company law requires the directors to prepare group and parent company accounts for each financial year. Under company law, they are required to prepare the group accounts in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union (EU) and have elected to prepare the parent company accounts in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law).

Under company law, the directors must not approve the accounts unless they are satisfied that they give a true and fair view of the state of affairs of the group and parent company and of their profit or loss of the group for that period. In preparing each of the group and parent company accounts, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable, relevant and reliable;
- state whether they have been prepared in accordance with IFRS as adopted by the EU;
- assess the group and parent company's ability to continue as a going concern, disclosing as applicable, matters related to going concern; and
- use the going concern basis of accounting unless they either intend to liquidate the group or the parent company or to cease operations, or have no realistic alternative but to do so.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the parent company's transactions and disclose with reasonable accuracy at any time the financial position of the group and parent company and enable them to ensure that its accounts comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the group and to detect fraud and other irregularities.

Under applicable law and regulations, the directors are also responsible for preparing a Strategic Report, Directors' Report, Remuneration Report and Corporate Governance statement that comply with that law and those regulations.

The directors are responsible for the maintenance and integrity of the corporate and financial information included on the company's website. Legislation in the UK governing the preparation and dissemination of accounts may differ from legislation in other jurisdictions.

The directors consider that the Annual Report and Accounts taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the group's and the company's position and performance, business model and priorities.

Responsibility statement of the directors in respect of the Annual Report and Accounts

Each of the directors as at the date of the Annual Report and Accounts, whose names and functions are set out below:

- Patrick Thomas, Chair
- Robert MacLeod, Chief Executive
- Anna Manz, Chief Financial Officer
- Alan Ferguson, Non-Executive Director
- Jane Griffiths, Non-Executive Director
- Xiaozhi Liu, Non-Executive Director
- Chris Mottershead, Non-Executive Director
- John O'Higgins, Non-Executive Director
- Doug Webb, Non-Executive Director

states that to the best of his or her knowledge:

- the group and parent company accounts, prepared in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the company and the undertakings included in the consolidation taken as a whole; and
- the management report (which comprises the Strategic Report and the Directors' Report) includes a fair review of the development and performance of the business and the position of the company and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face.

This responsibility statement was approved by the board on 11th June 2020 and is signed on its behalf by:



Patrick Thomas
Chair

Accounts

Accounts

The Accounts include the consolidated and parent company accounts and related notes, prepared in accordance with International Financial Reporting Standards, as well as the independent auditors' report.

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Accounts

Consolidated Income Statement

for the year ended 31st March 2020

	Notes	2020 £ million	2019 £ million
Revenue			
Cost of sales	1,2	14,577 (13,576)	10,745 (9,729)
Gross profit		1,001	1,016
Distribution costs		(126)	(126)
Administrative expenses		(313)	(316)
Net impairment losses on trade and contract receivables	27	(23)	(8)
Profit / (loss) on disposal of businesses	3	2	(12)
Loss on significant legal proceedings	3	-	(17)
Amortisation of acquired intangibles	3	(13)	(14)
Major impairment and restructuring charges	3	(140)	8
Operating profit	1,3	388	531
Finance costs	5	(195)	(107)
Finance income	5	109	64
Share of profit of joint venture and associate	13	3	-
Profit before tax		305	488
Tax expense	6	(50)	(75)
Profit for the year		255	413
		pence	pence
Earnings per ordinary share			
Basic	8	132.3	215.2
Diluted	8	132.1	214.6

Consolidated Statement of Total Comprehensive Income

for the year ended 31st March 2020

	Notes	2020 £ million	2019 £ million
Profit for the year		255	413
Other comprehensive income			
Items that will not be reclassified to the income statement			
Remeasurements of post-employment benefit assets and liabilities	24	87	(69)
Fair value losses on equity investments at fair value through other comprehensive income	14	(2)	(3)
Tax on items that will not be reclassified to the income statement	7	(21)	13
		64	(59)
Items that may be reclassified to the income statement			
Exchange differences on translation of foreign operations	26	65	22
Fair value losses on other investments at fair value through other comprehensive income	26	-	(1)
Amounts credited to hedging reserve	26	-	4
Fair value losses on net investment hedges	26	(8)	(1)
		57	24
Other comprehensive income for the year		121	(35)
Total comprehensive income for the year		376	378

The notes on pages 145 to 202 form an integral part of the accounts.

Consolidated and Parent Company Balance Sheets

as at 31st March 2020

Notes	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Assets				
Non-current assets				
	9	1,271	290	312
Property, plant and equipment				
Right-of-use assets	25	88	19	–
Goodwill	10	580	115	123
Other intangible assets	11	396	288	207
Investments in subsidiaries	12	–	1,921	1,912
Investments in joint venture and associate	13	23	–	–
Investments at fair value through other comprehensive income	14	49	7	7
Other receivables	17	63	1,214	1,010
Interest rate swaps	15	34	34	13
Deferred tax assets	23	66	–	–
Post-employment benefit net assets	24	317	309	199
Total non-current assets		3,019	4,197	3,783
Current assets				
Inventories	16	1,902	779	430
Current tax assets		31	–	–
Trade and other receivables ¹	17	2,077	2,225	1,592
Cash and cash equivalents – cash and deposits		112	22	11
Cash and cash equivalents – money market funds		192	192	347
Other financial assets	18	28	28	23
Assets held for sale		–	–	–
Total current assets		4,342	3,246	2,403
Total assets		7,361	7,443	6,186
Liabilities				
Current liabilities				
Trade and other payables ¹	19	(2,745)	(4,167)	(2,874)
Lease liabilities	25	(12)	(3)	–
Current tax liabilities		(106)	(31)	(64)
Cash and cash equivalents – bank overdrafts		(31)	(20)	(33)
Borrowings and related swaps	20	(331)	(130)	(107)
Other financial liabilities	18	(50)	(50)	(14)
Provisions	22	(11)	(85)	(23)
Total current liabilities		(3,286)	(4,486)	(3,115)
Non-current liabilities				
Borrowings and related swaps	20	(994)	(994)	(1,066)
Lease liabilities	25	(64)	(16)	–
Deferred tax liabilities	23	(74)	(32)	(39)
Employee benefit obligations	24	(104)	(12)	(10)
Provisions	22	(9)	(1)	(1)
Other payables	19	(6)	(514)	(489)
Total non-current liabilities		(1,251)	(1,569)	(1,605)
Total liabilities		(4,537)	(6,055)	(4,720)
Net assets		2,824	1,388	1,466
Equity				
Share capital	26	221	221	221
Share premium		148	148	148
Shares held in employee share ownership trust (ESOT)		(32)	(32)	(45)
Other reserves	26	142	10	8
Retained earnings ²		2,345	1,041	1,134
Total equity		2,824	1,388	1,466

¹ The parent company prior year comparatives have been restated (see notes 17 and 19).

² The parent company's profit for the year is £13 million (2019: £263 million).

The accounts were approved by the Board of Directors on 11th June 2020 and signed on its behalf by:

R J MacLeod
A O Manz Directors

The notes on pages 145 to 202 form an integral part of the accounts.

Accounts

Consolidated Cash Flow Statement

for the year ended 31st March 2020

Notes	2020 £ million	2019 £ million
Cash flows from operating activities		
Profit before tax	305	488
Adjustments for:		
Share of profit of joint venture and associate	(3)	–
(Profit) / loss on disposal of businesses	(2)	12
Depreciation	154	142
Amortisation	24	29
Impairment losses / (reversals)	146	(7)
Loss on sale of non-current assets	5	2
Share-based payments	(1)	10
Increase in inventories ¹	(575)	(394)
Increase in receivables ²	(541)	(246)
Increase in payables ³	1,115	416
Decrease in provisions	(6)	(24)
Contributions in excess of employee benefit obligations charge	(24)	(40)
Changes in fair value of financial instruments	24	(2)
Net finance costs	86	43
Income tax paid	(109)	(95)
Net cash inflow from operating activities	598	334
Cash flows from investing activities		
Interest received	104	61
Purchases of property, plant and equipment	(332)	(215)
Purchases of intangible assets	(111)	(86)
Proceeds from sale of assets held for sale	7	–
Proceeds from sale of non-current assets	1	1
Proceeds from sale of businesses	–	2
Net cash outflow from investing activities	(331)	(237)
Cash flows from financing activities		
Proceeds from borrowings	135	245
Repayment of borrowings	(123)	(2)
Dividends paid to equity shareholders	(167)	(156)
Settlement of currency swaps	–	(2)
Interest paid	(202)	(108)
Principal element of lease payments	(13)	–
Net cash outflow from financing activities	(370)	(23)
(Decrease) / increase in cash and cash equivalents	(103)	74
Exchange differences on cash and cash equivalents	(2)	–
Cash and cash equivalents at beginning of year	378	304
Cash and cash equivalents at end of year	273	378
Cash and deposits	112	90
Money market funds	192	347
Bank overdrafts	(31)	(59)
Cash and cash equivalents	273	378

¹ £0.5 billion increase in precious metal inventories on higher volumes and metal price increases (see note 16).

² £0.4 billion increase in amounts receivable under precious metal sale and repurchase agreements (see note 17).

³ £1.0 billion increase in amounts payable under precious metal sale and repurchase agreements (see note 19).

Consolidated Statement of Changes in Equity

for the year ended 31st March 2020

	Share capital £ million	Share premium account £ million	Shares held in ESOT £ million	Other reserves (note 26) £ million	Retained earnings £ million	Total equity £ million
At 1st April 2018	221	148	(48)	62	1,995	2,378
Profit for the year	-	-	-	-	413	413
Remeasurements of post-employment benefit assets and liabilities	-	-	-	-	(69)	(69)
Fair value losses on investments at fair value through other comprehensive income	-	-	-	(4)	-	(4)
Exchange differences on translation of foreign operations	-	-	-	22	-	22
Amounts credited to hedging reserve	-	-	-	4	-	4
Fair value losses on net investment hedges taken to equity	-	-	-	(1)	-	(1)
Tax on other comprehensive income	-	-	-	-	13	13
Total comprehensive income	-	-	-	21	357	378
Dividends paid (note 26)	-	-	-	-	(156)	(156)
Share-based payments	-	-	-	-	17	17
Cost of shares transferred to employees	-	-	3	-	(10)	(7)
Tax on share-based payments	-	-	-	-	1	1
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
Profit for the year	-	-	-	-	255	255
Remeasurements of post-employment benefit assets and liabilities	-	-	-	-	87	87
Fair value losses on investments at fair value through other comprehensive income	-	-	-	(2)	-	(2)
Exchange differences on translation of foreign operations	-	-	-	65	-	65
Fair value losses on net investment hedges taken to equity	-	-	-	(8)	-	(8)
Tax on other comprehensive income	-	-	-	-	(21)	(21)
Total comprehensive income	-	-	-	55	321	376
Dividends paid (note 26)	-	-	-	-	(167)	(167)
Share-based payments	-	-	-	-	5	5
Cost of shares transferred to employees	-	-	13	-	(19)	(6)
At 31st March 2020	221	148	(32)	142	2,345	2,824

The notes on pages 145 to 202 form an integral part of the accounts.

Accounts

Parent Company Statement of Changes in Equity

for the year ended 31st March 2020

	Share capital £ million	Share premium account £ million	Shares held in ESOT £ million	Other reserves (note 26) £ million	Retained earnings £ million	Total equity £ million
At 1st April 2018	221	148	(48)	–	1,075	1,396
Profit for the year	–	–	–	–	263	263
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	(63)	(63)
Amounts credited to hedging reserve	–	–	–	5	–	5
Tax on other comprehensive income	–	–	–	(1)	11	10
Total comprehensive income	–	–	–	4	211	215
Dividends paid (note 26)	–	–	–	–	(156)	(156)
Share-based payments	–	–	–	–	15	15
Cost of shares transferred to employees	–	–	3	–	(8)	(5)
Tax on share-based payments	–	–	–	–	1	1
Reclassification	–	–	–	4	(4)	–
At 31st March 2019	221	148	(45)	8	1,134	1,466
Impact of adoption of IFRIC 23	–	–	–	–	6	6
At 31st March 2019 (restated)	221	148	(45)	8	1,140	1,472
Profit for the year	–	–	–	–	13	13
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	89	89
Amounts credited to hedging reserve	–	–	–	2	–	2
Tax on other comprehensive income	–	–	–	–	(20)	(20)
Total comprehensive income	–	–	–	2	82	84
Dividends paid (note 26)	–	–	–	–	(167)	(167)
Share-based payments	–	–	–	–	4	4
Cost of shares transferred to employees	–	–	13	–	(18)	(5)
At 31st March 2020	221	148	(32)	10	1,041	1,388

The notes on pages 145 to 202 form an integral part of the accounts.

Accounting policies

for the year ended 31st March 2020

Basis of accounting and preparation – group

The accounts are prepared on a going concern basis in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) and interpretations issued by the IFRS Interpretations Committee or the Standing Interpretations Committee (SIC) as adopted by the European Union (EU) and the Companies Act 2006 applicable to companies reporting under IFRS.

COVID-19 has introduced unprecedented uncertainty to the market outlook and, in response to this, we have undertaken extensive reviews of our businesses and projections under a range of potential outcomes. The group has a robust funding position and has tested its performance under a deep recession scenario and stress tested with a more extreme very deep recession scenario. In both scenarios, we have sufficient headroom against committed facilities and key financial covenants in the going concern period (see going concern section on pages 65 and 66).

The accounts are prepared on the historical cost basis, except for certain assets and liabilities which are measured at fair value as explained below.

The group accounts comprise the accounts of the parent company and its subsidiaries, including the employee share ownership trust, and include the group's interest in joint ventures and associates. Entities the group controls are accounted for as subsidiaries. Entities that are joint ventures or associates are accounted for using the equity method of accounting. Transactions and balances between group companies are eliminated. No profit is recognised on transactions between group companies.

The results of businesses acquired or disposed of in the year are consolidated from or up to the effective date of acquisition or disposal, respectively. The net assets of businesses acquired are recognised in the consolidated accounts at their fair values at the date of acquisition.

Basis of accounting and preparation – parent company

The accounts are prepared on a going concern basis in accordance with Financial Reporting Standard (FRS) 101, Reduced Disclosure Framework, issued in September 2015 and the Companies Act 2006 applicable to companies reporting under FRS 101. The parent company applies the recognition, measurement and disclosure requirements of IFRS as adopted by the EU, but makes amendments where necessary to comply with the Companies Act 2006 and has set out below the FRS 101 disclosure exemptions taken by the parent company:

- the requirements of paragraphs 45(b) and 46 to 52 of IFRS 2, Share-based Payment;
- the requirements of IFRS 7, Financial Instruments: Disclosures;
- the requirements of paragraphs 91 to 99 of IFRS 13, Fair Value Measurement;
- the requirements of the second sentence of paragraph 110 and paragraphs 113(a), 114, 115, 118, 119(a) to (c), 120 to 127 and 129 of IFRS 15, Revenue from Contracts with Customers;
- the requirement in paragraph 38 of IAS 1, Presentation of Financial Statements, to present comparative information in respect of: paragraph 73(e) of IAS 16, Property, Plant and Equipment; and paragraph 118(e) of IAS 38, Intangible Assets;
- the requirements of paragraphs 10(d), 38A, 38B, 40A, 40B, 40C, 40D, 111 and 134 to 136 of IAS 1, Presentation of Financial Statements;
- the requirements of IAS 7, Statement of Cash Flows;
- the requirements of paragraphs 30 and 31 of IAS 8, Accounting Policies, Changes in Accounting Estimates and Errors;
- the requirements of paragraph 17 of IAS 24, Related Party Disclosures;
- the requirements in IAS 24, Related Party Disclosures, to disclose related party transactions entered into between two or more members of a group, provided that any subsidiary which is a party to the transaction is wholly owned by such a member; and
- the requirements of paragraphs 130(f)(ii), 130(f)(iii), 134(d), 134(f) and 135(c) to 135(e) of IAS 36, Impairment of Assets.

The accounts are prepared on the historical cost basis, except for certain assets and liabilities which are measured at fair value as explained below.

The parent company has not presented its own income statement, statement of total comprehensive income and related notes as permitted by Section 408(3) of the Companies Act 2006. Profit for the year is disclosed in the parent company balance sheet and statement of changes in equity.

In the parent company balance sheet, businesses acquired from other group companies are recognised at book value at the date of acquisition. The difference between the consideration paid and the book value of the net assets acquired is reflected in retained earnings.

The parent company prior year comparatives have been restated to increase and decrease current amounts receivable from and payable to subsidiaries by £278 million (see notes 17 and 19).

Accounts

Accounting policies continued

for the year ended 31st March 2020

Significant accounting policies

The group's and parent company's accounting policies have been applied consistently during the current and prior year, other than where new policies have been adopted (see below). The group's and parent company's significant accounting policies are as follows:

Foreign currencies

Foreign currency transactions are recorded in the functional currency of the relevant subsidiary, joint venture, associate or branch at the exchange rate at the date of the transaction. Foreign currency monetary assets and liabilities are retranslated into the relevant functional currency at the exchange rate at the balance sheet date.

Income statements and cash flows of overseas subsidiaries, joint ventures, associates and branches are translated into sterling at the average rates for the year. Balance sheets of overseas subsidiaries, joint ventures, associates and branches, including any fair value adjustments and related goodwill, are translated into sterling at the exchange rates at the balance sheet date.

Exchange differences arising on the translation of the net investment in overseas subsidiaries, joint ventures, associates and branches, less exchange differences arising on related foreign currency financial instruments which hedge the group's net investment in these operations, are taken to other comprehensive income. On disposal of the net investment, the cumulative exchange difference is reclassified from equity to operating profit. The group has taken advantage of the exemption allowed in IFRS 1, First-time Adoption of International Reporting Standards, to deem the cumulative translation difference for all overseas subsidiaries and branches to be zero at 1st April 2004.

Other exchange differences are recognised in operating profit.

Revenue

Revenue represents income derived from contracts for the provision of goods and services by the parent company and its subsidiaries to customers in exchange for consideration in the ordinary course of the group's activities.

Performance obligations

Upon approval by the parties to a contract, the contract is assessed to identify each promise to transfer either a distinct good or service or a series of distinct goods or services that are substantially the same and have the same pattern of transfer to the customer. Goods and services are distinct and accounted for as separate performance obligations in the contract if the customer can benefit from them either on their own or together with other resources that are readily available to the customer and they are separately identifiable in the contract.

The group typically sells licences to its intellectual property together with other goods and services and, since these licences are not generally distinct in the context of the contract, revenue recognition is considered at the level of the performance obligation of which the licence forms part. Revenue in respect of performance obligations containing bundles of goods and services in which a licence with a sales or usage-based royalty is the predominant item is recognised when sales or usage occur.

Transaction price

At the start of the contract, the total transaction price is estimated as the amount of consideration to which the group expects to be entitled in exchange for transferring the promised goods and services to the customer, excluding sales taxes. Variable consideration, such as trade discounts, is included based on the expected value or most likely amount only to the extent that it is highly probable that there will not be a reversal in the amount of cumulative revenue recognised. The transaction price does not include estimates of consideration resulting from contract modifications until they have been approved by the parties to the contract. The total transaction price is allocated to the performance obligations identified in the contract in proportion to their relative stand-alone selling prices. Many of the group's and parent company's products and services are bespoke in nature and, therefore, stand-alone selling prices are estimated based on cost plus margin or by reference to market data for similar products and services.

Accounting policies continued

for the year ended 31st March 2020

Significant accounting policies (continued)

Revenue (continued)

Revenue recognition

Revenue is recognised as performance obligations are satisfied as control of the goods and services is transferred to the customer.

For each performance obligation within a contract, the group and parent company determine whether it is satisfied over time or at a point in time. Performance obligations are satisfied over time if one of the following criteria is satisfied:

- the customer simultaneously receives and consumes the benefits provided by the group's and parent company's performance as they perform;
- the group's and parent company's performance creates or enhances an asset that the customer controls as the asset is created or enhanced; or
- the group's and parent company's performance does not create an asset with an alternative use to the group and parent company and they have an enforceable right to payment for performance completed to date.

If the over time criteria are met, revenue is recognised using an input method based on costs incurred to date as a proportion of estimated total contract costs. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognised immediately as an expense.

The majority of the metal processed by the group's and parent company's refining businesses is owned by customers and, therefore, revenue is recognised over time on the basis that the group and parent company are enhancing an asset controlled by the customer.

If the over time criteria for revenue recognition are not met, revenue is recognised at the point in time that control is transferred to the customer, which is usually when legal title passes to the customer and the business has the right to payment, for example, when the goods are despatched or delivered in line with the International Chamber of Commerce's International Commercial Terms (Incoterms®) as detailed in the relevant contract or on notification that the goods have been used when they are consignment products located at customers' premises. Most of the group's and parent company's contracts satisfy the point in time criteria.

In the event that the group and parent company enter into bill-and-hold transactions at the specific request of customers, revenue is recognised when the goods are ready for transfer to the customer and when the group and parent company are no longer capable of directing those goods to another use.

Revenue includes sales of precious metal to customers and the precious metal content of products sold to customers.

Linked contracts under which the group and parent company sell or buy precious metal and commit to repurchase or sell the metal in the future are accounted for as finance transactions and no revenue is recognised in respect of the sale leg.

No revenue is recognised by the group or parent company in respect of non-monetary exchanges of precious metal on the basis that the counterparties are in the same line of business.

Consideration payable to customers

Consideration payable to customers in advance of the recognition of revenue in respect of the goods and services to which it relates is capitalised and recognised as a deduction to the revenue recognised upon transfer of the goods and services to the customer.

Costs to fulfil a contract

Contract fulfilment costs in respect of over time contracts are expensed as incurred. Contract fulfilment costs in respect of point in time contracts are accounted for under IAS 2, Inventories.

Contract receivables

Contract receivables represent amounts for which the group and parent company have an unconditional right to consideration in respect of unbilled revenue recognised at the balance sheet date.

Contract liabilities

Contract liabilities represent the obligation to transfer goods or services to a customer for which consideration has been received, or consideration is due, from the customer.

Finance costs and finance income

Finance costs that are directly attributable to the construction of an asset that necessarily takes a substantial period of time to get ready for its intended use are capitalised as part of the cost of that asset. Other finance costs and finance income are recognised in the income statement in the year incurred.

Grants

Grants related to assets are included in deferred income and released to the income statement in equal instalments over the expected useful lives of the related assets. Grants related to income are deducted in reporting the related expense.

Accounts

Accounting policies continued

for the year ended 31st March 2020

Significant accounting policies (continued)

Research and development

Research expenditure is charged to the income statement in the year incurred. Development expenditure is charged to the income statement in the year incurred unless it meets the recognition criteria for capitalisation. When the recognition criteria have been met, any further development expenditure is capitalised as an intangible asset.

Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation and any provisions for impairment. Depreciation is provided at rates calculated to write-off the cost less estimated residual value of each asset over its useful life. Certain freehold buildings and plant and equipment are depreciated using the units of production method as this more closely reflects their expected consumption. All other assets are depreciated using the straight-line method. The useful lives vary according to the class of the asset, but are typically:

- freehold buildings – 30 years;
- leasehold improvements – life of the lease (or estimated useful life if shorter); and
- plant and machinery – 4 to 10 years.

Freehold land is not depreciated.

Goodwill and other intangible assets

Goodwill arises on the acquisition of a business when the fair value of the consideration exceeds the fair value attributed to the net assets acquired (including contingent liabilities). It is subject to annual impairment reviews. Acquisition-related costs are charged to the income statement as incurred. The group and parent company have taken advantage of the exemption allowed under IFRS 1 and, therefore, goodwill arising on acquisitions made before 1st April 2004 is included at the carrying amount at that date less any subsequent impairments.

Other intangible assets are stated at cost less accumulated amortisation and any provisions for impairment. Customer contracts are amortised when the relevant income stream occurs. All other intangible assets are amortised by using the straight-line method over the useful lives from the time they are first available for use. The estimated useful lives vary according to the specific asset, but are typically:

- customer contracts and relationships – 1 to 15 years;
- capitalised computer software – 3 to 10 years;
- patents, trademarks and licences – 3 to 20 years;
- acquired research and technology – 4 to 10 years; and
- capitalised development currently being amortised – 3 to 8 years.

Intangible assets which are not yet being amortised are subject to annual impairment reviews.

Investments in subsidiaries

Investments in subsidiaries are stated in the parent company's balance sheet at cost less any provisions for impairment. If a distribution is received from a subsidiary, the investment in that subsidiary is assessed for an indication of impairment.

Leases – accounting policy applied since 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 precious metal leases are charged to the income statement on a straight-line basis over the lease term in operating profit.

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.

Accounting policies continued

for the year ended 31st March 2020

Significant accounting policies (continued)

Leases – accounting policy applied until 31st March 2019

Leases are classified as finance leases whenever they transfer substantially all the risks and rewards of ownership to the group. The assets are included in property, plant and equipment and the capital elements of the leasing commitments are shown as obligations under finance leases. The assets are depreciated on a basis consistent with similar owned assets or the lease term if shorter. The interest element of the lease rental is included in the income statement.

The group leases, rather than purchases, precious metals to fund temporary peaks in metal requirements provided market conditions allow. These leases are from banks for specified periods (typically a few 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.

All other leases are classified as operating leases and the lease costs are expensed on a straight-line basis over the lease term in operating profit.

Inventories

Precious metal

Inventories of gold, silver and platinum group metals are valued according to the source from which the metal is obtained. Metal which has been purchased and committed to future sales to customers is valued at the price at which it is contractually committed, adjusted for unexpired contango and backwardation. Other precious metal inventories owned by the group, which are unhedged, are valued at the lower of cost and net realisable value using the weighted average cost formula.

Other

Non-precious metal inventories are valued at the lower of cost, including attributable overheads, and net realisable value. Except where costs are specifically identified, the first-in, first-out cost formula is used to value inventories.

Cash and cash equivalents

Cash and deposits comprise cash at bank and in hand and short term deposits with a maturity date of three months or less from the date of acquisition. Money market funds comprise investments in funds that are subject to an insignificant risk of changes in fair value. The group and parent company routinely use short term bank overdraft facilities, which are repayable on demand, as an integral part of their cash management policies and, therefore, cash and cash equivalents include cash and deposits, money market funds and bank overdrafts. Offset arrangements across group businesses have been applied to arrive at the net cash and overdraft figures.

Financial instruments

Investments and other financial assets

The group and parent company classify their financial assets in the following measurement categories:

- those measured at fair value either through other comprehensive income or through profit or loss; and
- those measured at amortised cost.

At initial recognition, the group and parent company measure financial assets at fair value plus, in the case of financial assets not measured at fair value through profit or loss, transaction costs that are directly attributable to their acquisition.

The group and parent company subsequently measure equity investments at fair value and have elected to present fair value gains and losses on equity investments in other comprehensive income. There is, therefore, no subsequent reclassification of cumulative fair value gains and losses to profit or loss following disposal of the investments.

The group and parent company subsequently measure trade and other receivables and contract receivables at amortised cost, with the exception of trade receivables that have been designated as at fair value through other comprehensive income because the group has certain operations with business models to hold trade receivables for collection or sale. All other financial assets, including short term receivables, are measured at amortised cost less any impairment provision.

For trade and contract receivables, the group and parent company apply the simplified approach permitted by IFRS 9, Financial Instruments, which requires expected lifetime losses to be recognised from initial recognition.

Accounts

Accounting policies continued

for the year ended 31st March 2020

Significant accounting policies (continued)

Financial instruments (continued)

Derivative financial instruments

The group and parent company use derivative financial instruments, in particular forward currency contracts, currency swaps, interest rate swaps and commodity derivatives to manage the financial risks associated with their underlying business activities and the financing of those activities. The group and parent company do not undertake any speculative trading activity in derivative financial instruments.

Derivative financial instruments are measured at their fair value. Derivative financial instruments may be designated at inception as fair value hedges, cash flow hedges or net investment hedges if appropriate. For currency swaps designated as instruments in cash flow or net investment hedging relationships, the impact from currency basis spreads is included in the hedge relationship and may be a source of ineffectiveness recognised in the income statement. Derivative financial instruments which are not designated as hedging instruments are classified as at fair value through profit or loss, but are used to manage financial risk. Changes in the fair value of any derivative financial instruments that are not designated as, or are not determined to be, effective hedges are recognised immediately in the income statement. The vast majority of forward precious metal price contracts are entered into and held for the receipt or delivery of precious metal and, therefore, are not recorded at fair value.

Cash flow hedges

Changes in the fair value of derivative financial instruments designated as cash flow hedges are recognised in other comprehensive income to the extent that the hedges are effective. Ineffective portions are recognised in the income statement immediately. If the hedged item results in the recognition of a non-financial asset or liability, the amount previously recognised in other comprehensive income is transferred out of equity and included in the initial carrying amount of the asset or liability. Otherwise, the amount previously recognised in other comprehensive income is transferred to the income statement in the same period that the hedged item is recognised in the income statement. If the hedging instrument expires or is sold, terminated or exercised or the hedge no longer meets the criteria for hedge accounting, amounts previously recognised in other comprehensive income remain in equity until the forecast transaction occurs. If a forecast transaction is no longer expected to occur, the amounts previously recognised in other comprehensive income are transferred to the income statement. If a forward precious metal price contract will be settled net in cash, it is designated and accounted for as a cash flow hedge.

Fair value hedges

Changes in the fair value of derivative financial instruments designated as fair value hedges are recognised in the income statement, together with the related changes in the fair value of the hedged asset or liability. Fair value hedge accounting is discontinued if the hedging instrument expires or is sold, terminated or exercised or the hedge no longer meets the criteria for hedge accounting.

Net investment hedges

For hedges of net investments in foreign operations, the effective portion of the gain or loss on the hedging instrument is recognised in other comprehensive income, while the ineffective portion is recognised in the income statement. Amounts taken to other comprehensive income are reclassified from equity to the income statement when the foreign operations are sold or liquidated.

Financial liabilities

Borrowings are measured at amortised cost. Those borrowings designated as being in fair value hedge relationships are remeasured for the fair value changes in respect of the hedged risk with these changes recognised in the income statement. All other financial liabilities, including short-term payables, are measured at amortised cost.

Precious metal sale and repurchase agreements

The group and parent company undertake linked contracts to sell or buy precious metal and commit to repurchase or sell the metal in the future. An asset representing the metal which the group and parent company have committed to sell or a liability representing the obligation to repurchase the metal are recognised in trade and other receivables or trade and other payables, respectively.

Accounting policies continued

for the year ended 31st March 2020

Significant accounting policies (continued)

Taxation

Current and deferred tax are recognised in the income statement, except when they relate to items recognised directly in equity, in which case the related tax is also recognised in equity.

Current tax is the amount of income tax expected to be paid in respect of taxable profits using the tax rates that have been enacted or substantively enacted at the balance sheet date.

Deferred tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the balance sheet. It is provided using the tax rates that are expected to apply in the period when the asset or liability is settled, based on tax rates that have been enacted or substantively enacted at the balance sheet date.

Deferred tax assets are recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. No deferred tax asset or liability is recognised in respect of temporary differences associated with investments in subsidiaries and branches where the group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

Provisions and contingencies

Provisions are recognised when the group has a present obligation as a result of a past event and a reliable estimate can be made of a probable adverse outcome, for example warranties, environmental claims and restructuring. Otherwise, material contingent liabilities are disclosed unless the probability of the transfer of economic benefits is remote. Contingent assets are only disclosed if an inflow of economic benefits is probable.

The parent company considers financial guarantees of its subsidiaries' borrowings and precious metal leases to be insurance contracts.

Share-based payments and employee share ownership trust (ESOT)

The fair value of shares awarded to employees under the performance share plan, restricted share plan, long term incentive plan and deferred bonus plan is calculated by adjusting the share price on the date of allocation for the present value of the expected dividends that will not be received. The resulting cost is charged to the income statement over the relevant performance periods, adjusted to reflect actual and expected levels of vesting where appropriate.

The group and parent company provide finance to the ESOT to purchase company shares in the open market. Costs of running the ESOT are charged to the income statement. The cost of shares held by the ESOT is deducted in arriving at equity until they vest unconditionally with employees.

Post-employment benefits

The costs of defined contribution plans are charged to the income statement as they fall due.

For defined benefit plans, the group and parent company recognise the net assets or liabilities of the plans in their balance sheets. Assets are measured at their fair value at the balance sheet date. Liabilities are measured at present value using the projected unit credit method and a discount rate reflecting yields on high quality corporate bonds. The changes in plan assets and liabilities, based on actuarial advice, are recognised as follows:

- The current service cost is deducted in arriving at operating profit.
- The net interest cost, based on the discount rate at the beginning of the year, contributions paid in and the present value of the net defined benefit liabilities during the year, is included in finance costs.
- Past service costs and curtailment gains and losses are recognised in operating profit at the earlier of when the plan amendment or curtailment occurs and when any related restructuring costs or termination benefits are recognised.
- Gains or losses arising from settlements are included in operating profit when the settlement occurs.
- Remeasurements, representing returns on plan assets, excluding amounts included in interest, and actuarial gains and losses arising from changes in financial and demographic assumptions, are recognised in other comprehensive income.

Sources of estimation uncertainty

Determining the carrying amounts of certain assets and liabilities at the balance sheet date requires estimation of the effects of uncertain future events. In the event that actual outcomes differ from those estimated, there may be an adjustment to the carrying amounts of those assets and liabilities within the next financial year. COVID-19 has introduced unprecedented uncertainty to the market outlook and, therefore, has increased the risk of material adjustment to the group's and parent company's financial position during the year ending 31st March 2021, particularly in respect of the carrying value of goodwill, other intangibles and other assets. Other significant risks of material adjustment are the valuation of the liabilities of the defined benefit pension plans and tax provisions. The group and parent company have considered the refining process and stock takes and provisions and contingent liabilities and, whilst not deemed to represent a significant risk of material adjustment to the group's and parent company's financial position during the year ending 31st March 2021, represent important accounting estimates.

Accounts

Accounting policies continued

for the year ended 31st March 2020

Sources of estimation uncertainty (continued)

Goodwill, other intangibles and other assets

The group and parent company have significant intangible assets from both business acquisitions and investments in new products and technologies. Some of those acquisitions and investments are at an early stage of commercial development and, therefore, carry a greater risk that they will not be commercially viable. Goodwill and intangible assets not yet ready for use are not amortised, but are subject to annual impairment reviews. Other intangible assets are amortised from the time they are first ready for use and, together with other assets, are assessed for impairment when there is a triggering event that provides evidence that they are impaired.

The impairment reviews require the use of estimates of future profit and cash generation based on financial budgets and plans approved by management, generally covering a three-year period, and the pre-tax discount rates used in discounting projected cash flows.

The impact of COVID-19 on the carrying value of the following assets has been considered:

- Goodwill** The budgets and plans used for the impairment reviews reflect management's estimate of the impact of COVID-19, which is a deep recession involving a period of lower demand followed by an extended recovery period. Whilst headroom has reduced under this scenario, no goodwill impairments have been identified as a direct result of the lower cash flow forecasts. A description of the group's approach to impairment testing and key assumptions, together with sensitivity analysis, is set out in note 10 to the accounts. Goodwill in respect of the Battery Materials LFP business in the New Markets sector has been impaired as a result of a decline in sales during the year and the refocusing of our LFP business (see note 3).
- Property, plant and equipment** As a result of COVID-19, most of the manufacturing plants in the Clean Air sector outside China were temporarily closed in March 2020, which represents a triggering event that could indicate that they are impaired. The plants have been tested for impairment based on discounted cash flows consistent with our deep recession scenario and, with the exception of three plants which have been impaired as a result of the optimisation of the manufacturing footprint in the Clean Air sector (see note 3), their carrying values are not considered to be impaired (see note 9).
- Trade and contract receivables** The group applies the simplified approach to measuring expected credit losses under IFRS 9, Financial Instruments, which requires lifetime expected credit losses to be recognised from initial recognition for trade and contract receivables. A provision matrix is used to calculate lifetime expected credit losses using historical loss rates based on days past due and a broad range of forward-looking information, including country and market growth forecasts. Whilst the group has not experienced significant losses on its trade and contract receivables in the past and has not identified any significant bad debts as a result of the economic slowdown caused by COVID-19, the risk that the group will incur bad debt losses in the future has increased. A high proportion of the group's trade and contract receivables are in the Clean Air sector. Although the Clean Air sector has a wide range of customers, the concentrated nature of the automotive industry means that amounts owed by individual customers can be large and, in the event that one of those customers experiences financial difficulty, there could be a material adverse impact on the group. Expected credit loss provisions on unimpaired trade and contract receivables have been increased, by £18 million, to £21 million (see note 27).
- Advance payments to customers** The Clean Air sector makes upfront payments to original equipment manufacturers to secure the award of future business. At 31st March 2020, the group held £66 million of advance payments as prepayments (31st March 2019: £26 million), which remain expected to be recovered either through new business based on our volume forecasts as updated for the impact of COVID-19, repayment or reallocation against other future business (see note 17).

Post-employment benefits

The group's and parent company's defined benefit plans are assessed annually by qualified independent actuaries. The estimate of the liabilities of the plans is based on a number of actuarial assumptions.

There is a range of possible values for each actuarial assumption and the point within that range is estimated to most appropriately reflect the group's and parent company's circumstances. Small changes in these assumptions can have a significant impact on the estimate of the liabilities of the plans. A description of those discount rate and inflation assumptions, together with sensitivity analysis, is set out in note 24 to the group and parent company accounts.

Tax provisions

Tax provisions are determined based on the tax laws and regulations that apply in each of the jurisdictions in which the group operates.

Tax provisions are recognised where the impact of those laws and regulations is unclear and it is probable that there will be a tax adjustment representing a future outflow of funds to a tax authority or a consequent adjustment to the carrying value of a tax asset.

Provisions are measured using the best estimate of the most likely amount, being the most likely amount in a range of possible outcomes. The resolution of tax positions taken by the group can take a considerable period of time to conclude and, in some cases, it is difficult to predict the outcome. Group current tax liabilities at 31st March 2020 of £106 million (2019: £130 million) include tax provisions of £106 million (2019: £102 million) and the estimation of the range of possible outcomes is an increase in those liabilities by £106 million (2019: £60 million) to a decrease of £90 million (2019: £61 million). The increase in the range of possible outcomes is mainly due to the consideration of a larger number of potential outcomes following the adoption of IFRIC 23. The estimates made reflect where the group: faces routine tax audits or is in ongoing disputes with tax authorities; has identified potential tax exposures relating to transfer pricing; or is contesting the tax deductibility of certain business costs.

Accounting policies continued

for the year ended 31st March 2020

Sources of estimation uncertainty (continued)

Refining process and stock takes

The group's and parent company's refining businesses process significant quantities of precious metal and there are uncertainties regarding the actual amount of metal in the refining system at any one time. The group's refining businesses process over four million ounces of platinum group metals per annum with a market value of around £8.4 billion. The majority of metal processed is owned by customers and the group and parent company must return pre-agreed quantities of refined metal based on assays of starting materials and other contractual arrangements, such as the timing of the return of metal. The group and parent company calculate the profits or losses of their refining operations based on estimates, including the extent to which process losses are expected during refining. The risk of process losses or gains depends on the nature of the starting material being refined, the specific refining processes applied, the efficiency of those processes and the contractual arrangements.

Stock takes are performed to determine the volume and value of metal within the refining system compared with the calculated estimates, with the variance being a profit or a loss. Stock takes are, therefore, a key control in the assessment of the accuracy of the profit or loss of refining operations. Whilst refining is a complex, large-scale industrial process, the group and parent company have appropriate processes and controls over the movement of material in their refineries.

Provisions and 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. Provisions and contingent liabilities are set out in notes 22 and 31, respectively.

Judgements made in applying accounting policies

The group and parent company use precious metal owned by customers in their production processes. It has been determined that this metal is not controlled by the group or parent company and, therefore, it is not recognised on the balance sheet.

The group and parent company manage precious metal inventories by entering into physically settled forward sales and purchases of metal positions in line with a well established hedging policy. The own use exemption has been adopted for these transactions and, therefore, the group and parent company do not fair value such physically settled contracts.

The group undertakes linked contracts to sell or buy precious metal and commits to repurchase or sell the metal in the future to manage inventory levels. Accordingly, principal cash flows in respect of sale and repurchase agreements are shown as cash flows from operating activities in the cash flow statement rather than cash flows from financing activities. Interest paid and received are shown as cash flows from financing and investing activities, respectively.

In the course of preparing the accounts, no other judgements have been made in the process of applying the group's and parent company's accounting policies, other than those involving estimations, that have had a significant effect on the amounts recognised in the accounts.

Changes in accounting policies

IFRS 16, Leases

IFRS 16 became applicable to the group and parent company on 1st April 2019 and the group and parent company changed their accounting policies as a result of adopting the new standard. The impact of the adoption of IFRS 16 is disclosed in note 34.

IFRIC 23, Uncertainty over Income Tax Treatments

IFRIC 23 became applicable to the group and parent company 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 and parent company have adopted IFRIC 23 retrospectively, with the cumulative effect of adoption, a £5 million and £6 million decrease in tax provisions (including interest), respectively, recognised in reserves at 1st April 2019.

Accounts

Accounting policies continued

for the year ended 31st March 2020

Changes in accounting policies (continued)

Amendments to IFRS 9, IAS 39 and IFRS 7 – Interest rate benchmark reform

The group and parent company have early adopted the amendments to IFRS 9, Financial Instruments, IAS 39, Financial Instruments: Recognition and Measurement, and IFRS 7, Financial Instruments: Disclosures, which relate to interbank offered rates (IBOR) reform and were endorsed by the EU on 6th January 2020. The replacement of benchmark interest rates, such as LIBOR and other IBOR, is a priority for global regulators. The amendments provide relief from applying specific hedge accounting requirements to hedge relationships directly affected by IBOR reform and have the effect that IBOR reform should generally not cause hedge accounting to terminate. There is no financial impact from the early adoption of these amendments.

The group has one IFRS 9 designated hedge relationship that is potentially impacted by IBOR reform: the 3.26% \$150 million Bonds 2022 which have been swapped into floating rate US dollars. This swap references six-month US dollar LIBOR and uncertainty arising from the group's exposure to IBOR reform will cease when the swap matures in 2022. The implications on the wider business of IBOR reform will be assessed during the year.

Other amendments to accounting standards

The following amendments to existing standards were applicable to the group and parent company from 1st April 2019, but did not have a significant effect on their reported results or net assets:

- Amendments to IFRS 9: Prepayment Features with Negative Compensation;
- Amendments to IAS 28: Long-term Interests in Associates and Joint Ventures;
- Amendments to IAS 19: Plan Amendment, Curtailment or Settlement; and
- Annual Improvements to IFRS Standards 2015–2017 Cycle.

Amendments to accounting standards that have been issued, but are not yet effective

The following amendments to existing standards are applicable to the group from 1st April 2020, but are not expected to have a significant effect on its reported results or net assets:

- Amendments to References to the Conceptual Framework in IFRS Standards; and
- Amendments to IAS 1 and IAS 8: Definition of Material.

Non-GAAP measures

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. The group's non-GAAP measures are defined and reconciled to GAAP measures in note 35.

Notes on the accounts

for the year ended 31st March 2020

1 Segmental information

The group has four operating sectors, Clean Air, Efficient Natural Resources, Health and New Markets, and a corporate headquarters that retains certain costs that have not been allocated to the operating sectors. The Group Management Committee (the chief operating decision maker as defined by IFRS 8, Operating Segments) monitors the results of these operating sectors to assess performance and make decisions about the allocation of resources. Each operating sector is represented by a member of the Group Management Committee. These operating sectors represent the group's reportable segments and their principal activities are described on pages 54 to 60. The performance of the group's operating sectors is assessed on sales and underlying operating profit (see note 35). Sales between segments are made at market prices, taking into account the volumes involved.

Revenue, sales and underlying operating profit by sector

	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Eliminations £ million	Total £ million
Year ended 31st March 2020							
Revenue from external customers	6,172	7,670	229	506	-	-	14,577
Inter-segment revenue	1	4,291	-	6	-	(4,298)	-
Revenue	6,173	11,961	229	512	-	(4,298)	14,577
External sales	2,617	945	223	385	-	-	4,170
Inter-segment sales	1	134	-	4	-	(139)	-
Sales¹	2,618	1,079	223	389	-	(139)	4,170
Underlying operating profit¹	295	256	27	(1)	(38)	-	539
Year ended 31st March 2019							
Revenue from external customers	4,948	5,074	259	464	-	-	10,745
Inter-segment revenue	210	2,608	-	9	-	(2,827)	-
Revenue	5,158	7,682	259	473	-	(2,827)	10,745
External sales	2,719	880	256	359	-	-	4,214
Inter-segment sales	1	111	1	3	-	(116)	-
Sales ¹	2,720	991	257	362	-	(116)	4,214
Underlying operating profit ¹	393	181	43	2	(53)	-	566

¹ Sales and underlying operating profit are non-GAAP measures (see note 35). 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.

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

1 Segmental information (continued)

Impact of exchange rate movements on sales and underlying operating profit by sector

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

Average exchange rates

	2020	2019
US dollar / £	1.271	1.310
Euro / £	1.143	1.134
Chinese renminbi / £	8.85	8.81

	Year ended 31st March 2020 £ million	Year ended 31st March 2019 At last year's rates £ million	Year ended 31st March 2019 At this year's rates £ million	Change at this year's rates %
Clean Air	2,618	2,720	2,739	-4
Efficient Natural Resources	1,079	991	1,002	+8
Health	223	257	262	-15
New Markets	389	362	363	+7
Inter-segment sales	(139)	(116)	(116)	
Sales¹	4,170	4,214	4,250	-2
Clean Air	295	393	395	-25
Efficient Natural Resources	256	181	183	+40
Health	27	43	44	-38
New Markets	(1)	2	3	n/a
Corporate	(38)	(53)	(54)	
Underlying operating profit¹	539	566	571	-6

Reconciliation from underlying operating profit to operating profit by sector

	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Total £ million
Year ended 31st March 2020						
Underlying operating profit¹	295	256	27	(1)	(38)	539
Profit on disposal of businesses	-	-	-	-	2	2
Amortisation of acquired intangibles	(3)	(6)	-	(4)	-	(13)
Major impairment and restructuring charges	(56)	-	(17)	(57)	(10)	(140)
Operating profit	236	250	10	(62)	(46)	388

	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Total £ million
Year ended 31st March 2019						
Underlying operating profit ¹	393	181	43	2	(53)	566
Loss on disposal of businesses	-	-	-	(12)	-	(12)
Loss on significant legal proceedings	-	-	-	-	(17)	(17)
Amortisation of acquired intangibles	(3)	(6)	-	(5)	-	(14)
Major impairment and restructuring charges	-	-	7	-	1	8
Operating profit	390	175	50	(15)	(69)	531

¹ Sales and underlying operating profit are non-GAAP measures (see note 35). 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.

Notes on the accounts continued

for the year ended 31st March 2020

1 Segmental information (continued)

Other segmental information

Year ended 31st March 2020	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate ¹ £ million	Total £ million
Segmental net assets	1,361	1,267	520	236	332	3,716
Net debt (note 35)						(1,094)
Post-employment benefit net assets and liabilities						213
Deferred tax net liabilities						(8)
Provisions and non-current other payables						(26)
Investments in joint venture and associate						23
Net assets						2,824
Property, plant and equipment	188	73	19	52	19	351
Intangible assets	–	3	13	13	85	114
Capital expenditure	188	76	32	65	104	465
Depreciation	64	48	21	12	9	154
Amortisation	5	9	1	4	5	24
Impairment losses	55	1	18	66	6	146
Total	124	58	40	82	20	324

¹ The increase in Corporate net assets includes purchases of computer hardware and software to upgrade the group's core IT systems.

Impairment losses include the following:

- £61 million in respect of three manufacturing plants in the Clean Air sector, comprising intangible assets in Corporate (£6 million) and property, plant and equipment in Clean Air (£55 million) (see note 3);
- £57 million in respect of the Battery Materials LFP business in the New Markets sector, comprising goodwill (£7 million), intangible assets (£5 million), property, plant and equipment (£35 million), right-of-use assets (£1 million) and trade and other receivables (£9 million) (see note 3);
- £20 million in respect of development expenditure which had been capitalised in respect of terminated molecules in the Health sector (see note 3); and
- £8 million in respect of the discontinued Battery Materials eLNO demonstration plants in the New Markets sector (see note 9).

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

1 Segmental information (continued)

Other segmental information (continued)

	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Total £ million
Year ended 31st March 2019						
Segmental net assets	1,339	1,243	496	235	108	3,421
Net debt (note 35)						(866)
Post-employment benefit net assets and liabilities						103
Deferred tax net liabilities						(33)
Provisions and non-current other payables						(34)
Investments in joint venture and associate						20
Net assets						2,611
Property, plant and equipment	124	49	18	35	9	235
Intangible assets	–	4	11	13	60	88
Capital expenditure	124	53	29	48	69	323
Depreciation	64	45	18	9	6	142
Amortisation	8	10	1	5	5	29
Impairment (reversals) / losses	–	(2)	(7)	2	–	(7)
Total	72	53	12	16	11	164

2 Revenue

Products and services

The group's principal products and services by operating sector and sub-sector are disclosed in the table below, together with information regarding performance obligations and revenue recognition. Revenue is recognised by the group as contractual performance obligations to customers are completed.

Sector	Sub-sector	Primary industry	Principal products and services	Principal performance obligations	Revenue recognition
Clean Air	Light Duty Catalysts	Automotive	Catalysts for cars and other light duty vehicles	Point in time	On despatch or delivery
	Heavy Duty Catalysts	Automotive	Catalysts for trucks, buses and non-road equipment	Point in time	On despatch or delivery
Efficient Natural Resources	Catalyst Technologies	Chemicals / oil and gas	Speciality catalysts and additives Process technology licences	Point in time Over time	On despatch or delivery Based on costs incurred or straight-line over the licence term ¹
	Platinum Group Metal Services	Various	Engineering design services	Over time	Based on costs incurred
			Platinum Group Metal refining and recycling services	Over time	Based on costs incurred
			Other precious metal products	Point in time	On despatch or delivery
	Advanced Glass Technologies	Automotive	Platinum Group Metal chemical and industrial products	Point in time	On despatch or delivery
Diagnostic Services	Oil and gas	Precious metal pastes and enamels	Point in time	On despatch or delivery	
Health	Generics	Pharmaceuticals	Detection, diagnostic and measurement solutions	Over time	Based on costs incurred
	Innovators	Pharmaceuticals	Manufacture of active pharmaceutical ingredients Development and manufacture of active pharmaceutical ingredients	Point in time Over time	On despatch or delivery Based on costs incurred
New Markets	Alternative Powertrain	Automotive	Battery materials and fuel cell technologies	Point in time	On despatch or delivery
		Consumer goods	Battery systems for a range of applications	Point in time	On despatch or delivery
	Medical Device Components	Pharmaceuticals	Products found in devices used in medical procedures	Point in time	On despatch or delivery
	Life Science Technologies	Pharmaceuticals / agriculture	Advanced catalysts	Point in time	On despatch or delivery

¹ Revenue recognition depends on whether the licence is distinct in the context of the contract.

Notes on the accounts continued

for the year ended 31st March 2020

2 Revenue (continued)

Revenue from external customers by principal products and services

	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Total £ million
Year ended 31st March 2020					
Metal	3,555	6,725	6	121	10,407
Heavy Duty Catalysts	831	-	-	-	831
Light Duty Catalysts	1,742	-	-	-	1,742
Catalyst Technologies	-	513	-	-	513
Platinum Group Metal Services	-	298	-	-	298
Advanced Glass Technologies	-	70	-	-	70
Diagnostic Services	-	64	-	-	64
Generics	-	-	134	-	134
Innovators	-	-	89	-	89
Alternative Powertrain	-	-	-	237	237
Medical Device Components	-	-	-	71	71
Life Science Technologies	-	-	-	47	47
Other	44	-	-	30	74
Revenue	6,172	7,670	229	506	14,577
Year ended 31st March 2019					
Metal	2,229	4,194	3	105	6,531
Heavy Duty Catalysts	938	-	-	-	938
Light Duty Catalysts	1,737	-	-	-	1,737
Catalyst Technologies	-	504	-	-	504
Platinum Group Metal Services	-	233	-	-	233
Advanced Glass Technologies	-	75	-	-	75
Diagnostic Services	-	68	-	-	68
Generics	-	-	171	-	171
Innovators	-	-	85	-	85
Alternative Powertrain	-	-	-	206	206
Medical Device Components	-	-	-	70	70
Life Science Technologies	-	-	-	46	46
Other	44	-	-	37	81
Revenue	4,948	5,074	259	464	10,745

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

2 Revenue (continued)

Revenue from external customers by point in time and over time performance obligations

	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Total £ million
Year ended 31st March 2020					
Revenue recognised at a point in time	6,172	7,361	165	502	14,200
Revenue recognised over time	-	309	64	4	377
Revenue	6,172	7,670	229	506	14,577
Year ended 31st March 2019					
Revenue recognised at a point in time	4,948	4,869	233	464	10,514
Revenue recognised over time	-	205	26	-	231
Revenue	4,948	5,074	259	464	10,745

Geographical analysis of revenue from external customers and non-current assets

The group's country of domicile is the UK. Revenue from external customers based on the customer's location and non-current assets based on the location of the assets are disclosed below.

	Revenue from external customers		Non-current assets	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
UK	3,275	1,838	1,007	924
Germany	1,422	1,252	271	266
Rest of Europe	2,125	1,869	366	257
USA	2,750	2,567	483	440
Rest of North America	477	205	48	32
China (including Hong Kong)	2,182	1,199	224	183
Rest of Asia	1,288	1,267	148	124
Rest of World	1,058	548	6	18
			2,553	2,244
Investments at fair value through other comprehensive income			49	52
Interest rate swaps			34	13
Deferred tax assets			66	58
Post-employment benefit net assets			317	209
Total	14,577	10,745	3,019	2,576

Major customers

The group received £1.8 billion of revenue from one external customer in the Clean Air sector which represents more than 10% of the group's revenue from external customers during the year ended 31st March 2020 (2019: £1.5 billion of revenue from one external customer in the Clean Air sector).

Unsatisfied performance obligations

At 31st March 2020, for contracts that had an original expected duration of more than one year, the group had unsatisfied performance obligations of £397 million (2019: £323 million), representing contractually committed revenue to be recognised at a future date. Of this amount, £88 million (2019: £38 million) is expected to be recognised within one year and £309 million (2019: £285 million) is expected to be recognised after one year.

Payment terms

The group and parent company supply goods and services on payment terms that are consistent with those standard across the industry and do not have any contracts with a material financing component. Where revenue is recognised over time, payment terms are generally consistent with the timeframe over which revenue is recognised.

Notes on the accounts continued

for the year ended 31st March 2020

3 Operating profit

Operating profit is arrived at after charging / (crediting):

	2020 £ million	2019 £ million
Total research and development expenditure	199	190
Less: Development expenditure capitalised	(23)	(19)
Research and development expenditure charged to the income statement	176	171
Less: External funding received – from governments	(13)	(12)
– from other organisations	(1)	(2)
Net research and development expenditure charged to the income statement	162	157

Inventories recognised as an expense	12,585	8,715
Write-down of inventories recognised as an expense	70	25
Reversal of write-down of inventories from increases in net realisable value	(17)	(5)
Net (gains) / losses on foreign exchange	(17)	10
Net losses / (gains) on foreign currency forwards at fair value through profit or loss	24	(6)
Past service credit	(20)	(9)

Depreciation of property, plant and equipment	140	142
Depreciation of right-of-use assets	14	–
Depreciation	154	142

Amortisation of internally generated intangible assets included in cost of sales	3	6
Amortisation of other intangible assets included in – cost of sales	1	2
– distribution costs	1	1
– administrative expenses	7	6
– amortisation of acquired intangibles	12	14
Amortisation	24	29

Impairment losses / (reversals) included in administrative expenses:		
– other intangible assets	1	–
– property, plant and equipment	9	2
– borrowings and related swaps	–	(2)
Impairment losses included in amortisation of acquired intangibles:		
– other intangible assets	1	–
Impairment losses / (reversals) included in major impairment and restructuring charges:		
– goodwill	7	–
– other intangible assets	31	–
– property, plant and equipment	90	(7)
– right-of-use assets	1	–
– inventories	(3)	–
– trade and other receivables	9	–
Impairment losses / (reversals)	146	(7)

	2020 £ million	2019 £ million
Fees payable to the company's auditor and its associates for:		
The audit of these accounts	1.2	0.9
The audit of the accounts of the company's subsidiaries	2.2	1.7
Total audit fees¹	3.4	2.6
Audit-related assurance services	0.2	0.2
Other services	0.4	0.3
Total non-audit fees	0.6	0.5
Total fees payable to the company's auditor and its associates	4.0	3.1

¹ 2019 excludes overruns of £0.9 million.

No audit fees were paid to other auditors (2019: £nil).

Other non-audit services predominantly comprise immigration services.

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Notes on the accounts continued

for the year ended 31st March 2020

3 Operating profit (continued)

The following items are shown separately on the face of the income statement:

- **Profit or loss on disposal of businesses** The group released a residual provision for environmental liabilities of £2 million which had originally been recognised in respect of the disposal of Johnson Matthey Gold and Silver Refining Holdings in March 2015. The time limit on claims was five years and no claims have been received. In the prior year, the group sold its water disinfection business, Miox. After costs, the net proceeds were £2 million which resulted in a loss on sale of £12 million.
- **Gain or loss on significant legal proceedings** In April 2019, the group paid £17 million in respect of a settlement with a customer on mutually acceptable terms with no admission of fault relating to failures in certain engine systems for which it supplied a component in the US. The settlement was recognised in the prior year on the basis that it confirmed that the group had a present obligation at the prior year end.
- **Amortisation of acquired intangibles** Amortisation and impairment of intangible assets which arose on the acquisition of businesses totalled £13 million (2019: £14 million).
- **Major impairment and restructuring charges** The group recognised the following impairments during the year:
 - **Clean Air manufacturing plants** Investment in new manufacturing plants in Europe and Asia has allowed the Clean Air sector to consolidate its existing capacity into new, more efficient plants. Specifically, we plan to restructure three of our manufacturing plants. As a result, the carrying value of one of the plants has been impaired, by £42 million to £24 million, based on a fair value less costs of disposal assessment, with our assessment of the market value of the plant based on internal data (level 3 inputs – see note 28 for the fair value hierarchy). The other two plants have been impaired by £17 million to £3 million and by £2 million to £nil based on a value in use assessment, with discount rates of 13% and 38%, respectively. The impairment comprises intangible assets (£6 million) and property, plant and equipment (£55 million).
 - **Battery Materials LFP business** We are focusing our science and innovative solutions on cathode materials that are truly market leading, principally eLNO, our ultra-high energy density cathode material and, in addition, our higher performing lithium iron phosphate (LFP). Sales of LFP declined during the year and we are now refocusing our LFP business on the high value segment of the market to better support our eLNO customers and the development of that business. These changes mean that the carrying value of the Battery Materials LFP cash-generating unit has been impaired, by £57 million, to £3 million based on a value in use assessment. The impairment comprises goodwill (£7 million), intangible assets (£5 million), property, plant and equipment (£35 million), right-of-use assets (£1 million) and trade and other receivables (£9 million). The recoverable amount of £3 million reflects residual working capital balances. The discount rate for the purposes of the value in use assessment was 10.7% (2019: 11.9%).
 - **Health capitalised development expenditure** During the year, a fundamental review of the Health sector's new product introduction process was undertaken to determine how the business will deliver its strategic plan. The organisation was restructured and new employees were recruited to strengthen the sector's technical capabilities. A detailed review of each molecule was performed which considered all assumptions, including market size, number of competitors, molecular process design and technical feasibility. The assessment resulted in the determination to reprioritise the molecules in the pipeline, focusing on the optimal number of projects to sustain a consistent and predictable new product launch process. Consequently, the development of 21 molecules in the pipeline has been terminated. Development expenditure which had been capitalised in respect of the terminated molecules totalling £20 million has been written off during the year. With a focus on fewer molecules, we have made further progress towards delivering an additional circa £100 million of operating profit from our pipeline of generic and innovator active pharmaceutical ingredients.

In addition to the impairments recognised during the year, consultancy costs of £5 million were incurred in respect of the major restructuring initiatives announced in June 2020 and a write off of inventories of £3 million recognised in the Health sector as part of the group's operational efficiency programme announced in March 2017 was released.

In the prior year, £7 million of a prior year impairment of the Health sector's Riverside site was reversed and, in September 2019, the site was sold, with no gain or loss on disposal.

Notes on the accounts continued

for the year ended 31st March 2020

4 Employee information

Employee numbers

	2020	2019
Clean Air	6,087	5,679
Efficient Natural Resources	3,981	3,602
Health	878	879
New Markets	1,927	1,855
Corporate	1,066	973
Monthly average number of employees	13,939	12,988

The number of temporary employees included above at 31st March 2020 is 583 (2019: 526).

The monthly average number of employees in the parent company is 3,020 (2019: 2,965).

	At 31st March 2020			At 31st March 2019		
	Actual employees	Agency staff	Total headcount	Actual employees	Agency staff	Total headcount
Clean Air	6,226	458	6,684	5,919	629	6,548
Efficient Natural Resources	3,988	134	4,122	3,645	163	3,808
Health	907	8	915	858	8	866
New Markets	1,952	381	2,333	1,934	343	2,277
Corporate	1,079	219	1,298	1,043	253	1,296
Year-end headcount	14,152	1,200	15,352	13,399	1,396	14,795

Employee costs

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Wages and salaries	621	593	187	192
Social security costs	68	64	19	20
Post-employment costs	49	56	38	30
Share-based payments	5	17	4	15
Termination benefits	2	1	1	–
Employee benefits expense	745	731	249	257

5 Net finance costs

	2020 £ million	2019 £ million
Net loss on remeasurement of foreign currency swaps held at fair value through profit or loss	(5)	(1)
Interest payable on financial liabilities held at amortised cost and interest on related swaps	(43)	(37)
Interest payable on other liabilities ¹	(144)	(69)
Interest payable on lease liabilities	(3)	–
Total finance costs	(195)	(107)
Interest receivable on financial assets held at amortised cost	4	3
Interest receivable on other assets ¹	103	58
Interest on post-employment benefits	2	3
Total finance income	109	64
Net finance costs	(86)	(43)

¹ Interest payable and receivable on other liabilities and assets mainly comprises interest on precious metal leases and the amortisation of contango and backwarranty on precious metal inventory and sale and repurchase agreements.

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

6 Tax expense

	2020 £ million	2019 £ million
Current tax		
Corporation tax on profit for the year	101	84
Benefit from previously unrecognised tax losses, tax credits or temporary differences	(2)	–
Adjustment for prior years	(3)	(7)
Total current tax	96	77
Deferred tax		
Origination and reversal of temporary differences	(37)	6
Tax rate adjustments	3	(1)
Recognition of previously unrecognised deferred tax assets	(10)	(5)
Adjustment for prior years	(2)	(2)
Total deferred tax	(46)	(2)
Tax expense	50	75

The tax expense can be reconciled to profit before tax in the income statement as follows:

	2020 £ million	2019 £ million
Profit before tax	305	488
Tax expense at UK corporation tax rate of 19% (2019: 19%)	58	93
Effects of:		
Overseas tax rates	(7)	2
Expenses not deductible for tax purposes	3	3
Losses and other temporary differences not recognised	21	7
Recognition or utilisation of previously unrecognised tax assets	(10)	(6)
Adjustment for prior years	(5)	(9)
Patent box / Innovation box	(19)	(19)
Other tax incentives	(5)	(4)
Tax rate adjustments	2	(1)
Disposal of businesses	–	(2)
Irrecoverable withholding tax	2	6
Other	10	5
Tax expense	50	75

Losses and other temporary differences not recognised includes current year tax losses arising in Canada, South Africa and China which are not expected to be used in the foreseeable future.

Recognition or utilisation of previously unrecognised tax assets is mainly the recognition of tax incentives in Poland.

Adjustments for prior years includes current and deferred tax adjustments in respect of the UK, US and Macedonia, as well as adjustments in respect of provisions for uncertain tax positions.

Other tax incentives includes research and development tax incentives in the US and China and other tax incentives in Poland.

Irrecoverable withholding tax and other include movements in respect of provisions for uncertain tax positions.

Notes on the accounts continued

for the year ended 31st March 2020

7 Tax on other comprehensive income

	2020		2019			
	Before tax £ million	Tax £ million	Net of tax £ million	Before tax £ million	Tax £ million	Net of tax £ million
Items that will not be reclassified to the income statement						
Remeasurements of post-employment benefit assets and liabilities	87	(18)	69	(69)	13	(56)
Fair value losses on equity investments at fair value through other comprehensive income	(2)	–	(2)	(3)	–	(3)
Tax rate adjustments	–	(3)	(3)	–	–	–
Items that may be reclassified to the income statement						
Exchange differences on translation of foreign operations	65	–	65	22	1	23
Fair value losses on other investments at fair value through other comprehensive income	–	–	–	(1)	–	(1)
Amounts credited to hedging reserve	–	–	–	4	(1)	3
Fair value losses on net investment hedges	(8)	–	(8)	(1)	–	(1)
Total other comprehensive income	142	(21)	121	(48)	13	(35)

8 Earnings per ordinary share

	2020 pence	2019 pence
Basic	132.3	215.2
Diluted	132.1	214.6

Earnings per ordinary share have been calculated by dividing profit for the year by the weighted average number of shares in issue during the year.

	2020	2019
Weighted average number of shares in issue		
Basic	192,437,993	192,128,811
Dilution for long term incentive plans	314,053	559,693
Diluted	192,752,046	192,688,504

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for the year ended 31st March 2020

9 Property, plant and equipment

Group

	Freehold land and buildings £ million	Leasehold improvements £ million	Plant and machinery £ million	Assets in the course of construction £ million	Total £ million
Cost					
At 1st April 2018	578	25	1,919	209	2,731
Additions	10	1	60	164	235
Reclassification between categories	13	1	63	(77)	-
Reclassification as held for sale	(7)	-	-	(1)	(8)
Transfer from other intangible assets (note 11)	-	-	11	-	11
Disposals	-	(3)	(40)	-	(43)
Disposal of businesses	-	-	(2)	-	(2)
Exchange adjustments	13	1	45	1	60
At 31st March 2019	607	25	2,056	296	2,984
Additions	2	-	33	316	351
Reclassification between categories	3	1	112	(116)	-
Disposals	(3)	(1)	(75)	(15)	(94)
Exchange adjustments	18	(1)	45	5	67
At 31st March 2020	627	24	2,171	486	3,308
Accumulated depreciation and impairment					
At 1st April 2018	250	15	1,302	9	1,576
Charge for the year	19	1	121	1	142
Impairment (reversals) / losses	(6)	-	-	1	(5)
Reclassification as held for sale	(1)	-	-	-	(1)
Reclassification between categories	(1)	1	(5)	5	-
Disposals	-	(3)	(37)	-	(40)
Exchange adjustments	7	1	33	-	41
At 31st March 2019	268	15	1,414	16	1,713
Charge for the year	18	2	120	-	140
Impairment losses	23	1	60	15	99
Disposals	(2)	(1)	(71)	(14)	(88)
Exchange adjustments	10	-	31	-	41
At 31st March 2020	317	17	1,554	17	1,905
Carrying amount at 31st March 2020	310	7	617	469	1,403
Carrying amount at 31st March 2019	339	10	642	280	1,271
Carrying amount at 1st April 2018	328	10	617	200	1,155

Finance costs capitalised were £7 million (2019: £4 million) and the capitalisation rate used to determine the amount of finance costs eligible for capitalisation was 3.0% (2019: 3.2%).

During the year, the group recognised impairments in respect of three Clean Air manufacturing plants (£55 million) and the Battery Materials LFP business (£35 million) which have been included in major impairment and restructuring charges (see note 3) and an impairment in respect of its Battery Materials eLNO demonstration plants (£8 million) which has been included in administrative expenses. The construction of the eLNO demonstration plants was discontinued during the year. The carrying value of the plants was £14 million. Assets with a carrying value of £6 million will be used in the construction of the commercial eLNO plants.

The carrying value of temporarily idle property, plant and equipment at 31 March 2020 is £473 million (31 March 2019: £nil). As a result of COVID-19, most of the manufacturing plants in the Clean Air sector outside China were temporarily closed in March 2020, which represents a triggering event that could indicate that they are impaired. The plants have been tested for impairment based on discounted cash flows consistent with our deep recession scenario and, with the exception of three plants which have been impaired as a result of the optimisation of the manufacturing footprint in the Clean Air sector (see note 3), their carrying values are not considered to be impaired. All of the plants that were temporarily closed are now in operation.

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for the year ended 31st March 2020

9 Property, plant and equipment (continued)

Parent company

	Freehold land and buildings £ million	Leasehold improvements £ million	Plant and machinery £ million	Assets in the course of construction £ million	Total £ million
Cost					
At 31st March 2019	129	3	592	51	775
Additions	–	–	12	76	88
Reclassification between categories	–	–	2	(2)	–
Disposals	(2)	–	(19)	(8)	(29)
Transfers to other group companies	–	–	(6)	(18)	(24)
At 31st March 2020	127	3	581	99	810
Accumulated depreciation and impairment					
At 31st March 2019	61	2	400	–	463
Charge for the year	3	–	33	–	36
Impairment losses	12	–	30	6	48
Disposals	(2)	–	(18)	(7)	(27)
At 31st March 2020	74	2	445	(1)	520
Carrying amount at 31st March 2020	53	1	136	100	290
Carrying amount at 31st March 2019	68	1	192	51	312

Finance costs capitalised were £1 million (2019: £2 million) and the capitalisation rate used to determine the amount of finance costs eligible for capitalisation was 3.0% (2019: 3.2%).

During the year, the parent company recognised impairments in respect of a Clean Air manufacturing plant (£42 million) and the Battery Materials eLNO demonstration plant (£6 million).

10 Goodwill

	Group £ million	Parent company £ million
Cost		
At 1st April 2018	585	123
Exchange adjustments	4	–
At 31st March 2019	589	123
Exchange adjustments	9	–
At 31st March 2020	598	123
Impairment		
At 1st April 2018 and 31st March 2019	11	–
Impairment losses	7	8
At 31st March 2020	18	8
Carrying amount at 31st March 2020	580	115
Carrying amount at 31st March 2019	578	123
Carrying amount at 1st April 2018	574	123

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10 Goodwill (continued)

Significant cash-generating units (CGUs)

Goodwill arising on the acquisition of businesses is allocated, at acquisition, to the CGUs that are expected to benefit from that business combination. These CGUs represent the smallest identifiable groups of assets that generate cash inflows that are largely independent of the cash inflows from other groups of assets. Goodwill allocated to the significant CGUs is as follows:

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Clean Air				
– Heavy Duty Catalysts	88	85	–	–
Efficient Natural Resources				
– Catalyst Technologies	272	267	113	113
– Diagnostic Services	49	50	–	–
– Other	2	3	–	–
Health				
– Generics ¹	117	117	–	–
– Innovators	29	27	2	2
New Markets ²	23	29	–	8
	580	578	115	123

¹ The goodwill recognised on the acquisition of Macfarlan Smith is allocated to the Generics CGU which comprises both the legacy Macfarlan Smith business and the group's other generics businesses reflecting the way that the group monitors and manages its operations.

² New Markets comprises CGUs with goodwill balances individually less than £10 million.

Impairment testing

The group and parent company test goodwill annually for impairment or more frequently if there are indications that goodwill might be impaired. The recoverable amounts of the CGUs are determined using value in use calculations which generally use cash flow projections based on financial budgets and plans covering a three-year period approved by management. The budgets and plans are based on a number of assumptions, including market share, expected changes to selling prices, product profitability, precious metal prices and other direct input costs, based on past experience and management's expectations of future changes in the markets using external sources of information where appropriate. The budgets and plans used for the impairment reviews reflect management's estimate of the impact of COVID-19, which is a deep recession involving a period of lower demand followed by an extended recovery period. The key macro assumptions for our financial year 20/21 under the deep recession scenario are shown on page 65. Further information on the group's current strategic and business planning process is provided in the viability statement on page 75.

Unallocated corporate costs are split between CGUs based on their share of contribution. The three-year cash flows are extrapolated using the long term average growth rates for the relevant products, industries and countries in which the CGUs operate. Pre-tax discount rates, derived from the group's post-tax weighted average cost of capital of 6.5% (2019: 7.6%), adjusted for the risks applicable to each CGU are used to discount these projected risk-adjusted cash flows.

The key assumptions are:

	Discount rate		Long term growth rate	
	2020	2019	2020	2019
Clean Air				
– Heavy Duty Catalysts	9.8%	9.5%	-1.2%	-1.0%
Efficient Natural Resources				
– Catalyst Technologies	8.3%	10.3%	2.8%	2.7%
– Diagnostic Services	9.7%	10.3%	1.3%	1.3%
Health				
– Generics	9.9%	8.6%	2.0%	4.0%
– Innovators	8.4%	9.2%	3.0%	3.0%

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for the year ended 31st March 2020

10 Goodwill (continued)

Impairment testing (continued)

Different long term growth rates are used for the Clean Air – Heavy Duty Catalysts CGU because of expected macroeconomic trends in the industry in which the business operates. The growth rate for years four to ten is expected to be 1% (2019: 1%). After that, growth is expected to slow and, therefore, the long term growth rate above is used for year 11 onwards.

Different long term growth rates are used for the Health – Generics CGU because of the significant growth expected in the medium term from our existing pipeline of active pharmaceutical ingredients. The growth rate for years four to ten is expected to be 4% (2019: 4%). The long term growth rate above is used for year 11 onwards.

Goodwill of £7 million in the Battery Materials LFP CGU in the New Markets sector has been fully impaired during the year (see note 3). The parent company has impaired £8 million of goodwill during the year, which represents its allocation of the goodwill in the Battery Materials LFP CGU.

Sensitivity analysis

The headroom for the significant CGUs, calculated as the difference between their carrying values including allocated goodwill at 31st March 2020 and the value in use calculations, is shown below. The table also shows, for each significant CGU, the headroom assuming a 1% decrease in the growth rate assumption and a 1% increase in the discount rate assumption used in the value in use calculations.

	Headroom at 31st March 2020 £ million	Headroom assuming a 1% decrease in the growth rate £ million	Headroom assuming a 1% increase in the discount rate £ million
Clean Air			
– Heavy Duty Catalysts	196	132	123
Efficient Natural Resources			
– Catalyst Technologies	874	655	637
– Diagnostic Services	25	14	12
Health			
– Generics	123	64	58
– Innovators	149	112	110

There are no impairments for the significant CGUs under a very deep recession scenario, which reflects even lower demand followed by a challenging, stuttering recovery. The key macro assumptions for our financial year 20/21 under the very deep recession scenario are shown on page 65.

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11 Other intangible assets

Group

	Customer contracts and relationships £ million	Computer software £ million	Patents, trademarks and licences £ million	Acquired research and technology £ million	Development expenditure £ million	Total £ million
Cost						
At 1st April 2018	152	188	69	53	180	642
Additions	–	63	6	–	19	88
Transfer to property, plant and equipment (note 9)	–	(11)	–	–	–	(11)
Disposals	–	(9)	–	–	–	(9)
Disposal of businesses	–	–	(13)	(1)	(1)	(15)
Exchange adjustments	–	–	1	–	8	9
At 31st March 2019	152	231	63	52	206	704
Additions	–	90	1	–	23	114
Disposals	(7)	(1)	(1)	(3)	(21)	(33)
Exchange adjustments	1	1	1	1	10	14
At 31st March 2020	146	321	64	50	218	799
Accumulated amortisation and impairment						
At 1st April 2018	107	54	35	31	120	347
Charge for the year	6	9	4	4	6	29
Disposals	–	(9)	–	–	–	(9)
Disposal of businesses	–	–	(5)	(1)	–	(6)
Exchange adjustments	1	–	1	–	5	7
At 31st March 2019	114	54	35	34	131	368
Charge for the year	5	10	2	4	3	24
Impairment losses	–	7	2	3	21	33
Disposals	(7)	(1)	(1)	(3)	(21)	(33)
Exchange adjustments	1	1	2	1	6	11
At 31st March 2020	113	71	40	39	140	403
Carrying amount at 31st March 2020	33	250	24	11	78	396
Carrying amount at 31st March 2019	38	177	28	18	75	336
Carrying amount at 1st April 2018	45	134	34	22	60	295

During the year, the group recognised impairments in respect of three Clean Air manufacturing plants (£6 million), the Battery Materials LFP business (£5 million) and development expenditure which had been capitalised in respect of terminated molecules in the Health sector (£20 million) which have been included in major impairment and restructuring charges (see note 3).

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for the year ended 31st March 2020

11 Other intangible assets (continued)

Parent company

	Computer software £ million	Patents, trademarks and licences £ million	Acquired research and technology £ million	Development expenditure £ million	Total £ million
Cost					
At 31st March 2019	190	26	10	22	248
Additions	86	1	–	12	99
At 31st March 2020	276	27	10	34	347
Accumulated amortisation and impairment					
At 31st March 2019	20	2	4	15	41
Charge for the year	8	1	–	–	9
Impairment losses	6	–	3	–	9
At 31st March 2020	34	3	7	15	59
Carrying amount at 31st March 2020	242	24	3	19	288
Carrying amount at 31st March 2019	170	24	6	7	207

During the year, the parent company recognised impairments in respect of a Clean Air manufacturing plant (£6 million) and the Battery Materials LFP business (£3 million).

12 Investments in subsidiaries

	Cost of investments in subsidiaries £ million	Accumulated impairment £ million	Carrying amount £ million
At 1st April 2018	2,255	(258)	1,997
Additions	12	–	12
Disposals	(97)	–	(97)
At 31st March 2019	2,170	(258)	1,912
Additions	13	–	13
Impairment losses	–	(4)	(4)
At 31st March 2020	2,183	(262)	1,921

The parent company recognised an impairment during the year in respect of its investment in Johnson Matthey Argentina S.A.

The parent company's subsidiaries are shown in note 33.

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13 Investments in joint venture and associate

	2020 £ million	2019 £ million
Investment in joint venture	6	5
Investment in associate	17	15
Investments in joint venture and associate	23	20

The movements in the year were:

	Joint venture £ million	Associate £ million	Total £ million
At 1st April 2018 and 31st March 2019	5	15	20
Group's share of profit for the year	1	2	3
At 31st March 2020	6	17	23

The group has an 11.1% interest in the ordinary share capital of Shanghai Bi Ke Clean Energy Technology Co Ltd (CECC) and has significant influence in this entity as CECC requires unanimous board decisions. As a result, this investment is accounted for as an investment in an associate in the group accounts. In addition, the parent company has a revenue share agreement with CECC which is accounted for as a non-current investment at fair value through other comprehensive income (note 14).

The group has a 51% interest in the ordinary share capital of Qingdao Johnson Matthey Hero Catalyst Company Limited, with the other 49% being owned by Qingdao Hero Chemical Engineering Company Ltd. This investment is accounted for as an investment in joint venture on the basis that the group has joint control over the entity. Directors from both of the owners sit on the board of the company and decisions require unanimous consent.

During the year ended 31st March 2020, the group made purchases from its joint venture and associate totalling £1 million (2019: £1 million).

14 Investments at fair value through other comprehensive income

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Quoted bonds purchased to fund pension deficit	49	52	–	–
Unquoted investments	–	–	7	7
	49	52	7	7

There is no active market for the unquoted investments and, therefore, they are categorised as level 3 (note 28). The parent company's investment is the revenue share agreement with CECC (note 13). Movements in the unquoted investments in the year are shown below:

	Group £ million	Parent company £ million
At 1st April 2018	3	7
Impairment losses	(3)	–
At 31st March 2019 and 31st March 2020	–	7

15 Interest rate swaps

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Cross currency interest rate swaps designated as cash flow hedges	19	8	19	8
Interest rate swaps designated as fair value hedges	15	5	15	5
Interest rate swaps	34	13	34	13

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for the year ended 31st March 2020

16 Inventories

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Raw materials and consumables	292	277	43	42
Work in progress	1,289	750	675	311
Finished goods and goods for resale	321	289	61	77
Inventories	1,902	1,316	779	430

Work in progress includes £0.9 billion (31st March 2019: £0.4 billion) of precious metal which is committed to future sales to customers and valued at the price at which it is contractually committed. The impact of COVID-19 has been taken into consideration when assessing the net realisable value of inventories not contractually committed to future sales.

The increase in work in progress reflects an increase in precious metal inventories driven by an increase in metal prices, as well as higher volumes due to reduced demand for production in Clean Air in March 2020 as a result of COVID-19. The impact of higher inventories on the group's working capital is offset by a net increase in amounts payable under precious metal sale and repurchase agreements (see notes 17 and 19).

The group also holds customers' materials in the process of refining and fabrication and for other reasons.

17 Trade and other receivables

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Current				
Trade receivables	1,228	1,204	291	206
Contract receivables	163	43	29	–
Amounts receivable from subsidiaries ^{1,2}	–	–	1,404	1,223
Prepayments	80	109	41	33
Value added tax and other sales tax receivable	71	33	–	5
Advance payments to customers	8	5	–	–
Amounts receivable under precious metal sale and repurchase agreements	457	97	427	75
Other receivables	70	62	33	50
Trade and other receivables	2,077	1,553	2,225	1,592
Non-current				
Amounts receivable from subsidiaries ³	–	–	1,211	1,009
Value added tax and other sales tax receivable	2	–	–	–
Prepayments	3	18	3	–
Advance payments to customers	58	21	–	1
Other receivables	63	39	1,214	1,010

¹ The parent company prior year comparatives have been restated to increase current amounts receivable from subsidiaries by £278 million. The restated amounts relate to the prior year net presentation of intercompany treasury accounts in different currencies. The parent company does not have an enforceable legal right to set off these amounts and, therefore, they have been restated on a gross basis.

² The parent company has three intercompany fixed-term loans that are due for repayment within one year. The loans are denominated in Brazilian Real and Malaysian Ringgit and have fixed interest rates between 4.8% and 6.5%. In addition, the parent company has a mixture of trade receivables from subsidiaries, which have limited specific contractual terms, and a number of receivable balances held in different currencies under an intercompany treasury facility that accrues interest at LIBOR +0.81% and are repayable on demand.

³ The parent company has a range of approximately 30 intercompany fixed-rate loans receivable across multiple currencies, with repayment dates ranging from 2022 to 2030. These unsecured loans have a range of interest rates determined by the currency in which they are denominated, ranging from 2.8% on Japanese Yen to 12.5% on Indian Rupee.

The increase in group contract receivables reflects higher unbilled amounts in respect of sales of precious metal due to metal price increases.

The increase in amounts receivable under precious metal sale and repurchase agreements is more than offset by an increase in amounts payable under precious metal sale and repurchase agreements driven by an increase in metal prices, as well as additional metal available to sell and repurchase due to reduced demand for production in Clean Air in March 2020 as a result of COVID-19 and lower refinery backlogs in Efficient Natural Resources (see notes 16 and 19).

The fair value of the precious metal contracted to be sold by the group under sale and repurchase agreements is £760 million (2019: £113 million).

Of the parent company's amounts receivable from subsidiaries, £153 million is impaired (2019: £131 million). Future expected credit losses on intercompany receivables are immaterial.

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18 Other financial assets and liabilities

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Forward foreign exchange contracts designated as cash flow hedges	4	5	6	5
Forward precious metal price contracts designated as cash flow hedges	2	1	2	1
Forward foreign exchange contracts and currency swaps at fair value through profit or loss	22	16	20	17
Other financial assets	28	22	28	23
Forward foreign exchange contracts designated as cash flow hedges	(10)	(3)	(10)	(4)
Forward foreign exchange contracts and currency swaps at fair value through profit or loss	(40)	(10)	(40)	(10)
Other financial liabilities	(50)	(13)	(50)	(14)

19 Trade and other payables

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Current				
Trade payables	677	637	261	229
Contract liabilities	134	85	5	17
Amounts payable to subsidiaries ^{1,2}	–	–	2,372	2,012
Accruals	312	332	117	112
Amounts payable under precious metal sale and repurchase agreements	1,491	525	1,357	483
Other payables	131	68	55	21
Current trade and other payables	2,745	1,647	4,167	2,874
Non-current				
Amounts payable to subsidiaries ³	–	–	510	486
Other payables	6	5	4	3
Other payables	6	5	514	489

¹ The parent company prior year comparatives have been restated to increase current amounts payable to subsidiaries by £278 million. The restated amounts relate to the prior year net presentation of intercompany treasury accounts in different currencies. The parent company does not have an enforceable legal right to set off these amounts and, therefore, they have been restated on a gross basis.

² The parent company has a mixture of trade payables to subsidiaries, which have limited specific contractual terms, and a number of payable balances held in different currencies under an intercompany treasury facility that accrues interest at one-month LIBOR less 0.125% subject to a minimum of 0% and are repayable on demand.

³ The parent company has a range of approximately ten intercompany fixed-term loans payable, all of which are denominated in sterling. These unsecured loans have repayment dates ranging from 2025 to 2037 and have interest rates between 3.3% and 4.9%.

The increase in group contract liabilities reflects a £51 million prepayment received from a customer in respect of sales of precious metal.

The amount of the contract liabilities balance at 31st March 2019 which was recognised in revenue during the year ended 31st March 2020 for the group and parent company was £85 million and £17 million, respectively.

The increase in amounts payable under precious metal sale and repurchase agreements is driven by an increase in metal prices, as well as additional metal available to sell and repurchase due to reduced demand for production in Clean Air in March 2020 as a result of COVID-19 and lower refinery backlogs in Efficient Natural Resources. The increase in amounts payable under precious metal sale and repurchase agreements is partially offset by an increase in amounts receivable under precious metal sale and repurchase agreements (see notes 16 and 17).

The fair value of the precious metal contracted to be repurchased by the group under sale and repurchase agreements is £1,738 million (2019: £502 million).

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20 Borrowings and related swaps

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Non-current				
Bank and other loans				
\$50 million KfW IPEX-Bank GmbH (KfW) loan 2020	-	(38)	-	(38)
4.66% €100 million Bonds 2021	-	(86)	-	(86)
€166 million EIB loan 2022	(148)	(143)	(148)	(143)
3.26% \$150 million Bonds 2022	(128)	(116)	(128)	(116)
2.99% \$165 million Bonds 2023	(134)	(127)	(134)	(127)
2.44% €20 million Bonds 2023	(18)	(17)	(18)	(17)
3.57% £65 million Bonds 2024	(65)	(65)	(65)	(65)
3.565% \$50 million KfW loan 2024	(41)	(38)	(41)	(38)
3.14% \$130 million Bonds 2025	(106)	(100)	(106)	(100)
1.40% €77 million Bonds 2025	(71)	(68)	(71)	(68)
2.54% £45 million Bonds 2025	(45)	(45)	(45)	(45)
3.39% \$180 million Bonds 2028	(146)	(138)	(146)	(138)
1.81% €90 million Bonds 2028	(86)	(80)	(86)	(80)
Other bank and other loans repayable in one to two years	-	(7)	-	-
Cross currency interest rate swaps designated as net investment hedges	(6)	(5)	-	-
Cross currency interest rate swaps designated as fair value hedges	-	-	(6)	(5)
Borrowings and related swaps	(994)	(1,073)	(994)	(1,066)
Current				
1.945% €124 million EIB loan 2019	-	(107)	-	(107)
\$50 million KfW IPEX-Bank GmbH (KfW) loan 2020	(41)	-	(41)	-
4.66% €100 million Bonds 2021	(89)	-	(89)	-
Other bank and other loans	(201)	(77)	-	-
Borrowings and related swaps	(331)	(184)	(130)	(107)

The 3.26% \$150 million Bonds 2022 have been swapped into floating rate US dollars. The 1.40% €77 million Bonds 2025 and the 1.81% €90 million Bonds 2028 have been swapped into floating rate euros. \$100 million of the 3.14% \$130 million Bonds 2025 have been swapped into sterling at 2.83%.

All borrowings bear interest at fixed rates with the exception of the KfW loan 2020, the EIB loan 2022 and bank overdrafts, which bear interest at commercial floating rates.

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21 Movements in assets and liabilities arising from financing activities

	2019 £ million	Cash (inflow) / outflow £ million	Non-cash movements			2020 £ million	
			Transfers £ million	IFRS 16 transition £ million	Foreign exchange movements £ million		Fair value and other movements £ million
Non-current assets							
Interest rate swaps	13	-	-	-	-	21	34
Non-current liabilities							
Borrowings and related swaps	(1,073)	-	131	-	(41)	(11)	(994)
Lease liabilities	-	-	13	(66)	-	(11)	(64)
Current liabilities							
Borrowings and related swaps	(184)	(12)	(131)	-	(4)	-	(331)
Lease liabilities	-	13	(13)	(11)	-	(1)	(12)
		1	-	(77)	(45)	(2)	
Dividends paid to equity shareholders		167					
Interest paid		202					
Net cash outflow from financing activities		370					

	2018 £ million	Cash (inflow) / outflow £ million	Non-cash movements			2019 £ million
			Transfers £ million	Foreign exchange movements £ million	Fair value and other movements £ million	
Non-current assets						
Interest rate swaps	6	-	(1)	-	8	13
Non-current liabilities						
Borrowings and related swaps	(951)	(202)	110	(26)	(4)	(1,073)
Current liabilities						
Borrowings and related swaps	(38)	(39)	(109)	-	2	(184)
		(241)	-	(26)	6	
Dividends paid to equity shareholders		156				
Interest paid		108				
Net cash outflow from financing activities		23				

Notes on the accounts continued

for the year ended 31st March 2020

22 Provisions

Group

	Restructuring provisions £ million	Warranty and technology provisions £ million	Other provisions £ million	Total £ million
At 1st April 2018	15	9	27	51
Charge for the year	–	3	2	5
Utilised	(8)	(1)	(14)	(23)
Released	(4)	(1)	(1)	(6)
Exchange adjustments	–	–	2	2
At 31st March 2019	3	10	16	29
Adjustment on adoption of IFRS 16 (note 34)	–	–	(1)	(1)
At 1st April 2019 (restated)	3	10	15	28
Charge for the year	–	4	5	9
Utilised	(1)	(1)	(8)	(10)
Released	–	(4)	(3)	(7)
At 31st March 2020	2	9	9	20

	2020 £ million	2019 £ million
Current	11	20
Non-current	9	9
Total provisions	20	29

Restructuring

The restructuring provisions are expected to be fully utilised by 31st March 2021.

Warranty and technology

The warranty and technology provisions represent management's best estimate of the group's liability under warranties granted and remedial work required under technology licences based on past experience in Clean Air, Efficient Natural Resources and New Markets. Warranties generally cover a period of up to three years.

Other

The other provisions include environmental and legal provisions arising across the group. Amounts provided reflect management's best estimate of the expenditure required to settle the obligations at the balance sheet date. They are expected to be fully utilised within the next 15 years.

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Notes on the accounts continued

for the year ended 31st March 2020

22 Provisions (continued)

Parent company

	Restructuring provisions £ million	Other provisions £ million	Total £ million
At 1st April 2018	4	18	22
Charge for the year	–	7	7
Utilised	(3)	(2)	(5)
At 31st March 2019	1	23	24
Adjustment on adoption of IFRS 16 (note 34)	–	(1)	(1)
At 1st April 2019 (restated)	1	22	23
Charge for the year	–	35	35
Net sale of metal	–	29	29
Utilised	(1)	–	(1)
At 31st March 2020	–	86	86

	2020 £ million	2019 £ million
Current	85	23
Non-current	1	1
Total provisions	86	24

The other provisions include provisions to buy metal to cover short positions created by the parent company selling metal to cover price risk on metal owned by subsidiaries. Amounts provided reflect management's best estimate of the expenditure required to settle the obligations at the balance sheet date.

The parent company also guarantees some of its subsidiaries' borrowings, partly through interest netting arrangements, payables and precious metal leases, and its exposure at 31st March 2020 was £177 million (2019: £113 million).

23 Deferred tax

Group

	Property, plant and equipment £ million	Post-employment benefits £ million	Provisions £ million	Inventories £ million	Intangibles £ million	Other £ million	Total deferred tax (assets) / liabilities £ million
At 1st April 2018	21	30	(25)	(10)	21	9	46
Charge / (credit) to the income statement	8	7	1	(8)	(1)	(9)	(2)
Disposal of businesses	–	–	–	–	–	1	1
Tax on items taken directly to or transferred from equity	–	(13)	–	–	–	–	(13)
Exchange adjustments	1	(1)	(1)	–	1	1	1
At 31st March 2019	30	23	(25)	(18)	21	2	33
(Credit) / charge to the income statement	(6)	9	–	(33)	(10)	(6)	(46)
Tax on items taken directly to or transferred from equity	–	21	–	–	–	–	21
Exchange adjustments	1	(1)	(1)	–	1	–	–
At 31st March 2020	25	52	(26)	(51)	12	(4)	8

	2020 £ million	2019 £ million
Deferred tax assets	(66)	(58)
Deferred tax liabilities	74	91
	8	33

Notes on the accounts continued

for the year ended 31st March 2020

23 Deferred tax (continued)

Group (continued)

Deductible temporary differences, unused tax losses and unused tax credits not recognised on the balance sheet total £222 million (2019: £157 million), of which £50 million is expected to expire within 5 years, £16 million within 5 to 10 years, £44 million after 10 years and £112 million carry no expiry date.

Deferred tax liabilities have not been recognised on temporary differences of £1,769 million (2019: £1,672 million) associated with investments in subsidiaries.

The recognition of deferred tax assets has been determined by the recoverability of those assets against future tax liabilities as determined by budgets and plans that have been updated for COVID-19 showing future profits in relevant businesses.

The majority of the deferred tax assets and liabilities noted above are anticipated to be realised after more than 12 months.

Parent company

	Property, plant and equipment £ million	Post- employment benefits £ million	Provisions £ million	Inventories £ million	Intangibles £ million	Other £ million	Total deferred tax (assets) / liabilities £ million
At 1st April 2018	(4)	45	(2)	(5)	–	9	43
Charge / (credit) to the income statement	5	6	1	(6)	1	(1)	6
Tax on items taken directly to or transferred from equity	–	(11)	–	–	–	1	(10)
At 31st March 2019	1	40	(1)	(11)	1	9	39
(Credit) / charge to income statement	(4)	5	1	(32)	–	3	(27)
Tax on items taken directly to or transferred from equity	–	20	–	–	–	–	20
At 31st March 2020	(3)	65	–	(43)	1	12	32

Deductible temporary differences, unused tax losses and unused tax credits not recognised on the balance sheet are £6 million (2019: £2 million) and have no expiry date.

24 Post-employment benefits

Group

Background

Pension plans

The group operates a number of post-employment retirement and medical benefit plans around the world. The retirement plans in the UK, US and other countries include both defined contribution and defined benefit plans.

For defined contribution plans, retirement benefits are determined by the value of funds arising from contributions paid in respect of each employee and the investment returns on those contributions prior to retirement.

For defined benefit plans, which include final salary, career average and other types of plans with committed pension payments, the retirement benefits are based on factors, such as the employee's pensionable salary and length of service. The majority of the group's final salary and career average defined benefit retirement plans are closed to new entrants, but remain open to ongoing accrual for current members.

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

24 Post-employment benefits (continued)

Group (continued)

Background (continued)

Regulatory framework and governance

The UK pension plan, the Johnson Matthey Employees Pension Scheme (JMEPS), is a registered arrangement established under trust law and, as such, is subject to UK pension, tax and trust legislation. It is managed by a corporate trustee, JMEPS Trustees Limited. The trustee board includes representatives appointed by both the parent company and employees, and includes an independent chairman.

Although the parent company bears the financial cost of the plan, the trustee directors are responsible for the overall management and governance of JMEPS, including compliance with all applicable legislation and regulations. The trustee directors are required by law to act in the interests of all relevant beneficiaries and: to set certain policies; to manage the day-to-day administration of the benefits; and to set the plan's investment strategy following consultation with the parent company.

UK pensions are regulated by the Pensions Regulator whose statutory objectives and regulatory powers are described on its website: www.thepensionsregulator.gov.uk

The US pension plans are qualified pension arrangements and are subject to the requirements of the Employee Retirement Income Security Act, the Pension Protection Act 2006 and the Department of Labor and Internal Revenue. The plans are managed by a pension committee which acts as the fiduciary and, as such, is ultimately responsible for: the management of the plans' investments; compliance with all applicable legislation and regulations; and overseeing the general management of the plans.

Other trustee or fiduciary arrangements that have similar responsibilities and obligations are in place for the group's other funded defined benefit pension plans outside of the UK and US.

Benefits

The UK defined benefit pension plan is segregated into two sections – a legacy section which provides final salary and career average pension benefits and a cash balance section.

The legacy section provides benefits to members in the form of a set level of pension payable for life based on the member's length of service and final pensionable salary at retirement or averaged over their career with the company. The majority of the benefits attract inflation-related increases both before and after retirement. The final salary element of the legacy section was closed to future accrual of benefits from 1st April 2010 and the career average element of the legacy section was closed to new entrants on 1st October 2012, but remains open to future accrual for existing members.

The cash balance section provides benefits to members at the point of retirement in the form of a cash lump sum. The benefits attract inflation-related increases before retirement but, following the payment of the retirement lump sum benefit, the plan has no obligation to pay any further benefits to the member. All new employees join the cash balance section of the plan.

The group operates two defined benefit pension plans in the US. The hourly pension plan is for unionised employees and provides a fixed retirement benefit for life based upon years of service. The salaried pension plan provides retirement benefits for life based on the member's length of service and final pensionable salary (averaged over the last five years). The salaried plan benefits attract inflation-related increases before leaving, but are non-increasing thereafter. On retirement, members in either plan have the option to take the cash value of their benefit instead of a lifetime annuity in which case the plan has no obligation to pay any further benefits to the member.

The US salaried pension plan was closed to new entrants on 1st September 2013, but remains open to future accrual for existing members. All new non-unionised US employees now join a defined contribution plan.

Other post-employment benefits

The group's principal post-employment medical plans are in the UK and US, and are unfunded arrangements that have been closed to new entrants for over ten years.

Maturity profile

The estimated weighted average durations of the defined benefit obligations of the main plans as at 31st March 2020 are:

	Weighted average duration Years
Pensions:	
UK	19
US	13
Post-retirement medical benefits:	
UK	14
US	12

Notes on the accounts continued

for the year ended 31st March 2020

24 Post-employment benefits (continued)

Group (continued)

Funding

Introduction

The group's principal defined benefit retirement plans are funded through separate fiduciary or trustee administered funds that are independent of the sponsoring company. The contributions paid to these arrangements are jointly agreed by the sponsoring company and the relevant trustee or fiduciary body after each funding valuation and in consultation with independent qualified actuaries. The plans' assets, together with the agreed funding contributions, should be sufficient to meet the plans' future pension obligations.

UK valuations

UK legislation requires that pension plans are funded prudently and that, when undertaking a funding valuation (every three years), assets are taken at their market value and liabilities are determined based on a set of prudent assumptions set by the trustee following consultation with their appointed actuary. The assumptions used for funding valuations may, therefore, differ to the actuarial assumptions used for IAS 19, Employee Benefits, accounting purposes.

In January 2013, a special purpose vehicle (SPV), Johnson Matthey (Scotland) Limited Partnership, was set up to provide deficit reduction contributions and greater security to the trustee. The group invested £50 million in a bond portfolio which is beneficially held by the SPV. The income generated by the SPV is used to make annual distributions of £3.5 million to JMEPS for a period of up to 25 years. These annual distributions are only payable if the legacy section of JMEPS continues to be in deficit, on a funding basis. This bond portfolio is held as a non-current investment at fair value through other comprehensive income (see note 14) and the group's liability to pay the income to the plan is not a plan asset under IAS 19 although it is for actuarial funding valuation purposes. The SPV is exempt from the requirement to prepare audited annual accounts as it is included on a consolidated basis in these accounts.

A funding valuation of JMEPS was carried out as at 1st April 2018 and showed that there was a deficit of £34 million in the legacy section of the plan. To address this deficit, the parent company agreed to make a contribution of £23 million prior to 31st December 2019, of which £17 million was paid during the year ended 31st March 2020. At 31st March 2018, £43 million remained available within the SPV for future distribution which created an overall surplus of £9 million in the legacy section of the plan at that date. The valuation also showed a surplus in the cash balance section of the plan.

In accordance with the governing documentation of JMEPS, any future plan surplus would be returned to the parent company by way of a refund assuming gradual settlement of the liabilities over the lifetime of the plan. As such, there are no adjustments required in respect of IFRIC 14, IAS 19 – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction.

US valuations

The last annual review of the US defined benefit pension plans was carried out by a qualified actuary as at 1st July 2019 and showed that there was a surplus of \$0.7 million on the projected funding basis. The assumptions used for funding valuations may differ to the actuarial assumptions used for IAS 19 accounting purposes.

Other valuations

Similar funding valuations are undertaken on the group's other defined benefit pension plans outside of the UK and US in accordance with prevailing local legislation.

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

24 Post-employment benefits (continued)

Group (continued)

Funding (continued)

Risk management

The group is exposed to a number of risks relating to its post-retirement pension plans, the most significant of which are:

Risk	Mitigation
<p>Market (investment) risk</p> <p>Asset returns may not move in line with the liabilities and may be subject to volatility.</p>	<p>The group's various plans have highly diversified investment portfolios, investing in a wide range of assets that provide reasonable assurance that no single security or type of security could have a material adverse impact on the plan.</p> <p>A de-risking strategy is in place to reduce volatility in the plans as a result of the mismatch between the assets and liabilities. As the funding level of the plans improve and hit pre-agreed triggers, plan investments are switched from return-seeking assets to liability-matching assets.</p> <p>The plans implement partial currency hedging on their overseas assets to mitigate currency risk.</p>
<p>Interest (discount) rate risk</p> <p>Liabilities are sensitive to movements in bond yields (interest rates), with lower interest rates leading to an increase in the valuation of liabilities, albeit the impact on the plan's funding level will be partially offset by an increase in the value of its bond holdings.</p>	<p>The group's defined benefit plans hold a high proportion of their assets in government or corporate bonds, which provide a natural hedge against falling interest rates.</p> <p>In the UK, this interest rate hedge is extended by the use of interest rate swaps, such that approximately 70% of the plan's interest rate risk is currently hedged. The swaps are held with several banks to reduce counterparty risk.</p>
<p>Inflation risk</p> <p>Liabilities are sensitive to movements in inflation, with higher inflation leading to an increase in the valuation of liabilities.</p>	<p>Where plan benefits provide inflation-related increases, the plan holds some inflation-linked assets which provide a natural hedge against higher than expected inflation increases.</p> <p>In the UK, this inflation hedge is extended by the use of inflation swaps, such that approximately 70% of the plan's inflation risk is currently hedged. The swaps are held with several banks to reduce counterparty risk.</p>
<p>Longevity risk</p> <p>The majority of the group's defined benefit plans provide benefits for the life of the member, so the liabilities are sensitive to life expectancy, with increases in life expectancy leading to an increase in the valuation of liabilities.</p>	<p>The group has closed most of its defined benefit pension plans to new entrants, replacing them with either a cash balance plan or defined contribution plans, both of which are unaffected by life expectancy. During the year ended 31st March 2019, 57% of the members of the career average element of the legacy section of JMEPS elected to switch to the cash balance section as part of a pension plan review.</p> <p>For the plans where a benefit for life continues to be payable, prudent mortality assumptions are used that appropriately allow for a future improvement in life expectancy. These assumptions are reviewed on a regular basis.</p>

Contributions

During the year, total contributions to the group's post-employment defined benefit plans were £52 million (2019: £75 million), including deficit contributions of £17 million (2019: £23 million) in respect of JMEPS. There was a contribution holiday in the US pension plans following an accelerated contribution made during the year ended 31st March 2019.

It is estimated that the group will contribute approximately £50 million to the post-employment defined benefit plans during the year ending 31st March 2021.

Notes on the accounts continued

for the year ended 31st March 2020

24 Post-employment benefits (continued)

Group (continued)

IAS 19 accounting

Principal actuarial assumptions

Qualified independent actuaries have updated the IAS 19 valuations of the group's major defined benefit plans to 31st March 2020. The assumptions used are chosen from a range of possible actuarial assumptions which, due to the long term nature of the plans, may not necessarily be borne out in practice.

Financial assumptions

	2020 UK plan %	2020 US plans %	2020 Other plans %	2019 UK plan %	2019 US plans %	2019 Other plans %
First year's rate of increase in salaries	–	–	2.15	3.85	3.00	2.45
Ultimate rate of increase in salaries	2.60	3.00	2.15	3.85	3.00	2.45
Rate of increase in pensions in payment	2.50	–	1.70	2.95	–	1.50
Discount rate	2.30	3.00	1.87	2.40	3.80	1.82
Inflation		2.20	1.65		2.20	1.60
– UK Retail Prices Index (RPI)	2.50			3.10		
– UK Consumer Prices Index (CPI)	1.85			2.10		
Current medical benefits cost trend rate	5.40	2.20	–	5.40	2.95	–
Ultimate medical benefits cost trend rate	5.40	2.20	–	5.40	2.95	–

Demographic assumptions

The mortality assumptions are based on country-specific mortality tables and, where appropriate, include an allowance for future improvements in life expectancy. In addition, where credible data exists, actual plan experience is taken into account. The group's most substantial pension liabilities are in the UK and the US where, using the mortality tables adopted, the expected lifetime of average members currently at age 65 and average members at age 65 in 25 years' time (i.e. members who are currently aged 40 years) is respectively:

	Currently age 65		Age 65 in 25 years	
	UK plan	US plans	UK plan	US plans
Male	87	85	89	87
Female	90	87	92	90

Financial information

Plan assets

Movements in the fair value of plan assets during the year 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 2018	1,935	44	–	272	–	47	2,298
Administrative expenses	(3)	–	–	(1)	–	–	(4)
Interest income	53	1	–	11	–	1	66
Return on plan assets excluding interest	68	3	–	7	–	4	82
Employee contributions	2	5	–	1	1	–	9
Company contributions	36	18	–	16	2	3	75
Benefits paid	(66)	(3)	–	(16)	(3)	(2)	(90)
Exchange adjustments	–	–	–	21	–	(1)	20
At 31st March 2019	2,025	68	–	311	–	52	2,456
Administrative expenses	(3)	–	–	(1)	–	–	(4)
Interest income	48	2	–	12	–	1	63
Return on plan assets excluding interest	(11)	(2)	–	46	–	(1)	32
Employee contributions	2	6	–	1	1	–	10
Company contributions	27	19	–	–	3	3	52
Benefits paid	(61)	(3)	–	(20)	(4)	(2)	(90)
Exchange adjustments	–	–	–	19	–	2	21
At 31st March 2020	2,027	90	–	368	–	55	2,540

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

24 Post-employment benefits (continued)

Group (continued)

Financial information (continued)

Plan assets (continued)

The fair values of plan assets are analysed as follows:

	2020 UK pension – legacy section £ million	2020 UK pension – cash balance section £ million	2020 US pensions £ million	2020 Other £ million	2019 UK pension – legacy section £ million	2019 UK pension – cash balance section £ million	2019 US pensions £ million	2019 Other £ million
Quoted corporate bonds ¹	700	73	178	6	614	67	156	5
Inflation and interest rate swaps	37	–	–	–	86	–	–	–
Quoted government bonds ¹	809	–	150	–	495	–	110	–
Cash and cash equivalents	89	1	8	–	43	1	12	–
Quoted equity	290	16	32	1	680	–	33	2
Unquoted equity	40	–	–	–	42	–	–	–
Property	62	–	–	–	65	–	–	–
Insurance policies	–	–	–	48	–	–	–	45
	2,027	90	368	55	2,025	68	311	52

¹ Prior year comparatives re-presented to increase quoted government bonds by £475 million and to decrease quoted corporate bonds by £475 million in the legacy section of the UK pension plan.

The UK plan's unquoted equities are assets within a pooled infrastructure fund where the underlying assets are a broad range of private infrastructure investments, diversified by geographic region, infrastructure sector, underlying asset type and development stage. These infrastructure assets are valued using widely recognised valuation techniques which use market data and discounted cash flows. The same valuation approach is used to determine the value of the swaps and insurance policies.

The UK plan's property represents an investment in the Blackrock UK Property Fund, which is a unitised fund where the underlying assets are taken at market value. The valuation of the fund is independently audited by KPMG on an annual basis. On 20th March 2020, consistent with other property fund managers, Blackrock suspended dealing in the fund due to a significant decrease in property transactions on which to base the fund valuation as a consequence of the COVID-19 pandemic. The fair value at 31st March 2020 is based on the independent valuation of activity up to 20th March 2020 provided by the fund manager which is subject to material uncertainty. The group considers the fund's value to be materially accurate on the basis that any short term impact of COVID-19 would not reflect the value of these long term investments.

The defined benefit pension plans do not invest directly in Johnson Matthey Plc shares and no property or other assets owned by the pension plans are used by the group.

Defined benefit obligation

Movements in the defined benefit obligation during the year 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 2018	(1,710)	(43)	(9)	(292)	(34)	(82)	(2,170)
Current service cost	(12)	(17)	–	(8)	–	(3)	(40)
Past service credit	7	–	–	2	–	–	9
Interest cost	(46)	(2)	–	(12)	(1)	(2)	(63)
Employee contributions	(2)	(5)	–	(1)	(1)	–	(9)
Remeasurements due to changes in:							
Financial assumptions	(132)	(6)	–	(5)	(1)	(9)	(153)
Demographic assumptions	3	1	–	(3)	1	1	3
Benefits paid	66	3	–	16	3	2	90
Exchange adjustments	–	–	–	(23)	(4)	2	(25)
At 31st March 2019	(1,826)	(69)	(9)	(326)	(37)	(91)	(2,358)
Current service cost	(8)	(21)	–	(8)	(1)	(3)	(41)
Past service credit	–	–	–	–	10	10	20
Interest cost	(43)	(2)	–	(13)	(1)	(2)	(61)
Employee contributions	(2)	(6)	–	(1)	(1)	–	(10)
Remeasurements due to changes in:							
Financial assumptions	131	8	–	(47)	(5)	3	90
Demographic assumptions	(34)	–	(3)	4	(1)	–	(34)
Benefits paid	61	3	–	20	4	2	90
Exchange adjustments	–	–	–	(21)	(2)	(3)	(26)
At 31st March 2020	(1,721)	(87)	(12)	(392)	(34)	(84)	(2,330)

Notes on the accounts continued

for the year ended 31st March 2020

24 Post-employment benefits (continued)

Group (continued)

Financial information (continued)

Defined benefit obligation (continued)

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. A past service credit of £10 million has been recognised in underlying operating profit in respect of changes to the group's Advanced Glass Technologies Netherlands defined benefit pension plan, effective 1st January 2020.

The net remeasurement gain in the legacy section of the UK pension plan during the year ended 31st March 2020 includes a gain due to changes in financial assumptions mainly reflecting a 60 basis point decrease in inflation, partly offset by a loss due to changes in demographic assumptions reflecting updated mortality assumptions.

Reimbursement rights

A government subsidy is receivable under the US Medicare legislation as the US post-retirement medical benefits plan is actuarially equivalent to the Medicare Prescription Drug Act and there is an insurance policy taken out to reinsure the pension commitments of one of the small pension plans which does not meet the definition of a qualifying insurance policy. These are accounted for as reimbursement rights and are shown on the balance sheet in post-employment benefit net assets.

Movements in the reimbursement rights during the year 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 2018	–	–	–	–	8	1	9
Return on assets excluding interest	–	–	–	–	(1)	–	(1)
Exchange adjustments	–	–	–	–	1	–	1
At 31st March 2019	–	–	–	–	8	1	9
Return on assets excluding interest	–	–	–	–	(1)	–	(1)
At 31st March 2020	–	–	–	–	7	1	8

Net post-employment benefit assets and liabilities

The net post-employment benefit assets and liabilities are:

	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 31st March 2020							
Defined benefit obligation	(1,721)	(87)	(12)	(392)	(34)	(84)	(2,330)
Fair value of plan assets	2,027	90	–	368	–	55	2,540
Reimbursement rights	–	–	–	–	7	1	8
Net post-employment benefit assets and liabilities	306	3	(12)	(24)	(27)	(28)	218
At 31st March 2019							
Defined benefit obligation	(1,826)	(69)	(9)	(326)	(37)	(91)	(2,358)
Fair value of plan assets	2,025	68	–	311	–	52	2,456
Reimbursement rights	–	–	–	–	8	1	9
Net post-employment benefit assets and liabilities	199	(1)	(9)	(15)	(29)	(38)	107

These are included in the balance sheet as follows:

	2020 Post- employment benefit net assets £ million	2020 Employee benefit net obligations £ million	2020 Total £ million	2019 Post- employment benefit net assets £ million	2019 Employee benefit net obligations £ million	2019 Total £ million
UK pension – legacy section	306	–	306	199	–	199
UK pension – cash balance section	3	–	3	–	(1)	(1)
UK post-retirement medical benefits	–	(12)	(12)	–	(9)	(9)
US pensions	–	(24)	(24)	–	(15)	(15)
US post-retirement medical benefits	7	(34)	(27)	8	(37)	(29)
Other	1	(29)	(28)	2	(40)	(38)
Total post-employment plans	317	(99)	218	209	(102)	107
Other long term employee benefits		(5)			(4)	
Total long term employee benefit obligations		(104)			(106)	

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

24 Post-employment benefits (continued)

Group (continued)

Financial information (continued)

Income statement

Amounts recognised in the income statement for long term employment benefits were:

	2020 £ million	2019 £ million
Administrative expenses	(4)	(4)
Current service cost	(41)	(40)
Past service credit	20	9
Defined benefit post-employment costs charged to operating profit	(25)	(35)
Defined contribution plans' expense	(23)	(21)
Other long term employee benefits	(1)	-
Charge to operating profit	(49)	(56)
Interest on post-employment benefits credited to finance income	2	3
Charge to profit before tax	(47)	(53)

Statement of total comprehensive income

Amounts recognised in the statement of total comprehensive income for long term employment benefits were:

	2020 £ million	2019 £ million
Return on plan assets excluding interest	32	82
Remeasurements due to changes in:		
Financial assumptions	90	(153)
Demographic assumptions	(34)	3
Reimbursement rights – return on assets excluding interest	(1)	(1)
Remeasurements of post-employment benefit assets and liabilities	87	(69)

Sensitivity analysis

The calculations of the defined benefit obligations are sensitive to the assumptions used. The following summarises the estimated impact on the group's main plans of a change in the assumption while holding all other assumptions constant. This sensitivity analysis may not be representative of the actual change as it is unlikely that the change in assumptions would occur in isolation of one another.

Financial assumptions

A 0.1% change in the discount rate and inflation assumptions would (increase) / decrease the UK and US pension plans' defined benefit obligations at 31st March 2020 as follows:

	0.1% increase		0.1% decrease	
	UK plan £ million	US plans £ million	UK plan £ million	US plans £ million
Effect of discount rate	34	5	(36)	(5)
Effect of inflation	(30)	-	30	-

Demographic assumptions

A one-year increase in life expectancy would increase the UK and US pension plans' defined benefit obligation by £59 million and £8 million, respectively.

Parent company

The parent company is the sponsoring employer of the group's UK defined benefit pension plan and the UK post-retirement medical benefits plan. There is no contractual agreement or stated policy for charging the net defined benefit cost for the plans to the individual group entities. The parent company recognises the net defined benefit cost for these plans and information is disclosed above.

Notes on the accounts continued

for the year ended 31st March 2020

25 Leases

Leasing activities

The group and parent company lease some of their property, plant and equipment which are used by the group and parent company in their operations. The impact of the group's transition to IFRS 16 is disclosed in note 34.

Right-of-use assets

Group

	Land and buildings £ million	Plant and machinery £ million	Total £ million
At 1st April 2019 on transition to IFRS 16	77	12	89
New leases, remeasurements and modifications	5	8	13
Disposals	–	(1)	(1)
Depreciation charge for the year	(10)	(4)	(14)
Impairment losses	(1)	–	(1)
Exchange adjustments	1	1	2
At 31st March 2020	72	16	88

Parent company

	Land and buildings £ million	Plant and machinery £ million	Total £ million
At 1st April 2019 on transition to IFRS 16	13	1	14
New leases, remeasurements and modifications	3	6	9
Depreciation charge for the year	(3)	(1)	(4)
At 31st March 2020	13	6	19

Lease liabilities

	2020	
	Group £ million	Parent company £ million
Current	12	3
Non-current	64	16
Lease liabilities	76	19

	2020	
	Group £ million	Parent company £ million
Interest expense	3	1

A maturity analysis of lease liabilities is disclosed in note 27.

Other

	2020	
	Group £ million	Parent company £ million
Total cash outflow for leases	16	5

The expense relating to low-value and short term leases is immaterial.

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Notes on the accounts continued

for the year ended 31st March 2020

26 Share capital and other reserves

Share capital

Issued and fully paid ordinary shares

At 1st April 2018, 31st March 2019 and 31st March 2020

Number	£ million
198,940,606	221

Details of outstanding allocations under the company's long term incentive plans and awards under the deferred bonus which have yet to mature are disclosed in note 29.

At the last annual general meeting on 17th July 2019, shareholders approved a resolution for the company to make purchases of its own shares up to a maximum number of 19,353,343 ordinary shares of 110^{49/53} pence each. The resolution remains valid until the conclusion of this year's annual general meeting. The company will purchase its own shares when the board believes it to be in the best interests of the shareholders generally and will result in an increase in earnings per share.

The group and parent company's employee share ownership trust (ESOT) also buys shares on the open market and holds them in trust for employees participating in the group's executive long term incentive plans. At 31st March 2020, the ESOT held 1,011,913 shares (2019: 1,439,984 shares) which had not yet vested unconditionally to employees. Computershare Trustees (CI) Limited, as trustee for the ESOT, has waived its dividend entitlement.

The total number of treasury shares held was 5,407,176 (2019: 5,407,176) at a total cost of £92 million (2019: £92 million).

Dividends

	2020 £ million	2019 £ million
2017/18 final ordinary dividend paid – 58.25 pence per share	–	112
2018/19 interim ordinary dividend paid – 23.25 pence per share	–	44
2018/19 final ordinary dividend paid – 62.25 pence per share	120	–
2019/20 interim ordinary dividend paid – 24.50 pence per share	47	–
Total dividends	167	156

A final dividend of 31.125 pence per ordinary share has been proposed by the board which will be paid on 4th August 2020 to shareholders on the register at the close of business on 19th June 2020, subject to shareholders' approval. The estimated amount to be paid is £60 million and has not been recognised in these accounts.

Other reserves

Capital redemption reserve The capital redemption reserve represents the cumulative nominal value of the company's ordinary shares repurchased and subsequently cancelled.

Foreign currency translation reserve The foreign currency translation reserve comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

Fair value through other comprehensive income reserve The fair value through other comprehensive income reserve represents the equity movements on financial assets held within this category.

Hedging reserve The hedging reserve comprises the effective portion of the cumulative net change in the fair value of cash flow hedging instruments. All amounts recorded in reserves at year end in relation to cash flow and net investment hedges relate to continuing hedge relationships.

Notes on the accounts continued

for the year ended 31st March 2020

26 Share capital and other reserves (continued)

Other reserves (continued)

Group

	Capital redemption reserve £ million	Foreign currency translation reserve £ million	Fair value through other comprehensive income reserve £ million	Hedging reserve			Total other reserves £ million
				Forward currency contracts £ million	Cross currency contracts £ million	Forward metal contracts £ million	
At 1st April 2018	7	56	6	1	(6)	(2)	62
Cash flow hedges – (losses) / gains taken to equity	–	–	–	(4)	7	1	4
Cash flow hedges – transferred to revenue (income statement)	–	–	–	1	–	–	1
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	(5)	–	(5)
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	1	–	3	4
Fair value losses on net investment hedges taken to equity	–	(1)	–	–	–	–	(1)
Fair value losses on investments at fair value through other comprehensive income	–	–	(4)	–	–	–	(4)
Exchange differences on translation of foreign operations taken to equity	–	22	–	–	–	–	22
Tax on items taken directly to or transferred from equity	–	1	–	–	–	(1)	–
Reclassification	–	4	–	–	–	–	4
At 31st March 2019	7	82	2	(1)	(4)	1	87
Cash flow hedges – (losses) / gains taken to equity	–	–	–	(9)	11	2	4
Cash flow hedges – transferred to revenue (income statement)	–	–	–	(1)	–	–	(1)
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	(5)	–	(5)
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	3	–	(1)	2
Fair value losses on net investment hedges taken to equity	–	(8)	–	–	–	–	(8)
Fair value losses on investments at fair value through other comprehensive income	–	–	(2)	–	–	–	(2)
Exchange differences on translation of foreign operations taken to equity	–	65	–	–	–	–	65
Tax on items taken directly to or transferred from equity	–	–	–	1	(1)	–	–
At 31st March 2020	7	139	–	(7)	1	2	142

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Notes on the accounts continued

for the year ended 31st March 2020

26 Share capital and other reserves (continued)

Other reserves (continued)

Parent company

	Capital redemption reserve £ million	Foreign currency translation reserve £ million	Fair value through other comprehensive income reserve £ million	Hedging reserve			Total other reserves £ million
				Forward currency contracts £ million	Cross currency contracts £ million	Forward metal contracts £ million	
At 1st April 2018	7	(4)	3	2	(6)	(2)	–
Cash flow hedges – (losses) / gains taken to equity	–	–	–	(2)	7	1	6
Cash flow hedges – transferred to revenue (income statement)	–	–	–	1	–	–	1
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	(5)	–	(5)
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	–	–	3	3
Tax on items taken directly to or transferred from equity	–	–	–	–	–	(1)	(1)
Reclassification	–	4	–	–	–	–	4
At 31st March 2019	7	–	3	1	(4)	1	8
Cash flow hedges – (losses) / gains taken to equity	–	–	–	(5)	11	2	8
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	(5)	–	(5)
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	–	–	(1)	(1)
Tax on items taken directly to or transferred from equity	–	–	–	1	(1)	–	–
At 31st March 2020	7	–	3	(3)	1	2	10

Capital

The group's policy for managing capital is to maintain an efficient balance sheet to ensure that the group always has sufficient resources to be able to invest in future growth. The group uses return on invested capital (ROIC) to provide a measure of its efficiency in allocating the capital under its control to profitable investments (see note 35). Capital employed is defined as total equity, excluding post tax pension net assets, plus net debt. During the year, the group complied with all externally imposed capital requirements to which it is subject.

27 Financial risk management

The group's activities expose it to a variety of financial risks, including credit risk, market risk and liquidity risk. Market risk includes foreign currency risk, interest rate risk and price risk. The financial risks are managed by the group, under policies approved by the board. The group uses derivative financial instruments, including forward currency contracts, interest rate swaps and currency swaps, to manage the financial risks associated with its underlying business activities and the financing of those activities. Some derivative financial instruments used to manage financial risk are not designated as hedges and, therefore, are classified as at fair value through profit or loss. The group does not undertake any speculative trading activity in financial instruments.

Notes on the accounts continued

for the year ended 31st March 2020

27 Financial risk management (continued)

Credit risk

Within certain businesses, the group derives a significant proportion of its revenue from sales to major customers. Sales to individual customers are large if the value of precious metals is included in the price. The failure of any such company to honour its debts could materially impact the group's results. The group derives significant benefit from trading with its customers and manages the risk at many levels. Each sector has a credit committee that regularly monitors its exposure. The Audit Committee receives a report every six months that details all significant credit limits, amounts due and overdue within the group, and the relevant actions being taken. At 31st March 2020, trade receivables for the group amounted to £1,228 million (2019: £1,204 million), of which £906 million (2019: £928 million) are in Clean Air which mainly supplies car and truck manufacturers and component suppliers in the automotive industry. Although Clean Air has a wide range of customers, the concentrated nature of this industry means that amounts owed by individual customers can be large and, in the event that one of those customers experiences financial difficulty, there could be a material adverse impact on the group. Other parts of the group tend to sell to a larger number of customers and amounts owed tend to be lower. At 31st March 2020, no single outstanding balance exceeded 2% (2019: 2%) of revenue.

The credit profiles of the group's customers are obtained from credit rating agencies where possible and are closely monitored. The scope of these reviews includes amounts overdue and credit limits. The group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, risk associated with the industry and country in which customers operate may also influence the credit risk. The credit quality of customers is assessed by taking into account financial position, past experience and other relevant factors, in particular those based on current market conditions. Generally, payments are made promptly in the automotive industry and in the other markets in which the group operates.

The group applies the simplified approach to measuring expected credit losses under IFRS 9, Financial Instruments, which requires lifetime expected credit losses to be recognised from initial recognition for trade and contract receivables. A provision matrix is used to calculate lifetime expected credit losses using historical loss rates based on days past due and a broad range of forward-looking information, including country and market growth forecasts. This year, expected credit losses on unimpaired trade and contract receivables have increased to £21 million (31st March 2019: £3 million) as a result of the estimated impact of the COVID-19 pandemic on the group, its customers and the countries and markets in which it operates.

Trade receivables are specifically impaired when the amount is in dispute, customers are in financial difficulty or for other reasons which imply there is doubt over the recoverability of the debt. They are written off when there is no reasonable expectation of recovery, based on an estimate of the financial position of the counterparty.

The group's provision matrix for trade and contract receivables is set out below:

	Contract receivables			Trade receivables			Total
	Total	impaired	Not past due	<30 days overdue	30-90 days overdue	>90 days overdue	
Year ended 31st March 2020							
Expected credit loss rate (%)	1%	100%	1%	2%	7%	11%	
Gross carrying value (£ million)	165	16	1,132	86	17	12	1,263
Expected credit losses (£ million)	(2)	(16)	(15)	(2)	(1)	(1)	(35)
Net carrying value (£ million)	163						1,228
	Contract receivables			Trade receivables			Total
	Total	Impaired	Not past due	<30 days overdue	30-90 days overdue	>90 days overdue	
Year ended 31st March 2019							
Expected credit loss rate (%)	–	100%	–	–	6%	10%	
Gross carrying value (£ million)	43	12	1,094	80	23	10	1,219
Expected credit losses (£ million)	–	(12)	–	–	(2)	(1)	(15)
Net carrying value (£ million)	43						1,204

Movements in the allowance for expected credit losses on trade and contract receivables are as follows:

	Group	
	2020 £ million	2019 £ million
At beginning of year	15	9
Charge for year	25	9
Utilised	(1)	(2)
Released	(2)	(1)
At end of year	37	15

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for the year ended 31st March 2020

27 Financial risk management (continued)

Credit risk (continued)

The group's maximum exposure to default on trade and contract receivables is £1,428 million (2019: £1,262 million).

The group's financial assets included in other receivables are all current and not impaired.

The credit risk on cash and deposits and derivative financial instruments is limited because the counterparties with significant balances are banks with strong credit ratings. The exposure to individual banks is monitored frequently against internally-defined limits, together with each bank's credit rating and credit default swap prices. At 31st March 2020, the maximum net exposure with a single bank for cash and deposits was £41 million (2019: £30 million), whilst the largest mark to market exposure for derivative financial instruments to a single bank was £22 million (2019: £7 million). The group also uses money market funds to invest surplus cash thereby further diversifying credit risk and, at 31st March 2020, the group's exposure to these funds was £192 million (2019: £347 million). The amounts on deposit at the year end represent the group's maximum exposure to credit risk on cash and deposits. Expected credit losses on cash and cash equivalents are immaterial.

Foreign currency risk

The group operates globally with a significant amount of its profit earned outside the UK. The main impact of movements in exchange rates on the group's results arises on translation of overseas subsidiaries' profits into sterling. The largest exposure is to the US dollar and a 5% (6.4 cent (2019: 6.6 cent)) movement in the average exchange rate for the US dollar against sterling would have had a £12 million (2019: £13 million) impact on underlying operating profit. The group is also exposed to the euro and a 5% (5.7 cent (2019: 5.7 cent)) movement in the average exchange rate for the euro against sterling would have had a £10 million (2019: £12 million) impact on underlying operating profit. This exposure is part of the group's economic risk of operating globally which is essential to remain competitive in the markets in which it operates.

The group matches foreign currency assets and liabilities (where these differ to the functional currency of the relevant subsidiary) to avoid the risk of a material impact on the income statement resulting from movements in exchange rates. The group does, however, have foreign exchange exposure on movements through equity related to cash flow and net investment hedges. A 10% depreciation or appreciation in the US dollar and euro exchange rates against sterling would increase / (decrease) other reserves as follows:

	10% depreciation		10% appreciation	
	2020	2019	2020	2019
	£ million	£ million	£ million	£ million
Cash flow hedges	12	6	(15)	(7)
Net investment hedges	21	20	(26)	(25)

For the net investment hedges, these movements would be fully offset in reserves by an opposite movement on the retranslation of the net assets of the overseas subsidiaries.

Investments in foreign operations

To protect the group's sterling balance sheet and reduce cash flow risk, the group has financed most of its investment in the US and Europe by borrowing US dollars and euros, respectively. Although much of this funding is obtained by directly borrowing the relevant currency, a part is achieved through currency swaps which can be more efficient and reduce costs.

The group has designated US dollar and euro loans and a cross currency swap as hedges of net investments in foreign operations as they hedge changes in the value of the subsidiaries' net assets against movements in exchange rates. The change in the value of the net investment hedges from movements in foreign currency exchange rates is recognised in equity and is offset by an equal and opposite movement in the carrying value of the net assets of the subsidiaries. All critical terms of the hedging instruments and hedged items matched during the year and, therefore, hedge ineffectiveness was immaterial. The hedge ratio is 1:1.

	US dollar and euro loans ¹ £ million	Cross currency swap ² £ million	Total £ million
Year ended 31st March 2020			
Carrying value of hedging instruments at 31st March 2020	(165)	(6)	(171)
Change in carrying value of hedging instruments recognised in equity during the year	(7)	(1)	(8)
Change in fair value of hedged items during the year used to determine hedge effectiveness	7	1	8

Notes on the accounts continued

for the year ended 31st March 2020

27 Financial risk management (continued)

Foreign currency risk (continued)

Investments in foreign operations (continued)

Year ended 31st March 2019

	US dollar and euro loans ¹ £ million	Cross currency swap ² £ million	Total £ million
Carrying value of hedging instruments at 31st March 2019	(158)	(5)	(163)
Change in carrying value of hedging instruments recognised in equity during the year	(3)	2	(1)
Change in fair value of hedged items during the year used to determine hedge effectiveness	3	(2)	1

¹ The designated hedging instruments are the 4.66% €100 million Bonds 2021, \$75 million of the 3.26% \$150 million Bonds 2022 and €17 million of the 2.44% €20 million Bonds 2023.

² The designated hedging instrument is a cross currency swap expiring in 2025 whereby the group pays 2.609% fixed on €77 million and receives 2.83% fixed on £65 million.

Forecast receipts and payments in foreign currencies

The group uses forward foreign exchange contracts to hedge foreign exchange exposures arising on forecast receipts and payments in foreign currencies. These are designated and accounted for as cash flow hedges. The group's policy is to hedge between 50% and 80% of forecast receipts and payments in foreign currencies.

For hedges of forecast receipts and payments in foreign currencies, the critical terms of the hedging instruments match exactly with the terms of the hedged items and, therefore, the group performs a qualitative assessment of effectiveness. Ineffectiveness may arise if the timing of the forecast transaction changes from what was originally estimated or if there are changes in the credit risk of the group or the derivative counterparty. Hedge ineffectiveness was immaterial during the year. The hedge ratio is 1:1.

Year ended 31st March 2020

	Sterling / US dollar £ million	Sterling / euro £ million	Other £ million	Total £ million
Carrying value of hedging instruments at 31st March 2020 – assets	–	1	3	4
– liabilities	(2)	(3)	(5)	(10)
Change in carrying value of hedging instruments recognised in equity during the year	(6)	–	(3)	(9)
Change in fair value of hedged items during the year used to determine hedge effectiveness	6	–	3	9
Notional amount ¹	70	111		

Year ended 31st March 2019

	Sterling / US dollar £ million	Sterling / euro £ million	Other £ million	Total £ million
Carrying value of hedging instruments at 31st March 2019 – assets	1	2	2	5
– liabilities	(1)	(1)	(1)	(3)
Change in carrying value of hedging instruments recognised in equity during the year	(3)	1	(2)	(4)
Change in fair value of hedged items during the year used to determine hedge effectiveness	3	(1)	2	4
Notional amount ¹	34	106		

¹ The notional amount is the sterling equivalent of the net currency amount purchased or sold.

The weighted average exchange rates on sterling / US dollar and sterling / euro forward foreign exchange contracts are 1.27 and 1.14 (2019: 1.33 and 1.14), respectively. The hedged, highly probable forecast transactions denominated in foreign currencies are expected to occur over the next 12 months.

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Notes on the accounts continued

for the year ended 31st March 2020

27 Financial risk management (continued)

Foreign currency risk (continued)

Foreign currency borrowings

The group has designated a US dollar fixed interest rate to sterling fixed interest rate cross currency swap as a cash flow hedge. This swap hedges the movement in the cash flows on \$100 million of the 3.14% \$130 million bonds 2025 attributable to changes in the US dollar / sterling exchange rate. The currency swap has similar critical terms as the hedged item, such as reference rate, reset dates, payment dates, maturity and notional amount. As all critical terms matched during the year, hedge ineffectiveness was immaterial. The hedge ratio is 1:1. The interest element of the swap is recognised in the income statement each year.

	Cross currency swap	
	2020 £ million	2019 £ million
Carrying value of hedging instruments at 31st March ¹	19	8
Change in carrying value of hedging instruments recognised in equity during the year	11	7
Change in fair value of hedged items during the year used to determine hedge effectiveness	(11)	(7)

¹ The designated hedging instrument is a cross currency swap expiring in 2025 whereby the group pays 2.83% fixed on £65 million and receives 3.14% fixed on \$100 million.

Interest rate risk

The group's interest rate risk arises from fixed rate borrowings (fair value risk) and floating rate borrowings (cash flow risk). Its policy is to optimise interest cost and reduce volatility in reported earnings and equity. The group manages its risk by reviewing the profile of debt regularly and by selectively using interest rate swaps to maintain borrowings at competitive rates. At 31st March 2020, 84% (2019: 94%) of the group's net debt was at fixed rates with an average interest rate of 3.6% (2019: 3.1%). The remaining debt is floating rate. Based on the group's net debt at floating rates, after taking into account the effect of the swaps, a 1% change in all interest rates during the current year would have a £2 million impact on the group's profit before tax (2019: immaterial).

The group has designated four (2019: four) fixed rate to floating interest rate swaps as fair value hedges as they hedge the changes in fair value of bonds attributable to changes in interest rates. All hedging instruments have maturities in line with the repayment dates of the hedged bonds and the cash flows of the instruments are consistent. All critical terms of the hedging instruments and hedged items matched during the year and, therefore, hedge ineffectiveness was immaterial. The hedge ratio is 1:1.

	2020 £ million	2019 £ million
Carrying value of hedging instruments at 31st March ¹	15	5
Amortised cost	(270)	(259)
Fair value adjustment	(15)	(5)
Carrying value of hedged items at 31st March ¹	(285)	(264)
Change in carrying value of hedging instruments recognised in profit or loss during the year	10	6
Change in fair value of hedged items during the year used to determine hedge effectiveness	(10)	(6)

¹ The hedged items are the 3.26% \$150 million Bonds 2022, 1.40% €77 million Bonds 2025 and 1.81% €90 million Bonds 2028. Interest rate swaps have been contracted with aligned notional amounts and maturities to the bonds with the effect that the group pays an average floating rate of six-month LIBOR plus 0.64% on the US dollar bonds and six-month EURIBOR plus 0.94% on the euro bonds.

Price risk

The group enters into forward precious metal price contracts for the receipt or delivery of precious metal. The group has policies in place to ensure that sales and purchases are matched and, therefore, that it is not exposed to price risk in respect of these contracts.

Notes on the accounts continued

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27 Financial risk management (continued)

Liquidity risk

The group's policy on funding capacity is to ensure that it always has sufficient long term funding and committed bank facilities in place to meet foreseeable peak borrowing requirements. At 31st March 2020, the group had borrowings under committed bank facilities of £nil (2019: £nil). The group also has a number of uncommitted facilities and overdraft lines at its disposal.

	2020 £ million	2019 £ million
Expiring within one year	125	–
Expiring in more than one year but not more than two years	–	175
Expiring in more than two years	1,000	422
Undrawn committed bank facilities	1,125	597

The maturity analyses for financial liabilities showing the remaining contractual undiscounted cash flows, including future interest payments, at current year exchange rates and assuming floating interest rates remain at the latest fixing rates, are:

	Within 1 year £ million	1 to 2 years £ million	2 to 5 years £ million	After 5 years £ million	Total £ million
At 31st March 2020					
Bank overdrafts	31	–	–	–	31
Bank and other loans – principal	331	–	528	445	1,304
Bank and other loans – interest payments	30	24	52	24	130
Lease liabilities – principal	12	12	26	26	76
Lease liabilities – interest payments	3	2	5	8	18
Financial liabilities in trade and other payables	2,611	1	2	–	2,614
Total non-derivative financial liabilities	3,018	39	613	503	4,173
Forward foreign exchange contracts – payments	398	–	–	–	398
Forward foreign exchange contracts – receipts	(386)	–	–	–	(386)
Currency swaps – payments	1,236	–	–	–	1,236
Currency swaps – receipts	(1,198)	–	–	–	(1,198)
Cross currency interest rate swaps – payments	2	2	71	–	75
Cross currency interest rate swaps – receipts	(2)	(2)	(68)	–	(72)
Total derivative financial liabilities	50	–	3	–	53
At 31st March 2019					
Bank overdrafts	59	–	–	–	59
Bank and other loans – principal	184	131	403	529	1,247
Bank and other loans – interest payments	31	27	59	36	153
Financial liabilities in trade and other payables	1,562	1	2	–	1,565
Total non-derivative financial liabilities	1,836	159	464	565	3,024
Forward foreign exchange contracts – payments	227	–	–	–	227
Forward foreign exchange contracts – receipts	(223)	–	–	–	(223)
Currency swaps – payments	612	–	–	–	612
Currency swaps – receipts	(602)	–	–	–	(602)
Cross currency interest rate swaps – payments ¹	2	2	70	–	74
Cross currency interest rate swaps – receipts ¹	(2)	(2)	(70)	–	(74)
Total derivative financial liabilities	14	–	–	–	14

¹ Re-presented to reflect a mutual break clause in the contract which can be exercised by either party in June 2023.

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27 Financial risk management (continued)

Offsetting financial assets and liabilities

The group offsets financial assets and liabilities when it currently has a legally enforceable right to offset the recognised amounts and it intends to either settle on a net basis or realise the asset and settle the liability simultaneously. The following financial assets and liabilities are subject to offsetting or enforceable master netting arrangements:

	Gross financial assets / (liabilities) £ million	Amounts set off £ million	Net amounts in balance sheet £ million	Amounts not set off ¹ £ million	Net £ million
At 31st March 2020					
Non-current interest rate swaps	34	–	34	(6)	28
Cash and cash equivalents – cash and deposits	112	–	112	–	112
Other financial assets	28	–	28	(21)	7
Cash and cash equivalents – bank overdrafts	(31)	–	(31)	–	(31)
Other financial liabilities	(50)	–	(50)	21	(29)
Non-current borrowings and related swaps	(994)	–	(994)	6	(988)

	Gross financial assets / (liabilities) £ million	Amounts set off £ million	Net amounts in balance sheet £ million	Amounts not set off ¹ £ million	Net £ million
At 31st March 2019					
Non-current interest rate swaps	13	–	13	(5)	8
Cash and cash equivalents – cash and deposits	95	(5)	90	–	90
Other financial assets	22	–	22	(10)	12
Cash and cash equivalents – bank overdrafts	(64)	5	(59)	–	(59)
Other financial liabilities	(13)	–	(13)	10	(3)
Non-current borrowings and related swaps	(1,073)	–	(1,073)	5	(1,068)

¹ Agreements with derivative counterparties are based on an ISDA Master Agreement. Under these arrangements, whilst the group does not have a legally enforceable right of set off, where certain credit events occur, such as default, the net position receivable from or payable to a single counterparty in the same currency would be taken as owing and all the relevant arrangements terminated.

28 Fair values

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).

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.

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 years.

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for the year ended 31st March 2020

28 Fair values (continued)

Fair value of financial instruments (continued)

	2020 £ million	2019 £ million	Fair value hierarchy Level	Note
Financial instruments measured at fair value				
Non-current				
Investments at fair value through other comprehensive income	49	52	1	14
Interest rate swaps	34	13	2	15
Borrowings and related swaps	(6)	(5)	2	20
Current				
Trade receivables ¹	328	173	2	17
Other receivables ²	72	9	2	17
Cash and cash equivalents – money market funds	192	347	2	
Other financial assets ³	28	22	2	18
Other financial liabilities ³	(50)	(13)	2	18
Financial instruments not measured at fair value				
Non-current				
Borrowings and related swaps	(988)	(1,068)		20
Lease liabilities	(64)	–		25
Current				
Cash and cash equivalents – cash and deposits	112	90		
Cash and cash equivalents – bank overdrafts	(31)	(59)		
Borrowings and related swaps	(331)	(184)		20
Lease liabilities	(12)	–		25

¹ Trade receivables held in a part of the group with a business model to hold trade receivables for collection or sale. The remainder of the group operates a hold to collect business model and receives the face value, plus relevant interest, of its trade receivables from the counterparty without otherwise exchanging or disposing of such instruments.

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.

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

	2020		2019	
	Carrying amount £ million	Fair value £ million	Carrying amount £ million	Fair value £ million
US Dollar Bonds 2022, 2023, 2025 and 2028	(514)	(496)	(481)	(477)
Euro Bonds 2021, 2023, 2025 and 2028	(264)	(247)	(251)	(264)
Euro EIB loan 2019	–	–	(107)	(108)
Sterling Bonds 2024 and 2025	(110)	(108)	(110)	(118)
KfW US dollar loan 2024	(41)	(41)	(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 year end.

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for the year ended 31st March 2020

29 Share-based payments

After considering expected lapses due to leavers and the probability that performance conditions will not be met, the total expense recognised during the year in respect of equity-settled share-based payments was £5 million (2019: £17 million). The reduction in the expense recognised represents the lower growth in earnings per share achieved during the year ended 31st March 2020 and now forecast for the years ending 31st March 2021 and 2022.

Further details of the directors' remuneration under share-based payment plans are given in the Remuneration Report.

Performance share plan (PSP)

From 2017, shares are awarded to certain of the group's executive directors and senior managers under the PSP based on a percentage of salary and are subject to performance targets over a three-year period.

At 31st March 2020, 1,037,536 shares awarded in 2017, 2018 and 2019 were outstanding (31st March 2019: 684,015 awarded in 2017 and 2018).

The minimum release of 15% of the award is subject to achieving underlying earnings per share (uEPS) growth of 4% compound per annum and the full release is subject to uEPS growing by at least 10% compound per annum. The number of awarded shares released varies on a straight-line basis between these points. Awards lapse if the uEPS growth is less than the minimum. For the 2017 awards, there was no uEPS growth and, therefore, the awards will lapse.

Awards to the executive directors are also subject to a deferred release whereby a third is released on the third anniversary of the award date and the remaining vested shares are released in equal instalments on the fourth and fifth anniversaries of the award date. The Remuneration Committee is entitled to claw back the awards to the executive directors in cases of misstatement or misconduct.

Activity relating to the PSP during the year was:

	2020 Number of awarded shares	2019 Number of awarded shares
Outstanding at the start of the year	684,015	357,562
Awarded during the year	442,905	350,211
Forfeited during the year	(89,384)	(23,647)
Released during the year	-	(111)
Outstanding at the end of the year	1,037,536	684,015

The fair value of the shares awarded during the year under the PSP was 2,964.6 pence per share (2019: 3,442.6 pence per share).

The fair value was calculated using a modified Black Scholes model based on the share price at the date of award of 3,210.0 pence (2019: 3,667.0 pence) adjusted for the present value of the expected dividends that will not be received at an expected dividend rate of 2.66% (2019: 2.11%).

At 31st March 2020, the weighted average remaining contracted life of the awarded shares is 1.1 years (2019: 1.5 years).

Restricted share plan (RSP)

From 2017, shares are awarded to certain of the group's senior managers below the board under the RSP based on a percentage of salary. Awards under the RSP are not subject to performance targets. The shares are subject only to the condition that the employee remains employed by the group on the vesting date (three years after the award date).

Activity relating to the RSP during the year was:

	2020 Number of awarded shares	2019 Number of awarded shares
Outstanding at the start of the year	161,691	80,047
Awarded during the year	125,243	99,543
Forfeited during the year	(29,618)	(15,270)
Released during the year	(7,557)	(2,629)
Expired during the year	(2,738)	-
Outstanding at the end of the year	247,021	161,691

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for the year ended 31st March 2020

29 Share-based payments (continued)

Restricted share plan (RSP) (continued)

The fair value of the shares awarded during the year under the RSP was 2,964.6 pence per share (2019: 3,442.6 pence per share). The fair value was calculated using a modified Black Scholes model based on the share price at the date of award of 3,210.0 pence (2019: 3,667.0 pence) adjusted for the present value of the expected dividends that will not be received at an expected dividend rate of 2.66% (2019: 2.11%).

At 31st March 2020, the weighted average remaining contracted life of the awarded shares is 1.3 years (2019: 1.6 years).

Long term incentive plan (LTIP)

Prior to 2017, shares were awarded to approximately 1,300 of the group's executive directors, senior managers and middle managers under the LTIP based on a percentage of salary and were subject to performance targets over a three-year period.

At 31st March 2020, 71,277 shares awarded in 2016 subject to deferred release as explained below (31st March 2019: 693,691 shares awarded in 2016 and 10,007 shares awarded in 2014 subject to deferred release) were outstanding.

For the 2016 awards, the minimum release of 15% of the award was subject to achieving uEPS growth of 4% compound per annum over the three-year period to 31st March 2019 and the full release was subject to uEPS growing by at least 10% compound per annum. Actual uEPS growth was 7.7%, which represented 67% of the full award. In August 2019, 392,403 shares were released with a further 71,277 shares subject to deferred release.

Awards to the executive directors are subject to a deferred release whereby a third is released on the third anniversary of the award date and the remaining vested shares are released in equal instalments on the fourth and fifth anniversaries of the award date. The Remuneration Committee is entitled to claw back the awards to the executive directors in cases of misstatement or misconduct.

Activity relating to the LTIP during the year was:

	2020 Number of awarded shares	2019 Number of awarded shares
Outstanding at the start of the year	703,698	1,370,183
Forfeited during the year	(34,059)	(55,357)
Released during the year	(402,410)	(72,702)
Expired during the year	(195,952)	(538,426)
Outstanding at the end of the year	71,277	703,698

Deferred bonus

A proportion of the bonus payable to executive directors and senior managers is awarded as shares and deferred for three years. The Remuneration Committee is entitled to claw back the deferred element in cases of misstatement or misconduct or other relevant reason as determined by it.

Activity relating to the deferred bonus during the year was:

	2020 Number of awarded shares	2019 Number of awarded shares
Outstanding at the start of the year	81,625	81,781
Awarded during the year	42,009	41,542
Released during the year	(18,104)	(41,698)
Outstanding at the end of the year	105,530	81,625

The fair value of the shares awarded during the year under the deferred bonus was 2,887.0 pence per share (2019: 3,371.0 pence per share). The fair value was calculated using a modified Black Scholes model based on the share price at the date of award of 3,210.0 pence (2019: 3,667.0 pence) adjusted for the present value of the expected dividends that will not be received at an expected dividend rate of 2.66% (2019: 2.11%).

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29 Share-based payments (continued)

All employee share incentive plan (SIP) – UK and overseas

Under the SIP, all employees with at least one year of service with the group and who are employed by a participating group company are entitled to contribute up to 2.5% of base pay each month, subject to a £125 per month limit. The SIP trustees buy shares (partnership shares) at market value each month with the employees' contributions. For each partnership share purchased, the group purchases two shares (matching shares) which are awarded to the employee.

In the UK SIP, if the employee sells or transfers partnership shares within three years of the date of award, the linked matching shares are forfeited.

In the overseas SIP, partnership shares and matching shares are subject to a three-year holding period and cannot be sold or transferred during that time.

During the year, 227,974 (2019: 190,284) matching shares under the SIP were awarded to employees. These are nil cost awards on which performance conditions are substantially completed at the date of grant and, consequently, the fair value of these awards is based on the market value of the shares at that date.

401k approved savings investment plans (401k plans)

In the US, there are two 401k plans, one for salaried employees and one for hourly employees. Salaried employees may contribute up to 50% of their base pay and hourly employees up to 20% of their base pay, both subject to a statutory limit. Salaried employees choosing Johnson Matthey Plc share matching are matched 100% of the first 4% contributed and hourly employees are matched 50% of the first 6% contributed. Employees may contribute after one month of service and are eligible for matching after one year of service.

During the year, 5,652 (2019: 5,488) shares under the 401k plans were awarded to employees. These are nil cost awards on which performance conditions are substantially completed at the date of grant and, consequently, the fair value of these awards is based on the market value of the shares at that date.

30 Commitments

	Group		Parent company	
	2020 £ million	2019 £ million	2020 £ million	2019 £ million
Capital commitments – future capital expenditure contracted but not provided				
Property, plant and equipment	41	60	12	5
Other intangible assets	9	13	–	2

At 31st March 2020, precious metal leases were £451 million (31st March 2019: £372 million) at year end prices.

31 Contingent liabilities

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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32 Transactions with related parties

The group has a related party relationship with its joint venture and associate (note 13), its post-employment benefit plans (note 24) and its key management personnel (below).

The key management of the group and parent company consist of the Board of Directors and the members of the Group Management Committee (GMC). During the year ended 31st March 2020, the GMC had an average of 9 members (2019: 6 members). The only transactions with any key management personnel was compensation charged in the year which was:

	2020 £ million	2019 £ million
Short term employee benefits	6	6
Share-based payments	–	5
Non-executive directors' fees and benefits	1	1
Total compensation of key management personnel	7	12

There were no balances outstanding at 31st March 2020 (2019: £nil). Information on directors' remuneration is given in the Remuneration Report.

Guarantees of subsidiaries' liabilities are disclosed in note 22.

33 Related undertakings

A full list of related undertakings at 31st March 2020 (comprising subsidiaries, joint ventures and associates) is set out below. Those held directly by the parent company are marked with an asterisk (*) and those held jointly by the parent company and a subsidiary are marked with a cross (+). All the companies are wholly owned unless otherwise stated. All the related undertakings are involved in the principal activities of the group. Unless otherwise stated, the share class of each related undertaking comprises ordinary shares only.

Entity	Registered address
+ Johnson Matthey Argentina S.A.	Tucumán 1 Piso 4, CP 1049, Buenos Aires, Argentina
Johnson Matthey (Aust.) Ltd	64 Lillie Crescent, Tullamarine VIC 3043, Australia
+ Johnson Matthey Holdings Limited	64 Lillie Crescent, Tullamarine VIC 3043, Australia
Johnson Matthey Belgium BVBA	Pegasuslaan 5, 1831 Diegem, Belgium
Tracerco Europe BVBA	1731 Zellik, Z3 Doornveld 115, Belgium
The Argent Insurance Co. Limited	Clarendon House, 2 Church Street, Hamilton, HM11, Bermuda
Johnson Matthey Brasil Ltda	Avenida Macuco, 726, 12th Floor, Edifício International Office, CEP04523-001, Brazil
Stepac Brazil Ltda	Rua Itapolis, n° 1921, Pacaembu, São Paulo, 01245-000, Brazil
Tracerco do Brasil – Diagnosticos de Processos Industriais Ltda	Estrada dos Bandeirantes, 1793, Curicica, Jacarepagua, Rio de Janeiro, Brazil
Johnson Matthey Battery Materials Ltd.	280 Liberté Ave, Candiac Québec J5R 6X1, Canada
Tracerco Radioactive Diagnostic Services Canada Inc.	8908 60 Avenue NW, Edmonton AB, T6E 6A6, Canada
Johnson Matthey Argillon (Shanghai) Emission Control Technologies Ltd.	No. 298, East Rong Le Road, Songjiang District, Shanghai, China
Johnson Matthey Battery Materials (Changzhou) Co., Ltd.	1 Xin Wei Liu Road, Changzhou Export Processing Zone, Changzhou, Jiangsu Province, China
Johnson Matthey Chemical Process Technologies (Shanghai) Company Limited	Room 1066, Building 1, No 215 Lian He Bei Lu, Fengxian District, Shanghai, China
Johnson Matthey (China) Trade Co., Ltd	1st, 2nd and 3rd Floor, Building 2, No. 598 Dongxing Road, Songjiang Industrial Zone, Shanghai, China
Johnson Matthey Clean Energy Technologies (Beijing) Co., Ltd	2007C, 20th Floor, No. 21 Building, No.5 Community, Shuguangxili Lane, Chaoyang District, Beijing, China
Johnson Matthey Process Technologies (Beijing) Co., Ltd.	Unit No. 2001-2007A, No. 21 Building, Shuguangxili Lane A5, Chaoyang District, Beijing, China
Johnson Matthey Pharmaceutical Services (Yantai) Co., Ltd.	No. 9 Wuxi Road, Yantai Economic and Technology Development Zone, Yantai, Shandong Province, China
Johnson Matthey (Shanghai) Catalyst Co., Ltd.	586 Dongxing Road, Songjiang Industry Zone, Shanghai, 201613, China
Johnson Matthey (Shanghai) Chemicals Limited	588 Dongxing Road, Songjiang Industry Zone, Shanghai, 201613, China
Johnson Matthey (Shanghai) Trading Limited	Room 1615B, No. 118 Xinling Road, Shanghai Pilot Free Trade Zone, China
Johnson Matthey (Tianjin) Chemical Co., Ltd.	Suite 1-1201, BoRun Commercial Plaza, Tianjin Development Zone, China
Johnson Matthey (Zhangjiagang) Environmental Protection Technology Co., Ltd	No. 9 Dongxin Road, Jiangsu Yangtze River International Chemical Industrial Park, Jiangsu Province, China
Johnson Matthey (Zhangjiagang) Precious Metal Technology Co., Ltd.	48, the west of Beijing Road, Jingang Town, Yangtze River International Chemical Industrial Park, Jiangsu, China

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33 Related undertakings (continued)

Entity	Registered address
Qingdao Johnson Matthey Hero Catalyst Company Limited (51%)	New Material Industrial Park, Shiyuan Road, Qinda Industrial Park, Chengyang District, Qingdao, 200331, China
Shanghai Bi Ke Clean Energy Technology Co Ltd (11.1%)	Room 427 Building 2 No 351 Guo Shou Jing Road, China (Shanghai) Pilot Free Trade Zone, China
Shanghai Johnson Matthey Applied Materials Technologies Co., Ltd	Area A, 1st Floor, Building 7, 298 East Rongle Road, Songjiang District, Shanghai, China
Tracerco China Process Diagnostics & Instrumentation (Shanghai) Co., Ltd.	Section G Floor 2, Building 7, 298 East Rongle Road, Songjiang District, Shanghai, China
Johnson Matthey A/S	Lundgrens Advokatpartnerselskab, Tuborg Boulevard 12, 4., 2900 Hellerup, Denmark
* AG Holding Ltd	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Cascade Biochem Limited ¹	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Illumink Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* JMEPS Trustees Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Battery Systems Engineering Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Davy Technologies International Limited (in liquidation)	30 Finsbury Square, London, EC2A 1AG
* Johnson Matthey Davy Technologies Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Johnson Matthey Fuel Cells Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Investments Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Johnson Matthey (Nominees) Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Johnson Matthey Precious Metals Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey South Africa Holdings Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Tianjin Holdings Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Matthey Finance Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Matthey Holdings Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Tracerco Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Finex Oy	Seppolantie 1, Kotka, 48230, Finland
Johnson Matthey Finland Oy	Autokatu 6, 20380 Turku, Finland
Kiinteistö Oy Kotkan Huumantie 5 (70%)	c/o Finex Oy, Seppolantie 1, Kotka, 48230, Finland
Johnson Matthey SAS	Les Diamants – Immeuble B, 41 rue Delizy, 93500 Pantin, France
Johnson Matthey Battery Materials GmbH	Ostenriederstr. 15, 85368 Moosburg a.d. Isar, Germany
Johnson Matthey Catalysts (Germany) GmbH	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Chemicals GmbH	Wardstrasse 17, D-46446 Emmerich am Rhein, Germany
Johnson Matthey GmbH & Co. KG ²	Otto-Volger-Strasse 9b, 65843 Sulzbach, Germany
Johnson Matthey Holding GmbH	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Management GmbH	Otto-Volger-Strasse 9b, 65843 Sulzbach, Germany
Johnson Matthey Piezo Products GmbH	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Redwitz Real Estate (Germany) B.V. & Co. KG ²	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Hong Kong Limited	Unit 2-6, 8/F, 909 Cheung Sha Wan Road, Cheung Sha Wan, Kowloon, Hong Kong
Johnson Matthey Pacific Limited ³	Unit 2-6, 8/F, 909 Cheung Sha Wan Road, Cheung Sha Wan, Kowloon, Hong Kong
Johnson Matthey Process Technologies Holdings Hong Kong Limited	Unit 2-6, 8/F, 909 Cheung Sha Wan Road, Cheung Sha Wan, Kowloon, Hong Kong
Johnson Matthey Tracerco Holdings Hong Kong Limited	Unit 2-6, 8/F, 909 Cheung Sha Wan Road, Cheung Sha Wan, Kowloon, Hong Kong
Macfarlan Smith (Hong Kong) Limited	Unit 2-6, 8/F, 909 Cheung Sha Wan Road, Cheung Sha Wan, Kowloon, Hong Kong
Johnson Matthey Chemicals India Private Limited	Plot No 6A, MIDC Industrial Estate, Talaja, District Raigad, Maharashtra 410208, India
Johnson Matthey India Private Limited	Regus Business Centre, 1st Floor, M-4, South Extension-II, New Dehli, Delhi-DL, 110049, India
Johnson Matthey Limited	13-18 City Quay, Dublin 2, D02 ED70, Ireland
Stepac L.A. Ltd.	Tefen Industrial Park Bldg. #12, Post Box 73, Tefen, Western Galilee, 2495900, Israel
Johnson Matthey Italia S.r.l.	Corso Trapani 16, 10139, Torino, Italy
Johnson Matthey Fuel Cells Japan Limited	5123-3 Kitsuregawa, Sakura-shi, Tochigi, 329-1412, Japan
Johnson Matthey Japan Godo Kaisha	5123-3 Kitsuregawa, Sakura-shi, Tochigi, 329-1412, Japan

Notes on the accounts continued

for the year ended 31st March 2020

33 Related undertakings (continued)

Entity	Registered address
Johnson Matthey DOOEL Skopje	TIDZ Skopje 1, 1041 Ilinden, Macedonia
* Johnson Matthey Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Johnson Matthey Services Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Tracerco Asia Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Tracerco Asia Services Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Johnson Matthey de Mexico, S. de R.L. de C.V.	Av. de Margues y Av. de la Canada, 2a Etapa Parque Industrial Bernardo Quintana, El Marques, Querataro C.P., 76246, Mexico
Johnson Matthey Servicios, S. de R.L. de C.V.	Av Ramon Rivera Lara 6620, Parque Industrial Juarez, Chihuahua, Mexico
Intercat Europe B.V.	Fregatweg 38, 6222 NZ Maastricht, Netherlands
Johnson Matthey Advanced Glass Technologies B.V.	Fregatweg 38, 6222 NZ Maastricht, Netherlands
Johnson Matthey B.V.	Otto-Volger-Strasse 9b, 65843 Sulzbach/Ts. Germany
Johnson Matthey Holdings B.V.	Fregatweg 38, 6222 NZ Maastricht, Netherlands
Johnson Matthey Netherlands B.V.	Fregatweg 38, 6222 NZ Maastricht, Netherlands
Johnson Matthey Netherlands 2 B.V.	Fregatweg 38, 6222 NZ Maastricht, Netherlands
Matthey Finance B.V. ¹	Fregatweg 38, 6222 NZ Maastricht, Netherlands
Tracerco Norge AS	Kokstadflaten 35, 5257 Kokstad, Norway
Johnson Matthey Battery Systems Spółka z ograniczoną odpowiedzialnością	Plac Marsz. Józefa Piłsudskiego 1, 00-078, Warsaw, Poland
Johnson Matthey Poland Spółka z ograniczoną odpowiedzialnością	Ul. Alberta Einsteina 6, 44-109, Gliwice, Poland
Johnson Matthey Battery Materials Poland Spółka z ograniczoną odpowiedzialnością	Plac Marsz. Józefa Piłsudskiego 1, 00-078, Warsaw, Poland
Macfarlan Smith Portugal, Lda	Largo de São Carlos 3, 1200-410 Lisboa, Portugal
Johnson Matthey Catalysts LLC	1 Transportny Proezd, 660027 Krasnoyarsk, Russia
International Diol Company (4.3%)	1st Basic Industrial Road 218, P.O. Box 12021, Jubail Industrial City, 31961, Saudi Arabia
* Johnson Matthey General Partner (Scotland) Limited	10 Wheatfield Road, Edinburgh, Midlothian, EH11 2QA, Scotland
* Johnson Matthey (Scotland) Limited Partnership ²	10 Wheatfield Road, Edinburgh, Midlothian, EH11 2QA, Scotland
* Macfarlan Smith Limited	10 Wheatfield Road, Edinburgh, Midlothian, EH11 2QA, Scotland
* Meconic Limited (in liquidation)	7 Exchange Crescent, Conference Square, Edinburgh, EH3 8AN
Johnson Matthey Singapore Private Limited	4 Shenton Way, #15-01 SGX Centre 2, 068807, Singapore
Johnson Matthey (Proprietary) Limited	Corner Henderson and Premier Roads, Germiston South Ext 7, Gauteng, South Africa
Johnson Matthey Research South Africa (Proprietary) Limited	Corner Henderson and Premier Roads, Germiston South Ext 7, Gauteng, South Africa
Johnson Matthey Salts (Proprietary) Limited	Corner Henderson and Premier Roads, Germiston South Ext 7, Gauteng, South Africa
Johnson Matthey Catalysts Korea Limited	A-dong 2906-ho, 13 Heungdeok 1-ro, Giheung-gu, Yongin-si, Gyeonggi-do, South Korea
Johnson Matthey Korea Limited	101-2803, Lotte Castle, 109, Mapo-daero, Mapo-gu Seoul, South Korea
Johnson Matthey AB	Viktor Hasselblads gata 8, 421 31 Västra Frölunda, Göteborg, Sweden
Johnson Matthey Formox AB	SE-284 80, Perstorp, Sweden
Johnson Matthey & Brandenberger AG	Glattalstrasse 18, 8052 Zurich, Switzerland
Johnson Matthey Finance GmbH	Hertensteinstrasse 51, 6004 Lucerne, Switzerland
Johnson Matthey Finance Zurich GmbH	Glattalstrasse 18, 8052 Zurich, Switzerland
LiFePO4+C Licensing AG	Hertensteinstrasse 51, 6004 Lucerne, Switzerland
Johnson Matthey (Thailand) Limited	1858/12 Interlink Tower, 5th Floor, Debaratna Road, Kwang Bangna Tai, Khet Bangna, Bangkok 10260, Thailand
Johnson Matthey Holdings (Thailand) Limited	1858/12 Interlink Tower, 5th Floor, Debaratna Road, Kwang Bangna Tai, Khet Bangna, Bangkok 10260, Thailand
Johnson Matthey Services (Trinidad and Tobago) Limited	Queen's Park Place, 17-20 Queens Park West, Port of Spain, Trinidad and Tobago
Stepac Ambalaj Malzemeleri Sanayi Ve Ticaret Anonim Sirketi	Güzeloba Mah. Rauf Denктаş Cad., No.56/101, Muratpaşa/Antalya, Turkey
Johnson Matthey Fuel Cells, Inc.	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, USA

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for the year ended 31st March 2020

33 Related undertakings (continued)

Entity	Registered address
Johnson Matthey Holdings, Inc.	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, USA
Johnson Matthey Inc. ⁴	Corporation Service Company, 2595 Interstate Drive, Suite 103 PA 17110, USA
Johnson Matthey Japan, Inc.	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, USA
Johnson Matthey Materials, Inc.	CSC Lawyers Incorporating Service, 2730 Gateway Oaks Drive, Suite 100, Sacramento CA 95833, USA
Johnson Matthey North America, Inc.	Corporation Trust Center, 1209 Orange Street, Wilmington DE 19801, USA
Johnson Matthey Pharmaceutical Materials, Inc.	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, USA
Johnson Matthey Process Technologies, Inc.	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, USA
Johnson Matthey Stationary Emissions Control LLC	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, USA
Red Maple LLC (50.0%)	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, USA

In some jurisdictions in which the group operates, share classes are not defined and in these instances, for the purpose of disclosure, these holdings have been classified as ordinary shares.

¹ Ordinary and preference shares.

² Limited partnership, no share capital.

³ Ordinary and non-cumulative redeemable preference shares.

⁴ Ordinary and series A preferred stock.

34 Changes in accounting policies

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

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. Under IFRS 16, the group and parent company recognise 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 and parent company 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 and parent company have 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 and parent company have applied the modified retrospective transition approach and have not restated comparative amounts for the year ended 31st March 2019. Under this approach, the group and parent company have 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 and parent company have elected to adopt the following practical expedients on transition:

- not to capitalise a right-of-use lease asset or lease liability where the lease expired 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 when determining a discount rate where a group of leases has similar characteristics.

Notes on the accounts continued

for the year ended 31st March 2020

34 Changes in accounting policies (continued)

Impact of adoption on the primary statements

Group

Income statement

Profit before tax has been reduced by approximately £1 million in the year ended 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 following table shows the effect of adopting IFRS 16 on the group's 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.

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 for the group. Lease payments of £16 million during the year ended 31st March 2020, including interest, are included in financing rather than operating activities in the consolidated cash flow statement.

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

34 Changes in accounting policies (continued)

Parent company

Income statement

The adoption of IFRS 16 has not had a material impact on the parent company's profit for the year.

Balance sheet

The following table shows the effect of adopting IFRS 16 on the parent company's balance sheet at 1st April 2019:

	£ million
Non-current assets	
Right-of-use assets	14
Total non-current assets	14
Total assets	14
Current liabilities	
Lease liabilities	(3)
Total current liabilities	(3)
Non-current liabilities	
Lease liabilities	(12)
Provisions	1
Total non-current liabilities	(11)
Total liabilities	(14)
Net assets	-

The weighted average incremental borrowing rate applied to lease liabilities was 3.5%.

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.

Notes on the accounts continued

for the year ended 31st March 2020

34 Changes in accounting policies (continued)

Reconciliation between operating lease commitments and lease liabilities

The following tables reconcile between the operating lease commitments disclosed under IAS 17 at 31st March 2019 and the lease liabilities recognised in the balance sheet of the group and parent company on transition to IFRS 16 at 1st April 2019:

Group

	£ 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

Parent company

	£ million
Future minimum amounts payable under non-cancellable operating leases reported under IAS 17 at 31st March 2019	17
Change in assessment of lease term	1
Reclassification of onerous lease provision	1
Impact of discounting lease liabilities	(4)
Lease liabilities recognised on transition to IFRS 16 at 1st April 2019	15
Current	3
Non-current	12
Lease liabilities recognised on transition to IFRS 16 at 1st April 2019	15

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Notes on the accounts continued

for the year ended 31st March 2020

35 Non-GAAP measures

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.

Definitions

Measure	Definition	Purpose
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.
Underlying operating profit ²	Operating profit excluding non-underlying items.	Provides a measure of operating profitability that is comparable over time.
Underlying operating profit margin ^{1, 2}	Underlying operating profit divided by sales.	Provides a measure of how we convert our sales into underlying operating profit and the efficiency of our business.
Underlying profit before tax ²	Profit before tax excluding non-underlying items.	Provides a measure of profitability that is comparable over time.
Underlying profit for the year ²	Profit for the year excluding non-underlying items and related tax effects.	Provides a measure of profitability that is comparable over time.
Underlying earnings per share ^{1, 2}	Underlying profit for the year divided by the weighted average number of shares in issue.	Our principal measure used to assess the overall profitability of the group.
Return on invested capital (ROIC) ¹	Underlying operating profit divided by average total 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. The group has a long term target of a return on invested capital of 20% to ensure focus on efficient use of the group's capital.
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.
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.
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. The group has a long term target of net debt (including post tax pension deficits) to underlying EBITDA of between 1.5 and 2.0 times, although in any given year it may fall outside this range depending on future plans.

¹ Key Performance Indicator.

² Underlying profit measures are 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. These items have been excluded by management as they are not deemed to be relevant to an understanding of the underlying performance of the business.

Notes on the accounts continued

for the year ended 31st March 2020

35 Non-GAAP measures (continued)

Underlying profit measures exclude the following non-underlying items which are shown separately on the face of the income statement:

- **Profit or loss on disposal of businesses** The group released a residual provision for environmental liabilities of £2 million which had originally been recognised in respect of the disposal of Johnson Matthey Gold and Silver Refining Holdings in March 2015. The time limit on claims was five years and no claims have been received. In the prior year, the group sold its water disinfection business, Miox. After costs, the net proceeds were £2 million which resulted in a loss on sale of £12 million.
- **Gain or loss on significant legal proceedings** In April 2019, the group paid £17 million in respect of a settlement with a customer on mutually acceptable terms with no admission of fault relating to failures in certain engine systems for which it supplied a component in the US. The settlement was recognised in the prior year on the basis that it confirmed that the group had a present obligation at the prior year end.
- **Amortisation of acquired intangibles** Amortisation and impairment of intangible assets which arose on the acquisition of businesses totalled £13 million (2019: £14 million).
- **Major impairment and restructuring charges** The group recognised the following impairments during the year:
 - **Clean Air manufacturing plants** Investment in new manufacturing plants in Europe and Asia has allowed the Clean Air sector to consolidate its existing capacity into new, more efficient plants. Specifically, we plan to restructure three of our manufacturing plants. As a result, the carrying value of one of the plants has been impaired, by £42 million to £24 million, based on a fair value less costs of disposal assessment, with our assessment of the market value of the plant based on internal data (level 3 inputs – see note 28 for the fair value hierarchy). The other two plants have been impaired by £17 million to £3 million and by £2 million to £nil based on a value in use assessment, with discount rates of 13% and 38%, respectively. The impairment comprises intangible assets (£6 million) and property, plant and equipment (£55 million).
 - **Battery Materials LFP business** We are focusing our science and innovative solutions on cathode materials that are truly market leading, principally eLNO, our ultra-high energy density cathode material and, in addition, our higher performing lithium iron phosphate (LFP). Sales of LFP declined during the year and we are now refocusing our LFP business on the high value segment of the market to better support our eLNO customers and the development of that business. These changes mean that the carrying value of the Battery Materials LFP cash-generating unit has been impaired, by £57 million, to £3 million based on a value in use assessment. The impairment comprises goodwill (£7 million), intangible assets (£5 million), property, plant and equipment (£35 million), right-of-use assets (£1 million) and trade and other receivables (£9 million). The recoverable amount of £3 million reflects residual working capital balances. The discount rate for the purposes of the value in use assessment was 10.7% (2019: 11.9%).
 - **Health capitalised development expenditure** During the year, a fundamental review of the Health sector's new product introduction process was undertaken to determine how the business will deliver its strategic plan. The organisation was restructured and new employees were recruited to strengthen the sector's technical capabilities. A detailed review of each molecule was performed which considered all assumptions, including market size, number of competitors, molecular process design and technical feasibility. The assessment resulted in the determination to reprioritise the molecules in the pipeline, focusing on the optimal number of projects to sustain a consistent and predictable new product launch process. Consequently, the development of 21 molecules in the pipeline has been terminated. Development expenditure which had been capitalised in respect of the terminated molecules totalling £20 million has been written off during the year. With a focus on fewer molecules, we have made further progress towards delivering an additional circa £100 million of operating profit from our pipeline of generic and innovator active pharmaceutical ingredients.

In addition to the impairments recognised during the year, consultancy costs of £5 million were incurred in respect of the major restructuring initiatives announced in June 2020 and a write off of inventories of £3 million recognised in the Health sector as part of the group's operational efficiency programme announced in March 2017 was released.

In the prior year, £7 million of a prior year impairment of the Health sector's Riverside site was reversed and, in September 2019, the site was sold, with no gain or loss on disposal.

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Notes on the accounts continued

for the year ended 31st March 2020

35 Non-GAAP measures (continued)

Reconciliations to GAAP measures

Sales

See note 1.

Underlying profit measures

Year ended 31st March 2020

Underlying
Profit on disposal of businesses
Amortisation of acquired intangibles
Major impairment and restructuring charges
Interest on non-underlying tax provisions
Change in non-underlying tax provisions

Reported

Operating profit £ million	Profit before tax £ million	Tax expense £ million	Profit for the year £ million
539	455	(72)	383
2	2	-	2
(13)	(13)	3	(10)
(140)	(140)	16	(124)
-	1	-	1
-	-	3	3
388	305	(50)	255

Year ended 31st March 2019

Underlying
Loss on disposal of businesses
Loss on significant legal proceedings
Amortisation of acquired intangibles
Major impairment and restructuring charges

Reported

Operating profit £ million	Profit before tax £ million	Tax expense £ million	Profit for the year £ million
566	523	(83)	440
(12)	(12)	4	(8)
(17)	(17)	3	(14)
(14)	(14)	3	(11)
8	8	(2)	6
531	488	(75)	413

Underlying earnings per share

Underlying profit for the year (£ million)
Weighted average number of shares in issue (number)
Underlying earnings per share (pence)

	2020	2019
	383	440
	192,437,993	192,128,811
	199.2	228.8

Notes on the accounts continued

for the year ended 31st March 2020

35 Non-GAAP measures (continued)

Return on invested capital (ROIC)

	2020 £ million	2019 £ million
Underlying operating profit	539	566
Average net debt	1,489	1,128
Average equity	2,733	2,541
Average capital employed	4,222	3,669
Less: Average pension net assets	(212)	(251)
Less: Average related deferred taxation	32	41
Average capital employed (excluding post tax pension net assets)	4,042	3,459
ROIC (excluding post tax pension net assets)	13.3%	16.4%
ROIC	12.8%	15.4%

Average working capital days (excluding precious metals)

	2020 £ million	2019 £ million
Inventories	1,902	1,316
Trade and other receivables	2,077	1,553
Trade and other payables	(2,745)	(1,647)
Total working capital	1,234	1,222
Less: Precious metal working capital	(597)	(590)
Working capital (excluding precious metals)	637	632
Average working capital days (excluding precious metals)	63	59

Free cash flow

	2020 £ million	2019 £ million
Net cash inflow from operating activities	598	334
Interest received	104	61
Interest paid	(202)	(108)
Purchases of property, plant and equipment	(332)	(215)
Purchases of intangible assets	(111)	(86)
Proceeds from sale of assets held for sale	7	-
Proceeds from sale of non-current assets	1	1
Principal element of lease payments	(13)	-
Free cash flow	52	(13)

Accounts

Notes on the accounts continued

for the year ended 31st March 2020

35 Non-GAAP measures (continued)

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

	2020 £ million	2019 £ million
Cash and deposits	112	90
Money market funds	192	347
Bank overdrafts	(31)	(59)
Cash and cash equivalents	273	378
Borrowings and related swaps – current	(331)	(184)
Borrowings and related swaps – non-current	(994)	(1,073)
Interest rate swaps – non-current	34	13
Lease liabilities – current	(12)	–
Lease liabilities – non-current	(64)	–
Net debt	(1,094)	(866)
(Decrease) / increase in cash and cash equivalents	(103)	74
Less: Increase in borrowings	(12)	(241)
Less: Principal element of lease payments	13	–
Increase in net debt resulting from cash flows	(102)	(167)
New leases, remeasurements and modifications	(13)	–
Lease disposals	1	–
Exchange differences on net debt	(47)	(26)
Other non-cash movements	10	6
Movement in net debt	(151)	(187)
Net debt at beginning of year	(866)	(679)
Impact of adoption of IFRS 16	(77)	–
Net debt at end of year	(1,094)	(866)
Net debt	(1,094)	(866)
Add: Pension deficits	(53)	(56)
Add: Related deferred tax	10	10
Net debt (including post tax pension deficits)	(1,137)	(912)
Underlying operating profit	539	566
Add back: Depreciation and amortisation excluding amortisation of acquired intangibles	166	157
Underlying EBITDA	705	723
Net debt (including post tax pension deficits) to underlying EBITDA	1.6	1.3

36 Events after the balance sheet date

The impact of the COVID-19 pandemic on the group's operations is discussed in the risks and uncertainties section on page 69 and its impact on the carrying value of certain assets at 31st March 2020 is discussed on page 142. The group has tested its performance under a deep recession scenario and stress tested with a more extreme very deep recession scenario. Subsequent to the balance sheet date, the group has monitored its trading performance and external factors, such as changes in government restrictions. Key estimates and judgements that impact the balance sheet at 31st March 2020 have been updated to reflect the impact of COVID-19 in the period since 31st March 2020.

The following non-adjusting events have also been identified in the period since 31st March 2020:

- In April 2020, the group secured a further \$300 million of funding from the US private placement market for the next five to seven years; and
- The group secured access to the Bank of England's COVID Corporate Financing Facility (CCFF), with an allocated issuer limit of £300 million which provides additional back-stop liquidity for the next year if needed.

Independent auditors' report

to the members of Johnson Matthey Plc



Report on the audit of the financial statements

Opinion

In our opinion:

- Johnson Matthey Plc's group financial statements and parent company financial statements (the "financial statements") give a true and fair view of the state of the group's and of the parent company's affairs as at 31 March 2020 and of the group's profit and cash flows for the year then ended;
- the group financial statements have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union;
- the parent company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the group financial statements, Article 4 of the IAS Regulation.

We have audited the financial statements, included within the Annual Report and Accounts (the "Annual Report"), which comprise: the Consolidated and Parent Company Balance Sheets as at 31 March 2020; the Consolidated Income Statement and Consolidated Statement of Total Comprehensive Income; the Consolidated Cash Flow Statement and the Consolidated and Parent Company Statement of Changes in Equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Our opinion is consistent with our reporting to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided to the group or the parent company.

Other than those disclosed in note 3 to the financial statements, we have provided no non-audit services to the group or the parent company in the period from 1 April 2019 to 31 March 2020.

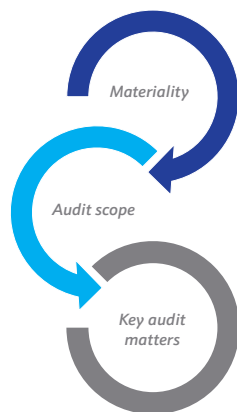
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Independent auditors' report continued

to the members of Johnson Matthey Plc

Our audit approach

Overview



- Overall group materiality: £24 million (2019: £25 million), based on approximately 5% of the three-year average profit before tax, adjusted for loss on disposal of businesses, loss on significant legal proceedings, major impairment and restructuring charges.
- Overall parent company materiality: £18 million (2019: £15 million), based on approximately 1% of total assets but capped at the maximum allocation of group materiality to a component.
- We conducted a full scope audit or specified procedures at 66 components which together accounted for 87% of group revenue and 76% of group profit before taxation.
- We maintained regular contact with our component teams and evaluated the outcome of their audit work.
- Carrying value of goodwill, and capitalised development costs (group, company)
- Refinery metal accounting (group, company)
- Taxation accounting (group)
- Claims, uncertainties and other provisions (group)
- Covid-19 (group, company)

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements.

Capability of the audit in detecting irregularities, including fraud

Based on our understanding of the group and industry, we identified that the principal risks of non-compliance with laws and regulations related to the failure to comply with international tax regulations, environmental regulations, health and safety regulations (EHS), and anti-bribery and corruption laws, and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the preparation of the financial statements such as the Companies Act 2006. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to posting inappropriate journal entries and management bias in accounting estimates. The group engagement team shared this risk assessment with the component auditors so that they could include appropriate audit procedures in response to such risks in their work. Audit procedures performed by the group engagement team and/or component auditors included:

- Discussions with management, internal audit and the group's legal advisors, including consideration of known or suspected instances of non-compliance with laws and regulations and fraud;
- Assessing management's significant judgements and estimates in particular those relating to the carrying value of goodwill and capitalised development costs, refinery metal accounting, tax matters and provisions, and the disclosure of significant items in underlying profit; and
- Identifying and testing manual journal entries, in particular any journal entries posted with unusual account combinations.

There are inherent limitations in the audit procedures described above, and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we would become aware of it. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Independent auditors' report continued

to the members of Johnson Matthey Plc

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. This is not a complete list of all risks identified by our audit.

Key audit matter	How our audit addressed the key audit matter
<p>Carrying value of goodwill and capitalised development costs</p> <p>Refer to the Significant issues considered by the Audit Committee on page 98 and Accounting Policies and notes 3, 10 and 11 to the financial statements.</p> <p>The group holds goodwill of £580 million (2019: £578 million) and capitalised development costs of £78 million (2019: £75 million) at 31 March 2020.</p> <p>The group has significant goodwill arising from the acquisition of businesses and the carrying value is dependent on the financial performance of the cash generating unit to which it relates.</p> <p>The group also has significant capitalised development costs, most notably in the Health business, which are at an early stage of their commercial life cycle and, as such, carry a greater risk that they will not be commercially viable.</p> <p>The impairment reviews performed by management constitute a significant estimate, and changes in the assumptions can result in materially different impairment charges or available headroom. Certain assets are subject to annual impairment assessment, while others with a finite life are reviewed if a triggering event has been identified.</p> <p>The impairment assessments prepared by management reflect its best estimates of the impact of COVID-19 on future forecasts and key assumptions. The nature of these estimates mean that they are inherently judgemental and therefore an area of focus in our audit procedures.</p> <p>Management included enhanced disclosure to explain its key judgements and estimates as part of the Accounting Policies and in note 10.</p>	<p>Goodwill – We obtained management's value in use goodwill impairment models and tested and evaluated the reasonableness of key assumptions, operating cash flow forecasts, long term growth rates, and discount rates.</p> <p>We agreed the forecast cash flows to Board approved budgets which had been updated to reflect the estimated impact of COVID-19, assessed how these budgets are compiled and understood key related judgements and estimates. This included those assumptions and models used to forecast the impact of COVID-19. Further information is provided in our COVID-19 key audit matter.</p> <p>We assessed management's historical forecasting accuracy by comparing the prior year forecasts with actual results. This informed the assumptions applied to our independent sensitivity analysis.</p> <p>We performed work over each material CGU. The nature and extent of work was commensurate with the level of headroom and sensitivity of the CGU to impairment. Our testing was focused on the key assumptions in management's latest forecasts and we corroborated the assumptions to supporting evidence (which included both internal and external sources of evidence).</p> <p>We engaged our valuations experts to assess the long-term growth rate and discount rate for each CGU by comparison with third party information, past performance and relevant risk factors. Our procedures included considering the overall level of risk in the future cash flow projections.</p> <p>We tested the mathematical integrity of the forecasts and of the value in use model, audited the allocation of central costs to the CGUs and agreed the carrying values in management's impairment models to underlying accounting records.</p> <p>We assessed management's sensitivity analysis and performed our own independent sensitivity analysis to assess whether a reasonable downside change in the key assumptions could give rise to a material impairment.</p> <p>Capitalised development costs – We obtained the impairment trigger assessment and the impairment models for a sample of the molecules from management. Management performed a detailed review of each molecule and terminated the development of 21 molecules. Management has assumed the net realisable value to be £nil based on the intention not to bring the molecules to market. We selected a sample of molecules that continue to be developed, and tested management's key assumptions including the market size, forecast market share and operating margin expected for each product. We corroborated certain assumptions to external data points and performed sensitivity analysis for other data points.</p> <p>As a result of our work, we agreed with management's conclusions with respect to the recoverability of the goodwill and capitalised development costs and the impairments recognised.</p> <p>We have assessed management's disclosures in light of the impairment testing performed and the impact of COVID-19. We consider the disclosures made to be reasonable and to appropriately present the sensitivities relevant to the goodwill.</p>

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Independent auditors' report continued

to the members of Johnson Matthey Plc

Key audit matter	How our audit addressed the key audit matter
<p><i>Refinery metal accounting</i></p> <p>Refer to the Significant issues considered by the Audit Committee on page 99 and to the Accounting Policies in the financial statements.</p> <p>The group refines a significant amount of metal. Complex estimates are applied in determining the year-end inventory balances including:</p> <ul style="list-style-type: none"> (i) Estimation of the level of metal contained in the carrier material entering the refining process, the refined metal that leaves the refining process, and the residual metal balance at year end; (ii) Estimates of the metal at the refineries at the time of stock takes, and the subsequent sampling and assaying to assess the precious metal content on stock take date; (iii) Estimates of the process losses of precious metals that may be lost during the refining and fabrication process, and the adequacy of these provisions at year-end; and (iv) Estimates of the net realisable value of unhedged metal held at year-end. <p>As part of its refining activities, the group processes material on behalf of third parties, whereby the group must return pre-agreed recoverable quantities of refined metal to those parties at an agreed date. Any metal retained in excess of this pre-agreed quantity is retained by the group. As such, the group's year-end metal inventory is reduced or increased dependent on its ability to recover metal as part of its refining operations.</p> <p>The majority of metal processed at refineries is owned by customers and is not held on the financial balance sheet of the group. As such, the group performs a metal balance sheet reconciliation to ensure quantities of precious metals held at year-end are appropriately understood, classified as either owned by Johnson Matthey or the customer and reconciled to its financial position.</p> <p>This ensures that only the group owned inventory is recorded on the balance sheet, and that the price allocated to this owned inventory is at the lower of cost and net realisable value.</p> <p>The refining process and its associated estimates are deemed a significant risk, as a small variation in underlying estimates or classification could result in a material change to the quantity or valuation of inventory.</p>	<p>We evaluated the design and operation of key controls at the main refining locations over stock takes, and metal assaying procedures.</p> <p>We tested that the metal balance sheet was prepared and reviewed on a monthly basis.</p> <p>We tested the classification of precious metals at year-end on the metal balance sheet, to determine if metal was owned by the group or the customer. Our procedures included sending confirmations to customers, and testing the customer metal that was in the refining process, but not contractually due.</p> <p>We assessed management's policy for recognising stock take gains and losses arising from the stock takes that occurred during the year. We attended physical stock counts (in person, or virtually, using live-feed video equipment) at sites where these were performed by management. The purpose was to verify existence of inventory and adherence to the group's stock take processes, and the reasonableness of stock take gains and losses that have been recorded at these sites.</p> <p>We assessed the underlying controls that have been implemented by management, to monitor potential inventory gains or losses through the refining process.</p> <p>We assessed provisions for inventory process losses compared to historical trends and stock take results, to assess the likelihood and quantum of processing losses (if any) of metal between the date of the stock take and the year-end date.</p> <p>We tested that all unhedged metal was being held at the lower of cost and net realisable value, on an individual metal by metal methodology, with reference to external metal price data.</p> <p>We considered the adequacy of the group's disclosures about the degree of estimation involved in arriving at the value of metal inventory.</p> <p>We are satisfied that the metal inventory balances were appropriately recognised at a supportable value, and in line with relevant group accounting policies.</p>

Independent auditors' report continued

to the members of Johnson Matthey Plc

Key audit matter

Taxation accounting

Refer to the Significant issues considered by the Audit Committee on page 99 and the Accounting Policies in the financial statements.

The group operates in a number of international jurisdictions, and as a result there is risk of uncertain tax exposures arising around the group, as well as heightened risk around estimates in determining the tax effect of cross border transactions including transfer pricing arrangements.

The group adopted IFRIC 23, 'Uncertainty over Income Tax Treatments', for the period commencing 1 April 2019, resulting in a £5 million adjustment to retained earnings as at 1 April 2019. As at 31 March 2020 the group had current income tax liabilities of £106 million (2019: £130 million) including tax provisions of £106 million (2019: £102 million). Management's estimate of the range of possible outcomes is an increase in those liabilities by £106 million (2019: £60 million) to a decrease of £90 million (2019: £61 million).

Where the precise impact of the tax laws and regulations on taxes payable with respect to profit arising in those jurisdictions is unclear, the group seeks to make reasonable estimates to determine the most likely amount in a range of possible outcomes.

There is inherent judgement and estimation uncertainty involved in determining provisions for uncertain tax positions, as described by management in the accounting policies to the financial statements.

How our audit addressed the key audit matter

We engaged our tax specialists in support of our audit of tax and obtained an understanding of the group's tax strategy and risks. We recalculated the group's tax provisions and determined whether the treatments adopted were in line with the group's tax policies and had been applied consistently.

We evaluated the key underlying assumptions and judgements, including considering the status of tax authority audits and enquiries through examining the latest correspondence and enquiring of management, and where applicable management's advisors. We considered the basis and support in particular for provisions not subject to tax audit, in comparison with our experience of similar situations.

We discussed the recognition of specific uncertain tax positions with third-party tax advisors appointed by management to verify the key assumptions, judgements and likely outcome with respect to specific uncertain tax positions recognised. In particular, we assessed management's adoption of IFRIC 23 and confirmed the appropriateness of management's application of either a single best estimate, or a weighted average range of outcomes, for each exposure, as driven by the facts and circumstances.

We evaluated the consistency of management's approach to identifying triggering events to reassess or record a provision for an exposure.

We also evaluated the consistency of management's approach to establishing or changing prior provision estimates and validated that changes in provisions established in previous periods reflected a change in facts and circumstances.

Our in-scope components performed audit work on the local tax expense and completeness of the corresponding liability or asset position.

We also considered the adequacy of the group's disclosures in respect of tax and uncertain tax positions.

We are satisfied that the group's provisions with respect to uncertain tax matters have been prepared on a reasonable basis that represent management's current best estimate of the most likely outcome.

We consider the disclosures with respect to tax matters to be appropriate.

Claims, uncertainties and other provisions

Refer to the Significant issues considered by the Audit Committee on page 99 and notes 22 and 31 to the financial statements

This risk covers warranty provisions, product liability issues, and other litigious matters across the group.

Due to the complex nature of the products offered by Johnson Matthey, the group at any point in time may be exposed to product liability issues including claims for damages or compensation. The identification of when such claims arise and the assumptions relating to these claims are inherently judgemental. Careful consideration needs to be given as to how the claim and any potential exposure are estimated and subsequently accounted for.

The group is also involved in various legal proceedings, including actual or threatened litigation and regulatory investigations.

The group discloses such risks as contingent liabilities where it is unable to make a reliable estimate of potential exposures or where it believes a possible outflow is not probable. If the group is unable to defend against such claims, these risks could give rise to a future liability.

For litigation provisions, we read the summary of major litigation matters provided by management and held discussions with group and sector level general counsel. For a sample of matters, we obtained and reviewed correspondence with external legal counsel with respect to matters included in the summary.

We have circularised external legal counsel to independently assess legal exposures and the expected outcome for material cases across the group.

We reviewed board minutes and made inquiries of management to address the risk of undisclosed claims and uncertainties. We performed audit procedures to identify any third party legal counsel used by management and as appropriate included them in our circularisation.

We have assessed the underlying assumptions underpinning product liability claims by considering past history in the settlement of such claims as evidence of likely settlement of open matters. We applied professional scepticism in auditing both the likely outcome and quantification of exposures, including performing audit procedures over claims management determined to be immaterial.

We have assessed the level of provisioning and contingent liability disclosures, where relevant, in response to known claims.

Based on the procedures outlined, we are satisfied that management's provisioning estimates are adequately supported and appropriate disclosures have been included within the financial statements.

Accounts

Independent auditors' report continued

to the members of Johnson Matthey Plc

Key audit matter

COVID-19

Refer to the Significant issues considered by the Audit Committee on page 98 and the Accounting Policies in the financial statements.

The COVID-19 pandemic has had a considerable impact on the recent operational performance of the Johnson Matthey group. Each of the group's sectors has been impacted to differing extents and the extent of the impact on future performance is difficult to predict. Therefore, there is inherent uncertainty in determining the impact of the pandemic on certain aspects of the financial statements. In the Accounting Policies note in the financial statements management has provided further detail on the key financial statement estimates and areas of the financial statements that are expected to be impacted.

The key impacts of COVID-19 on the Johnson Matthey group and parent company financial statements are described below:

- (i) The budgets and models supporting the goodwill and asset impairment assessments have been updated to reflect management's best estimate of the impacts of COVID-19. The assumptions applied in this analysis have been determined internally, however they incorporate views of external commentators and other third party data sources, where relevant. The models have been prepared assuming two key scenarios, a deep global recession, and a severe but plausible downside scenario reflecting a very deep global recession. These models are key estimates that also underpin management's going concern and viability assessment and form the basis of management's impairment assessments. Reference should be made to management's going concern and viability statements and the Accounting Policies.
- (ii) The majority of Clean Air manufacturing sites outside of China were temporarily closed from March to May 2020 due to the impacts of COVID-19. This was deemed a triggering event for impairment assessment. Management reflected the reduction in forecast manufacturing levels relative to budget in preparing its assessment, and concluded that none of the assets should be impaired (excluding the plants that had already been assessed and impaired as part of management's optimisation of the manufacturing footprint). Refer to note 9 of the financial statements.
- (iii) The group has net £1,391 million of receivables and contract assets, and therefore small adjustments to the expected credit loss could give rise to material losses. Management has estimated the group's exposure to credit risk across trade and contract receivables considering the impact of COVID-19 on its customer base. Although historical trends and the group's customer credit worthiness indicate very low credit risk (see note 27) management has determined that the expected credit loss is now greater given general economic uncertainty. Management's total provision has increased from £15 million to £35 million to anticipate a greater risk of default as a result of COVID-19.

How our audit addressed the key audit matter

- (i) The cash flow forecast models used across the goodwill impairment, going concern and viability modelling and fixed asset impairment assessment are consistent to one another.

For our work over goodwill, reference should be made to the earlier Key Audit Matter. The work performed to assess historical forecast accuracy over goodwill was also relevant to other areas where an estimate is reliant on the forecast, such as going concern.

Our audit procedures over management's going concern assessment included:

- For each sector we challenged the key assumptions in the deep and very deep recession models, and either agreed them to external data points (such as the outlook for the automotive sector) or corroborated them to internally generated assumptions (such as a reduction in variable costs in line with revenue declines). Management's going concern assessment on page 65 includes the most significant assumptions. Our procedures included assessing the expected movement in precious metal working capital, as this benefitted the group's net debt over the going concern period;
- We considered the group's available financing and maturity profile to assess liquidity through the assessment period;
- We reviewed each debt agreement to assess the terms and conditions in order to identify either explicit covenants or any conditions precedent. The covenants and period of assessment were each consistent with management's own understanding;
- We tested the mathematical integrity of the forecasts and the models and reconciled them to the Board approved budgets;
- We performed our own independent sensitivity analysis to assess further appropriate downside scenarios. We confirmed that a significant reduction, beyond the downside case, would be required before any covenant breach; and
- We assessed the reasonableness of management's planned or potential mitigating actions

Our conclusions in respect of going concern are set out separately within this report.

- (ii) We obtained the asset impairment trigger assessment and value in use impairment models prepared by management and performed the following:
 - We compared the forecast models to those used in the goodwill impairment assessment; and
 - We considered the level of headroom on each site relative to the underlying assets, as well as considering how sensitive the headroom might be to changes in assumptions.

Our audit procedures demonstrated significant headroom on all assets even under the severe but plausible downside scenario.

Independent auditors' report continued

to the members of Johnson Matthey Plc

Key audit matter	How our audit addressed the key audit matter
<p>COVID-19 (continued)</p> <p>(iv) UK pension assets include a property fund of £62 million (relative to pension assets of £2 billion). On 20 March 2020 investment activity on this fund was frozen given the inability to obtain any relevant market data for comparable property transactions. The fund valuation provided by the fund manager included a statement to highlight the material uncertainty in the valuation derived as a result of COVID-19. Management has concluded that the fund value is materially accurate on the basis that any impacts of COVID-19 would be short-term and not impact the longer-term value of the investments. See note 24 to the financial statements.</p> <p>In addition, management's ways of working, including the operation of controls, has been impacted by COVID-19 as a result of a large number of staff remote working. For example, this has meant virtual review meetings replaced in person meetings and certain planned inventory counts were performed after the year end. There is inevitably an increase in risk due to the remote accessing of IT systems, and a potentially heightened cyber risk.</p>	<p>(iii) We evaluated management's assessment of the composition of receivables (by counter party, amount and ageing) and considered the past experience of credit loss as well as forward-looking information (such as the credit ratings of automotive manufacturers) that management had applied. We assessed the specific updates for COVID-19 through:</p> <ul style="list-style-type: none"> • Reviewing the sector by sector assessment that considered latest credit rating information taking into account the current expected impact of COVID-19 and compared this to the updated credit loss percentage. • We recalculated the implied bad debt provision using the higher expected credit loss percentage. <p>The overall expected credit loss remains low and the final expected credit loss provision is immaterial which is as expected given the nature of the group's customer base and past success in credit collection.</p> <p>(iv) We received an independent confirmation from the fund manager, which confirmed that the property fund had been frozen, and that due to an absence of observable transactions there was a material uncertainty in the asset valuation. We understand that this cautionary statement is being suggested for inclusion in line with guidance from the Royal Institute of Chartered Surveyors, but still constitutes the best available valuation. We considered the nature of the investment, the duration it is expected to be held, and the overall size of the fund and concluded that the risk of a material devaluation event over the medium to long term is sufficiently low. Management has included disclosures in note 24.</p> <p>We have performed additional procedures to assess any control implications arising from the impact of the pandemic, including inquiries with respect to the operation of IT and business process controls, and whether there has been any impact on the group given the heightened cyber risk.</p> <p>Based on the inquiries performed and the results of our planned audit procedures, we did not identify any evidence of material deterioration in the control environment.</p> <p>We increased the frequency and extent of our oversight over component audit teams, using video conference and remote working paper review, to satisfy ourselves as to the appropriateness of audit work performed at significant and material components.</p> <p>With respect to inventory counts, where management did not perform counts at the year-end date, we have performed counts at different dates and rolled them back or forward to 31 March 2020. Where material inventory counts were performed at the year end date, we attended those counts virtually using live-feed video equipment.</p> <p>We considered the appropriateness of management's disclosures in the financial statements regarding the impact of the current environment and the increased uncertainty on its accounting estimates and deemed these to be appropriate.</p>

Accounts

Independent auditors' report continued

to the members of Johnson Matthey Plc

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the group and the parent company, the accounting processes and controls, and the industry in which they operate.

As a result of the impacts of COVID-19, certain countries were placed under restrictive government lockdowns for the duration of our audit which impacted the way we conducted our work, with more procedures being performed remotely and additional work being performed to address the requirements of ISA 500, Considering the Relevance and Reliability of Audit Evidence. In practice, this meant some component teams were able to attend client sites once restrictions permitted, or they had original documentation sent to them electronically or by post. For others, we were able to obtain sufficient, appropriate evidence remotely given more than one piece of audit evidence could be obtained to support the same transaction. In addition, we had to delay and/or modify our planned inventory counting procedures in some countries in response to COVID-19 restrictions, obtaining sufficient, appropriate audit evidence in alternative ways.

The group is structured across four sectors, Clean Air, Efficient Natural Resources, Health, and New Markets, as well as the Corporate central unit. The financial statements are a consolidation of approximately 315 Business Units. We have identified each individual Business Unit as a component, or a series of Business Units where they map to one legal statutory entity. These components comprise the group's operating businesses and holding companies across the four sectors and Corporate. Based on our risk and materiality assessments, we determined which components required an audit of their complete financial information having considered the relative significance of each entity to the group, locations with significant inherent risks and the overall coverage obtained over each material line item in the consolidated financial statements. We identified three components which, in our view, required an audit of their complete financial information, due to size or risk characteristics. During the audit we responded to the impacts of COVID-19 by refining our scope in one country to remove two audits from scope and convert one other to an audit of specified procedures. We performed specified procedures over certain line items that were most material to the group (revenue, cost of sales, accounts receivable, cash, inventory) and tested manual journal entries, the residual line items not subject to audit were not material in the context of the group audit. After making these changes we performed audits of complete financial information at a further 51 components. In addition to those full scope components, we performed specified procedures at 15 components over specific financial statement line items including revenue, trade and other receivables and deferred income, cash, intangibles, inventory, metal inventory, accruals, fixed assets and depreciation, cost of sales and operating expenses. This ensured that appropriate audit procedures were performed to achieve sufficient coverage over these financial statement line items. The total 66 in-scope components are located in numerous countries around the world. We used local teams in these countries to perform the relevant audit procedures. Of these, three components have been determined to be financially significant based on their contribution to the group. These financially significant components are located in the UK, the US, and Macedonia. The group consolidation, financial statement disclosures and corporate functions were audited by the group audit team. This included our work over the consolidation, litigation provisions, centrally recognised tax balances, goodwill, post-retirement benefits, earnings per share and treasury related balances. This scope of work, together with additional procedures performed at the Group level, accounted for 87% of Group revenue and 76% of Group profit before taxation. This provided the evidence we needed for our opinion on the consolidated financial statements taken as a whole. This was before considering the contribution to our audit evidence from performing audit work at the group level, including disaggregated analytical review procedures, which covers certain of the group's smaller and lower risk components that were not directly included in our group audit scope. We issued formal written instructions to all component auditors setting out the audit work to be performed by each of them. Throughout the year, the group audit team held regular meetings with all reporting units at all stages of the audit to direct and supervise the work of these local teams and to ensure that we had a full and comprehensive understanding of the results of their work – particularly insofar as it related to the identified areas of focus. The group engagement team also reviewed selected audit working papers for certain component teams. As a result of COVID-19 we did not visit any teams (we visited UK, US and China in the prior year) instead we conducted frequent video conferences with the PwC teams.

Independent auditors' report continued

to the members of Johnson Matthey Plc

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Considering COVID-19 and the impact on the group's profit before tax, we have changed our approach to determining materiality since the prior year. Based on our professional judgement, we have now applied a three year average profit before tax, adjusted for loss on disposal of businesses, loss on significant legal proceedings, major impairment and restructuring charges, (2019: single year applying the same metric) to determine our materiality for the financial statements as a whole. Our approach to determining parent company materiality has remained the same as in the prior year.

	Group financial statements	Parent company financial statements
Overall materiality	£24 million (2019: £25 million).	£18 million (2019: £15 million).
How we determined it	Approximately 5% of three-year average profit before tax, adjusted for loss on disposal of businesses, loss on significant legal proceedings, major impairment and restructuring charges.	Approximately 1% of total assets, capped at the maximum allocation of group materiality to a component.
Rationale for benchmark applied	Adjusted (underlying) profit before tax is used as the materiality benchmark excluding amortisation of acquired intangibles. Management uses this measure as it believes that it reflects the underlying performance of the group and this is how the directors are measured on their performance. We did not adjust profit before tax to add back amortisation of acquired intangibles as in our view this is a recurring item.	We considered total assets to be an appropriate benchmark for the parent company given that, whilst it does include trading businesses, it is the ultimate holding company, holds material investments in subsidiary undertakings, incurs corporate costs and enters into financing on behalf of the group. The materiality level was capped at £18 million given overall group materiality.

For each component in the scope of our group audit, we allocated a materiality that is less than our overall group materiality. The range of materiality allocated across components was between £1 million and £18 million. Certain components were audited to a local statutory audit materiality that was also less than our overall group materiality.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £1.3 million (2019: £1.26 million) for both the group and parent company audits, as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Going concern

In accordance with ISAs (UK) we report as follows:

Reporting obligation	Outcome
We are required to report if we have anything material to add or draw attention to in respect of the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements and the directors' identification of any material uncertainties to the group's and the parent company's ability to continue as a going concern over a period of at least twelve months from the date of approval of the financial statements.	We have nothing material to add or to draw attention to. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the group's and parent company's ability to continue as a going concern.
We are required to report if the directors' statement relating to Going Concern in accordance with Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit.	We have nothing to report.

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Independent auditors' report continued

to the members of Johnson Matthey Plc

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the Companies Act 2006 (CA06), ISAs (UK) and the Listing Rules of the Financial Conduct Authority (FCA) require us also to report certain opinions and matters as described below (required by ISAs (UK) unless otherwise stated).

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 March 2020 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements. (CA06)

In light of the knowledge and understanding of the group and parent company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report. (CA06)

The directors' assessment of the prospects of the group and of the principal risks that would threaten the solvency or liquidity of the group

We have nothing material to add or draw attention to regarding:

- The directors' confirmation on page 67 of the Annual Report that they have carried out a robust assessment of the principal risks facing the group, including those that would threaten its business model, future performance, solvency or liquidity.
- The disclosures in the Annual Report that describe those risks and explain how they are being managed or mitigated.
- The directors' explanation on page 75 of the Annual Report as to how they have assessed the prospects of the group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

We have nothing to report having performed a review of the directors' statement that they have carried out a robust assessment of the principal risks facing the group and their statement in relation to the longer-term viability of the group. Our review was substantially less in scope than an audit and only consisted of making inquiries and considering the directors' process supporting their statements; checking that the statements are in alignment with the relevant provisions of the UK Corporate Governance Code (the "Code"); and considering whether the statements are consistent with the knowledge and understanding of the group and parent company and their environment obtained in the course of the audit. (Listing Rules)

Other Code Provisions

We have nothing to report in respect of our responsibility to report when:

- The statement given by the directors, on page 90, that they consider the Annual Report taken as a whole to be fair, balanced and understandable, and provides the information necessary for the members to assess the group's and parent company's position and performance, business model and strategy is materially inconsistent with our knowledge of the group and parent company obtained in the course of performing our audit.
- The section of the Annual Report on pages 95 to 102 describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee.
- The directors' statement relating to the parent company's compliance with the Code does not properly disclose a departure from a relevant provision of the Code specified, under the Listing Rules, for review by the auditors.

Directors' Remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006. (CA06)

Independent auditors' report continued

to the members of Johnson Matthey Plc

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Responsibilities of Directors set out on page 127, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group's and the parent company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or the parent company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

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

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the parent company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the Audit Committee, we were appointed by the directors on 26 July 2018 to audit the financial statements for the year ended 31 March 2019 and subsequent financial periods. The period of total uninterrupted engagement is two years, covering the years ended 31 March 2019 and 31 March 2020.

Mark Gill (Senior Statutory Auditor)

for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London

11 June 2020

Other Information



Other information

Our basis of non-financial reporting and information for shareholders.

Also includes a summary of our Global Reporting Initiative disclosures, a glossary and an index.



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Other Information

Basis of reporting – non-financial data

This report has been prepared in accordance with the GRI Standard: Core option.

It covers the period from 1st April 2019 to 31st March 2020.

Our last annual report was published in June 2019.

Johnson Matthey compiles, assesses and discloses non-financial information for a number of reasons:

- where there is a legal obligation (UK Companies Act, UK Stream-lined Energy and Carbon reporting (SECR) regulations, UK Modern Slavery Act);
- to help drive improved business performance;
- to demonstrate to institutional investors that Johnson Matthey's business approach is responsible, ethical, sustainable and offers a sound value proposition;
- to demonstrate to our customers that Johnson Matthey's business conduct meets or exceeds all of the required standards and expectations;
- to demonstrate to other stakeholders that Johnson Matthey conducts its business in an ethical, responsible and sustainable manner; and
- to benchmark our corporate performance against peer group companies.

This report has been developed to incorporate the group's significant economic, environmental and social impacts and is set within the context of the United Nations Brundtland definition of sustainability (1987) and our own sustainable business goals to 2025. The principles of inclusivity, materiality and responsiveness help to shape the structure of the report and in setting priorities for reporting. The report also explains how we are continuing to build sustainability into our business planning and decision making processes and how, through our governance processes, we manage social, environmental and ethical matters across the group.

Performance data covers all sites that are under the financial control of the group, including all manufacturing, research and warehousing operations of the parent company and its subsidiaries. Joint ventures are not included.

For the purposes of reporting, separate business units resident at the same location are counted as separate sites. Data from 69 sites was included in this report, 54 of which are manufacturing sites.

Data from new facilities is included from the point at which the facility becomes owned by the company and operational. All non-financial performance data is reported on a financial year basis unless otherwise stated.

The processes in place to internally and externally verify the reported non-financial data are described on page 219. Certain employee data is included in the financial accounts and is also subject to separate external audit.

Some of last year's data has been restated, where necessary, to account for improvements in coverage and quality of available data. JM's materiality threshold for environmental data variance is 5%.

We have made three restatements of environmental performance data from 2018/19 this year:

- Our Scope 2 market based carbon emissions have increased by 6% due to the addition of purchased steam from non-renewable sources at one of our sites (see page 48).
- Our VOC and NOx emissions to air increased by 6% and 5% respectively due to three additional sites retrospectively reporting emissions, increasing our coverage to 60% (see page 221).

We have restated our prior year lost time injury and illness rate (LTIIR) and total recordable injury and illness rate due to injuries and illnesses that were reported or reclassified after the year end (see page 40).

We have restated community investment data relating to 2018/19 indirect expenditure from employee volunteering time to include updated data following the year end (see page 52).

Calculation methodologies for KPIs relating to six sustainable business goals to 2025

Definition of employees and contractors

A standard definition of employees and contractors has been implemented since 2017/18 across the group for all reporting of people-related goals. These definitions are used when reporting goals 1 and 2, and in the Responsible business section on pages 38 to 45 of this report.

Reported as "Employees"			Reported as "Contractors"		
Permanent employees	Temporary employees	Agency employees	Outsourced function	Specialist service	Projects
Continuously site based.	Continuously site based.	Continuously site based.	Continuously or regularly site based.	One-off project or regularly based on site.	One-off project.
Contract signed directly between JM and individual and paid regular salary and other benefits by JM.	Fixed term contract signed directly between JM and individual. Paid regular salary and other benefits by JM.	Person employed by an agency performing tasks that would normally be expected to be undertaken by a JM employee.	Facility management – catering, cleaning or grounds maintenance; IT and occupational health, if outsourced.	Small scale building or ground works; repairing specialist plant or equipment; low level maintenance; small scale repairs to offices or other buildings; stack monitoring.	Construction work, capital project work, major maintenance activities.
Work is directly supervised by JM.	Work is directly supervised by JM.	Work is directly supervised by JM.	Work is supervised by contractor and monitored by JM.	Work is supervised by contractor and monitored by JM.	Work is supervised by contractor and monitored by JM.

Health and safety

1

Goal 1: Health and safety:**Aspire to zero harm**

Lost time injury and illness rate (LTIR) is defined as the number of lost workday cases per 200,000 hours worked in a rolling year.

A lost workday case is defined as an incident where an employee or contractor is unable to work for more than one scheduled working day as a result of a work related injury or illness.

Total recordable injury and illness rate (TRIIR) is defined as the number of recordable cases per 200,000 hours worked in a rolling year.

A recordable case (as defined under the US Occupational Safety and Health Administration (OSHA) Regulations) is defined as a work related accident or illness that results in one or more of the following: absence of more than one day; medical treatment beyond first aid; death; loss of consciousness and restricted work or transfer to another job.

The OSHA severity rate is a calculation that gives a company an average of the number of lost days and restricted days per recordable incident.

OSHA severity rate = $([\text{total lost days and restricted days in the year} \times 200,000] \div \text{total hours worked during the year})$.

Occupational illness incidence rate is the number of new occupational illnesses diagnosed in the year per 200,000 hours worked in a rolling year.

200,000 hours represents 100 full time equivalent workers working 40 hours per week for 50 weeks per year.

LTIR by event type definitions

- A slip injury occurs where there is too little friction or traction between an individual's footwear and the walking surface.
- A trip injury occurs when the foot hits an object causing a person to lose balance.
- A fall injury is recorded when someone falls from an elevated surface (e.g. roof), object or temporary work platform (e.g. ladder) or into an opening in a floor or a hole in the ground.
- Struck against is an injury occurring as a result of coming into contact with a surface or object in which the action was initiated by the person (e.g. when a screwdriver slips).

Process safety rate definition

Johnson Matthey has adopted International Council of Chemical Association's (ICCA) process safety metric. The metric first requires a determination that the event is to be included in the process safety event severity rate (PSESR) calculation and then determining the severity using the severity table.

In determining this rate, 1 point is assigned for each Level 4 incident attribute, 3 points for each Level 3 attribute, 9 points for each Level 2 attribute, and 27 points for each Level 1 attribute. The PSESR is recorded as a 12 month rolling number. Total worker hours include employees, temporary employees and contractors.

$$\frac{\text{Process safety performance indicator (PSPI) 2 = Process safety event severity rate (PSESR) Level 1 to 4 (Total severity score for all events} \times 200,000)}{\text{(Total worker hours)}}$$

Theoretically, a process safety event could be assigned a minimum of 1 point (i.e. the incident meets the attributes of a Level 4 incident in only one category) or a maximum of 135 points (i.e. the incident meets the attributes of a Level 1 incident in each of the five categories).

Our people

2

Goal 2: Our people:**Employee engagement and enablement**

Johnson Matthey invites all its permanent and fixed term contract employees to voluntarily complete its employee survey once every one to two years to determine the wellbeing of its staff using a standard methodology defined and audited by the Korn Ferry.

All responses are submitted confidentially to a third party and results are independently analysed and reported back to JM management. Through the survey we measure attributes on a scale of 0 to 100%:

- employee engagement = how committed and motivated employees are to give their best to Johnson Matthey; and
- employee enablement = how well employees' jobs and work environment support peak performance in Johnson Matthey.

Diversity and inclusion (D&I) progress

A detailed roadmap of activities to be completed on JM's journey to D&I excellence to 2025 has been approved. To measure our progress we have introduced a target based upon the Refinitiv Diversity & Inclusion Index. This internationally-recognised standard is very comprehensive and helps us benchmark against the full range of activities within our D&I agenda. Their scoring methodology can be downloaded at:

<https://www.refinitiv.com/en/financial-data/indices/diversity-and-inclusion-index>

Low carbon operations

3

Goal 3: Low carbon operations:**Operational carbon footprint reduction**

Our operational carbon footprint, reported in tonnes of carbon dioxide (CO₂) equivalent, includes Scope 1 and Scope 2 emissions.

We report Scope 1 greenhouse gas (GHG) emissions from processes and energy use and convert the total group energy use to tonnes CO₂ equivalent using conversion factors for each emissions source as published by Defra in July 2019. We include carbon dioxide (CO₂), nitrous oxide (N₂O), refrigerant and methane (CH₄) process emissions to air in our Scope 1 calculations.

Our Scope 2 emissions are calculated using the 'dual reporting' methodology outlined in the GHG Protocol corporate standard 2015 revision, www.ghgprotocol.org. For the location based method of Scope 2 accounting, for all facilities outside of the US, we use national carbon intensity factors related to the consumption of grid electricity in 2017 made available in the 2019 edition of the world CO₂ emissions database of the International Energy Agency. They were purchased under licence in January 2020 for sole use in company reporting. For US facilities we use regional carbon factors published by the Environmental Protection Agency in March 2020 edition of, eGRID data 2018. For the market based method of Scope 2 accounting, we have applied the hierarchy of sources for determination of appropriate carbon intensity factors, as outlined in Table 6.3 on page 48 of the GHG Protocol 2015 edition guidance. We have successfully obtained carbon intensity factors directly from our grid electricity suppliers in the EU, USA and Australia. However, it has not been possible to obtain this from suppliers in China, India, South Africa and non-OECD Europe.

Our total operational carbon footprint is based on:

- Scope 1 emissions – generated by the direct burning of fuel (predominantly natural gas) and process derived greenhouse gas emissions (CO₂, N₂O, CH₄ and refrigerants) on our premises.
- Scope 2 emissions – generated from grid electricity and steam procured from third parties for use at our facilities.

Under the UK Stream-lined Energy and Carbon Reporting (SECR) April 2019 requirements, we are required to ensure that the quantification of GHG emissions and data reliability are sufficient to meet our obligation under the UK Companies Act 2006 (Strategic and Directors' Reports) Regulations 2013. The legislation indicates that all fuel used in company-owned and leased vehicles driven on public roads should be included in the Scope 1 emissions of the company. We have not historically included this in our reporting or carbon intensity targets and have omitted it this year because we have been unable to collate accurate data from all our businesses; we do not have a central database of all the vehicles we own and lease globally with a complete record of mileage driven during the year. We have taken steps to start to collect and collate this information globally during the next reporting cycle and estimate its total contribution to our footprint will remain below our materiality threshold of 5% for Scope 1 + Scope 2 emissions.

Since 2016/17 we have used a carbon intensity target, normalising our carbon emissions based on production output. The denominator is defined as 'tonnes of manufactured product sold externally'. Only sold products manufactured on JM premises are included.

Other Information

Basis of reporting – non-financial data continued

For sales of precious metal containing solutions from our PGM Services business, only the weight of the precious metal is included in the calculation. For all other products, the total shipped weight of product is included.

$$\text{Carbon intensity of JM operations} = \frac{\text{total JM group Scope 1 + Scope 2 GHG emissions}}{\text{Tonnes of manufactured products sold externally by JM}}$$

Responsible sourcing

4

Goal 4: Responsible sourcing:

Sustainable supplier assessment and compliance

Our ambition is to ensure all our Tier 1 strategic suppliers understand, accept and comply with the terms of JM's Supplier Code of Conduct, which can be found on our website in a variety of languages at matthey.com/supplier-code-of-conduct.

We use a risk-based approach to determine what level of assessment and audit is required to monitor a supplier's performance. All suppliers counted under this target are required to complete a bespoke self-assessment questionnaire and return key certificates and policy documents to demonstrate their adherence. This questionnaire is scored by JM using our in-house methodology. Selected suppliers may then be subject to onsite audit, by JM in-house auditors, to verify the responses received within the self-assessment questionnaire.

A strategic supplier is defined using JM in-house criteria.

Sustainable products

5

Goal 5: Sustainable products:

Sustainability impacts of our products

We have established two streams by which we measure and track the positive impact of our products towards a cleaner, healthier world:

- (a) We use a sales lens to quantify product impacts. We measure the correlation and classification of annualised sales of JM's products, services and technologies against the United Nations Sustainable Development Goals (UN SDGs). Sales are excluding precious metals and reflect external sales only. By increasing the absolute and percentage of JM's sales that contribute to the UN SDGs, we will be increasing our global impact.

A judgement is made as to whether the products or services within each of JM's business units contribute to the UN SDGs either directly, or by enabling another product to contribute. This is done by considering their attributes and intended purpose, and cross-referencing these against the 169 target descriptors of the 17 UN SDGs. Where appropriate, consideration is also given to the 232 indicators that have been released to accompany the UN SDG targets.

- (b) We have set four quantitative key performance indicators (KPIs) that capture the sustainability benefits our products bring to society when used by our customers. These are aligned with JM's vision and strategy, and focus on the UN SDGs that are most material to our stakeholders or most relevant to our business impact. The KPIs include:

- The tonnes of pollutants (oxides of nitrogen, carbon monoxide, hydrocarbons and particulate matter) removed using our products and services. This includes pollutants removed by both our automotive and stationary emission control technologies, as sold and used in a given year.

The calculation is based on the efficacy of our products to remove pollutants in order to meet legislative requirements. This KPI contributes to both UN SDG 3 – Good Health and Wellbeing and UN SDG 11 – Sustainable Cities and Communities.

- The number of lives positively impacted by innovation in JM's pharmaceutical products. This includes chronic and non-chronic illnesses treated by our pharmaceutical products, as sold and used in a given year. The calculation is based on our market share of various therapies by volume and considers products we have launched since April 2015. This KPI contributes to UN SDG 3 – Good Health and Wellbeing.
- The tonnes of greenhouse gases removed using our products and services, expressed as tonnes of carbon dioxide equivalent (CO₂ eq). This includes CO₂ eq removed by Johnson Matthey's installations of nitrous oxide abatement catalyst in nitric acid plants, as operating in a given year. Calculations are made using the ACM0019 Case 2 methodology of the Clean Development Mechanism, United Nations Framework Convention on Climate Change (UNFCCC). This KPI contributes to UN SDG 13 – Climate Action.
- The tonnes of greenhouse gases avoided using our products and services, expressed as tonnes of carbon dioxide equivalent (CO₂ eq). This includes CO₂ eq avoided from the use of JM's battery materials and fuel cell components in key applications. The calculation is based on emission savings compared with conventional technologies used in their respective applications and considers any CO₂ associated with fuelling the products. This KPI contributes to UN SDG 13 – Climate Action.

Both (a) and (b) are calculated using Johnson Matthey's in-house methodology.

Community engagement

6

Goal 6: Community engagement:

Employee volunteering

This KPI is an annual record of the total number of employee volunteering days undertaken by permanent employees within their local communities, in accordance with JM's global Employee Volunteering Policy.

The volunteering is recorded in periods of half days. Shorter periods of volunteering are not included in the data. The recorded volunteering days may have been completed either on company time or on paid company leave. Volunteering done on unpaid leave, or outside normal working hours, is not included in the reported numbers.

The length of a standard day varies slightly from location to location, between seven and eight hours.

In determining the in-kind contribution of employees' volunteering we take the number of volunteering days reported in the year and multiply it by the group average cost of one day of employee time.

$$\text{Average cost of one day of employee time} = \frac{\text{total employee benefits expense in year}}{\text{Number of working days in year} \times \text{Average number of permanent employees}}$$

Number of working days in a year is five days per week for 50 weeks per year.

Independent greenhouse gas and health & safety assurance statement



Independent Assurance

In 2019/20 we appointed consultancy Avieco to provide independent external assurance of our 2019/20 emissions and our key metrics quantifying our environmental, health and safety performance. Avieco has provided the following summary assurance statement:

"Avieco confirms that Johnson Matthey's global reported Scope 1, 2 and 3 greenhouse gas (GHG) emissions, specified environmental performance indicators related to total and source of energy consumption, waste disposed, water consumption, emissions to air and specified health and safety indicators have received limited assurance. The engagement was performed in accordance with the requirements of the International Standard on Assurance Engagements (ISAE) 3000 revised, 'Assurance engagements other than audits or reviews of historical financial information', including the specificities of ISAE 3410 for assuring GHG emissions data, and key health and safety definitions from the OSHA Regulations."

Objectives and Methodology

The objectives of this engagement were to ensure that the Johnson Matthey values in scope were free of material misstatements within an acceptable, agreed materiality threshold and to provide the relevant, material information required by stakeholders for the purpose of decision making.

Johnson Matthey's GHG inventory and quantification of environmental performance indicators has been completed in accordance with the WRI / WBCSD GHG Corporate Accounting and Reporting Standard (revised) best practice reporting principles of relevance, completeness, consistency, transparency, accuracy. The subject matter also adheres to the ISAE 3410 principles related to both the quantification of emissions and presentation of disclosures.

Avieco has been independently appointed by Johnson Matthey and no member of the assurance team has a business reason for bias with regards to the limited assurance engagement. Avieco applies quality control and management approaches equivalent to ISO 9001 International Standard as encompassed its Quality and Ethics Policies.

Assurance Conclusion

Based on the assurance procedures followed by Avieco on the scope of Johnson Matthey's data across the 2019/20 reporting period, we have found no material evidence to suggest that the data is not:

- Prepared in accordance with the WRI / WBCSD GHG Corporate Accounting and Reporting Standard (revised) and OSHA Regulations as relevant.
- Prepared in accordance with Johnson Matthey's relevant internal health and safety and environmental data collection guidelines.
- Materially correct and a fair representation of their GHG emissions, specified environmental impacts and health and safety incident rates.
- Worthy of the award of limited assurance.

This conclusion should be read with Avieco's full assurance statement available at matthey.com/avieco-assurance

Other Information

Additional non-financial performance information

We recognise that there are wide range of stakeholders who are interested in all aspects of JM's financial and non-financial performance. Historically we have produced a fully integrated annual report covering all aspects of performance, including detailed information relevant for a number of Environmental, Social and Governance (ESG) indices. This year, the Strategic Report contains all mandatory requirements and we have chosen to provide additional non-financial performance information in summary form below. This has approach has provided our sites with more time to focus on responding to and managing the impact of COVID-19.

+ Read more: Read this section in conjunction with the Responsible business section on pages 38 to 52

All performance data is for the year ended 31st March. Data relating to water management, waste management, emissions to air, energy generation and consumption, contractor lost time incident and illness rate, and Tier 1 process safety incidents have been externally assured.

+ Read more: Independent greenhouse gas and health & safety assurance statement on page 219

Additional environmental performance data

Water management

G GRI 303 and GRI 306-1

Our water use KPIs have remained broadly unchanged this year, compared with previous years. In total, 1.17 million m³ of waste water was treated on site, 23% which was recycled back into our processes rather than being discharged.

		2019/20	2018/19 ¹	2017/18	2016/17
Water withdrawal	Total '000 m ³	2,430	2,611	2,729	2,643
	m ³ /tonne product sold	19.7	18.5	20.6	21.6
Water sources	Municipal authorities ('000 m ³)	2,258	2,427	2,489	2,438
	Ground water ('000 m ³)	110	156	189	161
	Fresh surface water ('000 m ³)	60	47	50	44
Waste water discharged	Total '000 m ³	1,679	1,780	1,592	1,630
	Discharged to municipal authorities ('000 m ³)	1,547	1,476	1,355	1,396
	Discharged to fresh surface water ('000 m ³)	118	272	208	223
	Discharged to brackish surface water ('000 m ³)	14	25	29	11
Average COD of waste water discharge	mg/l	240	171	197	Not measured
	% waste water discharge covered by COD data	72	71	65	Not measured

Waste management

G GRI 306

Our waste KPIs have remained broadly unchanged this year.

		2019/20	2018/19 ¹	2017/18	2016/17
Waste disposed by third parties	tonnes	84,710	86,370	71,787	95,856
	tonnes per unit production	0.69	0.61	0.54	0.72
Type of waste (tonnes)	Liquid hazardous waste	53,766	59,824	44,519	43,284
	Solid hazardous waste	2,973	2,432	1,823	2,364
	Liquid non-hazardous waste	7,903	8,050	11,909	11,936
	Solid non-hazardous waste	20,067	16,064	13,537	30,304
Treatment type (tonnes)	Reuse	2,912	4,553	3,800	3,142
	Recycling	27,022	25,391	17,995	22,422
	Off-site incineration with energy recovery	4,257	4,306	6,134	5,376
	Off-site incineration without energy recovery	47,112	48,195	37,585	32,371
	Landfill	3,407	3,925	6,271	24,575
Destination (tonnes)	Total hazardous waste sent internationally	1,569	1,585	751	624

A total of 2,939 tonnes (5%) of our hazardous waste is solid material that is not reused after it has been sent off site². We also incinerated 2,245 tonnes of waste within our own facilities, principally waste sent to our refineries for precious metal recovery.

¹ Restated following review and reclassification of data submitted by some sites after the year end.

² Dow Jones Sustainability Index (DJSI) definition of hazardous waste.

Emissions to air

9 GRI 305-7

All licensed sites monitor emissions to ensure compliance with local regulations and set their own absolute targets aimed at reducing significant emissions as part of their local environment, health and safety improvement plans. We believe we have captured the majority of emissions across the group but will continue working to increase coverage of our emissions to air reporting to confirm this.

	2019/20	2018/19 ³	2017/18	2016/17
NOx (tonnes)	542	567	383	348
SOx (tonnes)	28	61	44	51
VOC (tonnes)	99	107	100	132
Sites covered	67%	60%	39%	39%

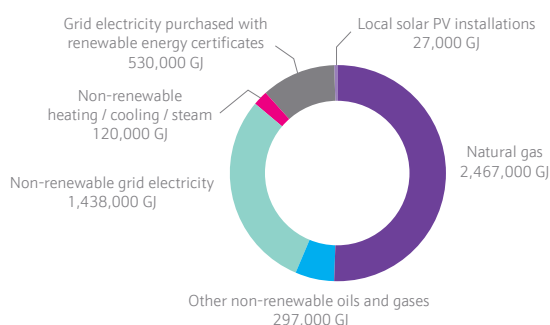
Energy generation and consumption

9 GRI 302

As part of our continuous improvement effort for energy efficiency, our manufacturing site in North Macedonia and our major sites in Germany are ISO 50001 compliant (comprising 9% of our manufacturing sites). Our UK sites also carried out their 2014 Energy Savings Opportunities Scheme (ESOS) Phase 2 assessment via third party audit.

	2019/20	2018/19 ³	2017/18	2016/17
Total energy consumption ('000 GJ)	4,879	5,202	5,104	5,147
Total Scope 1 and Scope 2 (market based) GHG emission (tonnes CO ₂ eq)	391,459	423,123	445,509	468,489

In 2019/20, renewable energy made up 11% of our energy consumption (557,000 GJ).



Environmental incidents

JM has a robust and effective management system that requires all sites to report environmental incidents. All spills that occur on unmade ground or near drinking water sources are classified as significant. There was one significant spill during the year; a leak from a temporary chiller unit resulted in approx. 500 litres of 50% v/v ethylene glycol and water mix spilling onto unmade ground. The event was reported to the local regulator.

Additional people performance data

Contractor health and safety

9 GRI 403-2

Contractor lost time injury and illness rate (LTIIR) further improved this year.

	2019/20	2018/19	2017/18	2016/17
Contractor LTIIR	0.23	0.4	0.74	0.86

Number of injuries and illnesses / 200,000 hours

³ Restated following review and reclassification of data submitted by some sites after the year end.

⁴ Restated to reflect updated Center for Chemical Process Safety guidance

Tier 1 process safety events

While our key lagging indicator, which is the industry standard ICCA (International Council of Chemical Associations) process safety incident severity rate, has reduced to 1.0, we saw an increase in our Tier 1 process safety events (see page 39).

	2019/20	2018/19 ⁴	2017/18	2016/17
Tier 1	0.11	0.091	0.035	0

Number of events / 1 million hours

Trade union health and safety representation

9 GRI 403-1

We have 39 active trade unions on our sites and 27 have representation on their local health and safety committee. A total of 27 sites have formal trade union agreements that cover health and safety topics, as detailed in the table:

Topic	% sites covered
Use of personal protective equipment	96
Participation of worker representatives in health and safety inspections and investigations	85
Training and education	89
Complaints mechanisms	85
The right to refuse unsafe work	85
Periodic inspections	85

Speak up reports

9 GRI 406

We received 123 speak up reports in 2019/20, which, given our size, is in line with the industry norm in terms of volume. Details of the areas of concern / allegations raised are as follows:

Concern / allegation raised	Number of cases
Bribery and corruption	13
Business and financial reporting	2
Computer, email and internet use	1
Confidential information and intellectual property	1
Conflict of interest	11
Discrimination including harassment and retaliation	58
Employee rights	7
Other or general query	6
Environmental protection, product stewardship or health and safety	7
Fraud, money laundering and embezzlement	5
Misconduct or inappropriate behaviour	8
Substance abuse	1
Trade and export controls	1
Violence or threats	2
Total	123

We note the number in the 'discrimination' category is high in relation to the other categories (although in line with industry norms) and a number of these related to broad employee relations issues which were subsequently addressed. All reports are taken seriously and we view the total number of speak ups (123) as a positive reflection of the confidence in the process. Within the same reporting period, 102 speak up cases were closed, 46 (45%) of which were upheld. In 81 (79%) of all cases, recommendations were identified and tailored to the findings including, enhancements to procedures, implementation of new or improvements to existing financial and other internal controls, communication and trainings, and coaching for employees with identified performance issues.

Other Information

GRI Standard Content Index

This report has been prepared in accordance with GRI Standard: Core Option

General disclosures in accordance with GRI 102

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GRI-404 Training and education 2016	404-2; 404-3	42; 44
Responsible sourcing		
GRI-103 Management approach 2016	103	32; 38; 49; 218
GRI-308 Supplier environmental assessment 2016	308-1; 308-2	49
GRI-414 Supplier social assessment 2016	414-1; 414-2	49
GRI-407 Freedom of association and collective bargaining 2016	407-1	not disclosed
Diversity and inclusion		
GRI-103 Management approach 2016	103	38; 44; 217
GRI-405 Diversity and equal opportunity 2016	405-1; 405-2	43; 44
GRI-406 Non-discrimination 2016	406-1	221
Community engagement		
GRI-103 Management approach 2016	103	36; 52; 217
GRI-413 Local communities 2016	413-1	not disclosed

Other Information

Shareholder information

Johnson Matthey share price as at 31st March

	2015	2016	2017	2018	2019	2020
	3,386p	2,744p	3,080p	3,042p	3,142p	1,798p

By location

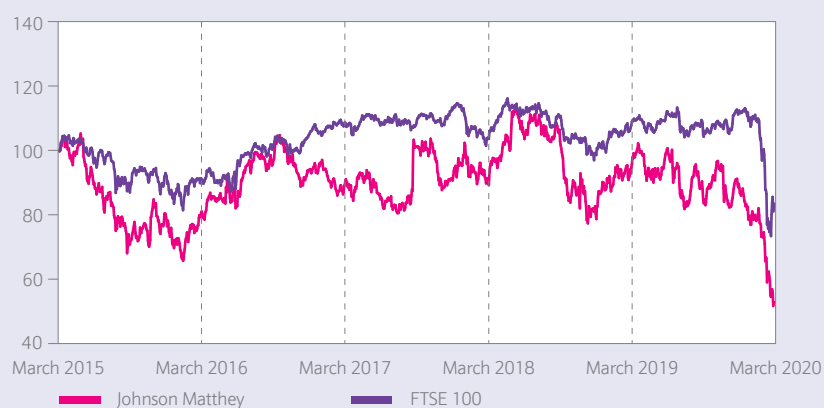
	Number of shares	Percentage
UK and Eire	100,571,441	50.6
USA and Canada	51,522,721	25.9
Continental Europe	27,374,032	13.8
Asia Pacific	6,814,466	3.4
Rest of World	1,863,224	0.9
Unidentified	10,794,722	5.4
Total	198,940,606	100.0

By category

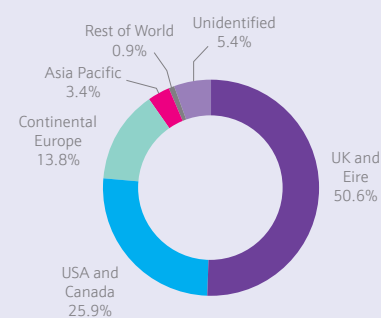
	Number of shares	Percentage
Investment and unit trusts	82,965,680	41.7
Pension funds	29,898,021	15
Individuals	13,100,723	6.6
Custodians	6,541,123	3.3
Insurance companies	5,946,185	3
Treasury shares and employee share schemes	7,692,150	3.9
Sovereign wealth funds	6,275,931	3.2
Charities	1,217,557	0.6
Other	45,303,236	22.8
Total	198,940,606	100.0

By size of holding

	Number of holdings	Percentage	Number of shares	Percentage
1 – 1,000	4,813	72.2	1,485,369	0.8
1,001 – 10,000	1,243	18.7	3,495,668	1.7
10,001 – 100,000	377	5.7	13,020,136	6.5
100,001 – 1,000,000	196	2.9	60,413,541	30.4
1,000,001 – 5,000,000	25	0.4	46,894,554	23.6
5,000,001 and over	7	0.1	73,631,338	37.0
Total	6,661	100.0	198,940,606	100.0

Johnson Matthey share price five year performance versus FTSE 100
Rebased to 100 at 1st April 2015

By Location



Share dealing services

A telephone and internet dealing service for UK shareholders is provided by the company's registrars, Equiniti. For further information, including Equiniti's terms and conditions and details of their fees, log on to www.shareview.co.uk/dealing or call 03456 037 037* (in the UK); +44 121 415 7560 (outside the UK).

Dividend – pence per share

	2016	2017	2018	2019	2020
Interim	19.5	20.5	21.75	23.25	24.50
Final	52.0	54.5	58.25	62.25	31.125
Total ordinary	71.5	75.0	80.0	85.5	55.625
Special	150.0	–	–	–	–

Given the heightened degree of current uncertainty, the board will propose a final ordinary dividend for the year of 31.125 pence, representing half the level of the 2018/19 final dividend. The board considers that the final dividend appropriately balances the importance of dividends to shareholders whilst preserving balance sheet strength and financial flexibility to continue to invest in our business. The board anticipates restoring future dividends to the level seen prior to the COVID-19 pandemic, when circumstances permit.

Dividend payments and DRIP

Dividends can be paid directly into shareholders' bank or building society accounts. Shareholders wishing to take advantage of this facility should contact the company's registrars, Equiniti, or complete the dividend mandate form attached to their dividend cheque. A Dividend Reinvestment Plan (DRIP) is also available which allows shareholders to purchase additional shares in the company. Further information can be obtained from Equiniti, Aspect House, Spencer Road, Lancing, West Sussex BN99 6DA. Telephone 0371 384 2268* (in the UK); +44 121 415 7047 (outside the UK). They can also be contacted via their website at www.shareview.co.uk.

American Depositary Receipts

Johnson Matthey has a sponsored Level 1 American Depositary Receipt (ADR) programme which BNY Mellon administers and for which it acts as Depository. Each ADR represents two Johnson Matthey ordinary shares.

The ADRs trade on the US over-the-counter (OTC) market under the symbol JMPLY. When dividends are paid to shareholders, the Depository converts those dividends into US dollars, net of fees and expenses, and distributes the net amount to ADR holders.

For enquiries, BNY Mellon can be contacted on 1-888-BNY-ADRS (1-888-269-2377) toll free if you are calling from within the US. Alternatively, they can be contacted by e-mail at shrrelations@cpushareownerservices.com or via their website at www.adrbnymellon.com.

Share price and group information

Information on the company's current share price together with copies of the group's annual and half-yearly reports and major presentations to analysts and institutional shareholders are available on the Johnson Matthey website: www.matthey.com.

The website's Investors section contains extensive information and a number of tools which will be of assistance to investors including historic share price information downloads and a share price charting facility.

For capital gains tax purposes the mid-market price of the company's ordinary shares on 31st March 1982 was 253 pence.

Enquiries

Shareholders who wish to contact Johnson Matthey Plc on any matter relating to their shareholding are invited to contact the company's registrars, Equiniti, Aspect House, Spencer Road, Lancing, West Sussex BN99 6DA. Telephone 0371 384 2344* (in the UK); +44 121 415 7047 (outside the UK) or via their website: www.shareview.co.uk.

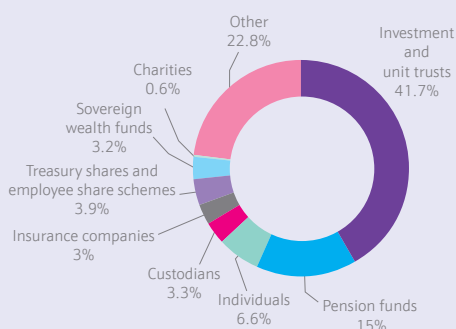
Shareholders may also telephone the company on +44 20 7269 8400 or write to:

The Company Secretary
Johnson Matthey Plc
5th Floor
25 Farringdon Street
London, UK
EC4A 4AB

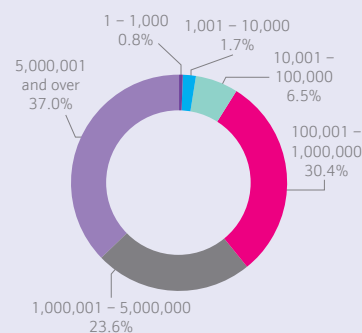
For other enquiries shareholders may contact the Investor Relations team at the above address and telephone number, by emailing jmir@matthey.com, or via www.matthey.com

* Lines are open 8.30am to 5.30pm Monday to Friday excluding public holidays in England and Wales.

By Category



By Size of holding



Other Information

Glossary of terms

2006 Act	The Companies Act 2006	ISO 14000	Internationally recognised series of standards which specify the requirements for an environmental management system
ADHD	Attention Deficit Hyperactivity Disorder	ISO 19001	International standard giving guidelines for management systems auditing
ADR	American Depositary Receipt	ISO 50001	International standard giving guidelines on an energy management system
AGM	Annual general meeting	JM	Johnson Matthey
APB	Auditing Practices Board	JMEPS	Johnson Matthey Employees Pension Scheme
API	Active pharmaceutical ingredient	KfW	KfW IPEX – Bank GmbH
BEV	Battery electric vehicle	KPI	Key performance indicator
CAGR	Compound annual growth rate	LCH	Low carbon hydrogen
Capital expenditure to depreciation ratio	Capital expenditure divided by depreciation Depreciation is the depreciation charge of property, plant and equipment plus the amortisation charge of other intangible assets excluding amortisation of acquired intangibles	LDV	Light duty vehicle
CDP	Carbon Disclosure Project	LFP	Lithium iron phosphate, a cathode material
CEFIC	The Council of European Chemical Industry	LTIIR	Lost time injury and illness rate
CGU	Cash-generating unit	LTIP	Long term incentive plan
CH ₄	Methane	Margin	Underlying operating profit divided by sales excluding precious metals
CO	Carbon monoxide	MEA	Membrane electrode assembly
CO ₂	Carbon dioxide	NOx	Oxides of nitrogen
COD	Chemical oxygen demand	NPI	New product introduction
CPI	Consumer price index	OSHA	Occupational Safety and Health Administration
CSR	Corporate social responsibility	OTC	Over-the-counter
D&I	Diversity and inclusion	PBT	Profit before tax
DRIP	Dividend Reinvestment Plan	Pgm	Platinum group metal
EBITDA	Earnings before interest, tax, depreciation and amortisation	PILON	Payments in lieu of notice
EHS	Environment, health and safety	PSP	Performance share plan
EIB	European Investment Bank	PSRM	Process safety risk management
eLNO®	JM's portfolio of next generation ultra high energy density battery material	R&D	Research and development
EPS	Earnings per share	RC 14001	An internationally recognised standard, an expansion of ISO 14001
ESG	Environment, social and governance	REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation EU chemical control legislation which came into force in June 2007
ESOT	Employee Share Ownership Trust	ROIC	Return on invested capital
EU	European Union	RPI	Retail price index
FCA	Financial Conduct Authority	RSP	Restricted share plan
FCEV	Fuel cell electric vehicle	SAICM	Strategic Approach to International Chemicals Management
FRC	Financial Reporting Council	Sales	Sales excluding the value of precious metals
Free cash flow	Net cash flow from operating activities, after net interest paid, net purchases of non-current assets and investments and dividends received from joint venture	SIC	Standing Interpretations Committee
Fuel cell	Technology which converts hydrogen or other fuels (methanol, natural gas) into clean electricity	SIP	Share incentive plan
GAAP	Generally accepted accounting principles	SOx	Oxides of sulphur
GHG	Greenhouse gas	SPV	Special purpose vehicle
GMC	Group Management Committee	SVHC	Substance of very high concern
GRI	Global Reporting Initiative	The Code	The UK Corporate Governance Code, issued by the FRC
GWP	Global warming potential	TPI	Third party intermediary
HDD	Heavy duty diesel	TRIIR	Total recordable injury and illness rate
HDV	Heavy duty vehicle	TSCA	Toxic Substances Control Act
HR	Human resources	UN	United Nations
IAS	International Accounting Standards	UN SDGs	United Nations Sustainable Development Goals
IASB	International Accounting Standards Board	VOC	Volatile organic compound
IFRIC	International Financial Reporting	Working capital days	Non-precious metal related inventories, trade and other receivables and trade and other payables (including any classified as held for sale) divided by sales excluding precious metals for the last three months multiplied by 90 days
IFRS	International Financial Reporting Standards	ZEV	Zero emission vehicle
Incoterms®	The International Chamber of Commerce's International Commercial Terms		
ISA	International Standards on Auditing		

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Financial calendar 2020/21

2020

18th June

Ex dividend date

19th June

Final dividend record date

23rd July

129th Annual General Meeting (AGM)

4th August

Payment of final dividend subject to the approval of shareholders at the AGM

19th November

Announcement of results for the six months ending 30th September 2020

26th November

Ex dividend date

27th November

Interim dividend record date

2021 (provisional)*

4th February

Payment of interim dividend

27th May

Announcement of results for year ending 31st March 2021

29th July

130th AGM

* 2021 dates will be published on our website, matthey.com/financial-calendar, once finalised.

Company details

Registered Office

Johnson Matthey Plc

5th Floor
25 Farringdon Street
London EC4A 4AB
Telephone: +44 (0)20 7269 8400
www.matthey.com
E-mail: [jmpmr@matthey.com](mailto:jmpr@matthey.com)

Johnson Matthey Plc is a public company limited by shares registered in England and Wales with the registered number 33774.

Professional Advisers

Auditor

PricewaterhouseCoopers LLP
1 Embankment Place
London WC2N 6RH

Brokers

Citigroup Global Markets Limited
Citigroup Centre
33 Canada Square
London EC14 5LB

J. P. Morgan Cazenove
25 Bank Street
Canary Wharf
London E14 5JP

Lawyers

Herbert Smith Freehills LLP
Exchange House
Primrose Street
London EC2A 2EG

Registrar

Equiniti
Aspect House
Spencer Road
Lancing
West Sussex
BN99 6DA
Telephone: 0371 384 2344 (in the UK)*
+44 (0)121 415 7047 (outside the UK)
www.shareview.co.uk

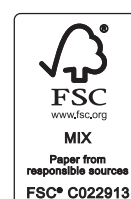
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Johnson Matthey Plc
5th Floor
25 Farringdon Street
London EC4A 4AB
UK
Tel: +44 20 7269 8400

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