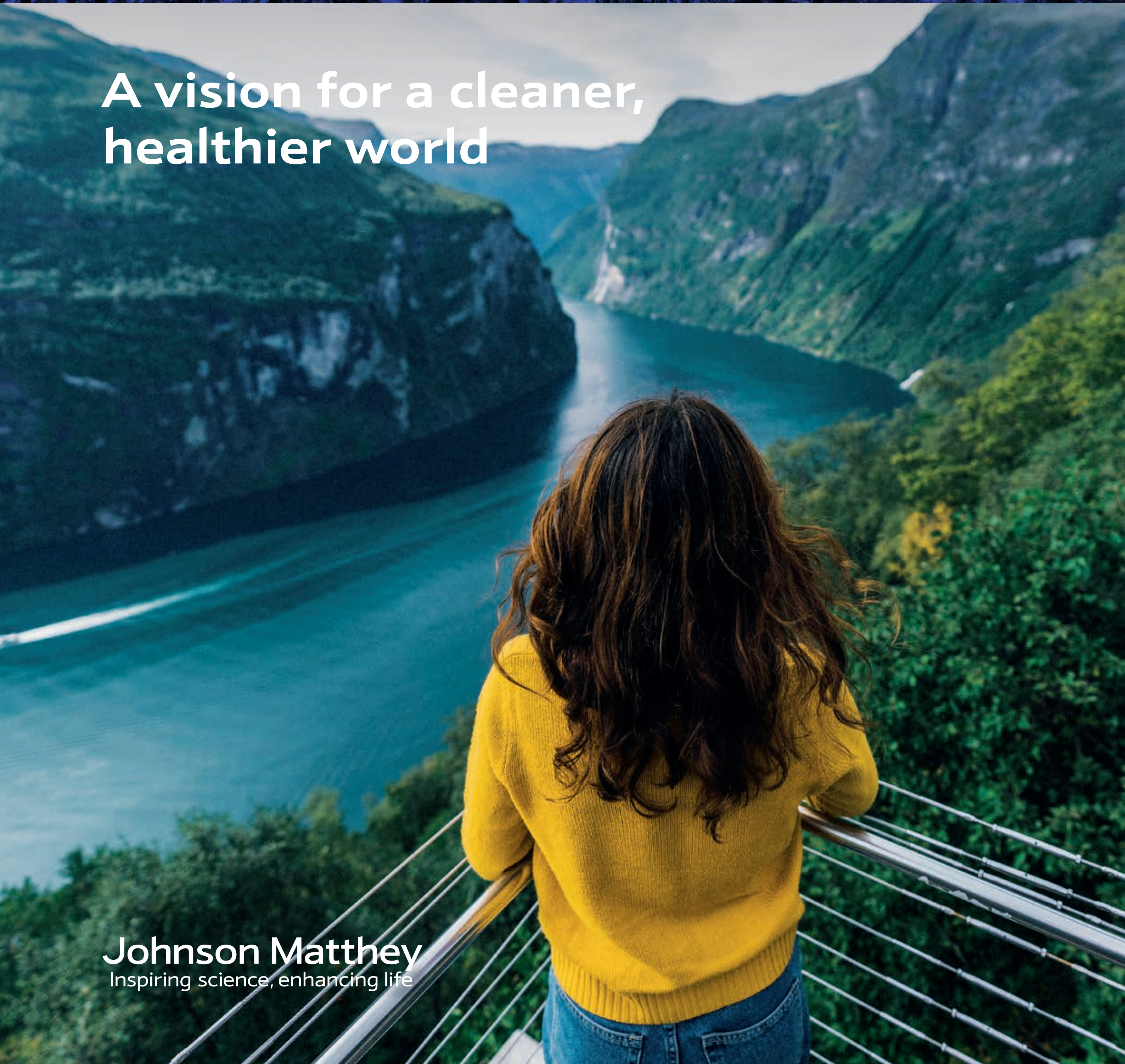
JM

2021 Annual Report and Accounts

A vision for a cleaner, healthier world



Johnson Matthey
Inspiring science, enhancing life

Contents

Our integrated report for 2021

Our report combines all aspects of the group's performance into one document and reflects how we are addressing areas which we believe have the potential to have a material impact on our business.

Unless otherwise stated, performance data is for the year ended 31st March 2021.

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

Sustainability reporting

Our 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.

This year's report also aligns with the Sustainability Accounting Standards Board (SASB) chemical sector reporting requirements for the first time, to provide increased transparency for our stakeholders.

Our Task Force on Climate-related Financial Disclosures (TCFD) report is included within the sustainable business section of the report (pages 60 to 87). We provide a summary report on the progress made during the year against each of the four pillars of TCFD and plan to demonstrate full compliance in our 2022 annual report.

Navigation

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

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

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.

Johnson Matthey: the catalyst for a sustainable planet

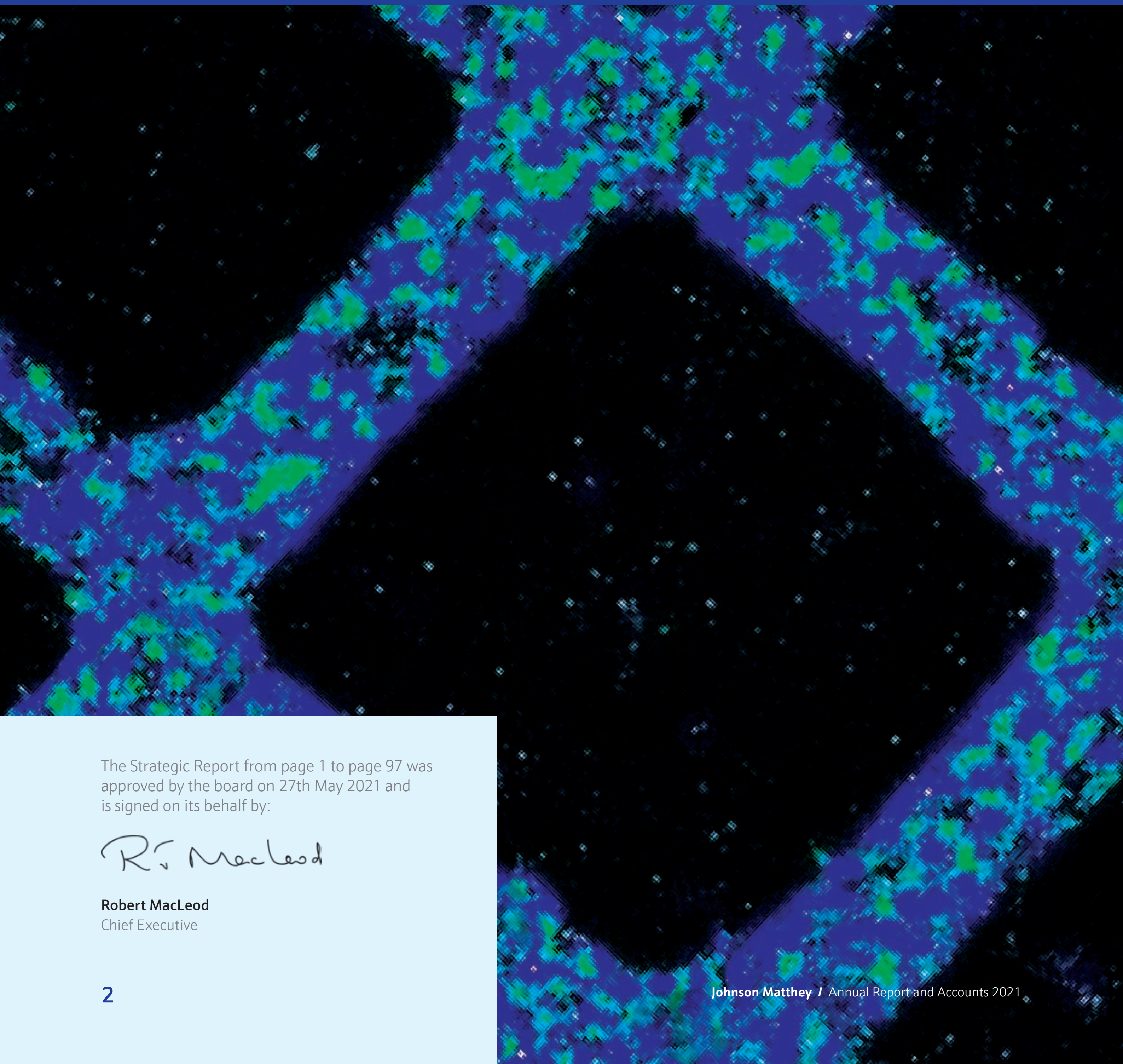
Have you ever wondered how our planet can sustain modern, healthy lifestyles for a growing population? Have you thought about how the way we travel, heat our homes and use natural resources will have to change to meet the ambitious net zero carbon emissions targets that so many governments and companies are making? Or how we might create a fairer society for all in a post-COVID-19 world – a world in which businesses use their skills and scale to 'build back better'?

We have. Johnson Matthey's vision is for a world that's cleaner and healthier, today and for future generations. And so we are making it our business to help address the four essential transitions the world needs for a sustainable future: transport, energy, decarbonising chemicals production and a circular economy.

How? By drawing on our deep expertise in the transformative power of metals chemistry.

Expertise that we've developed and used for more than 200 years to address some of society's biggest challenges. And it's more important now than ever, as we help our customers and our own business adapt processes and products to reach the sustainability goals that our planet and society are depending on.

Strategic Report



The Strategic Report from page 1 to page 97 was approved by the board on 27th May 2021 and is signed on its behalf by:

Robert MacLeod
Chief Executive

Contents

Case study

Cleaning the air we breathe

According to the World Health Organisation, 4.2 million people die every year as a result of exposure to outdoor air pollution, while 91% of the world's population lives in places where air quality exceeds safe limits.

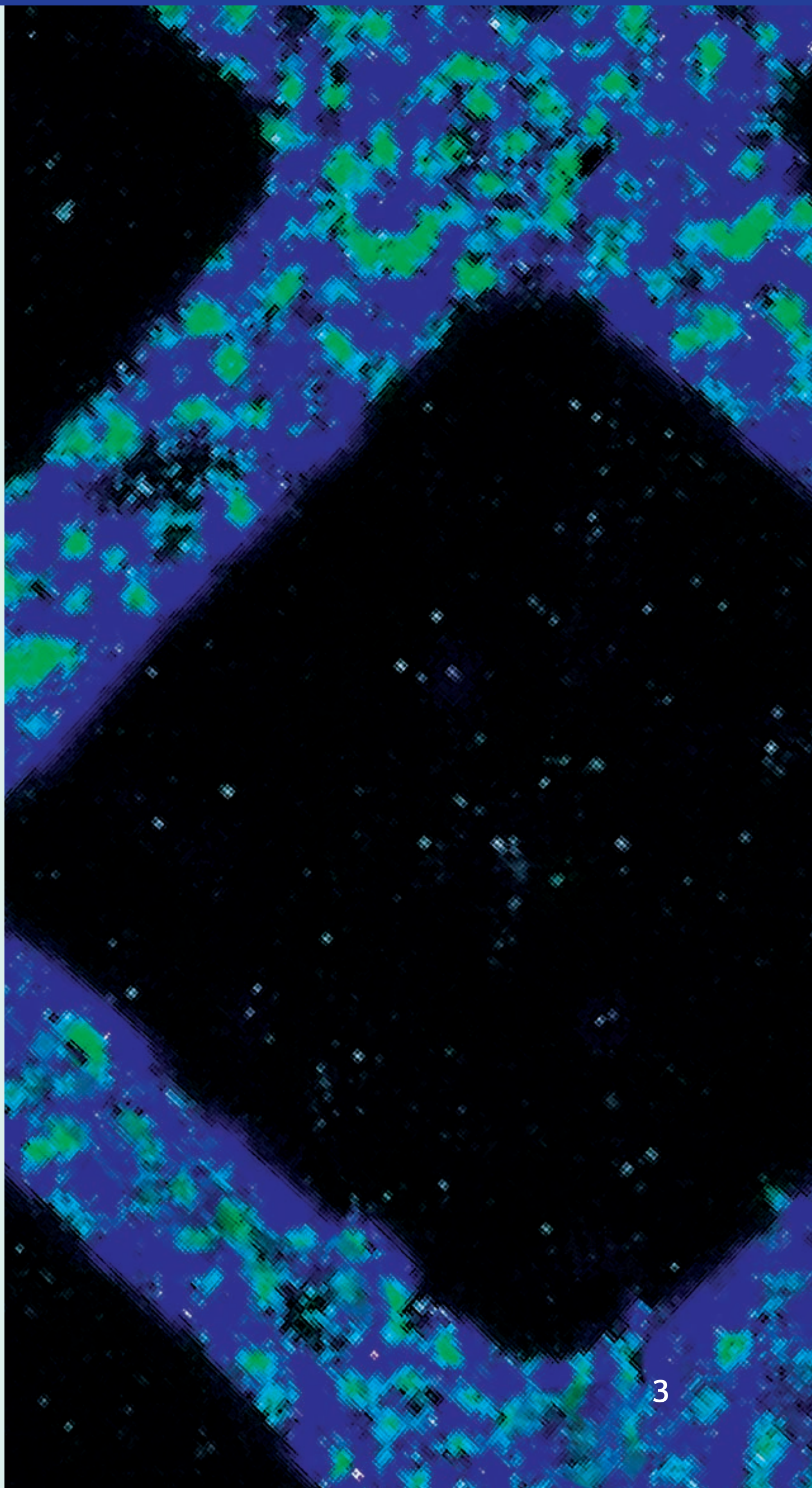
We've been at the forefront of the fight against air pollution for decades, producing our first commercial autocatalyst in the 1970s. Controls on how much a new car can emit have been tightening ever since. And they continue to get tighter. Both in the EU and here in China, for example, are anticipating new emissions standard soon, bringing in the strictest regulations for vehicle emissions yet.

Our R&D teams are already developing the next generation of catalysts that will help our customers meet these regulations.

It's exciting work. And it's important since the internal combustion engine isn't going to disappear overnight. This is particularly true for large, heavy duty vehicles like trucks, which are harder to decarbonise. And with the number of people living in cities expected to keep rising, catalysts to control the emissions from our vehicles are more vital than ever.

It's great to know that one in every three new cars on the road is fitted with a JM catalyst, working constantly to clean the air we breathe.

Zhou Shang
Scientist



Technologies to drive down transport emissions

Our global transport system is going through its biggest transition in decades.

Climate change and increasingly stringent air quality regulations are pushing the automotive industry to build cleaner engines and use new fuel sources, such as batteries and hydrogen fuel cells.

That's where we come in.

Cleaner air for all

Today, our emission control technologies are used in hundreds of millions of cars, buses and trucks around the world, helping to remove millions of tonnes of harmful pollutants, like nitrogen oxides and particulates, produced by gasoline and diesel engines. The end result is fewer harmful emissions from vehicles and cleaner air for everyone.

Despite a growing number of government deadlines to phase out petrol and diesel vehicles, we're not going to see the traditional combustion engine disappear any time soon. So, we'll continue to innovate and improve these technologies to keep people moving in the cleanest way possible while the transition towards battery and fuel cell vehicles takes place.

New technology to enable the transition

Our technology is central to this transition. Because we understand the part metals play in complex reactions and electrochemistry inside batteries, we're designing the next generation of battery cathode materials that will help drive the mass adoption of electric vehicles (EVs) in the next decade. These nickel-rich, advanced technologies – that we call eLNO® – can help increase the amount of energy a battery holds allowing a car to travel further on a single charge. And because every customer's needs and challenges are unique to them, we can tailor our cathode material products to their precise technical requirements.

Creating sustainable value chains

But we also have a responsibility to use our planet's resources wisely and lower the impact of our own operations. That's why the new battery materials factories we're building in Poland and Finland will be powered by electricity from renewable sources as soon as they start production, and we've committed to make the production of our eLNO products climate neutral by 2035. We've also signed up to the Global Battery Alliance's ten guiding principles to help establish a sustainable battery value chain.

Batteries are just one of the ways in which we can power a more sustainable transport network, though. For decades we've been using our knowledge of metals chemistry and electrochemistry to design and make the specialist catalyst coated membranes used inside fuel cells. Our very first fuel cell technologies even helped power the US space programme in the 1960s. Today, our focus is firmly back on Earth and our fuel cell technologies help vehicles that are less suited to batteries, such as long range trucks, and high use vehicles like buses, fork-lift trucks and some cars, run on the clean power of hydrogen.

There are many scientific, financial and policy challenges to overcome in both battery and fuel cell technology. But we're working with our customers today to tackle those challenges and help make the transport revolution a reality.

Our impact

1 in 3

new cars carries one of our emission control catalysts

2.5m tonnes

pollutants prevented from getting into the air by our catalysts every year

211k tonnes

CO_2 equivalent avoided by our battery materials and fuel cell technology in 2020/21

Our market

~1,800kT

demand for automotive high energy cathode materials expected by 2030[1]

5%

of world's trucks will be powered by fuel cells by 2030[2]

1 IHS and Johnson Matthey estimates.

2 LMC, KGP and Johnson Matthey assumptions which equate to ~0.4 million trucks.

Case study

Decarbonising heavy duty transport

Heavy duty transport is essential for keeping goods and people moving. But it's also a major source of carbon emissions. In the EU alone, lorries, buses and coaches represent around one quarter of all road transport emissions.

Fuel cells have the potential to help decarbonise this part of our transport system. They're ideal for heavy duty or high usage applications, such as trucks and buses, because of their longer range, low relative weight and fast refuelling times compared to battery alternatives. They use clean or low carbon fuels, such as hydrogen, to generate power without producing harmful emissions, since water is the only byproduct.

This is a growing market, with 5% of trucks globally expected to be powered by fuel cells by 2030, rising to one third by 2040.

We're now scaling up our business to meet demand. For example, we've built a new facility in Shanghai, China, where the market for our catalyst coated membranes is expected to grow to more than £1 billion a year by 2030. Our broader expansion programme is now complete to double manufacturing capacity for products that will enable 2GW a year of power generation from fuel cells.

We also announced a multi-million pound deal and joint development agreement with SFC Energy, a global leader in hydrogen and direct methanol fuel cells, to supply at least 400,000 membrane electrode assemblies.

Commercialising low carbon power to transform our energy systems

If the transport transition is all about moving people and goods while lowering emissions, the energy transition is about finding sustainable ways to power our world.

Hydrogen has a huge role to play – in fact, reaching net zero is not possible without it. As well as being used in fuel cells for vehicles and as a method to store and move power, hydrogen can replace natural gas as a fuel source for big industrial turbines. That's why more and more industries are looking at hydrogen technologies to help them decarbonise.

Hydrogen – the wonder element

And no wonder. When burned as a fuel, hydrogen's only byproduct is water. It's the most abundant element in the universe, but it only exists in compounds, so, to be useful, it must be separated from other elements – think of the H in H_2O (water) or CH_4 (methane). So how that hydrogen is made – and the impact the process has on the planet – matters too.

Today, most hydrogen is made using fossil fuels, which comes with associated carbon dioxide (CO_2) emissions – this is known as grey hydrogen, and JM is a leading producer of the catalysts used to make grey hydrogen, with 40% of market share globally.

But it is also possible to make lower carbon 'blue' and 'green' hydrogen.

Leading in low carbon hydrogen

'Blue' hydrogen is made from natural gas with the associated CO_2 emissions captured and stored away. Here too, we have leading technology to produce low carbon hydrogen that uses less natural gas, allows more than 95% of the CO_2 to be captured, and costs less than the other options. The technology won us a prestigious IChemE Energy Award in 2020. We are now commercialising that technology at scale and using it in the UK's two flagship clean hydrogen projects – HyNet and Acorn.

Building towards the green revolution

'Green' hydrogen, meanwhile, is made using renewable energy, such as solar or wind, and water electrolysis. While this method is not as mature, it has the potential to help some of our biggest, hard-to-decarbonise industries reach their net zero targets.

Electrolysis and fuel cells share a lot of similar technologies, so we're using our metals and catalysis expertise to develop the next generation of electrolyser catalyst coated membranes and help commercialise the production of green hydrogen.

Our impact

600k tonnes

per annum of CO_2 captured by the HyNet project, equivalent to taking 250,000 cars off the road – it will produce 80kT of hydrogen per year

10s of MW

green hydrogen capacity enabled by our products – enough to power several thousand homes

Our market

2.5-fold

increase in global hydrogen production by 2030[1]

18%

of energy per annum derived from hydrogen sources by 2050, preventing 6 gigatonnes of CO_2 entering the atmosphere

[1] Source: International Energy Agency.

Case study

Enabling the transition to the hydrogen economy

Whether it's blue or green, hydrogen will play a pivotal role in decarbonising our societies. By 2050 we'll need eight times more hydrogen than we produce today.

JM's experience in grey hydrogen production, methanol process technology and fuel cells mean we're perfectly positioned to lead in both.

This year we made leaps in the commercialisation of our green hydrogen solutions. We appointed Eugene McKenna as our first Managing Director of green hydrogen. He moves from his role leading business development, strategy and innovation within JM's Efficient Natural Resources Sector, where he focused on a pipeline of innovative low carbon technologies including those for clean hydrogen.

We also announced new green hydrogen capacity for the production of catalyst coated membranes. This capacity is co-located with JM's cutting edge plant in Swindon, UK, where high performance fuel cell components including membrane electrode assemblies, catalyst coated membranes, and fuel processor catalysts are produced at scale. The development will enable tens of megawatts of green hydrogen production, with the ability to scale up to multi-gigawatt production with market growth.

Adapting our knowhow to help decarbonise the way chemicals are produced

Our world relies on chemicals – they are in everything from our clothes to cleaning products, food packaging to medicine.

But like transport, the industry was built on fossil fuels and will need to change if society is to reach its net zero goals.

Chemical manufacturers know how to turn raw materials like oil and gas into the chemical building blocks that are used to make the case for your smartphone or the plastic pipes that deliver clean water to your home. So finding ways to decarbonise chemical manufacturing is essential if the lifestyles that many of us enjoy are to remain sustainable. That doesn't just mean switching to more renewable forms of power (such as hydrogen) to run chemical plants – although that is important. It also means using more sustainable materials to replace fossil fuels as the 'feedstocks' that make the chemicals in the first place.

Pivoting to greener feedstocks

Our catalysis technology and process design expertise can help. Broadly speaking, our catalysts don't care about feedstocks – with the right knowhow, chemical reactions can be triggered in anything from natural gas to sugarcane to household waste.

But catalysis is just one part of a very large, complex system that has been built over decades. That means this transition isn't going to happen overnight. It will take time and investment to build new infrastructure and secure commercial levels of alternative feedstocks. In the first instance, the industry will likely combine fossil fuels with carbon capture and storage. But in the longer term, as governments continue to introduce environmental regulation, carbon taxes and deadlines, we expect to see a dramatic shift.

The future of chemicals, today

And we'll be ready when it happens. We are already working with others to commercialise a process to convert renewable feedstocks into the chemical, bio-paraxylene which is a key raw material for producing renewable polyester. And our catalysts and technology have been chosen for the world's first wind to methanol plant in Chile.

Our impact

900k litres

climate neutral methanol to be produced each year using JM technology in the new Haru Oni wind to methanol plant in Chile

Our market

90%

of chemical processes use catalysts

Case study

World first wind to methanol plant

Methanol is an important chemical found in a wide variety of end products, from fuels to solvents to antifreeze. But today most of it is made from fossil fuels, which create carbon dioxide (CO_2) emissions.

Using our expertise in catalysis and process design, plus our flexible catalysts, which can be used with different feedstocks, we're helping the chemicals industry find ways to reduce those emissions.

For example, we're now part of the Haru Oni project in Patagonia, Chile, being led by Siemens Energy. The project will be the world's first integrated large scale plant to produce methanol from wind power, instead of a more carbon intensive feedstock such as coal.

To do that, we are licensing our methanol technology and supplying the engineering, catalysts and equipment needed to make around 900,000 litres a year of low carbon methanol as early as 2022. All of that using only green hydrogen made from wind power and CO_2 from the air.

The project will demonstrate the potential for innovation and collaboration to help decarbonise chemicals production.

Recycling to create a truly circular economy

We all know it's important to recycle to reduce waste, prevent pollution and protect our planet's precious, finite resources.

But, if we are to sustain a growing population with modern lifestyles, we must go a lot further in building a truly circular economy.

That means a system where everything is designed, produced and made for use and reuse, over and over again.

This is particularly important for the energy and transport transitions, where the products we make, like catalytic converters, battery materials and fuel cells, rely on scarce metals, such as palladium, platinum and cobalt. Not only does an ounce of recycled platinum group metal (pgm) contain around 50 times less embedded carbon than newly mined pgm, but the more we can recycle and reuse, the less we need to mine in the first place, which itself has associated social and environmental impacts.

The world's first circular economy

JM helped create one of the world's first circular economies in platinum group metals, and today we're the world's largest recycler of pgms. Our pgm extraction and separation processes are so advanced that we can recycle platinum, for example, to a minimum purity of 99.95%. And all our metal-containing catalysts are designed to accelerate chemical reactions using the minimum amount of metal.

Applying our expertise to develop new recycling solutions

To create a truly circular economy, however, we need to think about how we recycle new products before we've even made them. That's why we're working hard to take what we already know about pgm recycling and apply it to our battery, fuel cell and green hydrogen technologies. For example, in April 2021 we announced that we're partnering with Stena Recycling Group on technologies to recycle and reuse the scarce metals from used electric vehicle batteries in new battery materials.

Our impact

99.95% purity

when recycling platinum using our advanced processes

~40% reduction

in platinum used per kW in our fuel cell technologies in ten years

Our market

~10-fold

estimated increase in quantity of lithium-ion batteries used in vehicles and power storage by 2030, leading to exponential increase in demand for recycling

Case study

Creating a sustainable battery supply chain

Demand for electric vehicles (EVs) is expected to grow rapidly in the next decade. That means demand for the materials that go into EV batteries will rise too. For example, the quantity of lithium-ion batteries used in vehicles and power storage is expected to increase nearly ten-fold in the next decade.

To help conserve these scarce resources, the world needs to find more sustainable ways to make, use and recycle battery materials.

That's why we're taking several important steps to help create a more sustainable battery supply chain. For example, we're working with Stena Recycling Group, a leading recycler of industrial waste and end of life products, to develop an efficient European value chain for recycling lithium-ion batteries and cell manufacturing materials.

We're also developing additional steps to produce fully refined materials that are suitable for the lithium-ion battery manufacturing process to help increase the recycled content of new batteries. And we continue to work with RCS Global to improve visibility in our own supply chain so that we can ethically secure the materials our business needs.

Meanwhile, we're finding ways to make our operations more sustainable too. For example, for our new battery materials plant in Finland we are developing a unique system to capture and treat effluent waste. The plant will also use 100% renewable energy from the day it begins production.

At the heart of sustainability: the transformative power of metals chemistry

Metals are extraordinary, and it's their properties that make everything we do at JM a possibility.

Their make-up at an atomic level has made a huge difference to the world around us.

The way some metals are structured helps reduce the amount of energy needed to create a chemical reaction, while unique shapes on the surface of metals create the conditions for specific reactions to occur in the first place. It is a complex, yet remarkably efficient, process.

From tiny changes to huge effects

We believe our team of brilliant scientists and engineers understands better than anyone how scarce metals work at both an atomic level and as part of a bigger system, whether that's in a car exhaust, a chemical reactor or even the human body. We know how they behave and how they interact so that reactions happen quickly, efficiently and with the minimum amount of energy used and waste produced. We use this knowledge to design and customise products and solutions for our customers that use precise amounts of these scarce metals. This protects our planet's precious resources and lowers the cost of the key technologies that have the potential to revolutionise the way we move, use power and do more with less.

Our expertise helps us to make catalysts that remove pollution from cars, trucks and buses. It helps us develop new catalytic technologies that turn renewable energy sources into clean burning hydrogen and make clever new materials for batteries in electric vehicles. It helps us design highly efficient catalysts, chemicals plants and manufacturing processes for our customers. And it helps us recycle and reuse critical metals so that we can keep more of these scarce resources in the ground. Our technology is even helping to turn household waste into jet fuel.

Creating a cleaner, healthier world, for everyone

JM has spent two centuries understanding how metals work to develop and commercialise the products, technologies and processes our customers need to solve the problems of the times. But creating a cleaner, healthier world isn't just about strong science, effectively commercialised.

It's also about embedding sustainability into every aspect of our business – from promoting ethical supply chains and reducing greenhouse gas (GHG) emissions in our own operations, to keeping our people safe at work while building a diverse and inclusive team that reflects the society in which we operate. It's about recognising that we are part of a wider ecosystem and that we have the skills and knowhow to help the world build back better. And so, in 2021, we announced our goal to be net zero by 2040 together with a set of ambitious new sustainability commitments and targets.

The transitions we're facing will be our most challenging yet. But they also represent an opportunity to create a fairer, more sustainable future for all. With our smart people, financial strength and unique technology based on metals chemistry, Johnson Matthey can be the catalyst that enables these shifts, making this sustainable future a reality for all.

Our impact

84.7%

of sales today from products that contribute positively to our four priority UN Sustainable Development Goals; target to increase to more than 95% by 2030

Our impact

Net zero by 2040

with science based targets to reduce our greenhouse gas emissions by 2030

Case study

Tapping into innovation ecosystems

JM is a company with science and innovation right at its core. It's been part of our DNA for more than 200 years, allowing us to lead the way first in metallurgy, then to areas of real benefit to society like reducing pollution, relieving pain and making the most efficient use of the planet's natural resources.

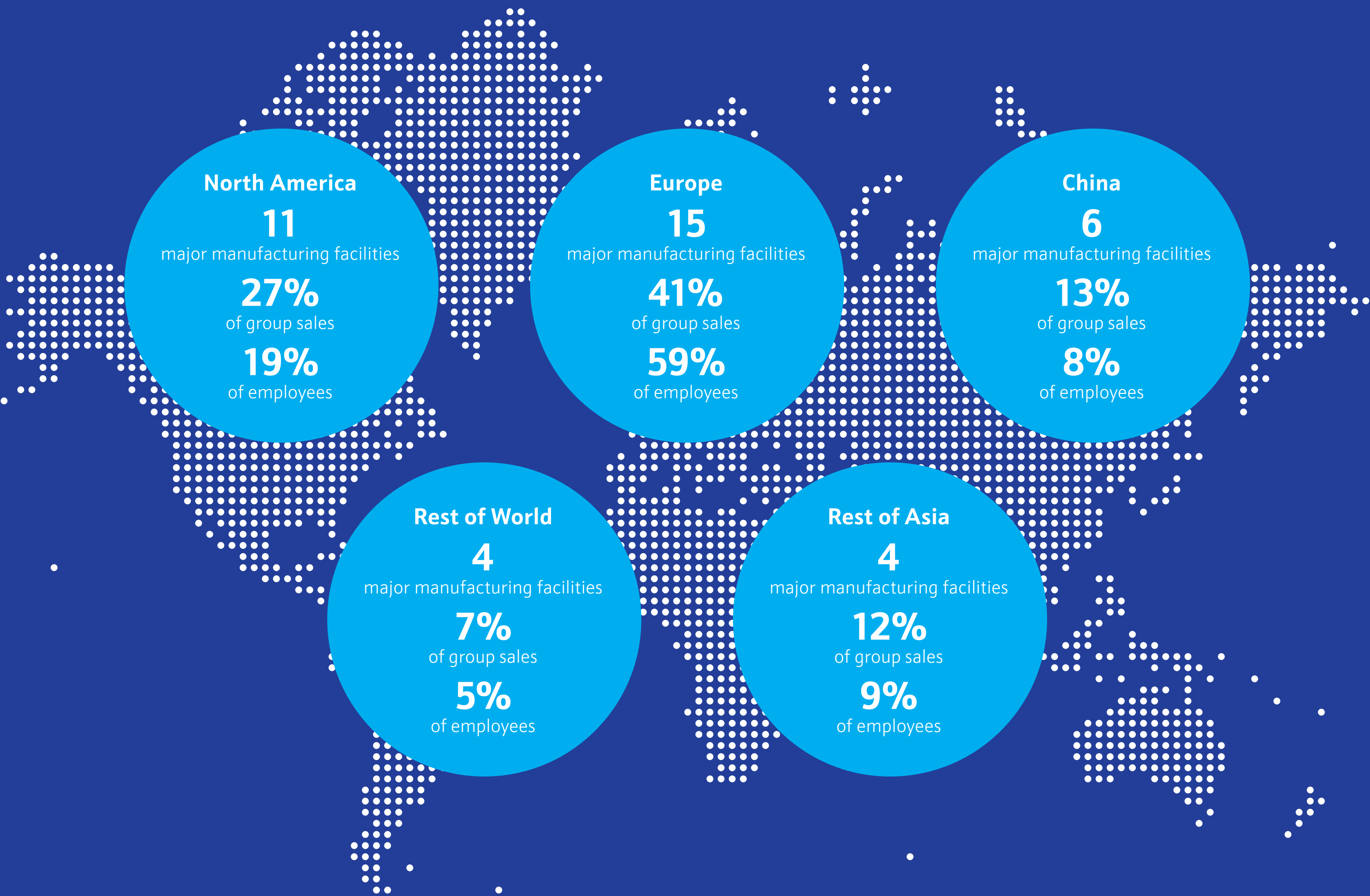
Now as we lean into tackling the challenges of climate change and enabling the big transitions, we must innovate even faster than before. But we know innovation doesn't happen in a vacuum. Achieving our vision means collaboration and cooperation both inside JM and outside, with partners across our value chains including customers, industry partners, start-ups and universities.

This year we announced our partnership with the Environmental Sustainability Innovation Lab (ESIL). Based in Israel, ESIL will provide a platform for establishing breakthrough sustainable innovation solutions and disruptive solutions to environmental problems. It will enable a dynamic ecosystem delivering economically viable technology solutions that support a socially just transition to a net zero world.

Last year we joined Greentown Labs, the largest cleantech start-up incubator in North America as its newest Gigawatt partner. And we have also been playing a leadership role in building new ecosystems like the Carbon-to-Value (C2V) initiative, sponsored by New York State Energy Research and Development Authority and the Canadian Government. As a member of the leadership council, in addition to building a start-up ecosystem in CO_2 capture and conversion technologies, we have also been able to develop our network with key stakeholders from industry and government from the US and Canada.

As both the pace and breadth of clean technology development continue to increase, we'll continue to tap into a growing number of globally leading innovation ecosystems to help us move at pace and to help shape long term strategies in sustainability.

Our global footprint



We have ~14,580 people working in our 30+ locations around the world.

2020/21 in numbers

Robust performance and growth opportunities driven by sustainable solutions.

Revenue	Sales[1,2]	Operating profit	Underlying operating profit
£15.7bn	**£3,922m**	**£323m**	**£504m**
+8%	-5%[3]	-17%	-5%[3]
2019/20: £14.6bn	2019/20: £4,170m	2019/20: £388m	2019/20: £539m

Earnings per share	Underlying earnings per share[1,4]	Ordinary dividend per share	Cash inflow[1,5]
106.5p	**182.0p**	**70.00p**	**£305m**
-20%	-9%		
2019/20: 132.3p	2019/20: 199.2p	2019/20: 55.625p	2019/20: £52m

Our sustainability framework

We've set ourselves new ambitious sustainability goals and targets for 2030 to accelerate a cleaner, healthier world.

Read more about our framework, goals and targets on pages 60 to 85

Products and services

Sales contributing to four priority UN SDGs[6]	Gross R&D spend contributing to four priority UN SDGs[7]
84.7%	**87.3%**
2019/20: 83.6%	2019/20: 86.2%

Operations

Scope 1 and 2 GHG emissions[8]	Upstream Scope 3 GHG emissions[9] (purchased goods and services)
388,904 tonnes CO_2 equivalent	**3.1** million tonnes CO_2 equivalent
2019/20: 391,459 tonnes CO_2 equivalent	2019/20: 3.9 million tonnes CO_2 equivalent

People

Total recordable injury and illness rate[10]	Employee engagement[11]
0.56	**65%**
2019/20: 0.79	2019/20: 63%

1 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 38 on pages 243 to 246.

2 Sales excluding precious metals. For definition see pages 243 and 244.

3 At constant rates (see note 2 on page 36).

4 For definition see pages 243 to 246.

5 For definition see pages 243 to 246.

6 For definition see page 261.

7 For definition see page 261.

8 For definition see pages 261 and 262.

9 For definition see page 262.

10 For definition see page 264.

11 For definition see page 264.

Chair's statement

Patrick Thomas Chair

The team has delivered an outstanding set of results given all the challenges of COVID-19.

When I wrote my statement last year, we were some months into the COVID-19 pandemic and already witnessing the virus's enormous impact on our lives and businesses.

Despite the economic uncertainty, I spoke of my confidence in our diverse business and talented employees, knowing that you often see what a company and its people are made of during a crisis. What I have witnessed over the past 12 months more than confirmed my opinion.

So I am delighted to see such a strong set of financial results, despite the difficult economic climate we found ourselves in. The nature of our portfolio, with its range of end markets and geographies, has helped us retain our financial strength and weather the COVID-19 storm. Our results represent a huge achievement for the whole team.

It has also been an extraordinarily exciting year for Johnson Matthey, not least the board level conversations about our strategic direction.

A board uniquely equipped to guide and challenge strategy

The way our board develops strategy is, in my experience, unique, because of the incredible depth of talent our directors have in the industry. The executive team brings strategic plans to the board multiple times before we approve them – I often describe this process as like baking a cake, with board meetings providing some extra cooking time. This level of scrutiny and co-development is an integral part of our culture and has helped us anticipate and adapt to big market changes over our 200 year history. And I firmly believe it's what will successfully guide us through the next four massive societal transitions – in transport, energy, decarbonising chemicals production and the circular economy.

Of course, these transitions were already happening, but COVID-19 has shone new light on the fragility of our planet and humanity's place in its complex ecosystem. Climate change, environmental stewardship and social justice have all moved up the agenda. As a result, governments and companies are setting tough sustainability targets, including net zero, to help the world 'build back greener'.

Our purpose places us at the centre of the sustainability transitions

All of which sits right at the heart of Johnson Matthey's vision for a cleaner, healthier world, today and for future generations. Johnson Matthey has an exciting opportunity to help our customers deliver the four transitions needed for a more sustainable future. It's no coincidence that 87% of our R&D investment and 85% of the products we sell are aligned with the four UN Sustainable Development Goals we have prioritised. These are statistics to be proud of and they show that what we do today matters.

So we know we can use our expertise in metals chemistry to act as a literal catalyst through the transitions, providing customers with the products and solutions to help them achieve their sustainability goals.

The key to success lies in investing and building at the right speed, which brings me back to the way that the board works with Robert and his team. This year, we have spent considerable time challenging the management team on our key strategic priorities, such as growth in our battery materials and hydrogen businesses. We also supported the team in carrying out the business transformation programme to ensure that our established businesses are organised in the best way to provide the cash for investing at pace.

Understanding risk is an essential part of a board's job. But one of our great strengths as a company is how we address challenges as opportunities, and we are in an exciting position because the opportunities offered by the transitions far outweigh the risks. But if we are to enable those transitions, we must do everything we can to be a sustainable business ourselves. So this year we set new, ambitious sustainability targets, including a target to reach net zero by 2040, and in May 2021 we established a new board committee, the Societal Value Committee, to oversee progress.

Continuing to listen to our people's views

Our success in reaching those targets will rely heavily on the talents and expertise of our people. Indeed, Johnson Matthey wouldn't be the company it is today without them. That's why the board has always made it a priority to talk to as many employees as possible. We continued to do that through our country level engagement forums – albeit virtually – and I know I speak for all my colleagues in saying what useful discussions we had on important issues like diversity and inclusion. I am also thrilled to see that many of the scores in our annual employee engagement survey rose this year.

> "We are in a unique position to help the world tread a more sustainable path. Our customers see us as part of the solution and are asking for our help. Thanks to the work we have done, and continue to do, it is a request we are more than ready to answer."

Ensuring good governance throughout the pandemic

A key role for the board is ensuring good governance, and I'm pleased that, through creative ways, we succeeded in doing so despite the pandemic. It's never as easy to have group discussions on complex subjects virtually, so we adjusted our approach to board meetings, setting up virtual one-to-one sessions between the non-executives and those presenting papers, so that people were fully briefed ahead of time. This allowed for a much richer discussion round the table, but it also meant considerable extra work and I would like to thank my colleagues for taking that time.

We also found creative ways to adapt our assurance measures, including live, encrypted, certified video links to assess stock levels. And the board has spent more one-to-one time with our Audit Committee Chair, Doug Webb. Doug has spent a lot of his time this year supporting risk management work in our battery materials supply chains.

In some ways, though, the pandemic has made certain activities more efficient. While travel restrictions have forced us to meet stakeholders online, it has meant that I've had the chance to talk individually to nearly half of all our major shareholders this year – far more than I usually would during a normal year.

Welcoming new colleagues to the board

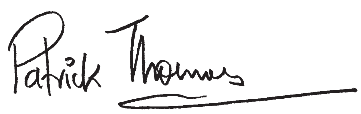
And a pandemic hasn't stopped us hiring some excellent new directors. I am delighted to welcome Stephen Oxley as our new Chief Financial Officer. Stephen brings enormous experience from his almost 30 years at KPMG. He takes over from Karen Hayzen-Smith, who has done an outstanding job as our interim CFO for the past six months, and now takes up the role of Director of Group Finance. I'd like to thank Anna Manz, our previous CFO who left us in November, for her contribution to Johnson Matthey over almost four years. She played an important role across the company and her leadership helped secure our financial strength through these unprecedented times. I'd also like to reiterate my thanks of last year to Alan Ferguson, who retired from the board in July, for his contribution, and to thank both Doug Webb, our new Audit Committee Chair and John O'Higgins, our new Senior Independent Director, for stepping up their non-executive roles.

Dividend update

The board will propose a final ordinary dividend for the year of 50.0 pence per share at the upcoming AGM. Together with the interim dividend of 20.0 pence, this gives a total ordinary dividend of 70.0 pence representing a 26% increase on the prior year. The board anticipates restoring future dividend payments to levels seen prior to the COVID-19 pandemic when circumstances permit.

A chance to shine in a low carbon future

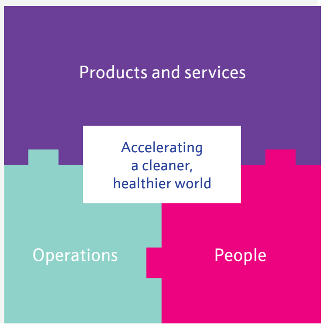
The world is not out of the COVID-19 woods yet. And the pandemic has shown that the world must accelerate the sustainability agenda to preserve the planet for future generations. With the work we have done this year in transforming the business, I am confident that we can.



Patrick Thomas
Chair

Ramping up our sustainability agenda

- Commitment to net zero by 2040.
- Supported by new ambitious sustainability framework and targets, including science based GHG emission targets.
- Establishment of Societal Value Committee of the board to oversee progress.



Chief Executive's statement

Robert MacLeod Chief Executive

COVID-19 tested us all last year, but we surpassed even our own expectations of what we're capable of.

Twelve months ago we were tightening our belts and adjusting our priorities as the COVID-19 pandemic swept across the globe.

We knew we faced unprecedented economic uncertainty as the virus hit different geographies at different times. We also knew that we had a resilient, diverse portfolio that would help us navigate that uncertainty.

What we didn't know was that we would end with a strong set of results in a pandemic year. While underlying operating profit at constant currency was down 5% on 2019/20, I am delighted to report that overall we outperformed market expectations, finishing the year at £504 million. This result is testament to the dedication of the entire Johnson Matthey team and I would like to take this opportunity to thank everyone for their commitment under difficult circumstances.

That dedication can also be seen in a good set of safety results, with our lost time injury and illness rate falling to 0.28 and our total recordable injury and illness rate falling to 0.56, already below our 2025 target of 0.60. Living and working through a pandemic undoubtedly brought additional worries and concerns for some of our people, and I am pleased at how we have kept the focus on health and safety through these more difficult times.

Robust results despite the economic challenges

It's fair to say that our Clean Air business bore the initial brunt of the pandemic, with widespread lockdowns bringing the automotive industry to a standstill. But despite the disruption, we saw a strong recovery across all regions – particularly Asia – in the second half of the year. This, coupled with early benefits from its major transformation programme, helped bring Clean Air's full year underlying operating performance at 8% under 2019/20. That is a great achievement given the circumstances, and the transformation programme will set the business up for the future, enabling us to drive strong cash flow and navigate the inevitable market volatility as the world transitions away from the internal combustion engine.

Our Efficient Natural Resources business, by contrast, continued operating throughout the pandemic, delivering a full year underlying operating performance ahead of 2019/20 and very strong cash generation. That isn't to say it wasn't affected by COVID-19, in both positive and negative ways. While Catalyst Technologies was hit by weaker pandemic-related demand, performance in our PGM Services refinery and trading businesses was exceptionally strong, driven by market volatility and the benefit of higher average precious metal prices. Market forces aside, Efficient Natural Resources' success this year is also testament to the team's work to improve efficiency, particularly in our refinery processes. We made excellent progress in reducing our refinery backlogs to end the year at historically low levels, reflecting a significant improvement in the management of our precious metal working capital.

And despite the pandemic, the team continued to win new business, including in Chile to supply advanced technologies, equipment and advisory services to the world's first wind powered methanol plant (see case study on page 9) and ten new catalyst licences.

Our full year underlying operating performance in Health finished significantly higher than the previous year. This reflects good progress in new customer contracts for our active pharmaceutical ingredients used in generic treatments for opioid addiction, and our work with innovator customers. For example, Gilead is now using our drug linker in an innovative new treatment for patients with metastatic triple negative breast cancer. We are incredibly proud of our Health business and it is absolutely in line with our vision for a cleaner, healthier world. But that world is changing rapidly and it is essential that we focus our portfolio on the most attractive growth areas – those with the greatest connections to the rest of our group and opportunities for us to add value. So, in April 2021, we announced that we had started a strategic review of Health.

Our New Markets businesses also collectively ended the year higher than 2019/20. In Battery Materials, work to commercialise our eLNO® portfolio remains on track despite the pandemic. In Fuel Cells, we continued to see rapid growth, with sales up more than 20% for the full year. Most recently, we have signed a development agreement and a long term supply agreement commencing in 2022 with a major German automotive supplier for the supply of next generation catalyst coated membranes into the global automotive market. We also made good progress in our 'green' hydrogen business, including introducing new manufacturing capacity for our proton exchange membrane technology at our facility in Swindon, UK, where our fuel cell experts are based. This new capacity will allow us to scale our business at pace as the market grows and we expect to see our first commercial sales in 2022.

> These are exciting times for Johnson Matthey. While our products are essential in helping the world achieve its net zero ambitions, we're also setting our own tough new sustainability targets."

Designing the circular economy into our products

We're also working to lead the transition to a circular economy. In fact, circularity is at the heart of everything we do. While we're always aiming to get more from the materials used in our technologies, we also design end of life recycling options for our products and look for ways to increase the amount of material that can be recycled. For example, in battery materials, we're exploring technologies that separate nickel and cobalt from other components and we're starting to look at recycling options for fuel cell and electrolyser components too.

And, since society's tolerance for waste is falling rapidly, we're also working to transform it into useful products. Through collaborations with external partners we've developed a process by which gasified household waste can be converted into hydrocarbons suitable for making diesel and jet fuels. These fuels are cleaner than conventional fuels derived from crude oil, and offer significant environmental and operational benefits. We're now working to commercialise this process.

Living our values as we responded to the pandemic

Everything that we achieved this year is testament to the quality of our people. They adapted quickly to the challenges of the pandemic, including strict new safety measures in our facilities and the new world of homeworking. However, we surprised ourselves by just what we were able to do despite the restrictions.

I've certainly learned a lot and discovered the benefits and difficulties of working from home. While our digital communications have helped many of us make the switch to homeworking, the lack of face to face interaction makes it harder to connect at a personal level. Luckily, Johnson Matthey people have always been very generous with their time and we were able to ramp up the amount of communication with our employees, which included holding JM-wide global town halls online. On the other hand, customer meetings continued and were more frequent, thanks to virtual communications, and this is certainly something we will continue to make use of as the world opens up.

As a company, I am proud of the way that we protected jobs through the height of the pandemic and that we used neither the furlough nor the grant scheme offered by the UK government. But we went beyond that, by setting up a £1 million fund to improve access to good education in science, technology, engineering and maths. In summary, the practical choices we made this year demonstrate just what our values mean to us.

Setting our strategic direction for a low carbon future

Our year was, however, about far more than responding to the immediate economic challenges of COVID-19.

Our vision drives our strategy and mirrors society's need to manage the four transitions – in transport, energy, decarbonising chemicals production and the circular economy – that will help us achieve a more sustainable future. We are in a unique position to enable a world that needs to change, and change quickly.

And so we spent much of the year as a board and Group Management Committee (GMC) assessing and finessing our strategic direction. Key in our minds were the questions our stakeholders, particularly our shareholders, have. These centre on our technology choices and the speed of change required, specifically how fast the market will change around the move from the combustion engine, which is at the heart of our Clean Air business, to electrification, decarbonisation and renewable energy, which are at the heart of our future. We were helped greatly in these discussions by the two new members of the GMC who joined during the year, Ron Gerrard in operations and Nick Cooper in legal, and, after the year end, by our new Chief Financial Officer, Stephen Oxley. I look forward to working even more closely with them all in the coming year.

The progress we've made this year gives me enormous confidence that we are not just on the right track, but on a trajectory that will see Johnson Matthey play an instrumental role in those four essential transitions over the next decade and beyond.

Customer feedback shows we are on the right track

Customer confidence is growing too, with our customer satisfaction scores rising by 3% during the year. As Patrick notes in his statement, more and more customers are asking for our help and the feedback they are giving us on our technologies is incredibly positive. For example, some of the world's leading fuel cell manufacturers tell us that our catalyst coated membrane technologies – a key component used in fuel cells – are among the best they're working with, while feedback from customers during tests on our battery materials has been very encouraging. There's continued confidence in our Clean Air business too. The world's transport systems are not going to decarbonise overnight and our emission control systems will continue to improve air quality from internal combustion engines for at least the next ten years, especially as governments continue to introduce strict new regulations.

Chief Executive's statement continued

So we've continued to plan and invest for the future, despite the pandemic, and we're laying the groundwork to deliver on our three key strategic objectives:

- Invest in growth areas targeted at climate change and circularity.
- Manage our established businesses to support growth.
- Promote a fast paced, efficient business and high performance culture.

1. Invest in growth areas targeted at climate change and circularity

Our growth businesses are the clearest expression of this first aim. Battery Materials represents an important new area of growth for us, one that builds on our long history of using metals chemistry to solve complex problems. But, if we are to realise our ambition to become a significant player in this market, we must invest at scale and speed.

As I mentioned, we continue to see considerable interest in our eLNO battery materials portfolio from new customers and we are moving into more advanced stages of testing with existing customers. The construction of our first commercial plant in Poland is progressing well and plans for a second plant in Finland are now under way. And because we want to set new standards in sustainability, both plants will run entirely on renewable electricity from the moment they start production. Meanwhile, in Finland, we're also partnering with Finnish Minerals Group on an innovative waste management system and have signed two supply agreements for critical raw materials, helping us secure long term, sustainable resources for the plant. More broadly, we continue to evaluate a range of scale up models for our Battery Materials business, including strategic partnerships.

We're also developing our hydrogen technologies. Fuel cells (which use hydrogen) is an industry that we know very well. But the conversation has accelerated in the past five years and we now have supply contracts with numerous fuel cell players including Doosan and SFC Energy. Fuel cells have massive potential to help decarbonise our transport, especially long distance trucks. To that end, we've doubled our manufacturing capacity in the UK and China giving an overall capacity of 2GW and we are already working on the next set of major expansion plans.

And hydrogen more broadly has a crucial role to play not only in fuel cells but in decarbonising our energy systems alongside big, hard-to-abate industries like chemicals. Indeed, without hydrogen it will be impossible for the world to reach net zero.

Johnson Matthey has a key role to play here. Already a market leader in 'grey' hydrogen production (from fossil fuels) technology, we're now commercialising at scale 'blue' hydrogen technology that uses less natural gas and can reduce carbon dioxide emissions by over 95%.

And we're advancing new 'green' hydrogen production (made via water electrolysis using renewable energy). It's early days and there are many challenges to overcome, but electrolysis and fuel cells share a lot of similar technologies. So we're using this to design the next generation of catalysts and membranes for new, cheaper types of electrolysis.

We also play a major role in the sustainability agenda as the world's largest recycler of platinum group metals. We are going to need more of these skills if we are to bring about a circular economy.

The progress that we have already made – and will continue to make – would not be possible without R&D. It is this team that designs and scales up the technologies and solutions our customers need to address their most complex challenges. While we continue to invest in R&D, we've reshaped our portfolio around some key areas to help us work in a more agile way, accelerate innovation and commercialise at speed.

2. Manage our established businesses to support growth

For more than 40 years, our Clean Air business has helped prevent harmful emissions reaching the atmosphere. It has been an extraordinary era of growth, with around one third of the cars on today's roads fitted with our emission control technology. And, since emissions legislation is continuing to tighten and our transport system isn't going to change overnight, it will remain an essential, valuable business for many years to come.

But change will come and we've done a lot to prepare the business for the next phase of the transport transition. That includes investing in new highly efficient plants in Europe and Asia and embarking on a major transformation programme to drive greater efficiency, new technology and lower costs, and turn Clean Air into the cash engine that will enable us to invest in our new growth businesses. We're already seeing the early benefits of this work, but there's plenty more to do.

This is a market we understand very well and we know how to respond – to tighter legislation and to whatever the future holds for the internal combustion engine. Clean Air is a catalyst for growth for our other businesses too, thanks to the relationships we have developed with our automotive customers over many decades.

3. Promote a fast paced, efficient business and high performance culture

The faster the world changes, the more it will need our skills. But if we are to take advantage of that pace, we must ensure we are sufficiently agile.

We already have the financial basics in place – with a resilient, diverse portfolio, multiple markets and highly flexible cost base and access to liquidity of around £1.5 billion. And, thanks to our continued strong management of working capital and our focus on an efficient balance sheet, at 31st March 2021 our leverage ratio of 1.2 times was slightly below our target range of 1.5 to 2.0 times, with net debt falling by £319 million to £775 million at the end of the year.

But we also need to simplify our business and become much more efficient in our operations and functions. So we continued to make good progress in our transformation programme, for example with the creation of centres of functional expertise to streamline the way we allocate specialist skills. During the year, we delivered £37 million of savings as part of our target of £110 million of annualised savings by 2023/24. We also completed our previous efficiency programmes which delivered £145 million of total savings, including £29 million in 2020/21.

And we are evolving our culture to become more fast paced and responsive. As I've mentioned, we're already changing some of our operating models to simplify the way we work. But we're also accelerating our people strategy.

In 2020, we introduced a new leadership framework aligned with our culture ambition that sets out the behaviours we need to successfully deliver our business strategy. And we're putting processes in place to ensure that our team reflects the communities in which we work and to enhance employee recognition and wellbeing so that people feel like Johnson Matthey is a place to build a long term career.

Setting our own targets for a sustainable future

So we have a strong balance sheet and a strategic direction that will see our products continue to add enormous value to society for decades to come. Indeed, this has always been part of our DNA. But we also have a responsibility to ensure that the way we operate contributes to that value. This is why our ambition is to become a leader in sustainability in our own operations as well as through the impact our products have on the world.

Everything we have done in the past few years has been about preparing for the future – be it upgrading existing facilities, building new infrastructure and developing skills, or redesigning our processes to create more opportunities for recycling.

Now we're taking the next step, with exciting new sustainability commitments, including our own plans to reach net zero by 2040. These commitments are underpinned by a series of 2030 targets, including:

- Increasing the percentage of our product sales that make a positive contribution to four priority UN Sustainable Development Goals to more than 95%.
- Increasing the quantity of greenhouse gases that are avoided using our technologies.
- Increasing the proportion of our products that are sold with an end of life recycling solution.

These targets are ambitious and they are necessary. Many people are talking about 'building back' after COVID-19. For Johnson Matthey, however, these targets are not just about building back, but rather continuing to build on what we have already done, and taking the next big step in our own sustainability journey.

Perfectly positioned to create a cleaner, healthier world

The precise details of how we will achieve our targets will evolve over the coming months and years. Exactly how society will recover from the pandemic remains uncertain and the world faces some tough technological, financial and policy hurdles that must be overcome if we are to achieve a low carbon future. Timing and technological choices will be key to that success and I believe the work we've done and are doing sets us on the right path for both. We'll need our talented people to help us overcome those hurdles, as well as a new generation of scientists and engineers in the coming years, and I don't underestimate the competition we face in attracting that talent.

But if I can leave you with one message it is this. We stand on the cusp of enormous changes, changes that have the potential to create a cleaner, healthier, more sustainable society for everyone. Johnson Matthey is perfectly positioned to enable those changes, something that is increasingly recognised by our customers across all the industries we serve.

I am enormously proud of everything our team has accomplished this year, and this tells me that we have what it takes to achieve our ambitions and help our customers achieve theirs.

R. MacLeod

Robert MacLeod
Chief Executive

Outlook

for the year ending 31st March 2022

The current year has started well with a continuation of the strength seen in the second half of 2020/21.

However, end market demand remains uncertain and subject to COVID-19 developments around the world, with the potential for supply chain disruption for some of our automotive customers.

- *In 2021/22, assuming our end markets remain robust, we expect low to mid teens growth in underlying operating performance at constant precious metal prices[1] and constant currency. This largely reflects strength in Clean Air with improving auto production volumes, tightening legislation in Asia and higher order intakes within heavy duty diesel in the US. In addition, we expect an improved performance from Catalyst Technologies and continued progress in Health. We expect to see benefits from our efficiency initiatives across the group, although these will be partly offset by investing for growth in new technology areas such as battery materials and hydrogen.*
- *At current foreign exchange rates, translational foreign exchange movements for the year ending 31st March 2022 are expected to adversely impact underlying operating profit by circa £25 million.*
- *If precious metal prices remain at their current high level for the whole of the year (especially for rhodium and palladium), we would expect a further net benefit of up to £120 million[2]. Continued strong metal prices may also result in higher working capital therefore impacting free cash flow in the short term.*
- *We continue to invest into strategic growth projects and capital expenditure is expected to be up to £600 million for the year. This reflects increased investment as planned into battery materials, which is on track and in line with previous expectations, investment in our pgm refineries to increase the resilience and capacity of these assets and investment in our hydrogen activities.*

[1] Based on actual precious metal prices in 2020/21.
[2] Based on current precious metal prices as at 25th May 2021.

Our business model

Our fundamental understanding of the transformative power of metals chemistry, combined with our technical and commercial expertise in how and where to use it, create the technologies that make our customers' products work in many industries to deliver a cleaner, healthier world.

Our unique strengths...

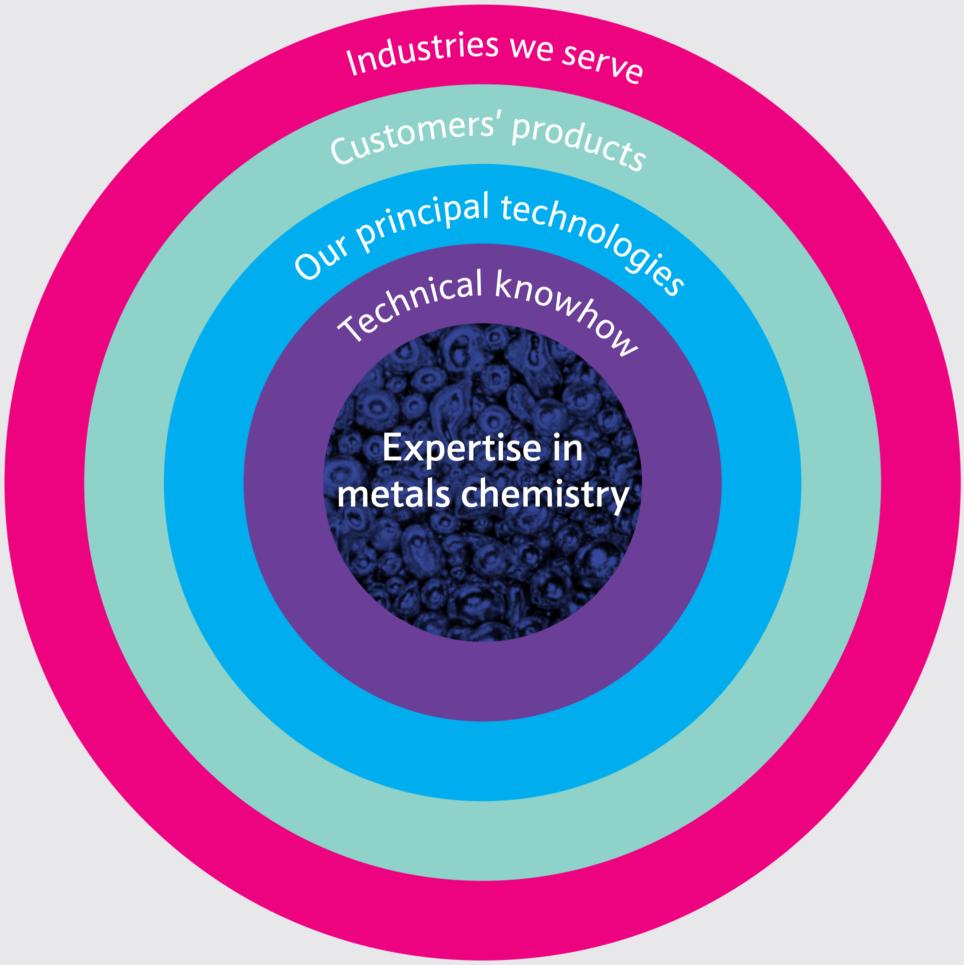
1. **Expertise in metals chemistry, its potential and practical applications**
   Our scientists and engineers understand deeply how to use the extraordinary properties of critical metals in the service and synthesis of products that will enable a sustainable future.

2. **Smart people who believe in what they do**
   We employ many of the world's brightest and best, not only in R&D but across the whole business, who are united by a shared commitment to our vision.

3. **Stewardship and recycling of scarce metals**
   We are the world's largest recycler of the scarce platinum group metals (pgms) that are so essential for the transformations the world needs, and we are responsible stewards of the raw materials we source that must still be extracted from the ground.

4. **Financial strength**
   Through ongoing careful management, especially of the high value pgms through our operations, we are focused on maintaining a strong balance sheet with low leverage, to fund growth.

how we use them...



Supported by our values

Protecting people and the planet	Acting with integrity	Working together

and our risk management framework

Read more: Risks and uncertainties on pages 88 to 96

…to deliver value

Technical knowhow

- Process design
- Catalysis (thermo and bio)
- Surface chemistry and coatings
- Electrochemistry
- Synthesis of advanced materials
- Chemical synthesis
- Pgm chemistry and metallurgy
- Product formulation
- Characterisation and modelling
- Materials engineering and design

Our principal technologies

- Emission control catalysts
- Industrial catalysts and process designs
- Hydrogen production technologies
- High energy battery cathode materials
- Fuel cell components and catalysts
- Fine chemical catalysts
- Biocatalysts
- Pgm refining and recycling
- Specialist products made from pgms
- Active pharmaceutical ingredients
- Medical device components

Customers' products

- Emission control systems for vehicles
- Cleaner, efficient chemical production
- Sustainable chemicals and fuels
- Clean hydrogen
- Battery cells and electric vehicles
- Fuel cell units and vehicles
- Closed loop recycling
- Targeted therapeutics

Industries we serve

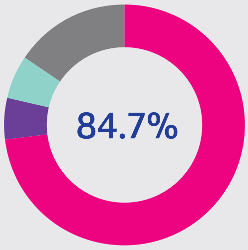
- Automotive
- Chemicals
- Energy generation and storage
- Oil and gas
- Agrochemicals and fertilisers
- Pharmaceutical and medical
- Other industrial

Innovating and improving

Owning what we do

For our planet and society

Percentage of sales from products that support our priority UN Sustainable Development Goals (UN SDGs) and enable the transition to a cleaner, healthier world.



- UN SDG 3: 73.1%
- UN SDG 7: 0.1%
- UN SDG 12: 5.5%
- UN SDG 13: 6.0%
- Not related to the four UN SDGs: 15.3%

For governments

Helping governments meet their greenhouse gas emissions targets.

Global GDP represented by nations with 2050 net zero targets

~60%[1]

For customers

Designing and making the technologies that power our customers' products.

Customer satisfaction score

8.1 (out of 10)

For our own people and communities

A rewarding place to work for talented people who support their own communities too.

Employee engagement score

65%

For our shareholders

An opportunity to invest in the world's sustainable, net zero future, with solid, reliable returns.

Total dividends paid in 2020/21

£99 million

[1] Source: IMF and EU Commission

Our strategy

Our strategy for growth mirrors society's need to decarbonise and create a more circular economy while managing the transitions needed to reach net zero. And it's an approach we apply to our own business: we want to lead in sustainability.

Throughout our more than 200 year history, we have anticipated change and used our expertise in the transformative power of metals chemistry to help our customers enable human progress through technology. Today we have a unique opportunity, at possibly the most decisive moment in modern history, to bring all our skills, expertise and resources to bear to help the world make the complex, technically challenging transition to net zero. We will do this by delivering sustainable products, services and technologies to our customers, while ensuring the way we operate and manage our business contributes to a sustainable, net zero future too.

COVID-19, rather than distracting us from this strategy, has only made it more urgent. The pandemic has raised awareness everywhere of humanity's interconnectedness, including with the natural world. Our vision for a cleaner, healthier world for today and for future generations has never been more relevant.

Our strategic objectives

- Invest in growth areas targeted at climate change and circularity.
- Manage our established businesses to support growth.
- Promote a fast paced, efficient business and high performance culture.

For details of how we've pursued our strategic objectives this year, see the Chief Executive's review on pages 18 to 21.

Invest in growth areas targeted at climate change and circularity

Our focus today is on disciplined investment in the right opportunities to support four essential transitions the world needs to reach net zero: transport, energy, decarbonising chemicals production and a circular economy.

In **transport**, we are investing in the fuel cells technology and battery materials that will enable electrification, while continuing to provide the emission control technologies for the traditional combustion engine as that transition takes place.

For the **energy** transition, hydrogen from low carbon sources will be essential. We are already a leader in some hydrogen technologies and are investing in these and in hydrogen made from renewable energy sources.

Decarbonising chemicals production requires clean carbon sources for feedstocks, fuels and materials, and the ability to convert those feedstocks cleanly and efficiently into chemical products. Here we are already a leading provider of catalyst and process technology to the chemical sector in key segments including methanol, ammonia and hydrogen, and we are working alongside our customers in the shift to a low carbon chemical industry.

Ultimately, for a net zero world to be an ongoing reality we need a **circular economy**. This is particularly important for the energy and transport transitions, where the necessary technologies rely on scarce metals, such as palladium, platinum and cobalt. Recycling – with its significantly lower carbon footprint – therefore has a critical part to play both now and in the future, and we are in a strong position as the world's largest recycler of platinum group metals (pgms).

Manage our established businesses to support growth

We generate cash from producing emission control catalysts that help the automotive and energy industries reduce emissions in vehicles. When the energy and transport transitions are complete, there will no longer be a need for such systems, but in the meantime, these catalysts continue to be essential as emissions legislation gets tighter. Meanwhile we are progressing with our transformation programme to enable us generate significant cash to invest in our growth businesses. We also use our long established relationships with automotive customers to open doors for our newer technologies, such as battery materials and fuel cells.

Like every organisation, we continually review our portfolio to make sure we are alive to the ever-changing business environment, and that everything we do remains in line with our strategy, thus maximising value for our shareholders. As part of this, we are undertaking a strategic review of our Health business.

Promote a fast paced, efficient business and high performance culture

Our greatest risk is also our greatest opportunity. The faster the world changes, the more it will need our technologies. But we must be sufficiently focused, agile and responsive to take advantage of the pace of change. We have therefore invested in a transformation programme to simplify our business and make our emission control catalyst manufacturing operations more efficient, which will deliver a total of £110 million in annualised savings by 2023/24. We are also evolving our culture to become more fast paced and responsive. This isn't about wholesale change – we are retaining the best of Johnson Matthey, our integrity and our commitment to our vision – but adding an injection of speed and ambition, in everything from delivery of our major capital projects, to the commercialisation of new technologies. The additional challenges of COVID-19 have helped us in some ways, because they've required us to adapt quickly, devolving decision making and accountability.

Our sustainability strategy, and targeting net zero

To achieve our vision, we must carry out our commitment to acting with integrity in everything we do. And, while our products and services will have the most impact in helping the world reach its net zero target, we must achieve the same ambition in our own business. So this year we also set new, ambitious sustainability targets for 2030 across our value chain, along with a target to reach net zero by 2040.

+ **Read more:** Sustainable business pages 60 to 85

Link to KPIs

Our vision

A cleaner healthier world today and for future generations

Our strategy

1 2

We will use our deep knowledge of metals chemistry to help our customers address the complex technical challenges of the four transitions – transport, energy, decarbonising chemicals production and a circular economy – by delivering sustainable products, services and technologies

Our strategic objectives

3

Invest in growth areas targeted at climate change and circularity	• Battery materials • Hydrogen • Fuel cells • Low carbon technologies • Recycling of pgms, battery materials and fuel cell products
Manage our established businesses to support growth	• Generating cash from emission control catalysts for reinvestment • Health – strategic review to maximise value
Promote a fast paced, efficient business and high performance culture	• Enhance productivity and efficiency • Deliver capital projects on time and on budget • Evolve our culture and drive faster and more flexible ways of working

Our ethos: sustainable business

4

For people	• Our employees • Our suppliers • Our communities
For our operations	• Low carbon operations • Resource efficiency

Read more: on our KPIs on pages 26 to 30

Key performance indicators

Our key performance indicators (KPIs) measure progress against our financial aims, our strategy and our 2030 sustainability targets.

Changes in 2020/21

This year we have introduced KPIs to measure the progress of our strategic objectives. We are currently developing KPIs for the strategic progress of our Clean Air business (relating to its cash generation) and the growth in revenues in new business areas targeting climate change and circularity. We will report on these in 2021/22. We have also updated our KPIs relating to our product and services, operations and people to bring them in line with how we are measuring progress towards our new 2030 sustainability targets.

Overall strategy – Products and services for a cleaner, healthier world

1

We track progress towards our vision for a cleaner, healthier world by measuring the percentage of our sales that come from products that contribute to our four priority UN Sustainable Development Goals (UN SDGs). A detailed definition of this KPI is provided on page 261.

84.7%

% sales from products contributing to our four priority UN SDGs

Performance in 2020/21

The percentage of sales from products that positively contributed to the four priority UN SDGs was 84.7%. Our sustainable business target is to increase this to more than 95% by 2030.

+ **Read more:** Sustainable business on pages 60 to 85

R **Future growth risk** on page 92

R **Competitive advantage risk** on page 93

Financial performance

2

Growth in sales excluding precious metals* (sales)

Monitoring sales growth at constant currency is a measure of the growth of our 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 and the impact of foreign exchange.

* Non-GAAP measures. See note 38 on page 243 for more details.

£3,922m

Performance in 2020/21

Sales at constant currency fell 5% to £3.9 billion (2019/20: fell 2%). The fall was due to the impact of COVID-19 on Clean Air where disruption, including customer shutdowns, led to reduced sales in the first half.

+ **Read more:** Financial and sector reviews on pages 34 to 57

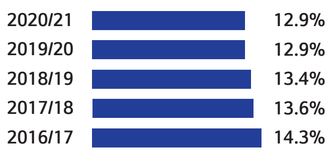
R **Future growth risk** on page 92

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 and effectiveness, and as we introduce new products through innovation to serve our customers' changing needs.

* Non-GAAP measures. See note 38 on page 243 for more details.

12.9%



Performance in 2020/21

In 2020/21, underlying operating margin was unchanged at 12.9% (2019/20: 12.9%) reflecting continued progress in driving efficiency and the benefits of higher precious metal prices, despite lower demand in a number of our businesses. In our largest business, Clean Air, strong cost control and early benefits from our transformation programme offset the impact of lower production due to COVID-19. Efficient Natural Resources benefited from more volatile and higher average precious metal prices.

+ **Read more:** Financial and sector reviews on pages 34 to 57

R **Future growth risk** on page 92

Financial performance continued

2

Underlying earnings per share*

Underlying earnings per share is the principal measure used to assess the overall profitability of the group. Certain items are excluded as they do not allow for a consistent comparison of performance between financial years. These items, together with a detailed definition of this KPI, are given in note 38 on page 243.

* Non-GAAP measures. See note 38 on page 243 for more details.

182.0p

2020/21	182.0p
2019/20	199.2p
2018/19	228.8p
2017/18	208.4p
2016/17	209.1p

Performance in 2020/21

Underlying earnings per share fell 9% to 182.0 pence reflecting lower underlying operating profit. A reconciliation from underlying profit for the year to profit for the year is given on page 244.

Read more: Financial and sector reviews on pages 34 to 57

R **Future growth risk** on page 92

Average working capital days (excluding precious metals)*

Average working capital days (as defined on page 243) 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.

* Non-GAAP measures. See note 38 on page 243 for more details.

57 days

2020/21	57
2019/20	63
2018/19	59
2017/18	62
2016/17	69

Performance in 2020/21

Our average working capital days (excluding precious metals) decreased by 6 days to 57 days. Our target range for average non-precious metal working capital days is between 50 and 60 days over the medium term.

Read more: Financial review on page 39

R **Existing market outlook risk** on page 92

Strategic objectives – Invest in growth areas targeted at climate change and circularity

3

Gross research and development expenditure

To maintain our competitive advantage and enable future growth, we invest in research and development to deliver sustainable products, services and technologies.

£194m

2020/21	£194m
2019/20	£199m
2018/19	£190m
2017/18	£193m
2016/17	£201m

Performance in 2020/21

We invested £194 million in R&D in the year which included £22 million of capitalised R&D. This was around 5% of sales and broadly flat on the prior year. We continue to invest in next generation technologies in Clean Air, the efficiency and resilience of our refineries in Efficient Natural Resources, our Health API product pipeline, our eLNO® cathode materials and hydrogen technologies.

Read more: Science and innovation on pages 58 to 59

R **Future growth risk** on page 92

R **Competitive advantage risk** on page 93

R **Intellectual property management risk** on page 94

Key performance indicators continued

Strategic objectives continued – Manage our established businesses to support growth

3

Clean Air cash flow

As we invest in new growth businesses targeting climate change and circularity, we are managing our more established businesses, particularly Clean Air, to generate more cash to support those investments. We also continue to review our portfolio to focus on areas of greatest opportunity to maximise value for our shareholders.

To be reported from 2021/22

Performance in 2020/21

We progressed the transformation of Clean Air to make the business more agile and efficient, enabling it to generate more cash to invest in our new growth opportunities. We will continue to consolidate our operations into our most efficient plants as needed, manage our costs in line with the size of the business, and drive down working capital to ensure the business generates robust cash flow to support investment in our new growth opportunities. Clean Air is expected to generate attractive sustainable cash flow of at least £4 billion in the coming ten years.

We have also begun a strategic review of our Health business.

Strategic objectives – Promote a fast paced, efficient business and high performance culture

3

Annualised cost savings from transformation programme

In order to be focused, agile and responsive to the pace of change in our markets, we have invested in a transformation programme to simplify the business and make our manufacturing operations more efficient. The programme, which we announced in June 2020, includes the consolidation of our Clean Air manufacturing footprint and implementation of the new group operating model. We originally targeted savings of £80 million by 2022/23 and we are now targeting £110 million by 2023/24.

£37m

Performance in 2020/21

During the year we delivered £37 million of savings against our target of £110 million of annualised savings by the end of 2023/24.

Total costs associated with this programme amount to £311 million of which £140 million was recognised in prior periods, and £171 million during this year of which £80 million was cash (2019/20: nil). Further details on costs are set out on pages 37 and 38.

During the year we also completed our historic cost savings programmes which delivered £145 million of savings in total, of which £29 million was delivered in the year. Total costs associated with these programmes of around £70 million (of which £40 million was cash) were taken outside of underlying operating profit in prior years.

R **Business transition risk** on page 95

Customer satisfaction

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 use the insight and feedback on how our customers view our offer and the strength of our relationships to agree and implement changes.

8.1/10

(2019/20: 8.0/10)

Performance in 2020/21

This year we engaged with more of our customers across all four sectors, representing around 80% of group sales. Given the challenges of COVID-19 and a larger survey group, our increased score of 8.1 underlines the hard work across the group to serve our customers better. We also continued to score ahead of the industry norm of 7.7.

R **Competitive advantage risk** on page 93

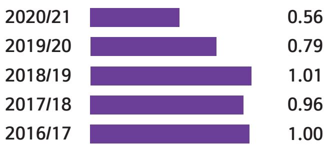
Our ethos: Sustainable business – People

Health and safety – Total recordable injury and illness rate (TRIIR) of employees

We place huge emphasis on health and safety, promoting the right behaviours through our values and through health and safety programmes across the group. We apply rigorous health and safety systems across all facilities and we actively manage our safety performance through monitoring the incidence and causes of accidents that result in lost time.

TRIIR 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 264.

0.56



Performance in 2020/21

Our employee TRIIR reduced from 0.79 to 0.56 which is ahead of the target of 0.6 that we set ourselves to exceed by 2025. This improvement reflects our continued efforts to promote a strong behavioural safety culture and relentless focus, despite the challenges of COVID-19 this last year. Our leading indicators of performance have also continued to improve.

Reflecting our progress and continued emphasis on health and safety, we have set a new target to reduce TRIIR for both employees and contractors to less than 0.25 by 2030.

+ **Read more:** Occupational health and safety on pages 78 to 81

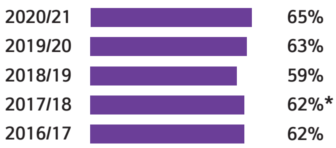
R **Environment, health and safety risk** on page 93

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.

A detailed definition of this KPI is provided on page 264.

65%



* Score from our survey in November 2016. We did not carry out a survey in the 2017/18 financial year.

Performance in 2020/21

Our employee engagement score in 2020/21 was 65% (2019/20: 63%) as we delivered the action plans put in place last year. This is a remarkable achievement in a year where our people had to adapt to new COVID-19 regulations and organisational change as part of our transformation programmes. To keep pushing ourselves, we have set a new target to score more than 75% by 2030, which would put us in line with the highest performing companies.

R **People risk** on page 94

Diversity and inclusion (D&I) – female representation in management

People will always be at their best when they feel like they can be themselves at work. As a global company we also have a responsibility to ensure that our teams reflect the communities in which we work, which means recruiting, developing and recognising employees from all backgrounds. We measure female representation across management levels as one aspect of our wider diversity and inclusion ambition.

27%

Performance in 2020/21

We have set a new target to achieve more than 40% of female representation across management levels by 2030. We began measuring this KPI as part of our new 2030 sustainability goals with the baseline year being 2019/20. Women in management reduced to 27% in 2020/21, from 30% in 2019/20, although the proportion of women in our senior leadership group increased.

We have high aspirations for D&I and ultimately aim to have gender balance across all levels of our organisation. Our target of more than 40% women in management by 2030 is an important milestone on this journey.

Key performance indicators continued

Our ethos: Sustainable business continued – Operations

4

Scope 1 and 2 greenhouse gas (GHG) emissions

A major part of our strategy is to develop solutions to help our customers and society decarbonise in order to address climate change. At the same time, we are committed to reducing GHG emissions in our own operations. Our GHG footprint, reported in tonnes of carbon dioxide equivalent (CO_2 eq), includes Scope 1 and Scope 2 emissions.

A detailed definition of this KPI is provided on pages 261 to 262.

388,904

tonnes CO_2 eq

Performance in 2020/21

Our Scope 1 and Scope 2 GHG footprint decreased by 1% from 391,459 tonnes to 388,904 tonnes CO_2 eq, although our production volumes fell by 8% meaning that our overall carbon efficiency decreased.

This was largely because we used a greater proportion of purchased gas versus renewable electricity at one site in the UK, where we have a combined heat and power (CHP) plant to generate heat for our processes. This CHP plant was under maintenance in 2019/20 but started up again in 2020/21 which affected our carbon efficiency relative to last year.

We have recently set a new science based target to reduce our Scope 1 and 2 GHG emissions by 33% by 2030.

+ **Read more:** Operations on pages 66 to 68

R **Environment, health and safety risk** on page 93

Upstream Scope 3 GHG emissions (purchased goods and services)

Upstream Scope 3 GHG emissions represent over half of our total GHG footprint and by far the largest component of this is the raw materials we buy. Reducing this is an important measure of our commitment to sustainability leadership and our vision for a cleaner, healthier world.

A detailed definition of this KPI is provided on page 262.

3.1m

tonnes CO_2 eq

Performance in 2020/21

As part of our new sustainability targets, we have set a new science based target to reduce our Upstream Scope 3 GHG emissions in this category by 20% by 2030 with our baseline being 2019/20.

Our Upstream Scope 3 GHG emissions were 3.1 million tonnes CO_2 eq this year (2019/20: 3.9 million tonnes CO_2 eq.

+ **Read more:** Operations on pages 66 to 68

Non-financial information statement

JM has a range of different policies and standards in place to manage our principal risks, 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	Read more
Business model	• Our business model is supported by the policies and standards illustrated in the table below. Information on our business model and the value created for our stakeholders can be found in the Strategic Report	1 2 3 4 5 6 7 8 9 10 11 12 13 14	22-23
Environmental matters	• Task Force on Climate-related Financial Disclosures (TCFD) statement • Environment, Health and Safety Policy* • Ethical and Sustainable Procurement Policy* • Supplier Code of Conduct* • Sustainability strategy	4 5 10	86-87 78-82 83 83 62-63
Employees	• Code of Ethics* • Equal Opportunities and Training and Development of People Policies* • Global Flexible Working Policy • Board Diversity Policy* • Speak up process • Environment, Health and Safety Policy* • Eight lifesaving policies • Working Together Policy • Mental wellbeing commitment • Investigations Policy • Corporate Governance Framework	4 6 10	77 73 75 125 77 78 78 78 76 77 107
Social matters	• Employee Volunteering Policy	6	85
Respect for human rights	• Modern Slavery Statement* • Code of Ethics* • Data Protection Policy and Employee Privacy Notice • Ethical and Sustainable Procurement Policy* • Supplier Code of Conduct* • Doing Business in Higher Risk Jurisdictions Policy • Conflict Minerals Policy	5 10	84 77 77 83 83 84 85
Anti-corruption and anti-bribery matters	• Anti-Bribery and Corruption Policy • Code of Ethics* • Trade and Export Controls Policy • Investigations Policy • Financial Crime Policy • Tax strategy • Conflict of Interests Policy • Competition Law Policy	10	77 77 77 77 77 38 77 77
Non-financial key performance indicators	–	2 3 4 5 6 10	28-30 260-263
Description of principal risks	–		92-96

* Available on our website.

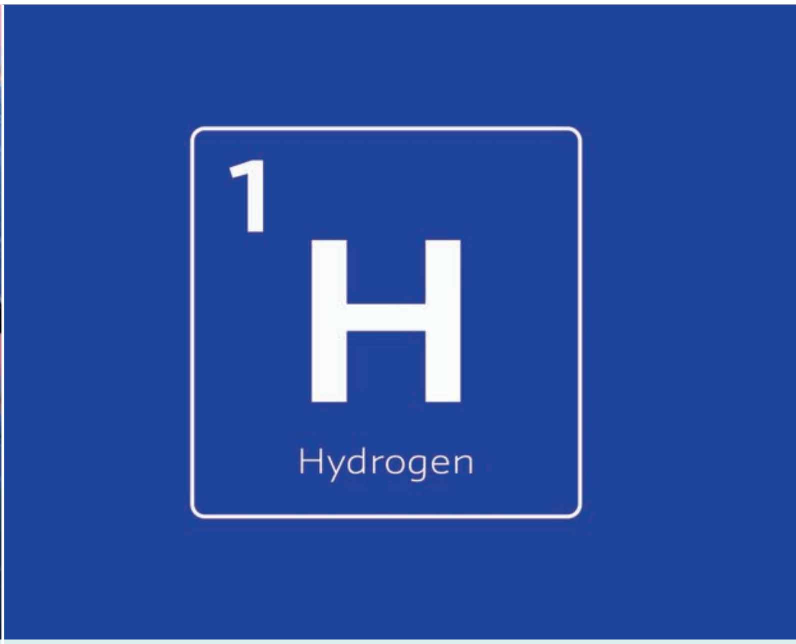
Section 172(1) statement and stakeholder engagement

Our Section 172(1) statement is on pages 110 to 113 of the Governance Report. It describes how the directors have had regard to stakeholders' interests when discharging directors' duties set out in Section 172 of the Companies Act 2006. Our stakeholder engagement activities and the impact of these are set out on page 110.

Review of the year

The COVID-19 pandemic has challenged everyone over the past 12 months. While our team worked tirelessly to keep each other safe and navigate uncertainty, they also accomplished a lot and ended the year with a very strong set of results. Here are a few of our highlights.

April 2020 May June July August September



April – June

In May we celebrated the best of the best at our annual JM Awards ceremony. And like most things this year, we went 'virtual' to recognise the work of individuals and teams around the world.

Our other highlights

- Donated ventilator components and space for ventilator assembly, as well as 3D-printing visor parts for the UK's National Health Service.
- Launched our 2020 PGM Market Report reviewing supply and demand for platinum group metals.
- Agreed our first licence with a customer in China for our new, more sustainable process technology for making isononyl alcohol.

July – September

In September we hosted an investor event to discuss hydrogen's role in tackling climate change. We also shared details of our hydrogen business, its competitive position and growth opportunities.

Our other highlights

- Held our 129th AGM. Financially, first quarter sales fell because of COVID-19, but we saw an improving trend over the three months.
- Included in the FTSE4Good Index and received the London Stock Exchange's Green Economy Mark for our contribution to the global green economy.
- Won Procurement Team of the Year – Large Organisation and named overall winner at the 2020 CIPS Awards.

October November December January 2021 February March

October – December

In November, we won the Best Process Award at the ICIS Innovation Awards with our technology partner Dow Global Technologies for our joint LP Oxo^{SM} process to produce isononyl alcohol.

Our other highlights

- Included for the first time in the annual Dow Jones Sustainability Index for companies in Europe.
- Won awards for our low carbon hydrogen process and high pressure formaldehyde technologies.
- Signed an open letter with other businesses demanding immediate action for #blacklivesmatter.
- Completed our £7.5 million fuel cell component facility in Shanghai as part of our expansion into China.

January – March

In January we announced that our new battery cathode materials plant in Konin, Poland, will be powered solely by electricity made from renewable energy as soon as it opens for production.

Our other highlights

- Accredited as a UK Living Wage Employer and set a voluntary minimum hourly wage.
- Strategic partnership with precious metals mining group Sibanye-Stillwater to identify and develop solutions to drive decarbonisation and use critical metals more efficiently.
- Announced new UK manufacturing capacity to make catalyst coated membranes for 'green' hydrogen technologies.
- Won a three year, multi million pound agreement to provide 400,000 direct methanol MEA fuel cell components to SFC Energy AG.

Financial review

Stephen Oxley Chief Financial Officer

Our new Chief Financial Officer, Stephen Oxley, shares his thoughts on joining Johnson Matthey, the financial year just gone and his excitement about the future.

Although new to the Johnson Matthey team, it's a business I know well.

Having worked with Johnson Matthey in the past while I was at KPMG, I got to know the pedigree of JM's people, its technology and knowhow. So I was really excited to take up my new role as Chief Financial Officer in April 2021.

Johnson Matthey has always fundamentally been a sustainability business. For decades, our products have helped clean the air and reduce emissions, and we're the world's biggest recycler of platinum group metals. Now we have this extraordinary opportunity to provide the solutions to help the world meet its commitments to net zero. I know from my own experience that there are very few companies who can say that and mean it.

Reflecting on a robust performance despite COVID-19

Of course, I've joined the company at the end of what has been a particularly challenging year due to the pandemic. Talking to my colleagues, I know how quickly everyone adapted to the rapid changes in our key markets. So, it's a privilege to be able to report such solid financial results.

Following a challenging first half, we recovered strongly in the second half. We've seen some of our key markets bounce back from COVID-19 more strongly than first expected. We have also benefited from higher platinum group metal (pgm) prices, particularly of rhodium and palladium. To that end, our revenue was up 8% to £15.7 billion while sales excluding the value of precious metals fell 5% at constant currency to £3.9 billion. Underlying operating profit of £504 million was 5% lower (constant currency) and this affected underlying earnings per share which fell 9% to 182.0 pence.

These results reflect a great deal of hard work. We've significantly reduced our net debt and working capital, despite the higher metal prices. And that is thanks to the work in Efficient Natural Resources to limit backlogs in our pgm refineries, and in Clean Air to reduce working capital. We delivered good free cash flow of £305 million, up from £52 million the year before, and our balance sheet remains strong with significant headroom in our funding facilities.

I also want to highlight how the team kept JM's broader business transformation progressing despite the pandemic. We've begun to move production to our most efficient Clean Air plants, started to roll out a new operating model and introduced more automation into our processes. All of which has helped drive greater efficiency across the business, delivering £37 million of benefits during the year, ahead of our targeted £30 million. And, through accelerating the programme, we've unlocked additional future savings as well. Crucially, we've continued to invest £358 million of capital expenditure in the year in our businesses.

All this would have been a huge amount of work and progress in a normal year, but in a pandemic it is outstanding. Our results are testament to that.

A strong position from which to grow

So what a position to inherit. Ending a difficult year well gives us continued confidence to invest in our future. COVID-19 has clearly accelerated the pace of change, particularly around sustainability. And there's a growing expectation that the world must not bounce back to its pre-pandemic ways. Which brings me back to that extraordinary opportunity I mentioned at the start. What JM does puts the company right at the heart of the four big transitions in transport, energy, decarbonising chemicals production and the circular economy. We have the skills and knowhow to meet our own new sustainability ambitions, but our products and processes give us the unique opportunity to help our customers achieve theirs. This is how we will help the world reach net zero and ensure a more sustainable future.

Commercialising at speed

That opportunity, however, comes with challenge. I have spent time talking to Johnson Matthey shareholders, our people and directors, and there is a clear message – JM's a great company with great science. But commercialising that science is more important than ever. And we must do it at speed with financial discipline.

Everything we do must be aligned to our strategy. That means absolute clarity in our portfolio decisions and it is why we've begun a strategic review of our Health business. We need to forge new relationships with partners, suppliers, customers and value chains across the group. In our new markets we need to progress our capital projects quickly to complete our battery materials factories and build an ecosystem of partners and suppliers, while securing new customer contracts. And, we need to develop and commercialise our fuel cell and hydrogen businesses. At the same time, we will need to build sustainability into every aspect of our decision making.

> This is a great company with great science. But commercialising that science is more important than ever. And we must do it at speed and with financial discipline."

Supporting growth with disciplined execution

Discipline and rigour in our execution is key. And JM's track record on execution, if we're honest, is mixed.

We need to continue to improve our systems, processes and controls, and build on the progress we have already made with our forecasting and working capital management. And we must deliver on what we have promised.

In Clean Air, disciplined execution means continuing to drive efficiency, value and cash generation from our largest and most successful sector to invest in our growth businesses. The rate of transition from the combustion engine to fully electric vehicles, be they battery or hydrogen powered, is accelerating but we have great confidence that Clean Air will continue to create value for many years to come, especially in limiting emissions from heavy duty vehicles including trucks and buses.

Investing in our people

Finally, we must also continue to invest in our people. In my direct areas of finance and IT, and right across JM, we have made great strides in strengthening our organisation. We will continue to do so, developing our talented and experienced people and bringing in new people where necessary.

None of our achievements would be possible without our people, so I was delighted to see that our new sustainability ambitions include diversity and inclusion commitments – a priority that is very important to me. And I am looking forward to playing my part in supporting a 'one JM' culture.

There are some big challenges ahead of us, but I would not have joined Johnson Matthey if I didn't believe we could rise to them. After all, we've done it before. Johnson Matthey led the development of emission control systems to reduce vehicle pollution back in the 1970s. There is no reason why we can't do it again to help the world's transition to a more sustainable future – and every reason that we can.

2020/21 financial headlines

Revenue

£15.7bn +8%

Sales excluding precious metals

£3.9bn -5%*

Underlying operating profit

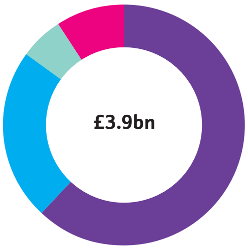
£504m -5%*

* At constant currency

Sales by sector

excluding precious metals

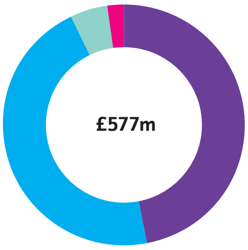
- Clean Air 62%
- Efficient Natural Resources 23%
- Health 6%
- New Markets 9%



Operating profit by sector excluding Corporate

underlying

- Clean Air 47%
- Efficient Natural Resources 46%
- Health 5%
- New Markets 2%



Financial performance review

		Reported results			Underlying results[1]			
		Year ended 31st March			Year ended 31st March			% change, constant rates[2]
		2021	2020	% change	**2021**	2020	% change	
Revenue	£ million	**15,673**	14,577	+8				
Sales excl. precious metals[3]	£ million				**3,922**	4,170	-6	-5
Operating profit	£ million	**323**	388	-17	**504**	539	-6	-5
Profit before tax	£ million	**238**	305	-22				
Earnings per share	pence	**106.5**	132.3	-20	**182.0**	199.2	-9	
Ordinary dividend per share	pence	**70.00**	55.625	+26				

Reported results

- Reported revenue increased 8% driven by higher average precious metal prices.
- Reported operating profit declined 17% largely driven by higher administrative expenses, and major impairment and restructuring charges.
- Reported profit before tax declined 22% to £238 million as a result of lower reported operating profit which was impacted by higher administrative expenses and major impairment and restructuring charges.
- Reported EPS declined 20% reflecting lower reported operating profit.
- Cash inflow from operating activities increased by £171 million to £769 million driven by the strong management of working capital.

Underlying performance[1]

- Sales declined 5% (1H: -20% and 2H: +11% year-on-year) primarily driven by the impact of COVID-19 on our Clean Air sector although this business experienced a strong recovery through the second half.
- Underlying operating profit declined 5%, due to higher administrative expenses and the impact of lower sales, which was moderated by higher platinum group metal (pgm) prices primarily in Efficient Natural Resources.
- Underlying EPS declined 9% reflecting lower operating profit.
- Free cash flow of £305 million was a strong improvement on the prior year, driven by the strong management of working capital across the group, and the reduction of backlogs despite the significant increase in pgm prices.
- Balance sheet remains strong, with net debt of £775 million; net debt to EBITDA of 1.2 times.

Change to reporting segments

For the year ending 31st March 2022, we are making small changes to our reporting segments to reflect how we are managing our businesses. This will increase visibility of our new growth businesses, notably our hydrogen technologies. Our new structure is outlined below and further detail will be provided in due course:

- **Clean Air** – no change.
- **Efficient Natural Resources** – Catalyst Technologies, PGM Services as well as Life Science Technologies (formerly part of New Markets).
- **Health** – no change.
- **Other Markets** – (New Markets and Value Businesses).
  - New Markets includes our battery materials, fuel cells and green hydrogen businesses.
  - Value Businesses includes Battery Systems, Medical Device Components as well as Diagnostic Services and Advanced Glass Technologies (both formerly part of Efficient Natural Resources) that are non-core.

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 38 on pages 243 to 246.

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 2019/20 results converted at 2020/21 average exchange rates. In 2020/21, the translation impact of exchange rates on group sales and underlying operating profit was negative circa £50 million and circa £6 million respectively.

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

Corporate

Corporate costs in the year were £73 million, an increase of £35 million from the prior year, largely due to higher bonus accruals, share based payments and legal costs.

Research and development (R&D)

We invested £194 million in R&D in the year which included £22 million of capitalised R&D. This was around 5% of sales and broadly flat on the prior year. We continue to invest in next generation technologies in Clean Air, the efficiency and resiliency of our refineries in Efficient Natural Resources, our Health API product pipeline, our eLNO cathode materials and hydrogen technologies.

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 76% of the non-sterling denominated underlying operating profit in the year ended 31st March 2021, were:

	Share of 2020/21 non-sterling denominated underlying operating profit	Average exchange rate Year ended 31st March		
		2021	2020	**% change**
US dollar	23%	**1.31**	1.27	+3
Euro	30%	**1.21**	1.14	+6
Chinese renminbi	23%	**8.85**	8.85	–

If current exchange rates (£:$ 1.39, £:€ 1.15, £:RMB 9.01) are maintained throughout the year ending 31st March 2022, foreign currency translation will have a negative impact of approximately £25 million on underlying operating profit. A one cent change in the average US dollar and euro exchange rates each have an impact of approximately £1 million and £2 million respectively 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

	Year ended 31st March		
(£ million)	**2021**	2020	**% change**
Underlying operating profit	**504**	539	-6
Profit on disposal of businesses	**–**	2	n/a
Amortisation of acquired intangibles	**(10)**	(13)	-23
Major impairment and restructuring charges[1]	**(171)**	(140)	+22
Operating profit	**323**	388	-17

[1] For further detail on these items please see note 2 on page 190 and note 6 on page 199.

Promote a fast paced, efficient business and high performance culture

Through our programme of active efficiency initiatives, we are transforming our organisation to create a more simple and efficient group, allowing us to act with greater agility and pace in a dynamic external environment. This includes the consolidation of our Clean Air manufacturing footprint and implementation of the new group operating model, which were targeted to save £80 million per annum by 2022/23. We have identified a further £30 million per annum of savings taking the total programme to £110 million per annum by 2023/24.

During the year we delivered £37 million of savings against our target of £110 million of annualised savings by the end of 2023/24. Total costs associated with this programme amount to £311 million of which £140 million was recognised in prior periods, and £171 million during this year of which £80 million is cash (2019/20: nil). For further details on costs, please see page 38.

Previous efficiency initiatives now complete

During the year, we completed our historic cost savings programmes which delivered £145 million of savings in total, of which £29 million was delivered in the year. Total costs associated with these programmes of circa £70 million (of which £40 million was cash) which were taken outside of underlying operating profit in prior years.

Financial review continued

Summary of benefits

Initiative £ million	Benefits delivered in 2020/21	Total benefits delivered to date	Future benefits by 2023/24	Total annualised benefits by 2023/24
Clean Air footprint	5	5	55	60
Group wide organisational efficiency	32	32	18	50
Active efficiency programmes	**37**	**37**	**73**	**110**
Previous efficiency programmes[1]	29	145	–	145
Total efficiency programmes	**66**	**182**	**73**	**255**

Summary of impairment and restructuring charges

Initiative £ million	Incurred in 2020/21	Total incurred to date
Clean Air footprint	(79)	(140)
Group wide organisational efficiency	(90)	(90)
Other[2]	(2)	(81)
Active efficiency programmes	**(171)**	**(311)**
Previous efficiency programmes	–	(71)
Total impairment and restructuring charges	**(171)**	**(382)**

Major impairment and restructuring charges

During the year we recognised impairment and restructuring charges of £171 million (31st March 2020: £140 million) associated with efficiency initiatives to transform our organisation into a more simple and efficient group. Of this charge, £80 million was cash. The remaining £91 million was a non cash impairment relating to the consolidation of our Clean Air manufacturing footprint (£49 million) and group wide organisation efficiencies (£42 million).

£ million	Impairment and restructuring charge
Clean Air footprint	79
Group wide organisational efficiency	90
Other[3]	2
Total	**171**

Finance charges

Net finance charges in the year amounted to £85 million, broadly in line with 2019/20. Finance costs on metal borrowings have decreased due to the focus across the group on reducing precious metal working capital. This was offset by higher average interest rates across the mix of our borrowings.

Taxation

The effective tax rate on reported profit for the year ended 31st March 2021 was 13.9%, down from 16.4% in the prior year.

The tax charge on underlying profit before tax for the year ended 31st March 2021 was £68 million, an effective underlying tax rate of 16.3%, slightly higher than 15.7% in the prior year primarily due to profit mix across different tax jurisdictions.

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.

Notes:

1 £145 million of delivered efficiency programmes include a previous (2017) restructuring programme (£25 million), the optimisation of Health's manufacturing footprint (£20 million) and savings delivered through our group procurement function (£100 million).

2 Other includes Battery Materials LFP, Health product pipeline and other restructuring costs.

3 Site closure of Battery Materials LFP.

- 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. This strategy relates to Johnson Matthey Plc and its global subsidiaries in respect of the financial year ended 31st March 2021 and satisfies the requirements of paragraph 16(2) Schedule 19 Finance Act 2016.

Post-employment benefits

IFRS – accounting basis

At 31st March 2021, 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 around £100 million.

The cost of providing post-employment benefits in the year was £65 million, up from £49 million last year. The prior year charge included a £20 million credit, compared to a £3 million credit this year.

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.

The next triennial actuarial valuation of the UK pension scheme is due as at 1st April 2021 with the results available towards the end of 2021.

The latest actuarial valuations of our two US pension schemes showed a surplus of £6.8 million at 1st July 2020, an improvement from a £1 million surplus at 1st July 2019.

Capital expenditure

Capital expenditure was £358 million in the year, 2.0 times depreciation and amortisation (excluding amortisation of acquired intangibles). Key projects included:

- Investment in the development and commercialisation of eLNO, our portfolio of leading nickel rich advanced cathode materials, including our first commercial plant in Konin, Poland
- Investment in our pgm refineries to increase the resilience and capacity of these assets
- Completion of Clean Air manufacturing plants in Europe and Asia
- Upgrading our core IT business systems
- Investment into Fuel Cells and Green Hydrogen
- Continued investment in our Health API product pipeline

Capital expenditure for 2021/22 is expected to be up to £600 million as our investment into strategic growth projects continues. Key projects include:

- Continued commercialisation of eLNO battery materials
- Investment in our pgm refineries to increase the resilience and capacity of these assets
- Upgrading our core IT business systems
- Investment into our hydrogen offerings

Depreciation and amortisation (excluding amortisation of acquired intangibles) was £180 million in the year. This is expected to increase to c.£225 million in 2021/22 due to the depreciation of our new Clean Air plants, the upgrade of our pgm refineries and amortisation of the upgrade to core IT systems.

Strong balance sheet

As part of our improved strong management of working capital and focus on balance sheet efficiency, net debt at 31st March 2021 was £775 million. This is a decrease of £103 million from 30th September 2020 and decrease of £319 million from 31st March 2020. Net debt is £40 million higher at £815 million when post tax pension deficits are included. The group's net debt (including post tax pension deficits) to EBITDA was 1.2 times (31st March 2020: 1.6 times), slightly below our target range of 1.5 to 2.0 times.

We use short term metal leases, which are outside the scope of IFRS 16 and off-balance sheet, as part of our mix of funding for working capital. Despite the significant increase in pgm prices, metal leases did not increase in value in the year. These amounted to £437 million at 31st March 2021 (31st March 2020: £451 million).

Free cash flow and working capital

Free cash flow was an inflow of £305 million, a strong improvement on the prior year. This reflects strong management of both non-precious metal and precious metal working capital across the whole group, which offset the significant rise in pgm prices experienced.

Average working capital days excluding precious metals decreased by 6 days to 57 days. Our target range for average non-precious metal working capital days is between 50 and 60 days over the medium term.

Dividend

The board will propose a final ordinary dividend for the year of 50.0 pence at the Annual General Meeting on 29th July 2021. Together with the interim dividend of 20.0 pence per share, this gives a total ordinary dividend of 70.0 pence representing a 26% increase on the prior year. The board 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 on 3rd August 2021, with an ex-dividend date of 10th June 2021.

Contingent liabilities

See note 35 on pages 238 and 239 of the accounts.

Going concern and treasury policies

Going concern

While COVID-19 brought unprecedented challenges to the market, particularly in the first half, the resilience of JM's business model has been demonstrated in its strong financial position in 2020/21. At 31st March 2021, the group had a strong balance sheet with almost £1.5 billion of available cash and undrawn committed facilities and no material maturities in the next 12 months. Leverage, measured by net debt (including post tax pension deficits) to EBITDA, was below our target range at 1.2 times. At 31st March 2021 the group also had metal lease facilities of £615 million, of which £437 million (31st March 2020: £451 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.

Our review of going concern covers the period of twelve months following the publication of full year results, being to June 2022 and our assessment uses a base case and a severe but plausible downside case to stress test key assumptions, including the pace of end markets recovery from COVID-19. Under each of these scenarios we have assessed our headroom against committed facilities and key financial covenants and considered the sufficiency of liquidity across the group.

At a macro level we have used forecasts from a range of external parties together with our own insights into expected market volumes to derive the scenarios.

Clean Air

In our base case we are expecting strong growth as the light duty market in particular rebounds to pre-COVID levels which is broadly consistent with the IHS Markit outlook for light duty vehicle production. Europe and North America see strong growth in Light Duty vehicles while China is broadly flat. Within this we expect Europe to continue to transition away from diesel to gasoline (circa 27% diesel in 2021/22 per IHS). In Heavy Duty, LMC global vehicle production forecasts show a 5% decline in vehicle production with a softer market in China offsetting rebounds in Europe and the US. However, given the global legislative frameworks in place we expect good growth despite the decline in vehicle volumes in China. With this growth, some increase in working capital is expected but this is modest given a number of initiatives in place to mitigate this.

In our severe but plausible scenario, we test the impact of a much slower recovery and/or reoccurrence of local COVID-19 interruptions resulting in a 10% drop in Light Duty vehicle sales. At the same time we consider a greater shift from Light Duty diesel to gasoline in Europe and a greater share of battery electric vehicles (BEVs) (an increase of a third of the current base case BEV market share assumption). The impact of these changes would significantly impact sales although profitability would be partly sheltered by the impact of the recent transformation savings. At the same time working capital would reduce and whilst we have kept our assumptions for precious metal prices unchanged in this scenario, given the assumed reduction in volumes, they could reasonably be expected to decline, further benefiting working capital.

Efficient Natural Resources

The impact on our Efficient Natural Resources Sector varies by sub-sector. The Catalyst Technologies businesses have seen a significant impact from the COVID-19 slowdown and our base case forecasts a recovery to pre-COVID levels over the year in line with industry projections. The Platinum Group Metal Services (PGMS) business is assumed to grow strongly, driven by the demand for catalysts in the automotive market (see Clean Air above). In our base case we have used a lower precious metals price which moderates year-on-year profit growth. The recent structural improvement to backlogs in the refineries is maintained with the ongoing benefit to working capital.

The severe but plausible scenario again assumes a much slower recovery in end user market, with growth of less than 1% at the macro level in the catalyst technologies markets and a halving of growth from our base case scenario in our PGMS markets. This impacts profitability more significantly in PGMS as it has a relatively high proportion of fixed costs. Working capital is assumed to be relatively unaffected and the structural reduction of backlogs reduces the sensitivity of working capital to precious metal prices.

Health and New Markets

As demonstrated during the past year Health was relatively unaffected by COVID-19 and the resulting economic slowdown. Given the relative size of Health and New Markets we have not made significant changes to our base case in our going concern scenario testing.

In both the base case and severe but plausible scenario we have assumed that our strategic focus and investment in Battery Materials is maintained throughout the period. This includes a significant level of capital expenditure in the period.

Conclusion

The group has a robust funding position and its business model was resilient during the recent COVID-19 pandemic. The future performance has been tested against both a base case and severe but plausible case. In both scenarios, we have significant headroom against committed facilities and key financial covenants in the going concern period (period to June 2022). In any more severe but plausible scenarios, the group has a range of levers which it could utilise to protect headroom including changing customer terms, reducing capital expenditure and reducing future dividend distributions. 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 a further decline in profitability beyond the severe but plausible scenario or a significant increase in borrowings.

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 2021 and so determine that it is appropriate to prepare the accounts on a going concern basis.

Treasury policies

Treasury policies and financial risk management

Group Treasury is a centralised function within JM with teams in the UK, US and China. 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.

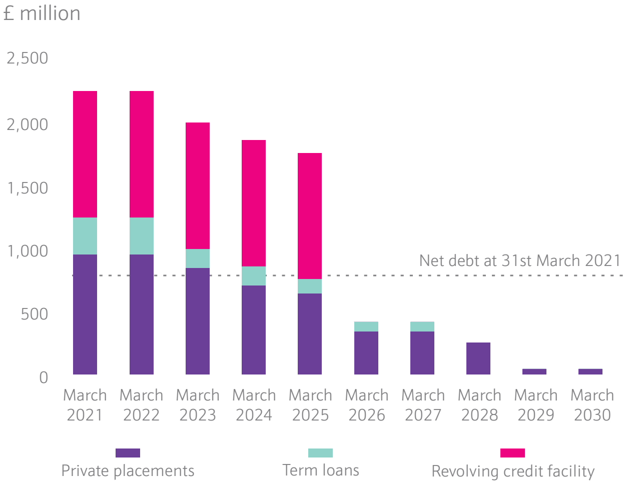
At 31st March 2021 the group had readily available cash investments of £462 million and £1 billion of undrawn committed bank facilities giving total available liquidity of almost £1.5 billion. The group also has a number of uncommitted facilities, including overdrafts and metal lease lines, at its disposal. The maturity dates of the group's debt and committed borrowing facilities as at 31st March 2020 are illustrated in the chart below.

The only significant maturity in the period to June 2022 is €165.6 million loan from the European Investment Bank maturing in June 2022.

The group recently extended its £1 billion sustainability linked revolving credit facility by a further year to March 2026. Our longer term funding comes from the US private placement market and other regional lenders including the European Investment Bank and KfW. During the year, JM's access to the Bank of England's COVID Corporate Financing Facility (CCFF) expired, having not been utilised at any time.

As a long time, highly rated issuer in the US private placement market, JM expects to be able to refinance or 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.

Maturity profile of term debt and committed facilities



At 31st March 2021 the group had metal lease facilities of £615 million, of which £437 million (31st March 2020: £451 million) was drawn. As these metal leases are for periods of less than 12 months and uncommitted they are excluded from our analysis of future headroom. However, the metal leasing market remains active and there is no indication that renewing these lease facilities when they mature will not be possible.

Foreign currency risk

JM's operations are situated in over 30 locations with significant assets and profit 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 2021 are shown on pages 210 and 231.

Interest rate risk

At 31st March 2021 the group had net borrowings of £775 million of which 107% (31st March 2020: 84%) was at fixed rates with an average interest rate of 3.5% (2019/20: 3.6%). 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 £0.5 million impact on the group's profit before tax (2019/20: £2 million).

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.

+ **Read more:** Our principal risks on pages 92 to 96

Sector review: Clean Air

> We are transforming Clean Air so that we can develop the expertise and provide the cash that Johnson Matthey needs to grow our newer, lower carbon businesses."

Joan Braca
Sector Chief Executive,
Clean Air

Sales

£2,412m -7%

Underlying operating profit

£269m -8%

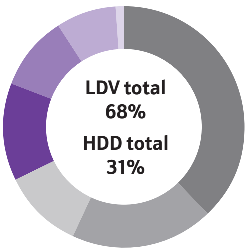
Margin	ROIC
11.2%	15.6%

Employees

6,289

Sales by business

- LDV Europe 38%
- LDV Asia 19%
- LDV Americas 11%
- HDD Americas 13%
- HDD Europe 10%
- HDD Asia 8%
- Other – stationary 1%



It's been an extraordinary year for every industry, not least for automotive.

Our industry is reliant on a global, just in time supply chain. When lockdowns first hit us in early 2020, we all needed to quickly flex our approach and ways of working. Our teams had to adapt at mind boggling speeds – adjusting capacity and production plans to match a volatile supply of raw materials while adapting to strict new safety practices at our plants and trying to get our customers everything they needed.

Phenomenal team effort in challenging circumstances

Given these challenges, what the team achieved was amazing. They have done a phenomenal job managing everything from our working capital to inventory levels to commercial relationships. The operational management of profit and loss was exemplary. And they did it while carrying out a major transformation programme that included reducing headcount, moving 16 business units into a single standardised global model, ramping up new efficient plants in Europe and Asia, achieving our lowest ever injury and illness rates, and a ten point rise in our European customer satisfaction scores. Our R&D teams kept pace too, developing new technology to tackle the next set of emissions regulations that will come in across Asia, Europe and the US in the latter part of the decade.

Streamlining our business and supporting growth

It's meant a lot of change and a lot of hard work in a very short period. But we now have a more streamlined, efficient business that is poised to tackle the future successfully. And it was that work, combined with strong recovery in demand across all our regions in the second half of the year, that meant we outperformed the market to end only moderately below the 2019/20 financial year and above our own expectations. I would like to thank the team for their dedication under such challenging circumstances.

While we had always planned to introduce this transformation programme, COVID-19 accelerated that decision. Clean Air is a successful, mature business facing rapidly changing market trends. If forecasts are correct, then the pandemic has only increased the clock speed on those trends. Light duty diesel engines look set to decline more rapidly, while battery electric vehicles are likely to take a greater market share sooner than anticipated. At the same time, we have tougher regulations coming later this decade, which will mean reductions in NOx emissions and tighter controls on particulates. Meeting them requires our technology, and our technical teams are working hard with our customers to make this happen.

The work we've done has helped future proof our business. We are set up to capture growth from the next round of regulations and to provide the cash Johnson Matthey needs as we grow our new low carbon businesses. And because we have worked with our automotive partners for so many years, we have an opportunity to share market insights with our newer businesses while acting as an ambassador for new conversations as the market adapts.

Delivering our vision through the transportation transition

And while market trends might be changing faster than we initially thought, Clean Air remains the flagbearer for Johnson Matthey's vision for a cleaner, healthier world. That is reflected in the quantity of harmful carbon monoxide, nitrogen oxides and particulates that we have removed over the past four decades. And we will continue to play a vital role – it will still take years to make the systemic changes needed in consumer behaviour, legislation, infrastructure, technology and economics that will enable a full scale transition in the world's transport systems.

Continued focus on efficiency to drive future success

If the last year has been about putting the building blocks in place, this year is about consolidating that work and using our transformation programme to keep driving operational efficiency and technology development. There are plenty of opportunities to do so and, as we demonstrated during the pandemic, we can do it at speed.

We asked a lot of our people during the year, so I am thrilled that our employee engagement scores stayed level and even grew in some instances. Sustaining that sense of teamwork and morale must be our priority. Clean Air is an exciting business, one with opportunities for our people to develop existing and new skills that will help to keep Johnson Matthey moving through these transitional years, while having a tremendous impact on improving air quality for society.

At a glance

Description

We make catalysts and catalyst systems that help the automotive industry reduce harmful emissions from all types of vehicles. We also make catalyst systems that lower emissions from industrial processes.

Our key customers

- Car and heavy duty truck manufacturers.
- Engine manufacturers.

Our products

- Emission control catalysts for gasoline, diesel and hybrid cars, vans, trucks and buses.
- Emission control catalysts for industrial processes.

15
manufacturing plants

2.5 million
tonnes harmful air pollutants removed in 2020/21

Sector review: Clean Air continued

Operating results: Clean Air

	Year ended 31st March			
	2021 £ million	2020 £ million	% change	% change, constant rates
Sales				
LDV Europe	**922**	1,046	-12	-11
LDV Asia	**453**	381	+19	+21
LDV Americas	**265**	315	-16	-14
Total Light Duty Vehicle Catalysts	**1,640**	1,742	-6	-5
HDD Americas	**305**	443	-31	-29
HDD Europe	**250**	277	-10	-11
HDD Asia	**186**	111	+68	+68
Total Heavy Duty Diesel Catalysts	**741**	831	-11	-10
Other – stationary	**31**	45	-31	-31
Total sales	**2,412**	2,618	-8	-7
Underlying operating profit	**269**	295	-9	-8
Margin	**11.2%**	11.3%		
Return on invested capital (ROIC)	**15.6%**	18.4%		
Reported operating profit	**165**	236		

Strong recovery in demand with second half margin approaching pre-COVID-19 levels

- Sales were down 7% and underlying operating profit declined 8% following disruption as a result of the pandemic in the first half. However, we saw a strong recovery in demand in the second half with sales and underlying operating profit up materially year-on-year, and 2H margins of 13.6% approaching pre-COVID-19 levels.
- Light duty sales were down 5%, outperforming global auto production, benefiting from an increased value per vehicle due to tightening legislation in Europe and Asia.
- In heavy duty, sales were down 10%. Americas and Europe were down materially, in line with the market, but we saw significant growth in China driven by a strong market and benefited from increased value per vehicle from tighter legislation.

Strong recovery in demand

In Clean Air, we provide catalysts for emission control after-treatment systems for light and heavy duty vehicles powered by internal combustion engines. Globally Clean Air sales declined 7% in the year. Our first half was materially lower, with sales down 27%, reflecting disruption caused by COVID-19, including customer shutdowns. In the second half, we saw a strong recovery in demand and sales were up 16% in comparison to the second half of the prior year.

Light Duty Vehicle (LDV) catalysts

Sales were down 5% in the year. Following a weak first half where sales declined 23%, we saw a strong second half recovery with sales up 15% year-on-year. Over the year, Europe and the Americas saw double digit declines, which were partly offset by a strong performance in Asia.

European LDV declined 11% with differing performance between diesel and gasoline. Light duty diesel represents c.80% of sales in Europe and sales in this segment decreased 13%, which was ahead of a market that declined materially. This reflected a better platform mix as we saw some platforms moving to more complex systems to comply with tighter Euro 6d final legislation. In light duty gasoline, sales were only down 3%, which was well ahead of the market driven by increased value per vehicle on average.

Americas LDV sales were down 14%, although ahead of the market reflecting a more favourable platform mix, with a greater indexation to diesel. Whilst diesel sales were down, this market proved more resilient than gasoline in the year. Our gasoline sales declined, in line with the market.

Sales in Asia LDV grew strongly as we benefited from an uplift in value per vehicle due to tightening legislation, particularly in China and India and increased vehicle production. This was partly offset by some loss of gasoline share in China as previously reported.

Case study

A win-win solution for changing market conditions

We use the power of metals chemistry to turn harmful emissions from car engines into clean air. Which is why platinum group metals are a crucial ingredient in many of our emission control catalysts.

But these metals are valuable and scarce. So we are trying to find ways to minimise the quantities we use in our manufacturing processes. We are also on hand if our customers need us to help them manage an efficient supply and flow of those metals for their catalysts.

This became even more important during 2020, when we saw precious metal prices rise very quickly. This inevitably had a knock on effect on cash flows for JM, and for our suppliers and our customers.

Managing that impact called for collaborative working – across our teams in JM and with our customers and suppliers – to find new solutions that would help us all better navigate the changing market conditions.

I'm really proud of how bold and creative we have been as a JM team to understand the needs of each party and achieve a win-win outcome across the supply chain, as a result building stronger relationships with our partners.

Sunny Sun
Regional Accounts Director

Heavy Duty Diesel (HDD) catalysts

The heavy duty market (trucks, buses and non-road equipment) is expected to show greater longevity than light duty, with less of an impact in the short and medium term from electrification.

Global HDD sales were down 10%. Whilst first half sales were down 33%, we experienced a strong recovery in the second half with sales up 20% year on year as markets recovered. We saw significant growth in our HDD Asia business, although this was more than offset by the Americas and European regions which saw truck production materially impacted by COVID-19.

Our Americas HDD business declined 29%, in line with the market. Following the downturn in the Class 8 truck cycle, external data suggest the cycle has turned. We saw increased orders coming through at the end of our financial year and we expect to see further benefits in 2021/22.

Europe HDD declined 11%, ahead of the market. In Asia sales grew 68%, significantly ahead of a market that grew strongly. We also benefited from Chinese government incentives and tighter legislation in China and India.

Underlying operating profit

Underlying operating profit declined 8% as the disruption from the pandemic in the first half was partly offset by a strong cost control and early benefits from our transformation programme. Margin remained broadly flat over the year at 11.2%, with the second half margin of 13.6% approaching pre-COVID levels.

ROIC

ROIC declined 2.8% to 15.6% due to lower operating profit and higher working capital as business activity ramped back up.

Sector review: Efficient Natural Resources

"We sit in a sweet spot – with science and technology at our core, providing essential solutions today that will matter even more tomorrow."

Jane Toogood
Sector Chief Executive,
Efficient Natural Resources

Sales

£1,057m -1%

Underlying operating profit

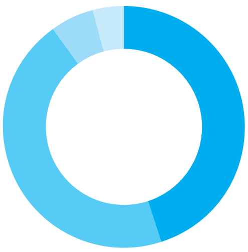
£268m +6%

Margin	ROIC
25.4%	25.2%

Employees

4,017

Sales by business



It has been a strong year for Efficient Natural Resources despite the challenges of living and working through a pandemic, and we end the year strongly positioned to win in a net zero world.

While Catalyst Technologies was hit by falling demand, cash generation was good both because of higher than average precious metal prices, which helped refining and trading performance in PGM Services, and our decisive efforts to optimise our operations for maximum efficiency. As a result, I'm pleased that we generated significant amounts of cash for the group under difficult economic circumstances.

Maintaining production throughout the pandemic

We also kept our facilities running throughout the pandemic and I'd like to thank the team for their hard work, particularly as we restructured part of our operations for greater efficiency. They did an excellent job at reducing our platinum group metal (pgm) refinery backlogs to historically low levels and improving our precious metal working capital volumes.

The impact of the pandemic has meant it's been a difficult year for everyone, and we continue to live with a lot of uncertainty. To that end, my senior leaders and I took part in mental health awareness training during the year, and we made sure employees knew how to access our wellbeing resources, such as Assist, our global employee assistance programme. This will remain an area of focus in the year ahead.

Throughout the year we have seen markets and industries recover at different rates. But the one consistent trend has been an acceleration of the drive towards sustainability: the essential transitions in transport, energy, decarbonisation of chemicals production and circularity. It's a really exciting time for Efficient Natural Resources, because we have such a big role to play. So it's essential that we make the right investment choices at the right time.

We are at the heart of the world's biggest transitions

Efficient Natural Resources is well placed to help our own businesses and customers move through those transitions and hit their sustainability and net zero targets. We're experts at converting syngas, a gaseous mixture of carbon oxides and hydrogen, and syngas is at the heart of many chemical value chains. In fact, syngas building blocks are crucial to around 40% of major primary chemicals, going into end markets such as food production, fuels and building materials. And because our catalysts are feedstock agnostic, we can produce that syngas from lots of different sources, including surplus CO_2, biomass and renewable energy. This represents a big opportunity to help the industry to decarbonise.

New growth opportunities in the hydrogen economy and industrial decarbonisation

The progress we're making in new low carbon hydrogen technologies is another excellent example. We have a long history in making catalysts and designing processes for hydrogen production, with a 40% market share in 'grey' hydrogen technologies. But grey hydrogen is made from fossil fuels, which means carbon emissions. So now we're rapidly commercialising our award winning 'blue' hydrogen technologies (made from fossil fuels and combined with carbon capture and storage), with a global pipeline of around 15 projects. And, of course, in our New Markets Sector, we're designing the next generation of electrolysis products and technologies that will help make it easier and cheaper to produce 'green' hydrogen from renewable energy.

This work will be key in helping to decarbonise some of the world's most challenging industries and support ongoing fuel cell development for transport. It also creates new growth opportunities for our world leading methanol and ammonia technologies. Using clean hydrogen to make these products not only means we can lower the carbon footprint of chemicals production, it also provides a way to ship hydrogen affordably around the world.

Efficient Natural Resources is therefore at the heart of an industry that is set to be an important part of the transport, energy and decarbonisation transitions. In fact, without hydrogen, the world cannot reach its net zero targets.

Applying recycling knowhow to the circular economy

But we are also in a unique position to support the fourth big transition – the circular economy. Like the others, there will be challenges to overcome. For example, managing rising demand for the scarce precious metals needed to make catalysts and products used in batteries and fuel cells for electric vehicles, while reducing the quantity of primary metals we extract in the first place.

We're already incredibly proud of our heritage in recycling and deep scientific capability in 'thrifting' – designing catalyst technologies that use as little precious metal as possible to conserve critical resources. And our understanding of metals chemistry means we can recycle platinum from catalysts or other sources to a minimum purity of 99.95%.

At a glance

Description

We make catalysts and license process designs and technologies that help customers in the chemicals and energy industries turn a wide range of feedstocks into many of the products that are essential for modern life. We supply customers with pgms and are also a key supplier to other parts of JM. We make specialist products from pgms and we're the world's biggest recycler of them.

Our key customers

- Chemical manufacturing companies.
- Processors of mined and used pgms.
- Oil and gas companies.
- Other industrial customers and pgm-using industries.

Our products and services

- Catalysts.
- Licensing chemical process technologies.
- Pgm recycling.
- Specialist products made from pgms.
- Specialist products for the glass industry.
- Diagnostic services for oil and gas industry applications.

10

new catalyst licences won in 2020/21

Building a cleaner, healthier world for today… and tomorrow

There's plenty of work still to do, of course, including investing in some of our older pgm refining facilities to improve efficiency, but I believe Efficient Natural Resources sits in a sweet spot – providing essential services today that will matter even more tomorrow.

As someone who joined Johnson Matthey because of its reputation in sustainability, this is an exciting prospect. I believe passionately that our science can help solve some of the world's biggest challenges. We have the foundations in place, now we must draw on our skills and expertise to make the most of the growth opportunities ahead of us.

Sector review: Efficient Natural Resources continued

Operating results: Efficient Natural Resources

	Year ended 31st March			
	2021 £ million	2020 £ million	% change	% change, constant rates
Sales				
Catalyst Technologies	**469**	556	-16	-15
PGM Services	**479**	389	+23	+25
Advanced Glass Technologies	**66**	70	-6	-6
Diagnostic Services	**43**	64	-33	-31
Total sales	**1,057**	1,079	-2	-1
Underlying operating profit	**268**	256	+5	+6
Margin	**25.4%**	23.8%		
Return on invested capital (ROIC)	**25.2%**	17.2%		
Reported operating profit	**241**	250		

Strong performance despite challenges from COVID-19

- Strong performance with sales broadly flat despite challenges from COVID-19. Catalyst Technologies was weaker due to COVID-19 and the comparison to a strong performance in the prior year from methanol catalyst refills. PGM Services grew strongly benefiting from more volatile and higher average precious metal prices.
- Underlying operating profit grew 6% and margin expanded 1.6 percentage points. This reflected higher average pgm prices and strength in our PGM Services trading business in a more volatile price environment as well as efficiency benefits. This was partly offset by weaker performance across the rest of the sector.

Catalyst Technologies

Our Catalyst Technologies business licenses key, proven and efficient process technology solutions and manufactures high value speciality catalysts and additives principally for the chemical and energy industries. We continued to operate our own plants throughout the COVID-19 pandemic by implementing new ways of working to keep our employees safe.

Sales were down primarily driven by lower demand for refill catalysts and additives, with sales of copper zeolites to Clean Air and licensing income also lower. These sales were partly offset by good growth in first fill catalysts from customer plants already under construction prior to COVID-19.

Refill catalysts and additives impacted by COVID-19 and comparison to a strong prior year

This is recurring business which makes up the majority of sales within Catalyst Technologies. Sales were lower driven by weaker demand due to COVID-19 in some end markets including additives which reflects fuel demand, and formaldehyde which is largely used in construction. As expected, following a strong performance in the prior year, sales of methanol catalyst refills were lower due to the phasing of customer changeouts.

First fill catalysts grew well

Sales of first fill catalysts are driven by the start-up of new plants. They are a lead indicator of future refill catalyst demand. In the period, we saw good sales growth with increased demand for ammonia and hydrogen catalysts as new plants came onstream.

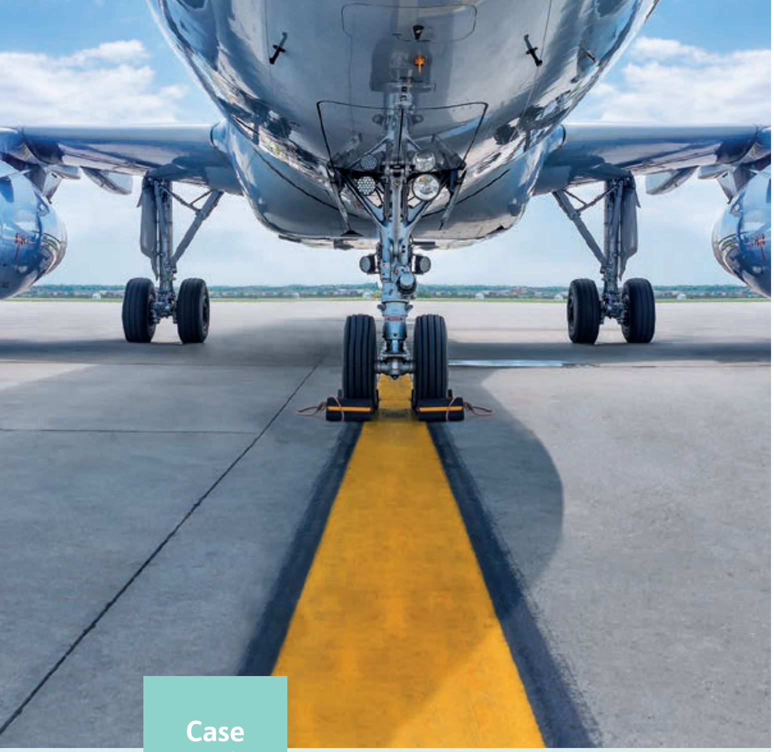
Licensing weaker in the period but strong future prospects

Our licensing business is dependent on new plant builds and revenue is recognised over the period of construction. In the period, sales were down largely due to project delays caused by COVID-19. We are starting to recognise income from our new technology including Fischer Tropsch sustainable aviation fuel and we received our first revenues from providing engineering packages and detailed studies for HyNet and Acorn, two of the world's leading low carbon blue hydrogen projects.

Licensing activity has improved and we signed 10 new licences in the year (2019/20: 4 licences) including technology for the world's largest methanol plant. We have a strong pipeline of projects which includes the world's first climate neutral e-methanol plant (see page 9).

PGM Services

PGM Services is the world's leading secondary refiner of platinum group metals (pgms) with expertise in management and refining of these scarce critical materials. This business has an important role in enabling the energy transition through providing circular solutions as demand for scarce critical materials increases and provides a strategic service to the group, supporting Clean Air with security of metal supply in a volatile market. Going forward it will provide that same security of supply to fuel cells and green hydrogen. In light of COVID-19, we adapted our working practices and our refineries maintained operation throughout the year, ensuring continued supply to our customers.



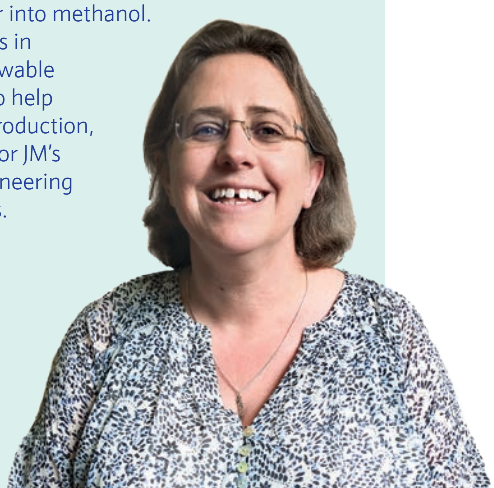
Case study

Creative solutions to transition towards sustainable fuels and chemicals

The chemicals industry has evolved to deliver products that have transformed how we feed, clothe and move people across the globe. But with its roots in 20th century investments in fossil fuel extraction and conversion, the environmental impact of the industry is under ever tighter scrutiny.

The industry has always adapted to different feedstocks, for example the recent shale gas revolution in the US. Now as we accelerate towards a future with net zero and circularity at the forefront of our thinking, and as brand owners of consumer facing products make strong commitments to sustainability and decarbonisation, we must be creative in finding new low carbon solutions. We're at the start of a revolution in our industries, but one at which efficient and effective catalyst technology sits at the heart. Industry's current skills in deploying improved thermo catalysis will be complemented by advances in bio, electro and possibly photocatalysis.

There'll be no one silver bullet, but finding renewable feedstocks and energy sources to replace fossil fuels will play a key role. We've been working on some projects recently that are great examples of this. These include advancements in real world sustainable aviation fuels, bioaromatics that can be used to produce renewable fuels and plastics, and a project that will turn wind power and CO_2 captured from the air into methanol. These are important steps in demonstrating how renewable feedstocks can be used to help decarbonise chemicals production, and a perfect challenge for JM's catalyst and process engineering expertise and capabilities.



Suzanne Ellis
Innovation Director

PGM Services sales grew strongly, benefiting from higher average pgm prices

Sales increased 25% reflecting strong growth in our refining and trading businesses as we benefited from more volatile and higher average precious metal prices driven by tight market conditions for these critical materials. Sales grew in chemical products supported by the supply of catalysts for fuel cells. Industrial products containing pgms were slightly down.

Refinery backlog volumes at historically low levels

We continue to make excellent progress in reducing our refinery backlogs. Our backlogs are now at historically low levels, reflecting a strong operational focus and improvement in the management of precious working capital. These improvements support the group's balance sheet efficiency and strengthen our position as a trusted supplier of scarce critical materials.

Advanced Glass Technologies

Advanced Glass Technologies mainly provides black obscuration enamels and silver paste for automotive glass applications. Sales were lower across both non-automotive and automotive segments primarily driven by lower demand due to COVID-19 in the first half, although we saw a strong rebound in the second half as markets recovered.

Diagnostic Services

Diagnostic Services provides specialised detection, diagnostic and measurement solutions for our customers in the petroleum industry. Sales were down impacted by COVID-19 which limited travel to customer sites, the lower oil price and lower oil consumption.

Underlying operating profit

Operating profit grew 6% and margin expanded 1.6 percentage points. This was primarily driven by a circa £80 million benefit from higher average pgm prices and strength in our PGM Services trading business in a more volatile price environment as well as efficiency benefits. This was partly offset by weaker performance in Catalyst Technologies, Diagnostic Services and Advanced Glass Technologies affected by COVID-19.

ROIC

ROIC increased 8% to 25.2% driven by lower precious metal working capital and higher underlying operating profit.

Sector review: Health

"We operate in a number of fast growing market segments, and our job is to be agile and responsive to commercialise the right opportunities out there. It's an exciting time for our sector."

Niek Stapel
Sector Chief Executive,
Health

Sales

£237m +8%

Underlying operating profit

£31m +15%

Margin

13.1%

ROIC

6.4%

Employees

958

Sales by sector

Joining a new business is always a challenge.

But doing so at a time when the whole world is responding to the COVID-19 pandemic has made my first six months as Johnson Matthey's Health Sector Chief Executive particularly interesting.

Of course, we have all had to adapt to new ways of working, including strict new safety measures for our operating teams and a lot more video calls for those of us working from home. Nevertheless, I am delighted by the way everyone has risen to the challenge and kept our facilities running safely throughout the pandemic.

COVID-19 aside, I'm incredibly excited to have joined a business that has such a positive influence on society. One that is completely aligned with Johnson Matthey's broader vision for a cleaner, healthier world. This is a fantastic team that is rightly proud of the work they do. And no wonder – the services and products we provide help our pharmaceutical customers create life changing medicines. It is a pride I have come to share in just six short months.

A solid financial performance despite the pandemic

Financially, it was a good year for us. Our sector isn't typically affected by the ups and downs of the economic climate, so COVID-19 has had little direct impact. The pandemic actually resulted in some growth since our active pharmaceutical ingredients (APIs) play an important role in the pain medication used to support COVID-19 patients needing ventilation.

In our business we partner with both 'innovator' customers (companies developing novel medicines) and 'generic' customers (who make existing drugs that are no longer under patent). Growth was fuelled by the progression of existing innovator customer programmes, new innovator related contracts, as well as new generic customer contracts for APIs used in opioid addiction therapies.

COVID-19 has not changed our broader market outlook either. A growing global population, the ongoing rise in average age and greater consumer expectations were already driving up healthcare demand. If anything, COVID-19 has only made people more aware of the importance of healthcare.

Balancing our portfolio for growth

So we expect our end markets to keep growing – the market for APIs will grow around 7% per year, but in some of our segments growth could be much higher in the coming years.

To make the most of these opportunities, we've worked hard to improve commercialisation prospects in our 'generic' API product pipeline. In addition, we have worked closely with our innovator customers supporting the development and advancement of various clinical programmes. We have also supported their growing commercial programmes by investing in the expansion and scale up of our manufacturing capabilities. Furthermore, to position ourselves for the future, we are providing our customers with development and manufacturing services in high growth market segments such as high potency APIs, RNA based technology platforms, and linker technology required in the development of antibody drug conjugate based (ADC) therapies.

More agility for more productivity

I believe we now have the right portfolio, focusing on the right market segments. And we are continuing to invest in our product pipeline to bring new APIs to the market. But we're now doing that more efficiently, with a new analytical approach of assessing projects at each stage of the development cycle, which will improve our ability to forecast the best commercialisation opportunities.

We're also enhancing the way we run our plants to improve productivity and efficiency, while looking for ways to create an even more integrated supply chain. The focus will be on getting the most from our assets and equipment and also on a fully integrated sales and operations planning process.

Excellent prospects for growth

The work we have done – and are doing – is positioning us well for the strategic review of the sector that we announced just after the year end. This review is part of Johnson Matthey's ongoing work to focus our portfolio to ensure we deliver the best value for our shareholders.

There is still plenty to do in Health and we have a great team whose work is fundamental to our vision. It's a time of huge opportunity. We have a business with exciting prospects and we're working with fantastic partners and customers to help create the next generation of medicines. I am very confident that we will see plenty more organic growth in the years to come because what we do is so essential for society.

At a glance

Description

We make the vital compounds – known as active pharmaceutical ingredients (APIs) – and other specialist products used in drug development that pharmaceutical companies need to create life changing medicines.

Our key customers

- Pharmaceutical companies.

Our products

- Complex active APIs used in existing, off patent drugs (generic drugs) and in new to market treatments (newly developed 'innovator' drugs).
- Drug development and synthesis services.

59
projects in our pipeline

6
manufacturing plants

Sector review: Health continued

Operating results: Health

	Year ended 31st March 2021 £ million	2020 £ million	% change	% change, constant rates
Sales				
Generics	**146**	134	+9	+11
Innovators	**91**	89	+2	+3
Total sales	**237**	223	+6	+8
Underlying operating profit	**31**	27	+15	+15
Margin	**13.1%**	12.1%		
Return on invested capital (ROIC)	**6.4%**	5.3%		
Reported operating profit	**14**	10		

Sales and operating profit growth supported by new customer contracts

- Sales growth in Generics and Innovators driven by new multi-year customer contracts.
- Underlying operating profit grew 15% reflecting stronger business performance and efficiency benefits, partly offset by higher costs.
- We made further progress towards delivering circa £100 million of operating profit from our pipeline of generic and innovator APIs, and launched one innovator and one generic in the period.
- Strategic review of sector in progress as previously announced.

Generics

Our Generics business develops and manufactures generic active pharmaceutical ingredients (APIs) for a variety of treatments. Sales grew 11%, primarily driven by speciality opiates where we benefited from new supply agreements.

Growth driven by new multi-year supply agreements for opioid addiction therapies

In the year, sales of controlled APIs were up. Sales of speciality opiates grew strongly primarily driven by opioid addiction therapies where we benefited from new multi-year supply agreements with generic partners. Sales of APIs for ADHD treatments were lower as one of our customers moved to dual sourcing for some high margin APIs although we remain well positioned in this growing market with our portfolio of APIs for ADHD treatments. We are advancing development of our ADHD portfolio which includes lisdexamfetamine – a generic which is currently awaiting regulatory approval. Sales of bulk opiates in Europe were down.

Sales of non-controlled APIs were broadly flat reflecting mixed performance across a number of products.

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.

Sales growth and continued progress with innovator customers

Our innovators business grew 3% in the year. This largely reflected increased demand from Gilead (formerly Immunomedics) as we execute on a multi-year contract for the supply of an immuno-oncology drug linker used in a treatment for triple negative breast cancer. We expect continued growth in the coming year and remain excited about our future prospects particularly in light of Gilead's recent approval from the FDA (Food and Drug Administration) for a further indication of the drug for the treatment of bladder cancer. Sales were also supported by higher demand from Sarepta as we continue to supply materials and treatments for their Duchenne Muscular Dystrophy treatment. As previously reported, sales were impacted following the cancellation of a customer's project in the second half of the prior year as they did not receive regulatory approval.

Case study

Helping tackle opioid addiction with buprenorphine

There's nothing more rewarding in your job than knowing that what you're doing is having a positive impact on people's lives.

That's why I'm really proud of our product buprenorphine, a leading treatment for anti addiction of opioids that helps change the lives of people living with addiction. We've been manufacturing buprenorphine since the 1990s in both the UK and US. Leveraging our expertise in solid form chemistry, we offer leading micronisation services to provide our customers with various particle sizes for their formulation needs. And our recent expansion to our Annan facility in Scotland has resulted in JM more than doubling our annual capacity allowing us to better serve our customers.

Our work with anti addiction therapeutics such as buprenorphine is just one of the ways we provide our customers with expertise in complex active pharmaceutical ingredient development and manufacture, solid form sciences, particle engineering, and catalysts.

It's a good feeling to know that what you do every day is helping enhance the lives of people all around the world.

Laurie Seifert
Global Business Director

API product pipeline

We continued to develop our new product pipeline across both our Generics and Innovators businesses and made further progress towards delivering circa £100 million of operating profit from this. To date we have launched six products which delivered sales of circa £60 million in the year.

To support the development of our product pipeline, we have enhanced our new global product introduction process. This ensures resources are focused on the right opportunities, with a disciplined approach to project stage gate reviews alongside effective governance including intellectual property and regulatory approval.

Overall, our pipeline comprises 59 molecules across generic APIs, innovator APIs and new applications. This includes the six launched molecules, including one innovator (Gilead) and one generic oncology treatment which both launched in the period. We have 11 generic molecules awaiting regulatory approval and one innovator project in late stage testing.

Underlying operating profit

Operating profit grew strongly, up 15%, and margin expanded 1.0 percentage points reflecting stronger business performance and efficiency benefits, partly offset by higher costs.

ROIC

ROIC increased 1.1% to 6.4%, reflecting higher operating profit and lower working capital.

Sector review: New Markets

> We're getting very encouraging feedback from key European customers who see Johnson Matthey as a credible supply partner for the battery materials technology of the future."

Christian Günther
Chief Executive,
Battery Materials

Sales

£356m -6%

Underlying operating profit

£9m

(2019/20: £1m underlying operating loss)

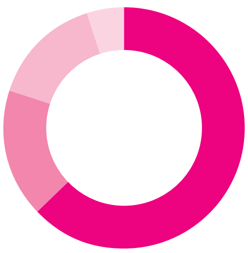
Margin	ROIC
2.5%	3.4%

Employees

2,132

Sales by business

- Alternative Powertrain 63%
- Medical Device Components 17%
- Life Science Technologies 15%
- Other 5%



It's been a busy year for our New Markets Sector, notably in Battery Materials and Fuel Cells, as the transition in our global transport system towards electrification gathers pace.

On track to commercialise our advanced battery materials

For the battery electric vehicle (BEV) market to grow at scale, we need the driving experience itself to match or better that of a traditional fuel powered vehicle, and that needs new materials. So our family of advanced high nickel eLNO cathode materials has been developed with consumer priorities in mind: driving range, safety, acceleration, recharging and total cost of ownership, as well as sustainability across the entire value chain. And I am delighted with the progress we have made in eLNO this year – we remain on course to commercialise despite the challenges COVID-19 threw at us. Construction at our first commercial plant in Konin, Poland, is progressing well and we expect to start commissioning in 2022 so that we are producing material for commercial use in 2024. And, because we want to embed sustainability into every part of our supply chain, our Polish facilities will be powered entirely by renewable electricity from day one of production.

Plans for our next plant are well underway and we have started the design work. This plant will be located in Vaasa, Finland, and will have approximately three times the capacity of our plant in Poland – producing enough material each year to power 300,000 BEVs. Like our Polish plant, our Finnish one will also be powered entirely by renewable electricity. Both plants are close to major central European automotive customers and battery cell manufacturers. And, to help create a more circular economy within the broader industry, we are a member of the Global Battery Alliance, which is developing a 'battery passport' system to document a battery's provenance.

Encouraging feedback from customers

We continue to see considerable interest with new customers entering testing and our existing customers are progressing well. Two customers already in full cell testing – which typically takes one to two years – are now at more advanced stages. Additionally, Wildcat Discovery Technologies, an independent third party technology company with significant original equipment manufacturers (OEMs) experience in battery materials, has recently performed evaluation and benchmarking on our family of eLNO materials. That confirmed eLNO met or exceeded current automotive targets that are continuing to move forward, giving us further confidence in the attractiveness of our technology to OEMs. These are positive developments in anticipation of signing our first automotive contract for commercial production of our materials in 2024.

All of this gives me great confidence that we are on track to becoming a significant player in the European Battery Materials market.

Rapid growth in fuel cells and commercialising green hydrogen technology

Meanwhile, in fuel cells, we saw another year of rapid growth driven by our supply of key components to the transport and power industries. We signed a memorandum of understanding with a major European automotive supplier for the long term supply of components for new fuel cell technology for automotive applications. And we doubled our manufacturing capacity in the UK and China.

Our expertise in fuel cell technology, in particular proton membrane electrode assemblies, also positions us well in another exciting growth area: green hydrogen. We announced new manufacturing capacity here too, based in our state of the art facilities in Swindon, UK, and expect our first commercial sales in 2022.

While there is still some uncertainty about when exactly the transport and energy transitions will occur and which technologies will eventually be most successful, it's clear that they will happen faster than we thought before the pandemic. This will be driven by tightening government regulation, automotive and energy companies looking to deliver their net zero targets, and growing societal expectations, post-COVID, to 'build back greener'.

Looking ahead – solutions for key challenges

One of the biggest issues the market faces in meeting increasing demand for BEVs is raw material supply. And so, with materials such as nickel, cobalt and lithium all forecast to be in deficit over the coming years, we have moved to secure a sustainable, responsible supply through new partnerships with Nornickel and SQM.

We've also begun working on a solution to treat sodium sulphate, a common byproduct of the manufacturing process for battery materials that is a big challenge for the industry. I was pleased with this development as it helps provide a sustainable supply chain to conserve natural resources and protect the local environment.

There is a lot of work still to do to keep growing in fuel cells, green hydrogen and commercialising battery materials, but I am excited to be leading one of the teams that is helping to build the future of our company, and enable the transitions the world needs for a sustainable future.

At a glance

Description

We design and make advanced battery materials, battery systems and fuel cell technologies for the automotive and power industries. We also create specialist catalysts for the pharmaceuticals and agricultural chemicals markets and make products found in devices used in medical procedures.

Our key customers

- Vehicle producers.
- Battery cell makers.
- Fuel cell manufacturers.
- Companies using battery packs for cordless power tools and e-bikes.
- Pharmaceutical, fine chemical and agrochemical manufacturers.
- Companies that make medical devices.

Our products

- Advanced battery cathode materials.
- Catalysts and complex components for fuel cells.
- High performance battery systems.
- Catalysts and specialist chemicals for life science applications.
- Precision engineered components used in medical devices.

211,000 tonnes

CO_2 equivalent avoided by our battery materials and fuel cell technology in 2020/21

Sector review: New Markets continued

Operating results: New Markets

	Year ended 31st March			
	2021 £ million	2020 £ million	% change	% change, constant rates
Sales				
Alternative Powertrain	**225**	237	-5	-3
Medical Device Components	**61**	72	-15	-13
Life Science Technologies	**53**	50	+6	+8
Other	**17**	30	-43	-41
Total sales	**356**	389	-8	-6
Underlying operating profit / (loss)	**9**	(1)	n/a	n/a
Margin	**2.5%**	-0.2%		
Return on invested capital (ROIC)	**3.4%**	-0.3%		
Reported operating loss	**–**	(62)		

Progress in the commercialisation and scale up of eLNO and continued strong growth in Fuel Cells

- Sales decreased 6%. Strong growth in Fuel Cells was offset by Battery Systems and Medical Device Components which were weaker due to the impact of COVID-19, as well as the disposal of other businesses in the second half.
- Operating profit grew to £9 million, largely due to the absence of a one-off £8 million impairment in the prior year relating to the eLNO demo plant.
- Commercialisation of eLNO remains on track and we announced plans to scale up beyond our first commercial plant.
- Strong sales growth in Fuel Cells with 2GW of capacity on stream, and planning further expansion.

Alternative Powertrain

Alternative Powertrain 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 nickel rich advanced cathode materials.

Sales declined 3%. We saw continued strong growth in Fuel Cells. This was offset by lower sales in Battery Systems due to a weaker sales mix and impact from COVID-19.

Fuel Cells continues to grow strongly

Sales in Fuel Cells increased 24% to £41 million as we continue to see increased demand for fuel cells in automotive applications in Asia. The recent expansion programme to double our manufacturing footprint is now complete, with 2GW of capacity across the UK and China. We will add new capacity quickly to meet market demand.

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 down 13%, weighted to the first half where we saw postponement of some elective procedures as a result of the COVID-19 pandemic.

Life Science Technologies

Our Life Science Technologies business provides advanced catalysts to the pharmaceutical and agricultural chemicals markets. Sales were up 8% as we saw increased demand for some products.

Other

Other comprises Atmospheric Control Technologies and Water Technologies, which were disposed of in November 2020.

Underlying operating profit

Underlying operating profit increased to £9 million, reflecting the absence of a one-off £8 million impairment in the prior year relating to the eLNO demo plant.

ROIC

ROIC increased 3.7% to 3.4% reflecting the increased underlying operating profit in the year.

Case study

Partnering for pole position

I'm excited to be part of the JM team creating a sustainable supply of battery cathode materials to support growing demand for EVs. We've made good progress towards commercialising eLNO, and my role is all about developing partnerships to help us to go even faster.

For example, announcing our new partnership with leading Formula E racing team Envision Virgin Racing was a big moment for us. Formula E is the ultimate showcase for e-mobility, using only high performance battery EVs in its races. As well as sponsoring their races, we're working together to develop the first ever two seater electric race car powered using eLNO. The project will act as a test bed for our technology, giving us valuable experience of a challenging application. This, in turn, will help us continue to develop eLNO as a high performance, customisable material for passenger cars. It's amazing to see the progress, and I can't wait until we can watch an ultra high performance car zooming down the tracks, powered by eLNO.

Srinivas Popuri
Strategic Partnerships Project Manager

Fuel cells

What they are and how they work

Fuel cells are used to provide back-up power for buildings and in transport, especially heavy duty trucks, where they are lighter and quick to refuel compared to some battery technology.

We have decades of experience in using pgms to make the highly specialised, catalyst coated membranes (CCMs) that are at the heart of a fuel cell unit (called a 'stack'). They help convert hydrogen (the fuel) into electricity and, over the years, we have perfected the formula of our CCMs to help make more electricity using less pgm.

Science and innovation

> Driving innovation through R&D is key if we are to help the world realise its net zero goals and successfully bring about the four essential transitions."

Maurits van Tol
Chief Technology Officer

A lot of what we do at JM starts with R&D.

It's where we bring our scientific skills to life so we can design and scale up technologies and solutions that help our customers address their most complex challenges. If innovation is defined as the entire process from idea to 'money in the bank', R&D is at the core of it.

Driving innovation through R&D is also key if we are to help create a sustainable future and successfully bring about the four essential transitions needed in transport, energy, decarbonising chemicals production and the circular economy. We'll need to progress at a pace that matches society's expectations. So, while our strong balance sheet will help us continue to invest in new R&D, we've also taken several steps to ensure we can respond in an agile way as we move through those transitions.

For example, we've expanded our technology horizon scanning out to 2050 and we look at a range of likely future scenarios. These help us make portfolio decisions today for the technologies we'll need tomorrow, and for much, much later. We have also reshaped our R&D portfolio around key programmes to accelerate innovation and help us commercialise new products with focus, at speed.

Embracing data to accelerate innovation

One of our programmes is called Labs of the Future, which we've set up to help us develop new ways of doing our research. For example, we're using machine learning to speed up the generation of results and the output of our R&D. We're also looking at ways to use and share data more effectively and we are introducing more automation to carry out repetitive experiments. This will give our scientists more of the space they need to do what they're brilliant at – creative thinking and innovation. And it is my conviction that these novel approaches will result in an increased 'RoI': return on innovation.

Attracting a new generation to help drive the transitions

R&D – no matter what we're developing – requires talent. While we have that in abundance in our team today, we continue to help our people develop new, transferable skills so they can grow their careers with us.

We are also looking for the next generation and that will be tough given the growing shortage of scientists and engineers to match the number of available jobs. At a grassroots level, Johnson Matthey's new long term £1 million science education fund will help improve access to quality science education in schools and encourage more young people to consider science careers. We need young people to select science subjects at school and university, as it is my strong belief that many of the problems humanity and the planet face need technological solutions.

One of the key ways in which we can attract new talent is through our partnerships with some of the world's leading universities and academic institutions. These relationships create important connections with the scientific community, and many of the PhD students we sponsor eventually come to work with us. These partnerships also give us the opportunity to understand and participate in the latest academic research in clean and sustainable technologies and tap into the start-up communities that so often flourish around universities.

Forming new partnerships to turn carbon into valuable products

To reach a net zero world, we have to work with others. So I'm particularly pleased to represent Johnson Matthey on the new Carbontech Leadership Council, part of an early stage technology investment initiative called Carbon to Value (C2V). The initiative is designed to stimulate R&D in technologies that turn carbon emissions into valuable products. Members join by invitation and come from business, academia and politics. Together, we're working on a 'carbontech' roadmap and will be working closely with the start-ups who join C2V.

Number one in the UK for chemical patents

As we move through the next decade of societal transition, we must ensure that we protect the competitive advantage that our technologies create. I am pleased that we are the number one chemicals company in the UK when it comes to filing patents[1] – and we must maintain that leadership.

The work we do in R&D has the potential to change the way we live. It is fundamental to Johnson Matthey's vision for a cleaner, healthier world. But it will take all our skills in metals chemistry and creative thinking to make a sustainable planet a reality. There will be challenges along the way of course – but it's what we thrive on. I've never met a scientist or an engineer who didn't relish a challenge!

[1] EPO status, 1st February 2021.

Case study

Using electrochemistry expertise to create new technologies for a sustainable future

The world is going to need new energy technologies if it is to meet its ambitious net zero targets. Many of those technologies rely on complex electrochemistry to turn energy from chemical reactions into electricity or electricity into chemical reactions. For example, fuel cells use special membrane technology to convert hydrogen and oxygen into electricity and water.

That's where JM comes in. For many years we've made the catalyst coated membranes inside proton exchange membrane (PEM) fuel cells that trigger this conversion.

But PEM technologies can also be used to make 'green' hydrogen, using renewable electricity to split water into hydrogen and oxygen. So we're developing new metal containing products to help make green hydrogen and have developed the manufacturing skills we need to make sure we can scale our business quickly as demand grows.

We're also combining our metals chemistry expertise and electrochemistry skills to develop advanced new battery materials. These materials will help charge the next generation of battery electric vehicles more quickly and allow EVs to travel farther on a single charge.

Read more about electrochemistry in action.

+ **Decarbonising heavy duty transport** on page 5

+ **Enabling the transition to a hydrogen economy** on page 7

+ **World's first climate neutral methanol plant** on page 9

+ **Creating a sustainable battery supply chain** on page 11

Awards won by Johnson Matthey over the past year

- IChemE Energy Award for low carbon hydrogen process
- IChemE Industry Project Award for formaldehyde technology
- Best Process award winner at ICIS Innovation awards
- Best Innovation Project at the Fuel Cells and Hydrogen Joint Undertaking Awards

At a glance

We use our deep understanding of metals chemistry to research, design and customise the next generation of technologies, products and solutions that will make the world cleaner and healthier.

Number of R&D employees

>1,600

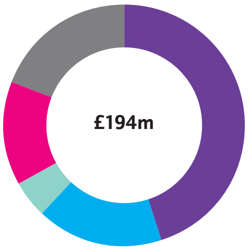
Gross R&D expenditure in 2020/21

£194 million

(including £22 million of capitalised R&D)

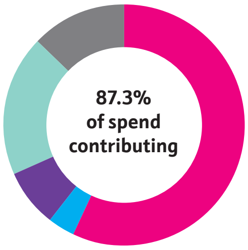
Annual gross R&D expenditure

- Clean Air: 45%
- Efficient Natural Resources: 17%
- Health: 5%
- New Markets: 14%
- Corporate: 19%



% R&D spend contributing to four priority UN Sustainable Development Goals

- UN SDG 3: 57%
- UN SDG 7: 3%
- UN SDG 12: 8%
- UN SDG 13: 19%
- Not related to the four UN SDGs: 13%



Sustainable business

Annette Kelleher, Chief HR Officer
Ron Gerrard, Chief Environment, Health and Safety and Operations Officer

New targets and commitments for a sustainable future

Ron and Annette reflect on a challenging year and discuss our new sustainability goals.

Looking back on a challenging year

Q It's been an extraordinary year. How did JM respond to the challenges of COVID-19?

AK I am so impressed with the way that our people adapted, which makes me feel very proud to be part of JM. At a high level, we gave guidance and put processes in place, and we trained leaders on how to spot signs of stress. However, we empowered our local leaders to make decisions appropriate to their locations and circumstances. I'm delighted by the tremendous positive feedback from yourSay, where our people told us how much they appreciated the support we gave them.

RG I'd add to that and say that this past year has been a great example of JM coming together as one team, particularly since we also continued to work through our transformation programme. That has meant additional organisational change for lots of people, including my team in Environment, Health and Safety (EHS). For example, we've introduced a new operating model to create clearer accountabilities and a new auditing standard. We've also created new process safety and product stewardship centres of expertise to allow for more efficient allocation of specialist skills and resources. As a result, we've identified some areas where we want to grow the team, but I'm aware that isn't the case in every part of the business.

AK That's true. We said that we expect about 2,500 redundancies over the course of the three year programme, which started last summer. We're doing everything we can to help those who are affected, including identifying other potential roles within the company. We realise change is often quite unsettling, but I'm pleased we held off our planned redundancies until after the first peak of the pandemic.

Q What were the highlights of 2020/21 for you?

AK Firstly, I'm thankful for the way our leaders and managers supported our people during the pandemic, showing enormous empathy, flexibility and focus. I'm thrilled to see the business progress we made thanks to our employees' adaptability and resilience. I personally learned a lot, and we've made several changes in our approach to learning, recruitment and how we induct new colleagues into JM. We shifted many development opportunities online and saw more employees take them up; this will be great for the future. Also, we've been able to adjust our induction process so that our new recruits still get the chance to learn about the business and a feel for our culture despite a pandemic.

RG I was one of them! I joined in August 2020 and am impressed with the way the company has kept people connected.

AK Although many of us couldn't meet face to face, we reached many people virtually, through town halls and Q&A sessions. We learned a lot about keeping the best parts of working differently in future. Our leadership engagement forums are a great example. We had super engagement on our new sustainability goals. More broadly, we saw a 10% rise in the number of yourSay responses and over 80% of survey participants shared information about diversity and inclusion for the first time ever. I'm so pleased with that – I think it shows that people want us to be a more inclusive place and that they trust us to use their data responsibly.

RG The progress we've made in our sustainability agenda has been a big highlight for me. We've made really good progress against our 2025 target to source 60% of our global electricity demand from renewables and we issued a new Supplier Code of Conduct that demonstrates our ambition to lead the sustainability agenda through our supply chains. But the most exciting element is working towards setting goals to increase our societal impact through our R&D and products.

> Successful businesses are built on trust...and we can only maintain trust by continuing to hold ourselves to the highest standards."
>
> **Ron Gerrard**

> If we want to help others achieve their climate and sustainability goals we have to do the same ourselves."

Annette Kelleher

New targets and commitments for a sustainable future

Q You have some very ambitious 2030 sustainability targets and goals. Why now?

RG Sustainability has always been at the heart of what we do and we're very proud of the fact that our products and services already make a huge contribution to society. But the world is changing far more quickly than anyone imagined and COVID-19 has increased the pressure on governments and companies to help build a cleaner, healthier world. So these targets are about making sure that we do everything we can internally to be a sustainable business. But they will also enable us to accelerate growth in our new businesses and help our customers achieve their own net zero goals. That's an exciting prospect.

AK Yes, I agree with this. We've always had this fabulous spirit to use our science and innovation skills to make a difference in the world. But we have to keep adapting and evolving. The six sustainable business goals that we set in 2017 were completely aligned with the material issues that faced our stakeholders at the time. But now we need to push ourselves further given the pace of change in the sustainability agenda and the ever increasing expectations on companies to act, and report on their progress. We are also taking the opportunity to align our work even more closely with the United Nations Sustainable Development Goals (UN SDGs). Again, we'd started that work in 2017, but now we're refining our targets to focus on four UN SDGs (see pages 64 and 65).

Q The targets are shaped into three pillars – products and services for a cleaner, healthier world, our operations, and people. Why these and what will they help you deliver?

RG Our products and services are the clearest expression of our purpose to create a cleaner, healthier world. They are also how we will help our customers and society reach net zero. To support that, we've set science based targets (SBTs) to reduce our Scope 3 emissions by 20% by 2030. But we also have to look at every aspect of our own manufacturing processes. So our SBTs also include a target to reduce our Scope 1 and 2 emissions by 33% over the same period. And we are setting specific targets on water use and hazardous waste management. Together, they will help us protect the planet.

AK Our people pillar is our recognition that none of this is possible without people – those who work for us and with us and the communities that live near our facilities. So we've set targets that will help us build teams that reflect the world we live in, get the right processes in place to protect their wellbeing and create a highly inclusive organisation. We also have targets to ensure we uphold human rights in our supply chain and invest more in our local communities.

Q Stakeholders will want to know that you are measuring and sharing progress. How will you do that?

AK We have a transparent, open culture and actively promote feedback and dialogue. Our Group Management Committee (GMC) regularly reviews our people plans and targets and our board ensures that we challenge ourselves and deliver on our promises. We track employee sentiment through channels like our yourSay survey and new employee forums hosted by our non-executive directors. I was particularly pleased that we kept those running virtually in 2020. Our recognition processes will call out and reward the behaviours we appreciate and need to deliver our plans. From this year, every member of the GMC will have a new sustainability target in their annual bonus plan. We will incorporate targets into our performance share plans in 2022 and will pilot this in 2021.

Thoughts for the future

Q What challenges will you need to overcome to achieve your new targets?

RG We've made some ambitious commitments, so the first challenge is to start demonstrating progress straight away. But we also need to match that progress to the speed at which the world around us changes. After all, our direct impact on the world is small compared with the impact our products have through our customers. And because of that, everything we've said we want to achieve depends on governments, other companies and society continuing to show support and commitment for tackling climate change. We will continue to use our voice to advocate for this.

AK Many of our people choose to develop their careers with JM because they believe in our purpose and impact. As we accelerate our growth, I want to make sure we have the right broad set of skills in place. We've got fabulous people and world beating knowhow and experience in R&D, technology and science. Now we are deliberately strengthening our commercial capabilities to support our growth plans. That's why we set up a new commercial council this year to bring together all our commercial leaders to structure career paths, understand our gaps and opportunities and build the skills we need for the future.

Q Why is being a sustainable business important for the future of JM?

RG We think this is critical. Successful businesses are built on trust, whether that's with employees, suppliers, partners, customers or communities. And we can only maintain that trust by continuing to hold ourselves to the highest standards and by working with others to encourage them to do the same.

AK I agree. You don't get to be a 200 year old business without trust. It's what gives us the licence to deliver our strategy and our purpose. And frankly if we want to help others achieve their climate and sustainability goals, we must also set – and meet – our own rigorous targets.

Sustainable business continued

Our sustainability strategy and framework

We have a responsibility to ensure that the products we make – and the way that we make them – is as sustainable as possible, whether that's keeping our people safe at work, adopting ethical business practices or reducing greenhouse gas emissions from our facilities.

Our goals are set out under three pillars:

Products and services

This is where we will have the greatest impact in accelerating progress towards a cleaner, healthier world.

Operations

We are also tackling the environmental footprint of our own operations.

People

We need the right people in our company and value chain to achieve this, and we will treat them and our communities in an ethical and respectful manner.

Our sustainability reporting

Our sustainable business report contains all the mandatory non-financial disclosures required by the UK Companies Act, including SECR regulation. We also report against several voluntary non-financial reporting initiatives, as outlined below.

Global Reporting Initiative (GRI) standard

As in previous years, we report to the GRI protocols. The GRI index on pages 272 to 273 references the relevant GRI code and indicates where in the annual report the disclosure can be found.

Materiality assessment

Through talking to stakeholders, we have identified the topics that are material to them. Our materiality map highlights our areas of environmental, social and governance (ESG) focus and is available on our website at matthey.com/materiality.

Sustainability Accounting Standards Board (SASB)

In this year's report we make disclosures aligned to the SASB chemical sector reporting requirements for the first time, to provide increased transparency for our stakeholders. The SASB index is set out on page 271 of the annual report.

Independent external assurance to the ISAE3000 standard has been provided by Avieco. It confirms Johnson Matthey's global Scope 1 and 2 GHG emissions, energy consumption specified environmental performance indicators, waste disposed, water consumption and specified health and safety indicators.

The Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD)

The TCFD recommendations are followed within the Sustainable business section of this annual report (pages 86 and 87). We provide a summary report on the progress made during the year in each of the four pillars of TCFD and plan to demonstrate full compliance in our 2022 annual report.

Other disclosures

During the year we also report our sustainability performance to a number of leading environmental, social and governance (ESG) surveys, including CDP Investor, CDP Water, S&P Global (Dow Jones Sustainability Index), FTSE4Good, MSCI, Sustainalytics, Equileap and Institutional Shareholder Services Inc.

Independent external assurance

Avieco, a sustainability consultant, has provided independent assurance of our greenhouse gas (GHG) emissions and key metrics quantifying our environmental, health and safety performance.

Their statement can be found on page 265 and the full report is available on our website at matthey.com/avieco-21.

Accelerating the transition towards a cleaner, healthier world

Products and services

Goal	2030 targets
Produce and innovate products for a cleaner, healthier world	>95% of sales contributing to four priority UN SDGs
	>95% of R&D spend supporting four priority UN SDGs
Drive lower global greenhouse gas emissions	Tonnes of GHGs avoided by using JM's products and solutions – target to be set 2021/22
Enable less harmful air pollution globally	Tonnes of oxides of nitrogen (NOx) emissions removed by using JM's products – target to be set 2021/22
Conserve scarce resources	Percentage of JM's products sold with an end of life recycling solution – target to be set 2021/22

Our commitment

- Provide back to source transparency for all our critical metals to OECD due diligence standards.

Operations

Goal	2030 targets
Achieve net zero by 2040	33% reduction in Scope 1 and Scope 2 GHG emissions
	20% reduction in upstream Scope 3 emissions
Reduce water consumption and waste	25% reduction in net water usage
	50% reduction in total hazardous waste produced
Minimise environmental footprint	40% reduction in nitrogen oxides emissions from our operations
	Make cradle to gate lifecycle analysis (LCA) information available for >95% of our products

Our commitment

- Joined the Business Ambition for 1.5°C and committed to net zero by 2040 – April 2021.

People

Goal	2030 targets
Keep people safe	Achieve a total recordable injury and illness rate (TRIIR) for employees and contractors below 0.25
	Reduce our ICCA process safety severity rate to 0.4
Create a diverse, inclusive and engaged company	Achieve an employee engagement score of >75%
	Achieve >40% of female representation across all management levels
Uphold human rights in our value chain	100% of value chain partners assessed for human rights risks and remedial plans in place where high risks identified
Invest in our local communities	>6,000 days of corporate volunteering annually

Our commitments

- Join the UN Global Compact for Human Rights.
- Accredited as a Real Living Wage employer in the UK – February 2021.
- Be recognised as a promoter of diversity and inclusion.
- Signed "If Not Now, When?" and "Change the race" commitments to take actions on black inclusion – December 2020.
- Deliver against Valuable 500 objectives for disability inclusion and be recognised in global LGBT+ indices.
- Invest at least £1 million annually in community engagement.

Products and services

For more than two centuries our products and services have helped enable human progress. Using our expertise in metals chemistry, we've designed solutions for automotive customers that reduce air pollution, developed chemical process technologies for customers who make life changing products and pioneered some of the world's most advanced metals recycling processes.

Every product and solution we make is driven by our belief in the transformative power of science and our passion for creating a cleaner, healthier world. Now, as we stand at a decisive moment in modern history, we need that passion and belief more than ever.

While the products and services we make today already have a hugely positive impact on society, the ones we're making for tomorrow have the potential to transform the world around us. They are at the centre of society's ambitions to reach net zero and they will play a pivotal role in driving the four essential transitions in transport, energy, decarbonising chemicals production and the circular economy.

That's why we're investing in exciting new markets like battery materials that will help electric vehicles travel farther on a single charge, fuel cell solutions for a new generation of transport, and hydrogen technologies that will help some of the world's biggest industries achieve their decarbonisation goals.

It's why we will continue to invest in new, more efficient catalysts that require smaller quantities of precious metals and keep designing products with end of life recycling in mind.

And it's why we've set ourselves a new commitment to provide our customers with back to source transparency for all the critical metals we use, in line with OECD due diligence standards.

This commitment will ensure we keep making products and solutions in a way that delivers our purpose as we move through the next transitional decade. But we must also back them up with action. To that end, we've developed four new key goals.

1. Produce and innovate products for a cleaner, healthier world

Without innovative thinkers, Johnson Matthey would not have succeeded these past 200 years. It is our blend of creativity and metals chemistry expertise that helped us shift from assaying metals to making products that protect people and the planet. It is that same blend that helps us design highly efficient chemical plants and manufacturing processes for our customers and steadily reduce the quantity of precious metals that we use in our technologies. Innovation is core to everything we do, and we're proud of the positive impact that our products already have today because of it. And there's plenty more to come as we grow our exciting new businesses, and help the world tackle climate change and tread a more sustainable path.

Our targets

We track our progress against this goal by measuring the percentage of our product sales that make a positive contribution to our four priority UN SDGs. Our original 2025 target was to have more than 90% of sales coming from products that positively contributed to all 17 goals. As part of setting our 2030 targets, we have refined this to focus more specifically on four UN SDGs – good health and wellbeing (#3), affordable and clean energy (#7), responsible consumption and production (#12) and, critically, climate action (#13). We've also increased our target to more than 95% of sales. And to ensure we invest in the right technology areas of the future, we will also measure the potential of our R&D spend in the same way.

2. Drive lower global greenhouse gas emissions

The world will need a range of low carbon solutions if we are to decarbonise our transport, energy and industrial systems and reach net zero. Solutions like clean running hydrogen, which can power fuel cell vehicles, provide back-up power storage and run big industrial turbines, and battery materials to help drive the electric vehicle (EV) revolution.

Our deep understanding of the way in which the chemistry of precious and other metals can be used to create powerful effects means we are already making the next generation of catalysts, membranes and electrolysis technologies. It's these technologies that will help bring about the hydrogen economy and create the materials that allow EVs to travel farther on a single charge.

Our targets

Our products and services already help our customers avoid and remove millions of tonnes of GHG emissions every year. Over the next decade we aim to increase our impact further, through a combination of new and improved low carbon offerings. We expect products and services such as our battery materials, fuel cell components, and technologies to produce clean hydrogen, sustainable fuels and chemicals, to make a significant contribution to lowering GHG emissions. We will measure and track the quantity of GHGs reduced by our products and will be setting an ambitious new target for 2030, which we will announce next year.

By 2030, our targets are:

- More than 95% of product sales will contribute to our four priority UN SDGs.
- More than 95% of our R&D spend will support our four priority UN SDGs.

3. Enable less harmful air pollution globally

We know the automotive industry well. We've been working with some of its biggest names for decades, using our catalyst expertise to design emission control systems that help them meet strict air quality regulations. For the past four decades those systems have helped prevent millions of tonnes of harmful emissions, such as carbon monoxide, NOx and particulates, from entering the atmosphere, improving the health of millions of people living and working in cities around the world. Today, one third of new cars are fitted with one of our catalytic converters.

Now, we are using that same expertise to develop and commercialise new battery and fuel cell technologies that will help our customers create the lower emission vehicles of the future. But that doesn't mean the internal combustion engine is going to disappear overnight, so we will keep innovating and advancing all our products to help our automotive customers ensure tailpipe emissions are as clean as possible, no matter how the vehicle is powered.

Our targets

One of the simplest ways in which we can demonstrate our impact in improving global health is by tracking increases in the quantity of harmful NOx emissions that our technologies remove from vehicle tailpipes before they reach the air we breathe. We intend to go further than before, increasing the proportion of vehicle related particulate matter and NOx emissions that is destroyed by JM technology globally. Over the next year we will set a 2030 target for this.

4. Conserve scarce resources

Many of our products and solutions rely on metals that are already scarce in the earth's crust, such as platinum group metals. Others, such as cobalt and lithium, may become increasingly difficult to source as demand for electric vehicles and fuel cells rises.

And so our R&D teams have spent decades designing and redesigning catalysts that use minimal quantities of these important resources. And we are already the world's biggest recycler of platinum group metals (pgms). As well as helping us do more with less, recycling helps us avoid greenhouse gas emissions, since the carbon footprint of recycled pgm is around 50 times lower than the carbon footprint associated with mining, refining and transporting new primary pgm from a mine to its point of use.

Since the world is going to need more of these scarce metals as we decarbonise our transport, energy and industrial systems, circularity will be essential. And it's not only the metals, there are other raw materials in the products we are designing for a low carbon future, and it will be important to create circular solutions for these to conserve the earth's resources and reach net zero. That means thinking about how we source, use and recycle all our critical raw materials and products while they are still on the drawing board.

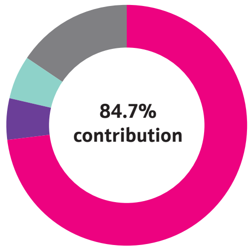
Our targets

Going forward, we will be designing for recycle for a sustainable future. We will track our progress through a new 2030 target, which will aim to increase the percentage of our products sold with an end of life recycling solution, either on our own or in partnership with others.

Our performance in 2020/21

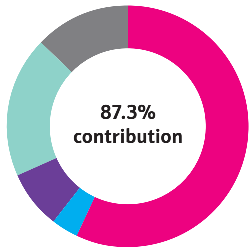
% sales from products contributing to priority UN SDGs

- UN SDG 3: 73.1%
- UN SDG 7: 0.1%
- UN SDG 12: 5.5%
- UN SDG 13: 6.0%
- Not related to the four UN SDGs: 15.3%



% R&D spend assigned to priority UN SDGs

- UN SDG 3: 57.2%
- UN SDG 7: 3.5%
- UN SDG 12: 7.8%
- UN SDG 13: 18.8%
- Not related to the four UN SDGs: 12.7%



Amount of GHGs avoided

211,000 tonnes CO_2 eq

GHGs avoided by consumers using our fuel cell and battery materials products

Amount of GHGs removed

11.5 million tonnes CO_2 eq

GHGs removed by our customers using our nitrous oxide abatement solution on nitric acid production plants

Sales of products designed for in-use resource efficiency

£804 million

Operations

Our products have a major impact on delivering our vision for a cleaner, healthier world. And they will have a huge role to play in driving the four essential transitions in transport, energy, decarbonising chemicals production and the circular economy that will help combat climate change and create a sustainable future for all.

As we work to realise our ambition to lead in sustainability, we must ensure that we design, make and move our products in ways that reduce our own impact on the planet.

That's because the work we do uses energy, creates emissions and generates waste products. For example, some of our manufacturing processes require high temperatures to trigger chemical reactions. As a result of both our chemical reactions and generating the heat needed for our processes, the work we do generates GHGs, including carbon dioxide (CO_2), nitrogen oxides and volatile organic compounds (VOCs). These can all contribute to climate change and local air quality issues, if not effectively managed.

We also use water in many of our production processes, as well as to heat and cool some of our operations. And our work produces waste, some of which can be hazardous and requires specialist treatment by external companies.

The good news is that we already have many processes in place to help us lower our environmental impact. For example, wherever possible, we recover and recycle waste materials that contain pgms. These metals can then be reused in new products.

But we know we can – and must – do more. So we are setting ourselves three bold new goals to continue lowering our footprint and help protect the planet.

Those goals are:

- Achieve net zero by 2040.
- Reduce water consumption and waste.
- Minimise environmental footprint.

These goals are underpinned by a series of tough 2030 targets, including science based targets (SBTs) to reduce our GHG emissions. More information about all our targets can be found in their relevant section and are summarised in the table below.

We already share detailed environmental lifecycle analyses (LCAs) of some of our products with our customers on request. Now we are setting ourselves a target to ensure we can offer this service for more than 95% of our products by 2030. This will help us demonstrate the ways the positive environmental benefits of our products outweigh the impacts associated with making them, particularly when used in other end products.

Our goals and targets

Goal	Sustainable business goal	Sustainable business KPIs	Baseline measure	Baseline	2020/21	2030 target
Net zero by 2040	Reduce our Scope 1 and 2 GHG emissions by 33% by 2030	Tonnes annual GHG emissions (Scope 1 and 2): market method	CO_2 eq emissions in 2019/20	391,459	388,904	**237,914**
	Reduce our Scope 3 GHG footprint: Purchased goods and services category by 20% by 2030	Tonnes annual GHG emissions (Scope 3): purchased goods and services	CO_2 eq emissions Scope 3: purchased goods and services in 2019/20	3,859,969	3,139,540	**3,087,975**
Reduce water consumption	Reduce water consumption by 25% by 2030	Net fresh water consumption (megaLitre)	Net fresh water consumption in 2019/20	2,254	2,039	**1,690**
Reduce waste	Halve the amount of hazardous waste produced by JM by 2030	Total hazardous waste shipped to third party for treatment (tonnes)	Total hazardous waste shipped to third party for treatment in 2019/20	56,751	57,213	**28,375**
Reduce emissions to air	Reduce NOx emissions to air by 40% by 2030	NOx emissions (tonnes)	NOx emissions (tonnes) in 2019/20	301	299	**181**
Provide LCA information	Make cradle to gate LCA information available for >95% of our products	–	–	0%	6%	**>95%**

Achieving net zero by 2040

Our products have huge potential to help our customers achieve their net zero ambitions. At the same time, we also have a responsibility to address our own GHG footprint and help enable the transition to a low carbon world.

That's why we have set a bold new commitment to reach net zero by 2040 and in April 2021 we signed up to the UN Global Compact's Business Ambition for 1.5°C. This commitment reflects our recognition of the Intergovernmental Panel on Climate Change's (IPCC) science on climate change. It also supports our earlier climate actions, including signing the Paris Climate Pledge to keep the global temperature rise below 2°C and our commitment to the UN SDGs, including UN SDG 13 (climate action).

If we are to get to net zero by 2040, we must start making progress today. To that end, we are introducing science based GHG targets. From 2020 to 2030 we aim to:

Reduce our Scope 1 and 2 emissions by

33%

Reduce our upstream Scope 3 emissions from purchased goods and services by

20%

And we intend to have these targets independently verified by the Science Based Targets initiative (SBTi) in the next year.

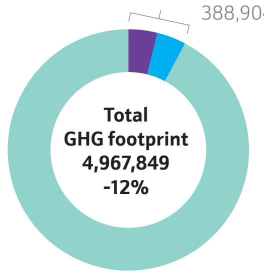
To make early progress towards our Scope 1 and 2 GHG reduction target, we will continue to work towards increasing the amount of renewable electricity we purchase to more than 60% by 2025. We will continue to improve energy efficiency of our existing processes. We will also introduce technology that removes nitrous oxide (N_2O) – a gas with a greenhouse effect 250 times more powerful than CO_2 – from our emissions to air at some of our biggest plants. For new facilities, we will design and build for a net zero future, as we are doing for our first large commercial plants for our Battery Materials business.

In the medium term, we will look to reduce our dependence on natural gas as a source of energy at our existing manufacturing plants as part of our asset renewal programme. We will introduce new technologies that capture CO_2, and convert equipment to use clean energy, such as hydrogen, when they become available locally. We will electrify other equipment where cost competitive renewable energy is available. Asset renewal programmes are typically long term investments and in setting our SBTs we recognise that most of the impact on our emissions from these activities will not be realised until the 2030s. We are currently considering the benefits of introducing an internal carbon price into our capital investment process to ensure that we are future proofing all our investment decisions for a net zero future.

Our GHG footprint

We have been measuring and reporting our Scope 1 and 2 GHG footprint since 2007. This is the part of our footprint we can directly affect by changing the way we use energy in our factories. However, we recognise that this is not our only contribution on GHG emissions.

Total footprint – Scopes 1 and 2 and 3 2020/21 (Tonnes CO_2 eq / % of JM carbon footprint)



During 2020 we worked with sustainability consultant Avieco to calculate our Scope 3 GHG footprint across all 14 categories for the first time. The full breakdown is shown on page 267.

In total, 92% of our GHG footprint comes from Scope 3 emissions embedded in our value chains. By far the largest component of our footprint is the embedded carbon in our raw material procurement, which is part of purchased goods category. That's why our 2030 target focuses solely on reducing our upstream Scope 3 emissions in this category.

Overall our Scope 1, 2 and 3 footprint has reduced by 12% in the last year (2019/20: 5,646,779 tonnes CO_2 eq.), broadly in line with temporarily lower production volumes of 8%, due to COVID-19.

Our Scope 1 and 2 GHG performance

Over the last four years we have made a lot of progress. In that time we have reduced our:

- Absolute Scope 1 and 2 emissions by 15%.
- Absolute Scope 1 emissions by 5%.
- Absolute Scope 2 (market based method) emissions by 20%.

These improvements demonstrate our commitment to the Paris Pledge for Action. The more significant reduction in Scope 2 emissions is due to good progress in sourcing renewable electricity (see page 68). We also emit some CO_2 directly from our processes.

While production output across JM was lower overall this year because of COVID-19, our Scope 1 emissions increased slightly mainly due to increased production at our largest natural gas using site in Clitheroe, UK. In addition, we started full operation of our natural gas fuelled combined heat and power plant at our site in Royston, UK, following a project to upgrade the equipment with more efficient engines. Our Scope 2 market based emissions were lower this year due to reduced production and also because some of our large production sites have used energy with a lower carbon emissions factor, such as Skopje, North Macedonia.

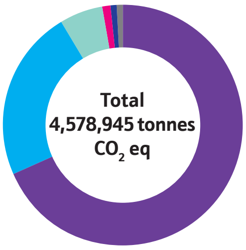
Operations continued

Some of our facilities operate in territories where there are specific regulations aimed at reducing carbon emissions, for example under the EU Emissions Trading System. A quarter of our Scope 1 carbon emissions are covered by such schemes. Because of the way we source renewable electricity, none of our Scope 2 emissions are subject to any carbon emission limiting regulations.

Our Scope 3 GHG performance

Scope 3 emissions (tonnes CO_2 eq)

- Purchased goods and services 3,139,540
- Use of sold products 1,057,318
- Capital goods 266,513
- Fuel and energy related transport and distribution losses 40,515
- Upstream transportation and distribution 37,859
- Other 37,201



For a full breakdown and prior year data see page 267.

Several Scope 3 GHG emissions categories fell substantially because of COVID-19:

- Our production volumes reduced 8%, so we procured fewer raw materials.
- Transportation of goods and business travel also fell.
- With more employees working from home, we expect that emissions caused by commuting fell, but we do not have the information available to support that.

Making progress towards our renewable electricity target

Shifting our energy supplies to renewable sources is an important element of our journey to net zero. This year we continued to make good progress against our aim to source 60% of our global electricity demand from renewable sources by 2025.

Globally, 31% of our electricity use in 2020/21 came from sources with a Renewable Energy Guarantee of Origin (REGO) certificate (2019/20: 27%)[1].

Just over 1% of our electricity supply came from local solar power facilities that are not grid connected. Where we don't use renewable electricity, and market choices exist, we actively manage our electricity purchasing to minimise the associated carbon footprint.

As part of our net zero plans, we will look to power new facilities using renewables. Our two new battery materials plants in Poland and Finland will both use 100% renewable electricity when they start production.

Driving energy efficiency in our operations

While more renewable energy will be critical in helping us lower our GHG emissions, particularly over the first decade of our plans to reach net zero by 2040, we also continue to improve energy efficiency in our operations.

Regional lockdown measures caused by COVID-19 meant we had to temporarily stop production at some of our sites, which lowered our energy use. Energy use at our facilities fell by 3%. Electricity use across the group fell by 5% and gas use dropped by 2%. COVID-19 also affected our energy efficiency, as we needed to run our plants in non-optimal ways to meet sudden geographical changes in demand for products.

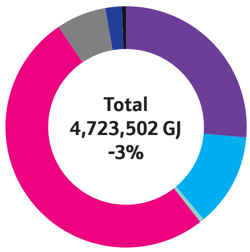
As we return to normal operation, we continue to make progress with our existing energy efficiency projects around the world. For example:

- At our Brimsdown facility in the UK, we have improved the reliability of our furnace burner used in our pgm refinery.
- In Nilai, Malaysia, we have replaced existing gas discharge lighting with LEDs, improved our air conditioning systems and optimised our ovens.
- In West Whiteland, US, we reviewed the use of compressed air on site and reduced the operational pressure in several locations.

Of the total energy used by JM, 39% (1,840,544 GJ) was grid supplied electricity. JM sources renewable electricity at a number of locations and the total amount of renewable energy sourced was 615,809 GJ or 13% of the total energy we used.

Energy mix (GJ)

- Non-renewable grid-supplied electricity 1,250,156 (26.5%)
- Certified renewable electricity from grid 590,388 (12.5%)
- Renewable electricity generated locally and not grid-connected 25,421 (0.5%)
- Natural gas used on site 2,416,909 (51.2%)
- Other fossil fuels 313,052 (6.6%)
- Non-renewable steam 112,445 (2.4%)
- Non-renewable fuel used on public roads by vehicles on company business 15,131 (0.3%)



A number of our sites generate electricity using combined heat and power (CHP) plants. We use natural gas as a fuel in our CHP plants and this energy is included in the natural gas section of the chart above. In total, 126,834 GJ of electrical energy was generated this way. Our total electricity consumption is therefore 1,992,799 GJ. From our total consumption of electricity, we used 615,809 GJ (30.9%) that was certified as renewable.

This year we spent £64 million on energy versus £68 million in 2019/20.

Further GHG-related disclosures are given on pages 266 and 267.

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

Reduce water consumption

Net fresh water consumption ('000m³)

We use water as a raw material to make some of our products and to heat and cool our operations.

Since water is one of our planet's most precious resources, we endeavour to use it in a responsible, sustainable way, not just for our operations but the communities who live near our facilities. To reaffirm our commitment to sustainable water management in our operations, we have set a new target to reduce our net fresh water consumption by 25% by 2030. To reach this target we will need to invest more in our existing and new facilities to ensure they meet high standards of water recycling.

Reduce our net fresh water consumption by

25%

This is particularly important at our 28 facilities that withdraw and consume water in locations that have a high or extremely high baseline water stress level (as determined by the World Resources Institute's Water Risk Atlas tool). The water we use at these facilities accounts for 24% of our net fresh water consumption and 24% of our water withdrawal.

Wherever possible, we look for ways to reduce our consumption of fresh water and reuse treated water within our facilities. For example, our Germiston facility in South Africa is located in a highly water stressed area. So, we have invested in a reverse osmosis plant that allows us to treat and reuse 80 to 100m³ of water each year. The process also allows us to recover small quantities of valuable pgms.

Our facilities source 93% of their water from mains supplies with the rest extracted from groundwater sources.

In 2020/21, we consumed 10% less water than the year before because of the affect of COVID-19 on our manufacturing output. We also upgraded pipework at our Brimsdown site, which led to an 18% reduction in water use and a 2% reduction in JM's overall water consumption.

We also treated 1.150 million m³ of waste water on site, 24% of which we recycled back into our processes instead of discharging. We are pleased to report that there were no non-compliances against water quality permits or regulations.

As part of our adoption of the scenario based risk assessments and reporting standards set by the TCFD, which we will report on in full from next year, we also intend to carry out a full climate assessment on our facilities, which will include water risks, such as drought, flooding and hurricanes. Read more: our 2020/21 TCFD on pages 86 and 87.

A full breakdown of our water management performance over five years is shown on page 268.

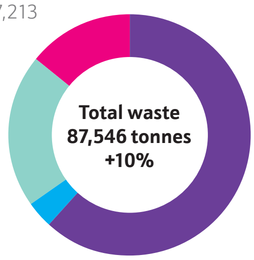
[2] Dow Jones Sustainability Index (DJSI) definition of hazardous waste.

Reduce waste

Type of waste (tonnes)

- Liquid hazardous waste 54,170
- Solid hazardous waste 3,043
- Liquid non-hazardous waste 18,166
- Solid non-hazardous waste 12,167

Total hazardous waste 57,213



We have a responsibility to make sure that we dispose of our waste in a safe manner, including working with specialist treatment companies. We also look for ways to reduce and recycle wherever possible. For example, we recover materials that contain pgms to our refineries to be reused. We also ensure that all our other waste is treated within local regulations.

Our manufacturing processes produce different types of waste, 65% of which is hazardous. If we are to help the world tread a more sustainable path, we know we must do more in this area. That's why we have set ourselves a tough new target to reduce our hazardous waste by 50% by 2030, using our 2020 data as our baseline.

This will be a big challenge, but we understand the issues and where our biggest areas of concern lie. And we are already looking for ways to introduce new processes or upgrade our facilities to meet this target.

In 2020/21, we produced 87,546 tonnes of waste. This is 10% higher than 2019/20. This is mainly due to an increase in effluent discharge at our Annan site, Scotland. The site is licensed to discharge effluent via pipeline using tidal discharge. The tidal discharge pipe became damaged and the site is currently not able to use this method to dispose of effluent waste. While we worked to fix the issue we temporarily used a waste vendor to tanker the material off site to ensure compliance.

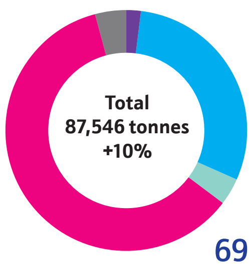
In 2020/21, we incinerated 2,560 tonnes of our waste within our own facilities. This was mainly waste that is sent to our refineries for precious metal recovery.

We also produced 57,213 tonnes of hazardous waste. This is 1% higher than 2019/20. Of this total, we recycled or reused 20% (11,332 tonnes). This compares to 19% in 2019/20. Meanwhile, 3% (1,350 tonnes) of our waste is solid material that is not reused after it is sent off site.

The amount of hazardous waste we produced was similar to last year, despite a reduction in overall output due to COVID-19. Much of our hazardous waste is liquid and it is often generated in our effluent plants and abatement scrubbers. These remained fully operational, even though our overall output of finished product was lower in the year.

Waste treatment (tonnes)

- Reuse 1,895
- Recycling 25,845
- Off site incineration with energy recovery 3,314
- Off site incineration without energy recovery 52,891
- Landfill 3,601



Operations continued

Reducing our other emissions to air

	2020/21	2019/20
NOx (tonnes)	**299**	301[1]
SOx (tonnes)	**49**	28
VOC (tonnes)	**83**	99
Sites covered	**74%**	67%

As well as GHGs, our operations produce other emissions, including NOx, dioxides of sulphur (SOx) and VOCs. These emissions arise when we burn fuels in our furnaces to generate heat and are also produced as byproducts in some of the chemical reactions that are involved when we make our products.

All our licensed sites monitor these emissions to ensure that they comply with local regulations. They also set their own absolute emissions reduction targets as part of their local EHS improvement plans.

To keep pushing ourselves, we've set a new target to reduce our NOx emissions by 40% by 2030, using 2020 as our baseline data. We will also improve our NOx monitoring processes to help us increase data coverage and accuracy.

Reduce our NOx emissions by

40%

In 2020/21, our NOx emissions fell slightly to 299 tonnes due to more accurate data and lower production. Meanwhile, our SOx emissions rose to 49 tonnes. However, this rise is again partly due to better coverage of reporting data and an increase of measured SOx at our Brimsdown facility due to changes in feedstock. Our VOCs fell by 16% to 83 tonnes partly reflecting lower manufactured output.

How we manage environmental performance

Together with our environmental strategy, we have group policies, processes and systems that help us manage our environmental performance to a high standard. We also set out corporate standards in five key areas of environmental performance and assess sites against those standards during regular audits.

Our EHS Leadership Committee is responsible for agreeing our overall approach to carbon emissions and our GHG reduction through ensuring leading environmental performance from our manufacturing facilities.

In all, 85% of our manufacturing sites operate environmental management systems that meet the ISO 14001:2014 standard. Many of our operations are covered by environmental permits or licences and, as a minimum, we ensure that we comply with all conditions set up by regulatory bodies in the locations where we operate.

We use an electronic reporting system to measure key environmental indicators and use this data internally to improve performance.

Reporting environmental incidents

We expect all our sites to report any incident that impacts the environment using our robust management system. We classify any spills that occur on unmade ground or near drinking water sources as significant. We are pleased to report that there were no significant spills during 2020/21.

[1] Restated. See basis of reporting on page 260.

People

Everything we do at Johnson Matthey is designed to have a positive impact on people's lives. Our products help us realise our purpose to create a cleaner, healthier world, but equally important is our responsibility to make sure that the way we make them, and the impact they have more broadly, is positive too.

That means we work hard to look after our employees and provide a good quality place to work. And we have a responsibility to treat them, and our suppliers, customers and the communities who live near our facilities with dignity and respect. It means ensuring that our manufacturing facilities are well run so that our people can go home safely after every shift.

It means designing our products in ways that minimise the quantity of hazardous materials within them. And when we can't remove those materials, it means making sure we provide clear, simple guidance on how to use them safely to protect people and the environment. It means training our teams and providing them with development opportunities, as well as recognising their efforts.

All our actions are guided by our commitment to safety and by our JM values, which help us act ethically and respectfully, both inside our company and within our supply chains. These help to create an inclusive culture that will deliver our vision and business strategy.

We want to lead in sustainability and help enable the world to move through the essential transitions in transport, energy, decarbonising chemicals production and the circular economy. People continue to be central to our success, which is why we have chosen 'People' as one of our sustainability pillars.

Our goals and targets

Sustainable business goal	Sustainable business aim	Baseline measure	Baseline	2020/21	2030 target
Keep people safe	Achieve a TRIIR for employees and contractors below 0.25	Recordable cases per 200,000 hours worked in 2019/20	0.79	0.54	**<0.25***
	Reduce our ICCA Process Safety Severity rate to 0.4	Points per 200,000 hours worked in 2019/20	1.2	0.81	**0.4**
Create a diverse, inclusive and engaged company	Achieve an employee engagement score of >75%	Score in 2019/20	63%	65%	**>75%**
	Achieve >40% of female representation across management levels	% female representation in management in 2019/20	30%	27%	**>40%**
Uphold human rights in our value chain	100% of direct value chain partners assessed for human rights risks and remedial plans in place where high risks identified	% assessed in 2019/20	New measure	–	**–**
Invest in our local communities	>6,000 days of corporate volunteering annually	Number of days in 2019/20	2,682	431	**>6,000**

Setting new commitments

We have made a series of new people orientated commitments as part of our broader new sustainability goals. Those commitments are to:

- Join the UN Global Compact for Human Rights.
- Accredited as a Real Living Wage employer in the UK – February 2021.
- Be recognised as a promoter of diversity and inclusion.
- Signed "If Not Now, When?" and "Change the race" commitments to take actions on black inclusion – December 2020.
- Deliver against Valuable 500 objectives for disability inclusion and be recognised in global LGBT+ indices.
- Invest at least £1 million annually in community engagement.

* This target includes employee + contractor incidents and hours in line with best practice companies.

People continued

Our people

Our people are what make Johnson Matthey a great place to work. Without their passion, skills, and creativity, our products would not have existed these past 200 years. Every day they demonstrate their commitment to our vision for a cleaner, healthier world.

Even through a global pandemic our people worked hard to keep each other safe and our operations running. For more on how we helped our people stay connected and supported their wellbeing during the pandemic, see page 76. For more on how we protected our people at our facilities, see page 78.

We are proud of our team and we will need their capabilities even more than ever as we play our full role in the big transitions happening today. To do that we intend to continue to find ways to enable our people develop their skills, give them new experiences, protect their wellbeing and remain engaged with our vision.

Engaging our people

Our new target to score more than 75% in our employee engagement survey by 2030 would put us on an equal footing with the highest performing companies.

We have made an excellent start. In 2021, we saw employee engagement in our yourSay survey rise two points to 65% and our enablement scores rise five points to 67%. This is a remarkable achievement in an unprecedented year in which our people have had to adapt to COVID-19 and our broader transformation programme.

Clearly there is more to do to reach our target and every Johnson Matthey leader has a role to play in helping us get there. This includes our board members. In October 2020 and in April 2021, we held virtual engagement focus groups in China, UK, Germany and the US. These were attended by a diverse mix of 25 employees and hosted by our non-executive directors. In these sessions we heard many positive comments about the support offered to employees during COVID-19 and the positive impact of improved manager communications. However, the feedback also suggests there is more work to do to help people feel more connected to JM as a whole – something that will form a key part of our engagement strategy this year.

A great place to work

We want our current and future teams to see Johnson Matthey as a great place to work, a place where innovation and performance are recognised. We want our people to feel like they belong regardless of gender, nationality, religion, race or disability and empowered to develop their skills and grow their career with us. We also want our colleagues to feel part of a company that acts ethically and treats people with the highest standards of integrity.

Accelerating our people strategy through a time of change

The world is going through a period of enormous change. COVID-19 has transformed the way we live and work in the past year, but there are also big, long term societal changes on the horizon.

Governments want to build a greener, cleaner post-COVID world and as stakeholder expectations on environment and climate change rise more and more nations and companies are setting ambitious net zero targets. We have set our own net zero target too (see pages 66 and 67). But beyond that, we have a unique opportunity to help the world achieve its ambitions through our products and to do that we must transform our own business to drive down costs and become simpler, more efficient and ready to accelerate future growth.

We began that transformation process during 2020/21 and expect some elements to continue for another couple of years. In this first year, the programme focused on reshaping our operating models in our group functions and Clean Air business.

To support the transformation work and execution of our business strategy we are also accelerating the roll out of our people strategy with a focus on four areas:

1. Creating an inclusive JM and embedding our culture ambition.
2. Creating a simplified, agile organisation that is global in outlook and reflects the communities in which we work.
3. Building our leadership skills and helping our people develop new skills for the future JM.
4. Enhancing employee recognition and wellbeing to strengthen their resilience, help them feel included and want to build their career at JM.

Protecting people and the planet	Acting with integrity	Working together	Innovating and improving	Owning what we do
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.	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.	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.	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.	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.

1. Creating an inclusive JM and embedding our culture ambition

Passionately purpose driven	Creating shared value	Boldly drive performance
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.	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.	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.

Our culture ambition sets out the working practices we need to deliver our purpose and business strategy. That includes ways of working that will create new market opportunities and allow us to move at pace, delivering our JM wide plans while supporting an inclusive working environment.

In 2021, we launched a new employee engagement programme to help our people feel more connected with our strategy and adopt our culture. As part of that programme, we created opportunities for two way conversations to encourage employees to share their lived experiences and feel empowered to take action to address issues when they see them.

Diversity and inclusion

People will always be at their best when they feel like they can be themselves at work. And research shows that companies who embrace diversity and create a sense of inclusion consistently outperform those that don't.

As a global company we also have a responsibility to ensure that our teams reflect the communities in which we work, which means recruiting, developing and recognising employees from all backgrounds. To that end, we have created a diversity and inclusion (D&I) ambition that aligns with our 2030 sustainability commitments, as well as specifically for the year ahead.

Our equal opportunities policy

Johnson Matthey recruits, trains and develops employees who are best suited to the requirements of the job, regardless of gender, ethnic origin, age, religion or belief, marriage or civil partnership, pregnancy or maternity, sexual orientation, gender identity or disability.

Supporting employees with disabilities

Our equal opportunities policy recognises that disabled people are often denied a fair chance at work because of misconceptions about their abilities. However, very often, it is the way that our society is built that prevents disabled people from fulfilling their true potential in the workplace. So we look for ways to help overcome these obstacles, including modifying equipment, restructuring jobs and safely improving access to our offices and facilities.

Working with employees to create an inclusive culture

Our employee resource groups (ERGs) do a great job in helping raise awareness of the experiences of individuals within certain communities. We currently have five groups – LGBT+, gender, disability, black employees and early careers. During the year some groups spent time with the GMC and with many of our leaders to discuss employee perceptions and explore actions that leaders could take to support further change.

For the first time we included questions in our 2021 yourSay survey that asked employees to share diversity and inclusion information, such as gender and ethnicity. We were delighted that over 80% of participants who responded to the survey answered these questions. This information will help us better shape our approach and actions to encourage greater diversity in the future.

Gender diversity statistics

The table below shows the gender breakdown of the group's employees as at 31st March 2021.

As at 31st March 2021	Male	Female	Total	% male	% female
Board	5	2	7	71%	29%
GMC	5	4	9	56%	44%
Subsidiary directors	95	16	111	86%	14%
Senior managers*	41	21	62	66%	34%
New recruits	1,117	475	1,592	70%	30%
Total group	**9,857**	**3,783**	**13,640**	**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.

People continued

Improving our gender diversity

As at 31st March 2021, women represent 29% of our board members and 44% of our GMC. We have made significant progress improving gender balance in our senior leadership roles, with women now holding 34% of all relevant jobs – up from 25% in 2018. Given this progress and our new yourSay data, we plan to refresh our diversity and inclusion ambition. We have high aspirations for D&I as this agenda is fundamental to our vision. We ultimately aim to have gender balance across all levels of our organisation and have set a target of over 40% of female representation in all managerial levels by 2030 as a key milestone on this journey.

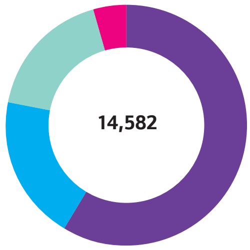
Gender pay gap

We saw a small increase in our UK gender pay gap from 6.0% in 2019 to 6.7% in 2020, which remains low relative to our peers and the national average, which was 15.5% in 2020. While good progress has been made in addressing gender imbalance in our senior management roles, we must focus on the broader population where we have seen little movement to positively shift our gender pay gap. Our new sustainability target related to gender diversity across management levels will support this. A full copy of our UK Gender Pay Gap Report can be found on our website.

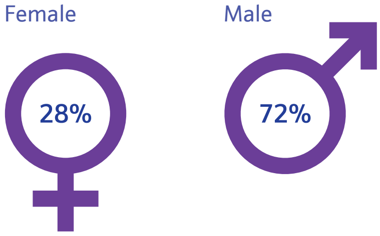
At a glance

Total employees by region

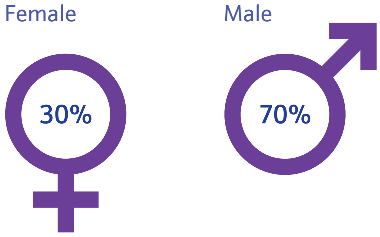
- Europe 8,564
- North America 2,831
- Asia 2,550
- Rest of World 637



Gender diversity

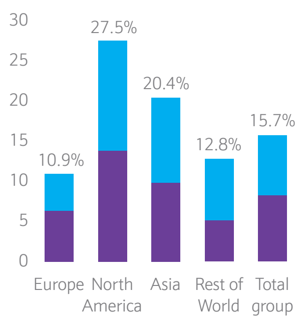


New joiners



Employee turnover by region

- Voluntary turnover
- Involuntary turnover



Our total turnover increased this year from 11.8% to 15.7% as the restructuring as part of our ongoing transformation led to the removal of roles. However, our voluntary turnover fell from 9.0% to 8.2%.

2. Creating a simplified, agile organisation that is global in outlook and reflects the communities in which we work

As well as talented people we will need an organisation that is fit and ready to support our ambitious growth plans and adapt to changing markets. Our transformation programme is helping us achieve that.

Ongoing transformation is a necessary part of our ability to execute our strategy. In 2020 we shared an intent to reduce the number of roles in our organisation by 2,500. This year our restructuring led to the removal of 1,128 roles. By focusing on redeployment and not filling vacancies we were able to reduce redundancies by over 10%. Further changes are expected over the next three years, however they will have less of an impact than expected on organisation structures largely due to strong performance in our core businesses and predicted future growth. We now estimate a further reduction of around 900 roles over the next three years to complete this phase of the transformation journey.

When the pandemic hit, our priority was the safety and wellbeing of our people. We paused redundancies in June 2020, resuming again when people were more able to find alternative employment. In managing through the pandemic, we did not furlough any employees or seek any government financial support.

Meanwhile, we implemented transition principles to retain our best talents and voluntary turnover fell from 9.0% in 2019/20 to 8.2%. We have provided leaders with change management support, learning and development programmes and communications training to help them lead their teams through this transformation.

The future of work in a post-COVID world

During the pandemic many of our employees worked in very different ways, with many more colleagues working from home. While this has been challenging for some people, many of our employees told us that they have appreciated the extra flexibility in working hours and location. So we are now in the process of shaping a new 'future of work' approach that will encourage more flexible ways of working. For employees who may work more remotely in the future, we will be making sure they still feel well connected and part of JM. We anticipate we will make use of office time to collaborate with team members to innovate and learn.

3. Building our leadership skills and helping our people develop new skills for the future JM

To play our part in the big transitions and help the world reach net zero we need to do two things: help our teams develop the skills they'll need to accelerate growth in our new business areas and hire new people into our teams.

Digital training and careers events in the COVID era

Although COVID-19 affected face to face training, we continued to provide training via our online iLearn portal. During 2020/21, more than three quarters of our people accessed the portal, a significant increase for the third year in a row. There was an 82% increase in the number of courses and resources accessed compared to 2019/20, and a four-fold increase in people registering for online courses.

We also turned our successful global careers weeks into virtual events, running everything from career coaching drop in clinics to external speaker webinars. This year inclusivity was a strong theme, with external speakers talking about diversity in careers. Our ERGs also ran a range of sessions to increase awareness and provide support.

Accelerating development of our high potential people

Our high potential people are our leaders of the future, so we want to support them with good quality development plans, clear career paths, senior level sponsorship and job rotations. Approximately 50% of those identified are female to help accelerate towards our gender balance targets.

As a result of our investment in internal career and talent management, internal appointments rose to 47% of total hiring from 33% in 2019/20.

A new leadership framework for a new culture

During 2020/21, we introduced a new leadership behaviour framework that is aligned with our culture ambition. We will use it to develop, assess and recruit leaders that inspire others to deliver great performance and our business strategy. To help embed the new framework, all our senior leaders, around 100 in total, took part in a 360° review to provide them with feedback and all are attending a new coaching programme to support their development.

Despite the pandemic, we continued the roll out of our 'Aspire' leadership programmes, which help everyone, from first line leaders to senior executives, develop consistent skills and behaviours. To date 1,500 managers have attended at least one of the programmes and while face to face training was suspended we ran a virtual programme with 125 managers. We are refreshing our other programmes to make them suitable for agile delivery and to incorporate our leadership expectations, culture ambition and sustainability goals.

People continued

Recruiting our next generation of creative thinkers

To build the Johnson Matthey of tomorrow we will need to continue to grow our overall capabilities, and in particular we will have opportunities for more commercially minded scientists, engineers and technologists. With their help we will be able to accelerate our growth and realise our business and sustainability ambitions. So, we continued to recruit new people into key roles, despite the pandemic. In all, we hired 1,592 new people, with the majority of those in our growth businesses in the UK, China, Poland and the US.

Crucially, we also continued to hire graduates into science, operational and commercial disciplines. So far we have recruited 33 graduates for our 2021 programme from the UK, US and China, 58% of whom are women.

4. Enhancing employee recognition and wellbeing to strengthen their resilience, help them feel included and want to build their career at JM

We want our employees to feel they belong at Johnson Matthey and to know that we have the tools and processes in place to help them build a career with us. Recognising and rewarding them for excellent performance, as well as supporting their wellbeing, is an important part of how we do this.

Supporting employee wellbeing during the pandemic

One thing that the COVID-19 pandemic has demonstrated is that our mental health is just as important as our physical health. So while we put lots of measures in place at our facilities to protect people's physical health and safety (see page 78 for more on this), we also supported their overall wellbeing:

- Time to Talk – our campaign, first launched in 2019, to help reduce stigma around mental health.
- Communications to increase access to our dedicated wellbeing resources such as Elements, our wellbeing portal.
- Intranet articles on topics such as stress management, nutrition and maintaining social connections.
- Virtual coffee sessions to keep people connected.
- 'Say Thanks' and 'Career Celebrations' programmes in the US to recognise the contributions of our colleagues, now being rolled out across JM.

Supporting wellbeing for future success

Taking care of wellbeing isn't just about responding during a pandemic. We will continue focusing on it as the big global transitions speed up and we accelerate our growth. To that end, we continued to grow our wellbeing ambassador network around the world, with 140 people helping us promote wellbeing issues at a local level. Meanwhile, in the week running up to World Mental Health Day in October 2020, we published intranet articles and ran webinars and activities to help our employees learn about and discuss wellbeing issues.

Recognising and rewarding our people

We continue to make sure that employee remuneration and benefits are competitive and in line with local markets. This year we also:

- Acknowledged the tremendous effort and commitment of our people as they came together to keep our operations running safely during COVID-19 with an additional one-off recognition payment of £250 (or local equivalent) for non-managerial employees.
- Celebrated the achievements of our people and great examples of teams demonstrating our values at our annual JM Awards, which we held virtually this year.
- Signed the UK's Living Wage Commitment as part of our ongoing commitment to paying people fairly.

Ethics and compliance

Being a responsible business means living by our value to act with integrity and upholding the highest ethical standards when working with our customers, suppliers and local communities. This responsibility underpins our purpose and strategy and is expressed through our Code of Ethics. This Code has been particularly important during the pandemic, helping our teams make good decisions in difficult circumstances.

We continue to assess our ethics and compliance programme against changes in legislation in the locations where we operate and to understand any gaps or weaknesses that we need to address.

Maintaining our ethical stance during the pandemic

COVID-19 has created extra pressure and uncertainty in all our lives. Stress can have a negative impact on our ability to make good decisions and, unless carefully managed, ethics and compliance can sometimes suffer.

To help manage the additional risk, our Group Ethics and Compliance team created a series of global video communications offering employees practical support and guidance. The videos highlighted the risks and provided a refresher on our key ethics and compliance principles. We also used our communications channels and training to reinforce the importance of using our Code to make good decisions. Our values and compliance obligations can never be compromised, and our teams were encouraged to continue supporting others in doing the right thing, recognising that the pandemic posed increased commercial pressures externally and internally.

We also continued to grow our global network of ethics ambassadors with more than 130 employees now involved. These ambassadors act as a sounding board for their colleagues and offer guidance on navigating difficult situations. They also help employees seek extra help and play a vital role in helping us run our annual 'Ethics Week' celebrations.

Embedding an ethics and compliance programme

We set out our global ethics and compliance standards using a two pillar approach that is supported by our Code:

1. Promoting an ethical culture across the company.
2. Implementing a compliance programme framework applied to each risk area.

Our compliance programme brings together our approach to risk management, internal controls and work to promote an ethical culture across the company. Our key compliance risks include:

- Bribery and corruption.
- Data protection.
- Export controls and sanctions.
- Conflicts of interest.
- Competition / anti-trust issues.
- Financial crime (including the corporate criminal offence of failing to prevent the facilitation of tax evasion).
- Supply chain compliance.

Continued focus on ethics and compliance training

Some of our employees work in jobs that expose them to a higher risk of ethical and compliance issues. We provide these individuals with additional, targeted compliance training to help them manage those risks. During the pandemic we shifted this programme online, providing 'live' ethics and compliance training sessions to our employees globally.

Meanwhile, 71% of employees completed our annual Code of Ethics training – this is higher than the previous year (66%) following a concerted engagement effort during our Ethics Week. We also continued to deliver our global compliance training via our e-learning portal, with classroom training options for employees who do not have regular access to a computer. These face to face sessions were run in line with local COVID-19 regulations.

Helping our people speak up

We encourage our employees and anyone with whom we do business to speak up when they have a concern or are unsure about how to do the right thing. There are several ways in which people can raise a concern, including via their manager, ethics ambassador, HR and legal. Those who are not comfortable using these routes can contact our independent speak up helpline and online chat function. Where local law permits, these calls and conversations are anonymous.

All Speak Ups are investigated and we take appropriate action whenever an issue is identified. Those investigations are overseen by our senior leadership Ethics Panel who also report back to the board, particularly on any themes or opportunities to improve our working practices. In 2020/21, we received 129 Speak Ups (see page 269 for a full breakdown by issue type). There were some that related to questions or concerns about COVID-19 protocols, which enabled us to clarify misunderstandings and further enhance practices in other instances.

While the number in the 'discrimination' category is higher than other categories, this is in line with industry norms. All reports are taken seriously, and we view the total number of Speak Ups as a positive reflection of the confidence in the process.

People continued

Occupational health and safety

Nothing is more important than keeping people safe at work. COVID-19 only made that commitment more acute, reminding us all that every Johnson Matthey employee has a responsibility to look after themselves and each other. The pandemic was also a stark reminder of the importance of protecting people's mental health as well as their physical health and safety. Here we discuss safety at our facilities. For more on how we support people's wellbeing and mental health, see page 76.

We are proud of the way our people came together, helping each other and adapting to new ways of working without ever losing sight of the bigger health and safety picture. Their hard work can be seen in our results.

But keeping people healthy and safe is always a work in progress. We must keep asking ourselves 'what more can we do?' and then putting the processes and procedures in place to keep improving. To that end, we have set ourselves an ambitious new TRIIR target as part of our new sustainability goals for 2030: achieve a TRIIR of 0.25. This is equivalent of a one in 400 years risk of such an injury to any individual worker, be that our employees or contractors.

In 2020/21 we continued to focus on:

- Process safety, which is about how we safely manage our most hazardous processes and design, operate and maintain our factories safely.
- Occupational health and safety, which is about incidents that happen more frequently but are usually less severe, like slips, trips, falls, cuts and sprains.

Protecting operational teams during COVID-19

When COVID-19 hit, we quickly put safety measures in place at our facilities around the world to protect our operational teams and reduce the spread of infection. While we developed site guidance at a corporate level, local leadership teams also worked with our EHS experts to ensure measures met national and regional health guidelines and relevant COVID-19 laws.

Some of the measures we put in place at our sites include:

- Checking temperatures as employees arrive.
- Installing new cleaning and hand sanitiser stations.
- Implementing social distancing and one way systems.
- Issuing personal protective equipment.
- Introducing site response pandemic guidance.

In some parts of the world, regulators have carried out spot checks to review our onsite COVID-19 controls. In all instances, those audits have commended our facilities for their actions.

To assure ourselves internally we also set up a global outbreak response team. This team is responsible for continually monitoring and assessing the health situation at an international, national and regional level and, when needed, escalating strategic decisions to the GMC. They also developed our internal COVID-19 standards, including a work from home plan for our office based employees. And they talked to other companies and experts to benchmark ourselves and share examples of good practice.

We are acutely aware that efforts to prevent virus transmission at our sites raises the risk of distractions when it comes to process safety. To manage this risk, we drew on external sources for COVID specific lessons, and senior managers hosted process safety conversations with site teams to maintain vigilance.

The steps we have taken have kept our facilities operating and our people safe. But since we're still living with the virus, we continue to assess the situation and will introduce additional safety measures if needed. As countries start to ease their lockdown restrictions, we will help home based employees get back on site. But we will only do this in line with our own alert level status guidance and in compliance with national and local requirements.

Safety metrics and policies to protect lives

Everyone is responsible for health and safety at Johnson Matthey. That's why every employee is expected to follow our clear, simple safety principles. We also expect every employee to include a health and safety objective in their annual performance review.

At a company level, our approach to health and safety is guided by our Group EHS Policy and underpinned by eight core health and safety policies. We call these our 'lifesaving policies' (LSPs) and make them available in local languages. Our LSPs address high risk topics, such as working at height and driving on company business, where any breach might endanger life or lead to serious injury. We provide sites with guidance on how to implement our LSPs and expect them to create and follow their local procedures to meet these policies. We also monitor compliance through EHS audits. COVID-19 affected the audit programme as travel was severely disrupted by lockdowns. The assurance team took two months to prepare and test a new remote audit protocol and then proceeded to audit on a priority basis using that tool.

It's six years since we first introduced our LSPs so, to ensure employees stay up to date, we introduced a refresher e-training programme. By March 2021, more than 80% of our employees had completed the course.

Process safety – good progress under difficult circumstances

Process safety is all about ensuring our operational equipment remains in good working order and is managed in a way that reduces risk of failures that could lead to significant injury, significant impact to the environment or significant asset damage. It relies on good design principles, strong engineering, operating and maintenance practices. It also means making sure that our employees have the skills and training they need to follow our procedures and policies.

Our process safety performance indicators showed significant improvement in 2020/21 with the number of potentially life threatening incidents falling from ten to three. While these incidents damaged equipment, they did not cause major injuries.

Meanwhile, our process safety severity rate (based on the actual impact of incidents as defined by the International Council of Chemical Associations – ICCA) fell from 1.20 in March 2020 to 0.81 in March 2021. Our Tier 1 process safety event rate increased from 0.11 to 0.15 due to better reporting of process safety events from our sites. We had five Tier 1 process safety events during the year. This compared to four in 2020. A definition of a Tier 1 Process Safety Event and our performance is given on page 269.

ICCA process safety severity rate

Investigating the root causes of safety events

We investigate every process safety event to understand both the root cause and the actions a site took to correct the problem.

In 2020/21, our most serious event occurred when a reaction hazard generated excess hydrogen at our site in West Deptford in the US. This caused an internal explosion and ruptured a reactor. Detailed root cause analysis found flaws in the operating instructions. To address this, the team improved its approach to reaction hazard processes. Meanwhile, we implemented a group wide review of the basis of design safety for selected chemical processes in which conditions might generate excess flammable gas.

Embracing digital ways of working to address process safety

The pandemic has made it difficult to carry out in person hazard identification, risk assessments and group level site audits. So, we have adapted, using digital tools to assess process safety on some of our biggest projects while keeping progress on track through our metrics reporting. We also:

- Continued running one day process safety leadership training with 100 new senior managers online.
- Offered online process safety training, with 4,000 operational employees trained so far.
- Ran a three week virtual global process safety conference, with employees attending 2,700 sessions.
- Started rolling out a new programme that assesses individual competencies for critical operational roles against 18 key process safety areas, such as knowledge, competency, engineering and design, following a successful two year pilot with 60 participants.

During 2021/22, we will continue to implement our process safety strategy as part of our overall EHS roadmap, with plans that include further training, competency assessments, managing safety critical equipment and further embedding our leading and lagging metrics.

People continued

Occupational health and safety performance in 2020/21

We use leading and lagging indicators to track our occupational health and safety performance and saw improvements in both during 2020/21.

In our indicators for employee health and safety we reduced our:

- Lost time injury and illness rate (LTIIR) by 20%, falling from 0.35 to 0.28. We have set ourselves a target to reach 0.20 by 2025.
- TRIIR by 28%, falling from 0.79 to 0.56. This is lower than our previous target for 2025 of 0.6. We have a new target for 2030, covering both employees and contractors, of 0.25.
- Reduced our OSHA severity rate[1] by 15% to 15.7 (at end of March 2021 compared with the 12 months to March 2020).[1]
- Reduced the number of lost and restricted days by 847, down from 3,053 in 2019/20.

2020/21 was another year without a fatal accident on any JM facility. It is now five years since our last fatality.

Our occupational health statistics remain relatively low, falling to only two cases in 2020/21 and a rate of 0.01 per 200,000 working hours in a rolling year. By comparison, we recorded 14 cases and a rate of 0.09 in 2019/20. These are exceptional reductions and could, in part, be due to fewer employees on site during pandemic restrictions.

We have not identified any transport related incidents among our employees during the year.

Reporting and learning from our near misses, narrowly avoided injuries and unsafe practices is as important in occupational safety as it is in process safety. This year the number of near misses rose by 26%. This is the second year running that the number has risen and reflects a good reporting culture which has helped us to reduce injuries. Currently 36% of our sites have ISO 45001 / ISO 18001.

We received an administrative penalty notice from the local emergency bureau for our site in Yantai, China, for CNY 135,000 on 29th June 2020 for over storage of hazardous chemicals and failure to conduct a physical hazards assessment. We were also fined CNY 25,000 for the lack of an emergency plan drill during the period of 13th June 2020 to 18th January 2021. All actions from these notices have been completed and closed to the satisfaction of the local emergency bureau.

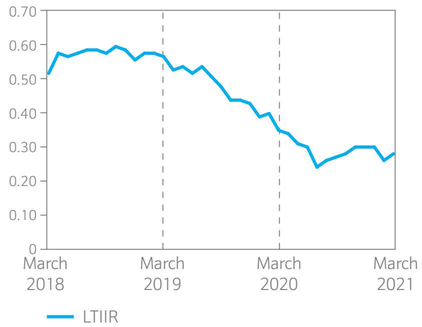
Encouraging a culture of safety from the top

We expect leaders at all levels – from the GMC to the front line – to have a personal safety action plan in place. This plan includes practical safety activities to encourage safety behaviours and promote a proactive safety culture. During the year, our leaders carried out regular communications on safety and also conducted reviews for serious incidents.

At a glance

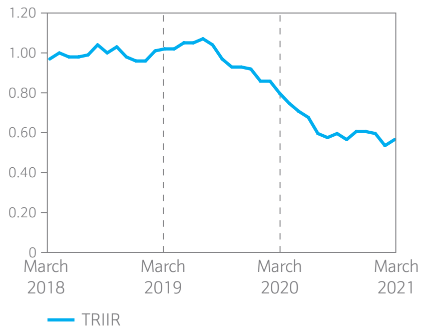
Lost time injury and illness rate (LTIIR)[2]

per 200,000 working hours in a rolling year

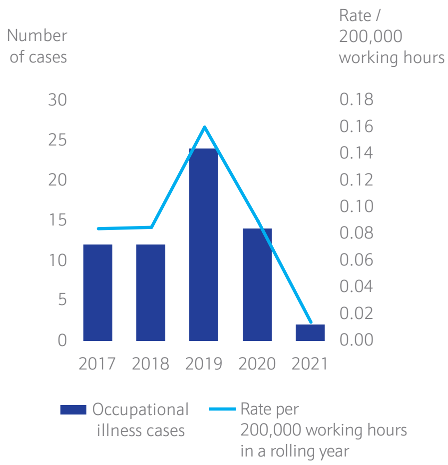


Total recordable injury and illness rate (TRIIR)[2]

per 200,000 working hours in a rolling year



Occupational illness cases[2]



1 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.

2 Data relates to employees only.

We have launched a global EHS induction programme for new leaders and managers. The interactive training includes videos, personal action plans and discussion forums so that participants can discuss safety issues with other employees.

Raising health and safety awareness among employees

During 2020/21, we increased the frequency and quality of our health and safety communications with campaigns that raised awareness and increased engagement and personal ownership.

For example, we launched a six month 'Work Safe Home Safe' campaign to inform employees about the common musculoskeletal disorders that represent our highest injury rates, and how, for example, good desk ergonomics can help prevent them. We issued ergonomic guidance regarding correct set up of equipment to employees working at home due to COVID-19.

As part of the campaign we ran a competition to find out which site had made the most changes thanks to the campaign. We received more than 60 entries and the campaign prompted more than 100 local improvement actions.

Managing chemical hazard exposure risks

Some of the materials we use to make our products are hazardous and must be handled carefully. To help assess, monitor and reduce employee and contractor exposure to these hazards, we have developed a series of EHS standards and guidance. These cover a range of issues, such as exposure management to chemical, physical and biological agents, and set out our requirements when planning to work with hazardous materials.

Every site also has its own exposure monitoring plans to help identify potential exposure against regulatory or internal JM limits and lays out the control measures in place to reduce or eliminate exposure.

Our Group EHS team regularly audits against our EHS standard requirements to ensure we continuously improve our operating practices. The team also works closely with other functions to share guidance on good practice and provide tools to continuously improve safety standards, and they conduct frequent reviews of our industrial hygiene exposure risk evaluation and control programmes to make improvements.

Our Group Industrial Hygiene and Occupational Health team runs regular reviews with sites to make sure they have a strong programme of health management in place and help develop improvement action plans when needed. In the UK, we have partnered with a single national occupational health service provider to help drive consistency, efficiency and cost savings.

We also work with our industry peers as a member of metal associations like the International Platinum Group Metals Association and European Precious Metals Federation. When needed, we proactively participate in and promote sector wide health studies and reviews.

Keeping our contracting community safe

We are currently working on several large capital investment projects around the world, which means we have more contractors on site than in a typical year. We work with our contracting partners to help them understand our EHS expectations and regularly monitor their compliance. As a result, we have seen a reduction in our contractor LTIIR over the past 12 months from 0.27 to 0.23 and in TRIIR from 0.80 to 0.45. Our five year contractor LTIIR and TRIIR performance is on page 269.

Product stewardship

Some of the materials we use to make our products and the products themselves are inherently hazardous – and if not managed correctly, could present an environmental risk or negatively affect someone's health. We extend our responsibility beyond our manufacturing sites, to think about the complete lifecycle of the products we make and ensure that risks are managed at every stage.

Reassuring customers on product safety

Naturally our customers expect to see evidence that we understand these inherent hazards and we provide accurate information on how to manage any risks appropriately. We assess all potential chemical hazards in our products and create legally compliant safety data sheets. These provide information on the chemical, the hazards it presents, how to handle it safely and what to do in the event of a spill or an emergency. We also submit this information to national poison centres around the world.

Meanwhile, other external stakeholders want assurance that we are managing any potential risks to the environment, our employees and customers. As such our product stewards, toxicologists and industrial hygienists meet regularly to review new hazard and exposure data and identify ways to reduce operational risks. This may include reducing, eliminating or replacing hazardous materials in our processes and products. And our businesses use a robust new product introduction process to make sure we're always pushing our standards in this area.

Setting a high standard for product stewardship

Our licence to operate depends on high standards of product stewardship. At its simplest level, that means we comply with all relevant chemicals regulations in the regions where we operate. We have procedures in place that help us identify our current and future regulatory obligations and our group wide policies are written in line with the Strategic Approach to International Chemicals Management's (SAICM) global framework. These product stewardship policies are an important part of our EHS audits to ensure compliance at a site level.

We also encourage voluntary stewardship activities across our value chain. We work with customers to understand how they use our products to see if we can further control and minimise safety risks and any adverse effects on human or animal health and on the environment. We also look at opportunities to develop products with improved health and environmental attributes. We're proud of this work, and we want to add more rigour to the way we measure progress.

To help increase understanding, and encourage proportionate regulation, of our chemistries and products, we are actively involved in several trade associations and organisations. We are a signatory of voluntary European industry initiatives set up to improve the quality of hazards and risk management information submitted under the EU's Registration, Evaluation, Authorisation and Restriction of Chemicals (EU-REACH) regulation. To support those initiatives, we updated more than 20 of our EU-REACH registrations in 2020.

People continued

Finding safer alternatives for hazardous substances

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, and always when legally required. In our Fuel Cells business, for example, we substituted a key chemical in our manufacturing processes with a less hazardous one, avoiding costly regulatory consequences for JM and a key energy customer in the US.

Sometimes, however, it simply isn't currently possible to replace a substance. In those instances, we carry out a detailed risk assessment and ensure both our operations and customers have robust risk management processes in place.

Designing risks out of new products

Whenever we develop a new product, we assess all the materials we need to make it against internal guidelines and regulations. We do this early in the development process and, in line with our policies, always investigating the availability of safer alternatives. Higher hazardous chemistries are subject to risk assessments and require senior level approval for their time limited use.

The number of substances we use that are 'regulated'[1], or are considered to be 'of international concern'[2] is limited. Approximately 5% of our sales come from products that are manufactured using or containing these substances.

Meanwhile, a very small proportion of our products (less than 0.01% of sales) are made using genetically engineered microorganisms. These are found in our biocatalysts (enzymes) but do not contain live organisms at the point of supply. Biocatalysts are highly selective and can help us produce more of the desired chemical products and fewer undesirable byproducts.

Complying with regulation

We operate in a number of regulated industries, with some of our products subject to strict rules on their use. Our regulatory teams actively monitor and assess any changes to these regulations and their potential impact on our supply chain and make sure we always meet our obligations.

Meanwhile, we track our operational and product performance every year through our product stewardship reporting programme. This year the programme found no reports of significant health effects from use of our products, and confirmed full compliance with health and safety, labelling and marketing regulations and voluntary codes. There were no significant transportation incidents reported either.

Putting our Brexit plans into action

During 2020/21, we put into practice our readiness plans for the post-Brexit regulatory regimes. This included transferring more than 90 UK registrations to EU legal entities to ensure the products we export to the EU remain compliant with EU-REACH. In addition, we hit the first UK-REACH deadline for 'grandfathering' our relevant EU-REACH registrations so that we can maintain our access to the UK market.

Management of the regulatory environment

We are a member of a number of industry bodies, including the Chemical Industries Association (CIA) in the UK, the European Chemical Industry Council (CEFIC) and Eurometaux in Europe. These industry bodies allow us to take part in government consultations whereby we can review and comment on upcoming environmental policy proposals or legislation that could affect our business. This allows us to understand the impact of the change being proposed either for new or existing legislation early and subsequently make plans to ensure we deliver compliance with government regulations and policy.

[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.

Upholding high ethical standards in our value chain

In addition to maintaining the highest standards in our own operations, we are committed to ensuring that our whole value chain upholds the highest environmental, social and governance standards.

As part of our new sustainability framework our goal is to uphold human rights throughout our value chain. Our target for 2030 is to:

Assess

100%

of value chain partners for human rights risks and put remedial plans in place where high risks are identified

We will use a risk based approach in our assessments and where high risks are identified we will work closely with our value chain partners to put any necessary action plans in place.

What we mean by upholding human rights

- We support the principles set out in the UN Universal Declaration of Human Rights, UN Guiding Principles on Business and the International Labour Organisation Core Conventions, including the conventions on child labour, forced labour, non-discrimination, freedom of association and collective bargaining.
- We support the principles endorsed under the UN Global Compact and have committed to formal membership by the end of 2021.
- We have also made a commitment to encourage greater diversity across our value chain through the introduction of a structured supplier diversity programme during 2022.
- We ensure we carry out a full human rights risk assessment whenever we enter a new territory, make an acquisition or enter into a joint venture.

Transparent supply chains founded on strong partnerships

Our commitment to developing a sustainable ecosystem is critically important to our customers. Raw materials such as nickel, cobalt and lithium are forecast to be in deficit over the coming years due to increasing numbers of EVs. Through our strategic partnerships with SQM and Nornickel we are providing long term security of supply while delivering sustainable and responsibly sourced critical raw materials. We have also formed a strategic partnership with mining group Sibanye-Stillwater to secure supplies of critical pgms required to accelerate new technologies for a low carbon future. The partnership will drive circularity and reduce carbon footprints in critical metal supply chains for customers across many global industries.

Due to the varied nature of our businesses, the principal risks in our supply chains are complex. To manage our key relationships and risks we have policies and processes in place within our procurement function and as part of our ethics and compliance framework. In March 2021 we issued an enhanced Supplier Code of Conduct, which sets out the standards we expect all our supply partners to share with us. It forms the foundation of our new supplier due diligence programme, which will roll out in phases during 2021/22. This programme will help us strengthen our supplier relationships, support our goal to reduce our Scope 3 GHG emissions and address human rights risks across the lifecycle of our products.

We expect our supply partners to complete self assessments under our Code of Conduct to demonstrate activity that already meets our expectations, any elements that they have committed to adopting or areas they are unable to support in the foreseeable future. This creates a level of transparency that helps us work with our partners to identify and address areas of risk and agree future action plans.

Responding to COVID-19

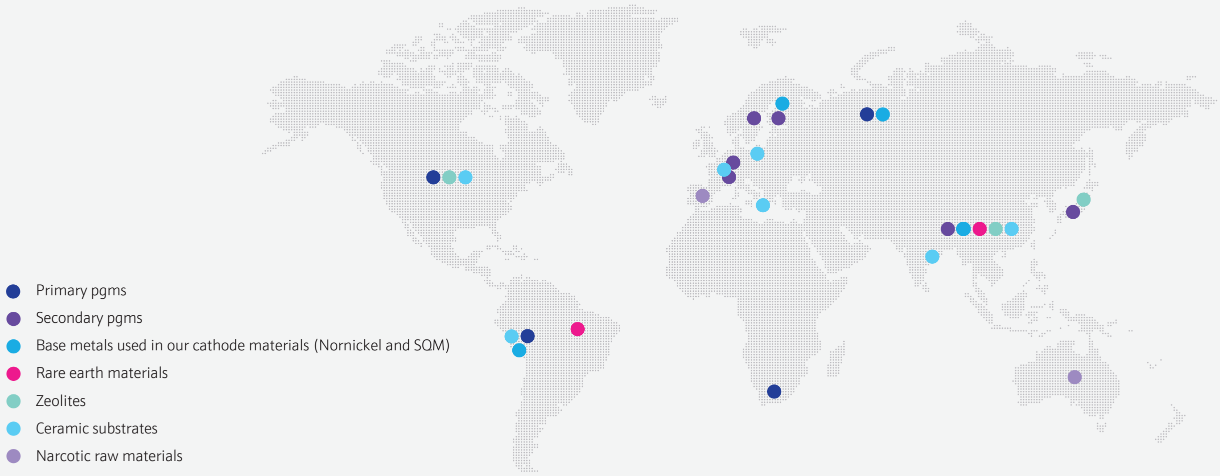
We have global, multi tiered supply chains, so it was essential to react quickly to COVID-19. This was possible thanks to strong supply partner relationships and contracts, and the positive way that our people adapted to remote working. Together, this helped us avoid COVID-19 related costs worth £19 million. As part of our response, we:

- Identified the suppliers critical to business continuity, such as logistics and facilities management, and worked closely with those delivering services to our sites to manage supplies as different lockdown measures hit different geographies.
- Put contingency plans in place, including supplier and services risk mapping, and kept in regular contact with critical suppliers to secure continuity of supply.
- Offered extra support to smaller or niche suppliers, such as paying invoices early.
- Worked with our key travel providers to track employee locations and arrange travel and repatriation where necessary.
- Sourced critical personal protective equipment through strategic supply partners when supplies were tight.

People continued

Where we source strategic raw materials

We procure goods and services globally and our supply chains are multi tiered. Supply failure is a principal risk (see page 93). Monitoring and understanding that risk is challenging but essential. Some of our strategic raw materials are only available from a limited number of countries. The countries we rely on for these materials are highlighted in the map below.



Doing business in higher risk jurisdictions

We don't just want to abide by the laws in the regions where we operate, we want to help raise industry standards within them. The requirements and expectations that we set other businesses help us do that and that's why, in April 2020, we introduced a new Doing Business in Higher Risk Jurisdictions Policy. This formalises our approach to third party risk management and due diligence in regions that represent the highest risk for our operations.

Since then, we have reviewed 426 counterparties against legal, compliance and reputational criteria and taken risk based decisions on their suitability as a JM business partner.

Reducing the risk of modern slavery in our supply chains

In line with the UK Modern Slavery Act 2015, we publish an annual public statement that demonstrates the actions we've taken that year to ensure modern slavery and human trafficking do not occur in our businesses or supply chains. There were no human rights grievance reports made against Johnson Matthey during the year. Our 2020 Modern Slavery Statement is available on our website.

Creating ethical supply chains for battery materials

We rely on critical raw materials such as lithium, nickel and cobalt to make our battery materials, some of which are often mined in parts of the world where human rights abuses, including modern slavery and child labour, are well documented. For example, the Democratic Republic of Congo (DRC) holds about 50% of the world's cobalt reserves and, while some mines are operating ethically, there is a significant amount of illegal artisanal mining in uncontrolled conditions.

We are committed to only using ethically sourced raw materials in our Battery Materials business. To help us do that we have implemented an enhanced due diligence programme for battery materials designed with third party experts RCS Global. This gives us full 'back to mine' transparency on all our raw materials that contain lithium, cobalt and nickel.

RCS Global audits are carried out in line with the OECD's Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. In September 2021 we will publish our annual statement in line with this guidance. COVID-19 restrictions meant we had to pause onsite supplier audits in 2020. However, we were able to continue self assessment audits and introduce several virtual audits of new strategic partnerships.

As the market for high performance batteries for EVs takes shape, we want to help instil high ethical standards across the whole industry from the outset. To that end we are active members of the Global Battery Alliance and are committed to its ten guiding principles to create a sustainable battery supply chain by 2030. We are also members of the Cobalt Institute and intend to align our corporate reporting framework and policies with the Cobalt Industry Responsible Assessment Framework guidance later this year.

Responsible sourcing of our platinum group metals

Our Platinum and Palladium Supply Chain Policy Statement, available on our website, sets out our commitments and actions to the responsible sourcing of pgms. Johnson Matthey Plc and Johnson Matthey Inc are accredited as good delivery refiners on the London Platinum and Palladium Markets (LPPM). This means that all the materials that pass through our UK and US refineries are subject to the LPPM's responsible platinum and palladium guidance. In 2020, we achieved third party assurance, from LPPM accredited auditors from RCS Global, that our pgms due diligence programme complies with the standard. The audit report is published on LPPM's website.

We also work with our customers through the International Platinum Group Metals Association (IPA) to ensure that we source our pgms in an ethical manner. All mining members of the IPA have committed to obtaining third party assurance of their ethical mining practices to independently recognised standards, such as IRMA and ICMM.

Conflict minerals

The term 'conflict minerals' refers to tin, tungsten, tantalum and gold (3TG). They are found in the DRC and surrounding countries, particularly areas of military conflict where mining is often illegal and linked to serious human rights abuses, including modern slavery and child labour. Johnson Matthey uses small quantities of these metals in some of our products, most notably tungsten in some of our automotive catalysts.

Because of the problems associated with conflict minerals we have enhanced our due diligence process based on OECD guidelines, in line with the European Union Conflict Mineral Regulation. This includes keeping records that allow us to track the suppliers of all the raw materials we use and identify which smelter the conflict minerals came from. We only use materials from refiners and smelters that meet the Responsible Minerals Assurance Process (RMAP) assessment protocols and that are listed on the Responsible Minerals Initiative database.

We keep an in house database on the provenance of our 3TG supplies so that we can answer any specific questions our customers might have about the minerals in our products. In 2020/21, we responded to 104 customer requests for information, an increase of 21% on the previous year.

We revised our global Conflict Minerals Policy during 2020 and it is available on our website. We train our employees annually on this policy as part of our ongoing ethics and compliance e-learning programme. In September 2021, we plan to publish our first annual conflict minerals statement on our website.

Our communities

We have a long tradition of supporting our local communities through our global volunteering programme, which grants employees two paid volunteering days a year. This allows them to give something back to organisations that they care about. Meanwhile, our match funding programme doubles the money that our people raise for charity, up to £1,000 a year per employee.

Now we are going further, with a commitment to invest at least £1 million every year in community engagement. This investment will be used to address the needs of our local communities, and fund the core elements of our flagship programme, Science and Me.

We will also introduce a new key performance indicator to measure the impact of Science and Me. And because we're so proud of the voluntary work that our employees do, we have set a target for 2030 to:

Achieve

>6,000

days of corporate volunteering a year

Bringing science to life for the next generation

The COVID-19 pandemic has been extraordinarily challenging for young people and created major uncertainty for the next generation. But what it has shown is that science is a key part of the solution to this and many of the other global challenges we're facing, like climate change. We're going to need many more scientists, engineers and technologists to help tackle those challenges.

That's why we've created Science and Me, using a £1 million fund created as part of our COVID commitments made last year. There are two parts to the programme. The first gives our sites access to funds to run science education projects in their communities with local partners through a grant scheme. And because science inclusion is at the heart of Science and Me, the programme will target students who typically miss out or don't engage with science because of factors such as socioeconomics, gender or ethnicity. Widening participation is essential to a widespread change of attitude towards science and science careers. The second part will increase our global impact through a new corporate level charity, which we plan to announce later this year.

Despite the pandemic, we were able to run our first set of projects online, connecting with young people. These included volunteer activities in which our colleagues connected with students through online chat forums to answer their science questions and developed science activity packs for disadvantaged children to use at home.

We also continued to provide mentoring, and skills and careers talks for young people around the world. Throughout the year over 200 employees took part in our online activities and we reached more than 1,500 students. We will continue to run virtual events to supplement face to face activities, as they've proved highly effective.

We were delighted to win the Best Online External Event Award at the 2020 COVID Comms Awards for our Virtual Work Experience Week. During that week, more than 100 UK students worked online, completing team and individual activities set and run by our people. More than 45 employees took part, including our Chief Executive, Robert MacLeod, who discussed 'a day in the life of the Chief Exec' and took part in a Q&A with the students.

Employee generosity despite COVID-19

We are proud of our employees' generosity despite the challenges of the pandemic. In 2020/21, employees volunteered 431 days. COVID-19 restrictions meant that our volunteer contribution was significantly lower than the 2,682 days volunteered in 2019/20. Nevertheless, it still represents hundreds of hours of activity. We shifted many activities online, such as our virtual volunteer week, which helped to maintain all important connections with our local communities.

Johnson Matthey also donated £80,000 to match funds raised and donated by our employees, up from £77,000 in 2019/20. As a response to the pandemic, we extended our match funding programme to cover employees' personal donations to COVID-19 relief efforts.

Community investment summary

	Investment in 2020/21 £'000	Investment in 2019/20 £'000	% change
Direct expenditure	**1,374***	940	+46%
Indirect expenditure	**98**	573	-83%
Employee volunteering time	**98**	573	-83%
Total group	**1,472**	1,513	-3%

* includes £1 million earmarked for the Science and Me programme.

Taskforce on Climate-related Financial Disclosures

This year we have continued to embed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) into our management and reporting frameworks.

Our leadership team owns our sustainability 'journey' and they have engaged the global sustainability consultancy Environmental Resources Management (ERM Ltd) to undertake a robust review of JM's internal processes and external reporting against the TCFD framework to help us align it with best practices by the end of 2021. The review includes a detailed assessment of JM's approach to identifying and managing both risks and opportunities related to the low carbon transition and physical climate change. ERM will also evaluate JM's climate scenarios and how they are used to assess the potential implications for our business strategy. Adapting to climate change is an ongoing journey. We will continue to integrate it into our strategy, systems and processes and will be ready to be fully compliant with upcoming UK regulation on TCFD reporting for our annual report 2022.

Here is a summary of our current progress under each of the **four pillars** of the TCFD framework:

1. Governance of climate-related impacts

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. A number of board sub committees play a key role in determining how JM governs climate change.

Read more: Corporate Governance report pages 108 to 121

In May 2021 the board set up the **Societal Value Committee** to provide direction and oversight of our ESG strategy, goals and performance against targets, which includes our climate management activities. The committee is chaired by an independent director, Jane Griffiths, and will meet three times per year. This committee will review the governance of all aspects of climate change across JM, include implementing the TCFD recommendation. During 2021/22 the committee will consider the benefit to JM of setting an internal price of carbon.

Read more: Societal Value Committee on pages 107 and 112

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. As part of this work they will ensure that our disclosures are aligned with the requirements of TCFD in 2022.

Read more: Audit Committee Report on pages 126 to 135

The **Remuneration Committee** implements our Remuneration Policy approved by shareholders at our annual general meeting in 2020, where we committed to introduce a third performance that focuses on sustainability into our long term incentive plan. This metric will represent no more than one third of the overall award and will be included in awards from August 2022. In order ensure we prepare for this change we will be running a small trial in 2021.

Read more: Remuneration Report pages 136 to 163

The **Group Management Committee** is responsible for implementing the sustainability strategy and programme and ensuring the delivery of our net zero commitment and other sustainability goals and targets.

During the year we appointed a new Chief Environment, Health and Safety & Operations Officer, who is the GMC member with overall accountability for delivery of sustainability strategy and climate change targets. He chairs the newly formed Sustainability Council, an internal council of business sector and functional leaders who advise on adjustments to the sustainability programme and strategy, and who drive the internal focus on delivering our sustainability goals, including those related to climate management. The Sustainability Council is responsible for ensuring we deliver on our net zero commitments and science based greenhouse gas (GHG) reduction targets.

2. Climate strategy

During the year a substantial business review has been undertaken to identify climate related opportunities for JM over the next decade.

Read more: Our strategy on pages 24 and 25

Transition risks

Our largest transition risk is the rate at which the automotive powertrains will transition from internal combustion engine vehicles to battery electric and fuel cell vehicles. We are carefully managing the transition as tighter regulations for vehicle tailpipe emissions are debated to ensure we maintain a profitable business in autocatalysts for as long as the market requires these products. At the same time we are developing our new businesses in high performance cathode active materials for electric vehicles, membrane electrode assembly components for fuel cell vehicles and technology for hydrogen production used to power those vehicles, in order to be prepared for the transition at whatever pace it occurs. We are also investing in a broader portfolio of low carbon solutions linked to clean energy, decarbonising chemicals production and circularity.

Read more: Technologies to drive down transport emissions on pages 4 and 5

Read more: Clean energy, decarbonising chemicals production and circularity on pages 6 to 11

The rate and extent of change in our key markets in response to climate change is the subject of extensive ongoing scenario planning. We have developed four in house scenarios for the mobility sector, including one which is closely aligned with the 2DS scenario of the Paris agreement; other scenarios are aligned with rates of market evolution informed by customer announcements and driven by progressive tightening of regulatory standards, and we also include a 'business as usual' scenario. We have also taken into account the variance of regulatory tightening in different geographies and other market factors such as car sharing and urbanisation.

Physical risks

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. We have completed an assessment of climate risk on all our facilities in partnership with our insurance providers. 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 and we periodically assess our sites for water risks using the World Resources Institute's Water Risk Atlas tool.

Read more: Managing water responsibly on page 69

3. How we manage climate-related 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 'Asset failure' and is considered when compiling those risks. We recognise that effective management of climate change risks is crucial to deliver our growth strategy and inspire confidence in our stakeholders. Our risk governance framework is described in detail on page 90.

Read more: Risk and uncertainties on pages 88 to 96

Future growth risk on page 92, Environment, health and safety risk on page 93 and Asset failure risk on page 95

Our programme of work with ERM will particularly focus on how to ensure climate risk is integrated into our overall risk management framework.

4. Metrics and targets to manage climate-related impacts

Johnson Matthey is committed to net zero by 2040 across its GHG footprint. In April 2021 we joined the Business Ambition for 1.5C and committed to setting science based GHG reduction targets for Scope 1, 2 and 3. Our proposed targets for 2030 and baseline performance are outlined in our sustainability goals table on page 63 and we will proceed with independent verification of these targets according to the SBTi methodology during the next year. In addition, we will continue to monitor our progress towards our renewable energy target, where 60% of our electricity must be certified renewable by 2025, and our progress towards our reduction in net water usage.

Read more: Renewable energy on page 68

Read more: Managing water responsibly on page 69

We have disclosed our GHG performance against all Scope 3 categories for the first time on page 267. We developed our Scope 3 methodology during 2020 in partnership with third party experts Avieco Ltd. As part of the launch of our revised Supplier Code of Conduct and supplier relationship management programme during 2021, we will launch activities to engage with our suppliers on the subject of net zero target setting and building understanding of their contribution to JM's goals.

It remains the case that the greatest contribution Johnson Matthey makes towards combating climate change is through the positive impact of the products we make when in use with our customers and consumers. A key pillar of our business strategy is investing in growth opportunities targeting climate change and circularity. As such, we will also be setting ambitious targets to increase the positive impact our products have on the carbon footprint of our customers.

Read more: Products and services for a cleaner, healthier world on pages 64 and 65

Risks and uncertainties

Reflection of the previous year – managing risks effectively

This year really proved the value of our risk management process. COVID-19 had a significant impact on business and society, and JM was no exception. We also felt the consequences of the economic changes caused by Brexit. Nonetheless, we were able to navigate these uncertainties well, thanks to the strength of our risk management framework which guided our approach. It helped us understand the risks better, and shape the actions we took to mitigate them.

As a result, we were not distracted from rolling out our key business transformation programmes. These programmes will help us respond more quickly, driving growth as we enable the four global transitions the world needs in transport, energy, decarbonising chemicals production and circularity, through our scientific knowhow, products and technologies.

These key strengths, and the products we are developing to help our customers decarbonise, are at the heart of how we will help the world achieve the goal of net zero. But within this context we also need to do more ourselves – as set out in our new sustainability commitments (pages 62 and 63). We have therefore also increased our commitment to reducing our own greenhouse gas emissions. As part of this, we have set up a new Working Group for the Task Force on Climate-related Financial Disclosures (TCFD) to ensure that our enterprise risk framework incorporates all relevant requirements and addresses our own climate scenarios, and that we have the right business processes in place to deliver our sustainability commitments.

Managing JM's risks

JM applies a holistic approach to risk management which enables the business to protect value, proactively manage threats to the delivery of strategic and operational objectives while enhancing the realisation of opportunities. We have a risk management and internal controls framework to identify, assess, mitigate and monitor the risks and uncertainties we face as a business. It helps deliver a balance between risk and opportunity underpinned where appropriate by other tools available to us such as insurance.

We have a culture of continuous improvement; our risk environment continues to be enhanced as we embed stronger risk management practices and make positive progress to reaching our desired level of maturity. To fully embed risk management practices, we have focused on our risk culture through a series of workshops with risk owners and sponsors, clearer definitions of risk causes and sharing of this understanding across the group.

Effective risk management helps us:

- Pursue new opportunities while mitigating our risks in a rapidly changing external environment.
- Deliver our strategic objectives through prioritised planning.
- Focus our assurance resources on specific areas of risk and uncertainty.
- Implement relevant controls to mitigate or prevent risks from occurring.
- Drive continuous improvement and close collaboration between our corporate functions and sectors.
- Comply with UK Corporate Governance Code requirements.

2020/21 process developments

We have made several enhancements over the last 12 months in the way we address and monitor risks:

- Mitigating action prioritisation. Key activities identified as having the most significant impact in reducing JM's risk exposure will be tracked and monitored.
- Risk champion and sector risk forums have been established to provide practical support to the business in operationalisation of the risk process. We have also enhanced risk reporting through utilisation of supporting dashboard and visualisation of key risk information as well as the actions required to support achievement of desired outcomes.
- Further definition of improved key risk indicators (KRIs) framework. Expanded approach in detailing metrics which demonstrate when tolerance levels for each principal risk may be breached. This provides the board, risk sponsors and owners greater visibility and awareness of mitigating action effectiveness in driving the net positions towards the defined appetites.

Emerging risks and opportunities

Given the rapidly changing nature of the external environment, the process to determine emerging risks is included within our Group Risk Management framework. We have systematised our approach to tracking key signposts and indicators relating to decarbonisation policy and private sector commitments, which also includes consideration of JM's climate scenarios. We are using this to better understand the market context for our new growth opportunities, for example in hydrogen, and adjust our strategy as needed. Automotive / powertrain scenarios have been developed and will be expanded over the next financial year to provide a clearer view on oil demand and key chemical value chains while continuing to develop our thinking on other group wide macroeconomic drivers (e.g. carbon pricing). We have also reviewed internal and external environment changes / movements at the board and Group Management Committee (GMC) to ensure that the top down risk management process continues to be informed.

Determining our risk appetite

As part of our risk assessment process, our board and GMC consider the nature and extent of our risk appetite of the group's principal risks. The outcome of this exercise informs our strategic planning activities and helps us to set the level of mitigation needed to achieve our strategic objectives – accepting, of course, that some level of risk taking is necessary.

JM's Board of Directors has overall accountability for the risk management process. Supported by the GMC, assessments are carried out against the principal and emerging risks facing the business to ensure that the risks identified are relevant to JM's goals and strategic objectives. We recognise the emerging nature and velocity of some of the more dynamic aspects of emerging risks, which we are developing. Read more in our TCFD statement on pages 86 and 87. 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 group's principal risks as well as bottom up to identify operational risks. They are run in parallel and we are improving the connection and alignment between them. The visibility of all risks is ensured through our group principal risk reporting dashboard, which includes a consolidated view of operational risks. We are working on the implementation of JM's risk universe and its digitisation will improve live visibility and comparability of risks across the sectors and sites as well as emerging themes.

Each principal risk is individually sponsored by a GMC member who drives progress through regular review considering related emerging risk factors, current responses and further mitigating actions to manage to our defined risk 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.

JM's risk approach

Risks and uncertainties continued

How we manage risk

A standardised framework is used across the business to ensure risks are identified, analysed, monitored and reported in a consistent manner. 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 existing controls are assessed regularly with risk sponsors and owners. A subset of the most relevant controls are reported at least once a year via the key controls questionnaire process.

Functional leaders, sectors and site teams are responsible for identifying, assessing and prioritising their risks, considering the likelihood of occurrence and their potential impact on JM's objectives. This review includes assessing any movement in the risks, the strength of the controls we use to manage them and the status of mitigating actions.

Site risks are 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 GMC, and this includes discussion of emerging risks.

The board assesses the outputs from this process and is committed to further maturing JM's '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 Group Assurance function and other third parties. This model is subject to continuous improvement and requires further strengthening with the aim to mature management assurance functions and approaches.

We are currently enhancing our enterprise risk management structure to facilitate the implementation of a Governance, Risk and Compliance (GRC) tool which will support visibility of our processes, controls and risks and are developing JM's risk universe.

Risk management framework

Top down

Defines risk appetite; identify, monitor and mitigate risk at group level

Identify, monitor, report and mitigate risks at operational level

Bottom up

Group Assurance

- Constructively challenges and assists the board, Audit Committee, GMC risk sponsors, sectors and functions in considering the range of risks identified and their materiality.
- 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.

Board of Directors

Overall responsibility for sponsoring the approach to risk management and internal controls. Sets the tone on risk management culture and approves risk management policies, guidelines and processes.

Audit Committee

- Reviews the effectiveness of the group's risk management framework and internal controls system.

GMC

- Develops company strategy in line with board risk appetite.
- Reports on principal risks and uncertainties to the board and Audit Committee.
- Carries out top down, bottom up and emerging risk identification and review.
- Owns risk definitions, mitigation plans and monitors progress towards the appetite of our principal risks.

Sectors

Carries out a top down review of activities on a regular basis. Responsible for ensuring that sites and functional areas have developed risk registers in place. Reports to the GMC on sector risk and issues.

Sites / Functional Areas / Programmes / Projects

Reports top risks to sector. Carries out regular reviews on effectiveness of existing controls and progress with control implementation.

Insurance

Our risk management process allows us to respond to risks through the use of insurance to treat and manage risks. Our insurance strategy is to prioritise our mitigation resources on the most significant areas of risks and / or where JM has a legal or contractual requirement. We also consider using insurance cover as a risk mitigation tool where it is available on commercially reasonable terms from leading insurance companies. We currently have insurance programmes in place to cover a number of risks including employers' liability, workers' compensation, stock and transit, public and products liability, property damage, business interruption, and directors' and officers' liability. We utilise a captive insurance company to provide insurance cover for the portion of some of the risks we retain, ensuring there is an appropriate and economically beneficial balance of risks between JM and its external insurers.

The type and limit of insurance purchased from the external market is reviewed to ensure its alignment with our assessment of the relevant risks and with our external obligations. For example, we currently mitigate the potential financial impact of extreme weather events through our property damage and business interruption insurance programme.

JM's principal risks and uncertainties

Principal risks are regularly reviewed to ensure that JM meets the challenges facing the business and strategic objectives. To understand the current risk universe for JM, GMC risk sponsors have assessed changes to their risks, prioritising principal risks as required, with focused mitigation plans. This has been enabled by the risk management process facilitated by the Group Assurance and Risk function.

The following provide an insight into the way we have further shaped our risk coverage, and clarity on opportunities and relevant actions in 2020/21:

- Climate change is an important part of our risk management process, driving certain principal risks, such as 'Future growth', 'Environment, health and safety' and 'Supply failure'. We recognise that we must manage our climate change risks effectively if we are to deliver our growth strategy and inspire confidence in our stakeholders. The rate and extent of change in our key markets in response to climate change is subject to extensive scenario planning as part of our TCFD preparations and we are carrying out further analysis on the validity of a stand alone risk for this area.
- We refined our 'Failure of operations' risk to focus specifically on 'Asset failure'. This better reflects the primary cause of this risk and the level of potential exposure across the business. Following discussions with our sectors and other principal risk owners, we have put in place sector focused actions to reduce our exposure.
- We reviewed our 'Quality' risk and developed sector specific views to acknowledge the different applications of this risk. We continued to work with sectors to help them own the risk, monitor its likelihood and ensure any specific actions are tracked.
- Cyber attacks remain a significant risk because of the evolving external landscape and a rise in the number and sophistication of those attacks. Under our 'Information technology and cyber security' risk (previously Applications, systems and cyber) we continue to develop our controls in line with good industry practice to help us respond to these new challenges. We developed our ongoing programme of work with independent oversight and will track and report progress within this risk.
- Following an assessment of JM's legal risk landscape, we have introduced 'Customer contract liability' as a new principal risk. This risk recognises our potential exposure to loss or damage because of existing or future customer contracts having potentially unfavourable terms against the backdrop of increasing regulation and collective actions, particularly in the automotive and pharmaceutical sectors.
- The Precious Metal Management (PMM) team has continued to enhance the governance procedures over our metal management. Despite initial disruption caused by the pandemic it has not had an immediate impact on our supply positions and JM has benefited from the volatile and higher than average precious metal prices. In addition, significant advances have been made in reducing the amount of working capital which has been assisted by the advances made by reducing our refinery backlogs.

The table below sets out our principal risks and uncertainties and the actions we have put in place to mitigate them. The risks discussed below, either individually or in combination, could have a material adverse effect on our strategy, business, financial performance, operations, cash flows and liquidity, prospects, shareholders value and reputation. We analyse the extent of the mitigation plans we need, knowing that our risk profile and the potential impact of each risk changes over time. JM's strategic risks are listed first followed by operational risks. Each principal risk is also linked to one or more of our three strategic priorities:

Invest in growth areas targeted at climate change and circularity

Manage our established businesses to support growth

Promote a fast paced, efficient business and high performance culture

Risks and uncertainties continued

Key

- Invest in growth areas targeted at climate change and circularity
- Manage our established businesses to support growth
- Promote a fast paced, efficient, high performance culture

- Increased since 2020 annual report
- No change
- Decreased since 2020 annual report
- n/a Risk movement not applicable as new risk

1 Existing market outlook

GMC sponsor: Robert MacLeod

Risks, opportunities and impact

Changing assumptions in our key markets could have an unplanned or unforeseen impact that we are not agile enough to respond to. This risk includes the potential impact of legislative changes, other market movements outside of our predictions, the extended impact of global pandemics, and emerging trends, such as tariffs, as well as regional and global slowdowns to which our business may be sensitive.

Key mitigations

- We continue to execute our strategic planning process to assess and understand external trends and the associated effects on our sectors. This includes the balance, scale and focus of our investments.
- We regularly review our portfolio to ensure that each part of the business is providing value to the group. In turbulent times the resilience of our portfolio demonstrates its benefits.
- We monitor key viability and liquidity metrics, such as balance sheet strength, as part of our budgeting and going concern testing.
- We monitor changes to key drivers, such as GDP and market assumptions, carry out scenario planning and adjust our business plans accordingly.
- We have developed response mechanisms to ensure that we can react quickly when unforeseen market events take place.

Changes since 2020 annual report

Coverage of this risk has evolved to reflect potential unforeseen changes in our key existing markets and our ability to respond at speed. We have split our risk scoring into two categories: 'normal' fluctuations in the business cycle that are identified through our strategic planning, and lower frequency 'black swan' events, such as COVID-19, which are intrinsically unforeseeable. As a result, we have strengthened our market intelligence across all sectors and we continue to monitor global macroeconomic factors and are improving our sensitivity analysis through our strategic planning and budgeting process. Furthermore, we have improved our ability to react to unexpected market changes.

2 Future growth

GMC sponsor: Christian Günther

Risks, opportunities and impact

Ineffective execution of our strategic initiatives and investments could lead to failure to deliver planned growth and create value.

Key mitigations

- We continually review our strategy in light of new information, and our Strategic Transformation Office tracks our execution via a business review process.
- We review and monitor new technologies and market competitiveness on an ongoing basis.
- We invest in research and development, capital projects and people with the specific skills we need to deliver our strategy.
- We work proactively with current and potential customers, as well as industry bodies, such as the Hydrogen Council, to understand future needs and potential product and market evolution.
- Our dedicated group capital projects team conducts regular reviews of all strategic capital projects.

Changes since 2020 annual report

We have further refined this risk to focus not just on the growth opportunities we see in our two main core businesses (Clean Air and Efficient Natural Resources) but also on the key growth platforms that relate to our Battery Materials, Hydrogen and Fuel Cells businesses.

Our future growth is in part driven by global macro trends, including climate change, acceleration of EV penetration and fuel cells, and an increase in the rate of decarbonisation that, on balance, create a suite of opportunities for JM.

To drive growth, we recognise that we need to leverage our core businesses to support our growth platforms, identifying opportunities, strengthening our IP positions, developing the products and services that customers need and building the skills we need to deliver our strategy. We also recognise the inherent level of risk that embarking on new growth areas creates, including securing customer platforms.

Overall, our net scoring (currently mitigated position) has reduced, recognising our regular monitoring and increased control through the Transformation Office. However, our appetite (desired position) has increased to reflect the alternative growth streams required and the higher percentage of revenue at risk as we balance our portfolio, expanding from our existing core businesses.

3 Competitive advantage

GMC sponsor: Maurits van Tol

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.

Key mitigations

- We maintain strong customer relationships through our technical proposition, good market reputation and a high level of technical service.
- We conduct research and development and use our capital management process to ensure resources are prioritised against the areas of greatest opportunity.
- We maintain a strong innovation portfolio using our new technology platform and product development process.

Changes since 2020 annual report

We have processes in place to enable effective decisions to allocate innovation resource and capital. Through our innovation excellence programme, we continually improve the processes that further expand JM's product, application and technology toolbox.

We added further mitigating actions to ensure we have the capabilities to 'place the right innovation bets' and respond to emerging opportunities at pace.

4 Environment, health and safety (EHS)

GMC sponsor: Ron Gerrard

Risks, opportunities and impact

Like other high hazard manufacturing companies, our business operations are subject to a wide range of challenging health, safety and environmental laws, standards and regulations set by 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 have a negative impact on our employees. This could result in lost production time and potentially attract negative interest from the media and regulators.

Key mitigations

- We have embedded a health and safety culture across the business. This includes clear policies, guidelines and standards, continual training and awareness activities and audits.
- We continue to conduct process safety reviews at applicable sites.
- We carry out investigations to determine the root cause of incidents and accidents and develop remediation plans to address the issue.
- We manage and report on environmental data associated with our sites.

Changes since 2020 annual report

The health and safety of our employees is our priority. COVID-19 has continued to affect the way in which many of our employees work and we have adapted our processes to ensure that training, online hazard studies and other assessments can continue despite the pandemic.

We have updated this risk to clearly articulate how we manage our exposure to health and safety risks, and to specifically include all relevant areas, such as our environmental impact.

5 Supply failure

GMC sponsor: Jane Toogood (metal) and Ron Gerrard (other sourcing)

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 our products and satisfy customer demand.

Key mitigations

- We manage our supplier relationships through regular reviews and discuss their constraints and quality management processes.
- Where appropriate, we carry strategic stocks of raw materials and regularly monitor our levels against changes in the external landscape.
- We regularly investigate alternative materials as part of our research and development.
- We continue to invest in our pgm refining business to ensure access to recycled precious metals.
- We conduct ongoing market research to understand and monitor the impact of short term events on the longer term supply of metal.

Changes since 2020 annual report

We have continued to implement our procurement strategy and have further sharpened our supply chain understanding across the sectors, including our capital projects supply chain.

We continue reviewing critical direct raw material suppliers to meet our product portfolio strategies.

We have also continued to reduce the precious metal backlogs in our refineries, reducing pressure on our precious metal sources.

Risks and uncertainties continued

6 People

GMC sponsor: Annette Kelleher

Risks, opportunities and impact

To successfully execute our strategy and deliver growth, we need an appropriate culture and a breadth and depth of leadership skills to drive a motivated, inclusive and engaged workforce, underpinned by adequate people data.

Key mitigations

- Our values and behaviours are embedded in all our internal processes, including hiring and performance reviews.
- We run culture focused sessions with our leaders and have developed a culture statement roadmap.
- We run ongoing leadership development and wellbeing programmes for our employees.
- We conduct a global employee engagement survey every two years and intermediate pulse surveys. We then develop targeted action plans based on the feedback from them.

Changes since 2020 annual report

We have increased our scoring to reflect the pandemic and also the level of change we are currently undertaking.

We have continued to prioritise our employees' health and safety, maintaining social distancing measures and supporting many homeworking employees. 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

GMC sponsor: Jane Toogood

Risks, opportunities and impact

We store and transport significant quantities of high value precious metals or highly regulated substances. Loss or theft due to a failure of our associated security management systems may result in financial loss and / or a failure to satisfy our customers, which could reduce customer confidence or result in legal action.

Key mitigations

- We have delivered the first year of a three year security improvement roadmap to further strengthen the function.
- We continue to implement and apply our Group Security policies across all sites.
- We regularly carry out security assessments and audits at sites.
- We are members of intelligence groups that help us carry out regular threat evaluation and horizon scanning.
- We run ongoing security awareness campaigns and training, including rigorous follow up of thefts and continuous learnings.

Changes since 2020 annual report

Our level of control continues to increase through the delivery of the security improvement roadmap, which includes implementation of control measures across our critical sites.

With the increase in metal prices comes a potential increase in the risk and we adapt our controls in line with the changing security risks to our materials.

8 Intellectual property management

GMC sponsor: Maurits van Tol

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.

Key mitigations

- We carry out an annual review of our intellectual property portfolio against JM's strategic priorities to ensure continued alignment.
- We regularly review our sector level intellectual property strategy to ensure consistent monitoring of intellectual property activity.
- We actively manage our intellectual property portfolio and use digital tools to support governance.
- We continue to provide training on, and raise awareness of, our Information Classification Policy.
- Intellectual property lawyers provide specialist guidance, including on the use of intellectual property as a business tool.

Changes since 2020 annual report

The intellectual property landscapes for the technologies in which JM operates continue to be inherently challenging as, for example, sustainable technology development is a very dynamic space.

To continue reducing our risk exposure, we are developing and implementing a trade secret management policy to ensure JM has a register of all its trade secrets and key knowhow. This will allow us to better manage our intellectual property and guard against loss, either inadvertent or deliberate.

9 Asset failure

GMC sponsor: Ron Gerrard

Risks, opportunities and impact

We may experience critical asset failures resulting in a material impact on the supply, performance, share value and reputation of JM.

Key mitigations

- We are implementing robust asset management programmes and rigorous operational technology support systems.
- We have developed and embedded engineering standards.
- We are prioritising key insurance review actions and business continuity planning.
- We are detailing and prioritising critical spares and capital expenditure for ageing assets and infrastructure.
- We are delivering competency programmes.

Changes since 2020 annual report

We have changed 'Failure of operations' to 'Asset failure' to avoid duplication and reflect the level of our exposure if not mitigated.

Overall, even with mitigations in place, there is further work required to reach tolerance. Group scoring reflects the level of exposure within the PGM Services (PGMS) business due to the nature of the business with the highest potential impact. A multi year investment programme is underway in PGMS to renew assets that require replacing due to them approaching end of life. Part of this investment includes a new state of the art refinery at our PGMS Royston site.

10 Ethics and compliance

GMC sponsor: Nick Cooper

Risks, opportunities and impact

Failure to comply with ethical and regulatory standards could lead to reputational damage, and leave the company or individuals open to potential criminal or legal action.

Key mitigations

- We have shared our Code of Ethics and compliance policies with employees and provide regular training on them. Our senior leaders set the tone from the top.
- Internal and external subject matter experts identify risks, set standards and provide advice and training.
- Our third party due diligence programme assesses and manages the risks associated with various counterparty relationships.
- We continued the 'speak up' facility for employees to raise concerns. Our Ethics Panel investigates any reported issues and recommends actions to address the issue, as needed.

Changes since 2020 annual report

As the ethics and compliance landscape continues to evolve and risk management techniques become more sophisticated, we continue to adapt our programme. During the last 12 months we have continued to monitor the heightened compliance risk due to the additional financial pressures that people and companies may be suffering because of COVID-19.

In addition, we have increased our focus on ethical risks that may not have direct regulatory consequences by creating a new role of Head of Business Ethics.

11 Business transition

GMC sponsor: Robert MacLeod

Risks, opportunities and impact

Failure to manage and deliver change in a controlled manner to achieve expected business benefits.

Key mitigations

- The setup of the Strategic Transformation Office in April 2020 has ensured appropriate governance across key initiatives to coordinate and drive delivery of change in a controlled manner.
- We continue to monitor JM wide risks and interdependencies associated with our transformation.
- We carry out independent assurance on key change programmes.
- We have introduced a project management and business change framework across all key initiatives.

Changes since 2020 annual report

Our Strategic Transformation Office has driven delivery of the expected benefits in a controlled manner, thereby reducing the overall risk compared with last year.

We have put new processes, tools, controls, governance, and focus on business change in place this year, which has lowered the overall risk in our workstreams. This year we will continue to use these measures across our sectors and in new workstreams and across asset disposal and sustainability.

The model of the Strategic Transformation Office has been replicated in many of our sectors to manage the overall group risk.

Risks and uncertainties continued

12 Product quality

GMC sponsor: Joan Braca

Risks, opportunities and impact

Customers use our products in a wide range of their own end products, processes and systems. It is crucial, therefore, that our products work properly and meet the established quality criteria. Performance failure or quality defects could cause harm to consumers or leave us exposed to liability claims. This could lead to loss of future business, licence to operate and reputational damage.

Key mitigations

- We monitor and report on quality performance, taking corrective action where needed.
- We continue to develop robust manufacturing and preventative maintenance systems supported by standardised processes.
- We embed global quality management systems across our business and provide training and regular communications to help employees understand how to use them.
- We adopt 'quality by design' in our new product introduction and product change management processes.

Changes since 2020 annual report

The regulatory environment continues to tighten, and our customers are experiencing greater scrutiny.

We note an increase in risk profile due to better understanding of our sector quality programmes and relevant exposures. Our risk strategy has been to apply the highest exposure across our sectors which is driven predominantly by the Health Sector.

We have strengthened our ability to recognise continuous improvement opportunities and how we apply inherently different quality management systems across our sectors.

13 Information, technology and cyber security

GMC sponsor: Ron Gerrard

Risks, opportunities and impact

Failure to adapt our IT systems to changing business requirements, significant disruption to those systems or a major cyber security incident could adversely affect our financial position, harm our reputation and lead to regulatory penalties, or non-compliance with laws.

Key mitigations

- We continue to raise employee awareness and run technology training programmes.
- We have enhanced key cyber security technologies to increase our ability to predict, prevent, detect and respond to cyber threats.
- We continue to deliver our Cyber Security and Infrastructure Improvement Programme (CSIIP) to increase our organisational resilience. Controls have been increased in areas where we perceive a heightened risk.
- We have introduced key policies and standards across JM.
- We receive continued support and assurance from third party specialists.

Changes since 2020 annual report

We have refreshed this risk to reflect wider IT risks in line with good industry practices and it now includes innovation and digital areas.

We continue to invest heavily in our cyber security and IT general controls providing better visibility and governance to support a more efficient business.

We maintain a high level of communication and awareness activities ensuring our employees continue to be alert to the external risk associated with the exploitation of the COVID-19 pandemic.

14 Customer contract liability

n/a

GMC sponsor: Nick Cooper

Risks, opportunities and impact

Unfavourable customer contract terms could lead to significant loss or damage and expose us to high or unlimited liability, as well as other broader negative consequences.

Key mitigations

- Our in house legal team and commercial function work together to negotiate terms and liabilities within our customer contracts.
- We provide ongoing legal training and activities to raise awareness.
- Contracts that meet specific high risk triggers are subject to approval by our Legal Risk Committee.
- Sector General Counsels are part of Sector Executive Committees and advise senior leadership teams on legal risk within their sectors.

Changes since 2020 annual report

Following an assessment of our legal risks landscape and exposures we have concluded that the group's risk in relation to customer contract liability should be tracked.

This is primarily due to increasing regulation and collective actions, particularly in the automotive and pharmaceutical sectors, raising our overall risk exposure.

Viability

The directors have assessed the viability of the group over a three-year period in line with the annual planning horizon. During the year the board has carried out a robust assessment of the principal and emerging risks affecting the company and group, 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 Directors along with the Audit Committee annually reviews the risk management process to ensure its continuing effectiveness and improvements to the process reflect the nature of the business and group's risk appetite;

- 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 by 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.
- Throughout the year, the Corporate Assurance and Risk Team produce a risk based internal audit plan and presents results to 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 and reassessment of risks that would impact successful execution. Climate change is not expected to have a near term impact on forward looking forecasts, however we will continue to review this. We do not anticipate any significant risk from climate change over the viability statement period.

In making the viability assessment, we have analysed each of the principal risks facing the group (as described in the previous section) and identified the items within each principal risk category which have a significant impact to cash flow and viability. We have then modelled these in four stress scenarios as shown in the table below:

Principal risk	Scenarios
1. Existing market outlook	Scenario 1
2. Future growth	Scenario 2
3. Competitive advantage	Scenario 3
4. Environment, health and safety 5. Supply failure 6. People 7. Security of metal / highly regulated substances 8. Intellectual property management 9. Asset failure 10. Ethics and compliance 11. Business transition 12. Product quality 13. Information, technology and cyber security 14. Customer contract liability	Scenario 4

Scenario 1: Existing market outlook – In the going concern analysis, the severe but plausible scenario showed additional headroom compared to the base case due to working capital benefits from lower volumes. For this viability scenario, we considered a more challenging combination of further stress-testing precious metal prices and metal holdings compared to the base case. Within this scenario, we have flexed individual metal prices by up to 64% within the basket of our key metals and increased key metal holdings by up to 50%.

Scenario 2: Future growth – this scenario models the failure to deliver growth in new markets and technologies, most notably battery materials. Within the three-year timeframe the impact of this risk on viability is not assessed to be significant as the sales and returns from new markets and technologies only become material to the group's profitability beyond this period. The risks around the capital expenditure are captured in scenario 3.

Scenario 3: Competitive advantage – this scenario considers the failure to maintain competitive advantage in existing markets principally as a result of ineffective execution of key initiatives or operations. Again, it considers the elements expected to have the most material impact on cash flow and viability. It includes the impact of failure to deliver the capital projects and delayed benefits in the period; failure to deliver the transformation savings and associated higher costs throughout the period; and a failure of a refinery leading to higher working capital and lower profits at the time of lowest cash flow during the period.

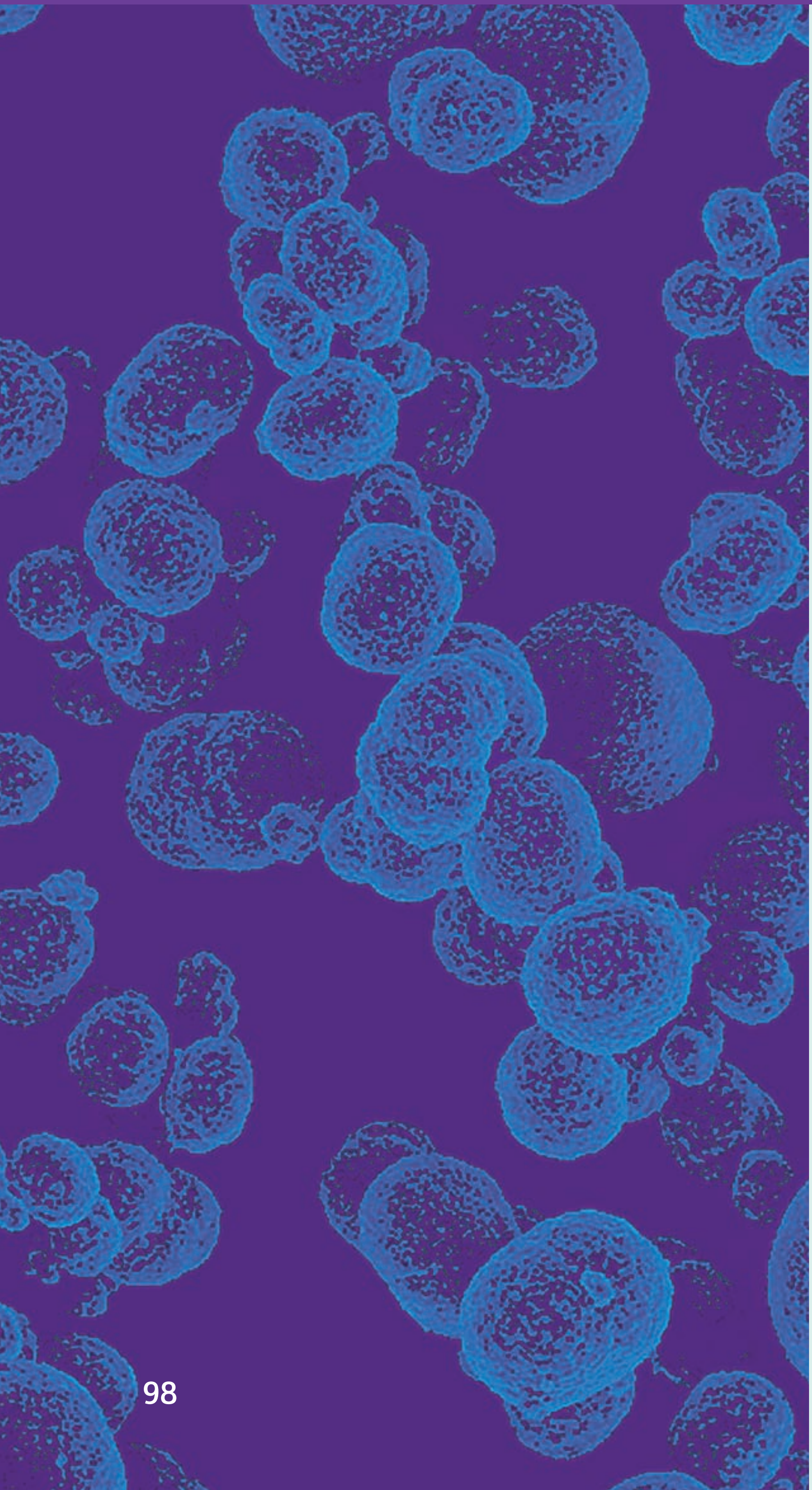
Scenario 4: Other risks – this scenario includes the impact of all the other risks identified in the group's principal risks outlined in the prior section. For each risk a financial impact has been estimated considering the impact and likelihood of the risk. Given the wide range of risks, we have then applied an overall probability weighting to this set of ten risks to derive a potential financial impact of this set of risks.

Our evaluation of viability under each of these scenarios takes account of the group's current financing arrangements (as outlined on page 41) and assumes no refinancing of maturing debt, although in practice we would fully expect to refinance these well ahead of maturity. Our stress testing shows that under each of the scenarios described above the group had headroom under its committed facilities and financial covenants. Furthermore, we also tested the extreme case of all four scenarios occurring simultaneously and there was still headroom.

As a final review, we have also undertaken a reverse stress test in order to identify what additional or alternative scenarios and circumstances would threaten our current financing covenants or headroom. This shows that the group has headroom against either a further decline in profitability well beyond the severe but plausible scenario or a very significant increase in borrowings. In this extremely unlikely scenario the group still has further mitigating actions available, including reducing capital expenditure, tightening payment terms and reducing the dividend. We also fully expect to be able to access additional funding from existing debt markets to refinance maturing debt and increase headroom if it were necessary.

Based on the results of our assessment, the directors have a reasonable expectation that the company and group will be able to continue in operation and meet its liabilities as they fall due over a period of at least three years.

Governance



Case study

Celebrating our world leading low carbon hydrogen technology

Today JM is a leading manufacturer of catalysts used to make 'grey' hydrogen from fossil fuels. But since this process generates carbon dioxide (CO_2) emissions we're also developing technologies to make 'blue' hydrogen, in which the CO_2 is captured and stored, and 'green' hydrogen, made from renewable energy and electrolysis.

Our LCH™ process is actually world leading for producing blue hydrogen. It not only reduces CO_2 emissions by over 95%, but also offers the highest feedstock efficiency with lower capital expenditure, and a 40% smaller required footprint. It's ready to deploy now, and has already been used in the development of two major UK hydrogen projects, HyNet and Acorn.

There's a lot of buzz about low carbon hydrogen in the industry, and I'm excited to see our technology used at scale soon, helping to kick start the carbon reductions we need to reach net zero.

Rob Jolly
Business Development Manager

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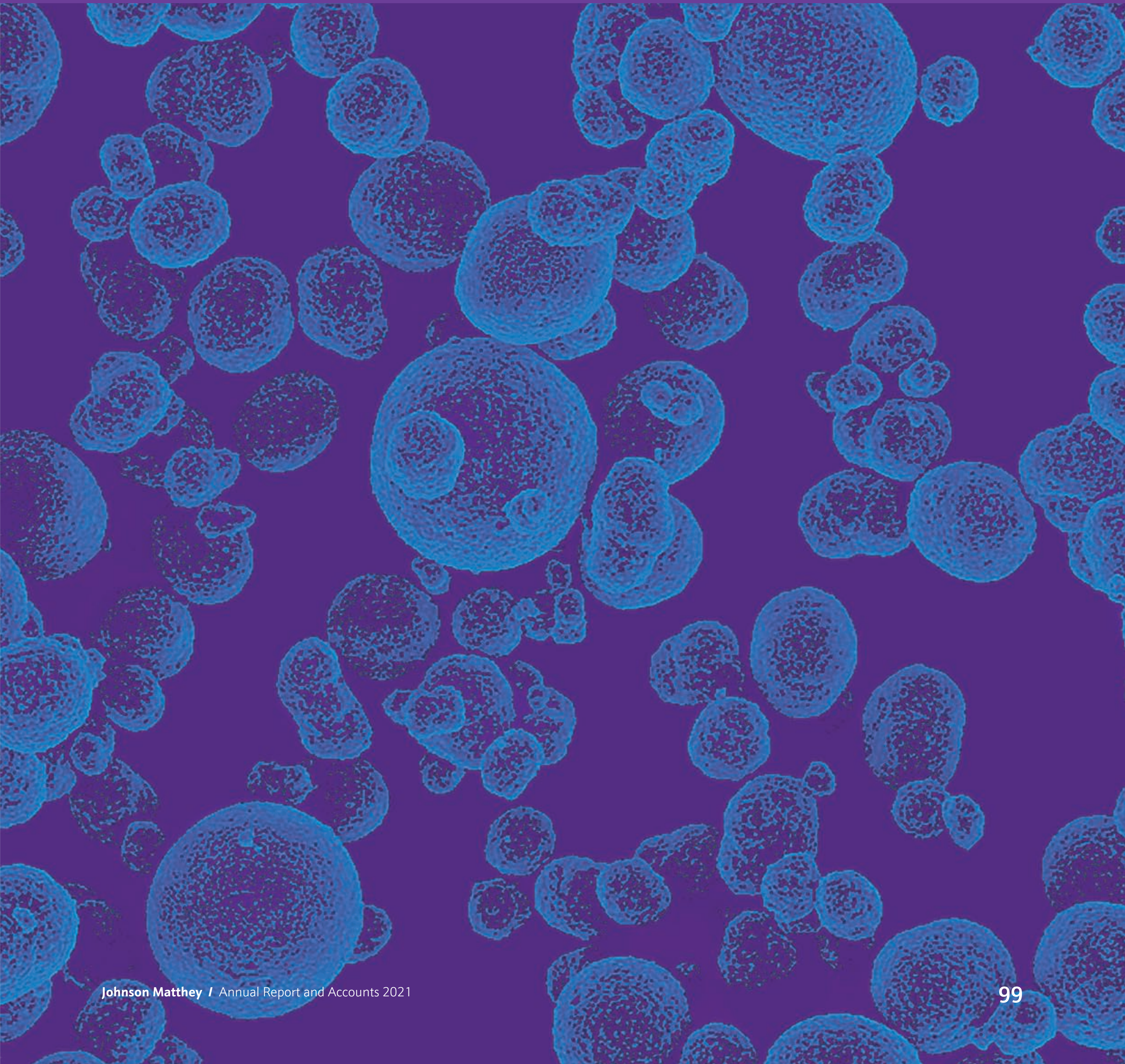


Letter from the Chair

Patrick Thomas Chair

Tackling today's unique challenges, driving change for the future

Dear Shareholder

I am pleased to present the Governance Report for the year ended 31st March 2021.

This year was of course, unlike any other. Many of the challenges the board faced were no doubt similar to our peers – adapting to a fully virtual meeting schedule, and balancing the views of stakeholders as we assessed the impact of the COVID-19 pandemic on our business. For us, there was also significant added complexity, as we drove the transformation of our business to make us ready for the future while adapting to the fast changing external environment. It meant a year when strong, effective governance was more important than ever, and I believe our high standards and clear framework supported the effective decision making which is so vital to delivering the company's strategic aims and our vision – a world that is cleaner and healthier; today and for future generations.

Staying in touch with stakeholders, and strengthening our board

In last year's report, we were just beginning to assess the impact of COVID-19 on our business. A year on, we have set out to explain how the board and committees continue to adapt our ways of working and adjust how we engage so that we make sure we stay in touch with all our stakeholders.

At the same time, we continued to seek to improve the effectiveness of our board, including through an external board effectiveness review. I'm delighted to report that the board continues to be effective, providing a culture of open debate, strong contribution and challenge. Further details on the review and the actions arising from it can be found on page 118.

Succession planning remains a key focus, particularly at Group Management Committee (GMC) level, where we saw a number of new appointments during the year. We welcomed Nick Cooper as General Counsel and Company Secretary, Ron Gerrard as Chief Environment, Health and Safety (EHS) and Operations Officer, and Stephen Oxley as Chief Financial Officer. All bring extensive experience in their respective fields and further enhance the skills and capabilities of our GMC. I would also like to extend my thanks to Karen Hayzen-Smith, our Group Financial Controller, who stepped up as Interim Chief Financial Officer following the departure of Anna Manz in November 2020. As reported last year, following the retirement of Alan Ferguson in July 2020, John O'Higgins took on the role of Senior Independent Director and Doug Webb became Chair of the Audit Committee.

Making sure sustainability stays at the heart of our success

As you will have seen from our strategic report, we are making it our business to help address the four big transitions the world needs for a sustainable future: transport, energy, chemicals decarbonisation, and the circular economy. It is at the heart of JM's strategy – so it is vital that we have the governance structure to support it, and that the board continues to place a priority focus on environmental, social, and governance (ESG) issues and the risks associated with them. The board has therefore established a new main board committee in May 2021 – the Societal Value Committee – to support all our sustainability ambitions, which will be chaired by Jane Griffiths.

Our approach to sustainability marches in step with JM's approach to business in general, and with the attitude that I'm pleased to say has been evident in the board again this year: where there are challenges, we see opportunities, and we put the creativity and innovation that drives this company to work.

Patrick Thomas

Patrick Thomas
Chair

Compliance with the UK Corporate Governance Code 2018

Our compliance statement on pages 120 and 121 summarises how the company has applied all principles of the UK Corporate Governance Code 2018 (the code). During the year under review, we have not complied with provision 38 on aligning executive director pension payments with the workforce. Our Remuneration Report on page 141, contains further details on the plans in place to ensure alignment with the workforce for the next financial year. We have also not fully complied with provision 41 engagement with the workforce on alignment of executive pay with the wider company pay policy. While we seek to ensure that our employees are kept informed on global changes to pay and benefits, we have not actively sought a two way dialogue with the workforce over executive pay. We continue to benchmark our remuneration against our peers to ensure the pay and benefits that we offer to the whole workforce are competitive to attract and retain the highest calibre candidates.

Go online: The code is publicly available on the Financial Reporting Council (FRC) website, frc.org.uk

> We will only achieve our vision for a cleaner, healthier world if we maintain our strong standards of governance and a culture of debate and challenge."

Board at a glance

Board and committee attendance

Board attendance

	Board	Audit Committee	Remuneration Committee	Nomination Committee
Patrick Thomas	11/11	–	7/7	8/8
Robert MacLeod	11/11	–	–	–
Anna Manz	7/7	–	–	–
Alan Ferguson	4/4	4/4	4/4	3/3
Xiaozhi Liu	11/11	8/8	7/7	7/8[1]
John O'Higgins	11/11	8/8	7/7	8/8
Jane Griffiths	11/11	8/8	7/7	8/8
Chris Mottershead	11/11	8/8	7/7	8/8
Doug Webb	11/11	8/8	7/7	7/8[1]

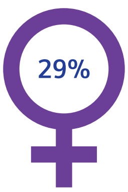
Attendance is expressed as number of meetings attended out of the number eligible to attend.

1 Doug and Xiaozhi were unable to attend an unscheduled Nomination Committee meeting due to unavoidable diary clashes.

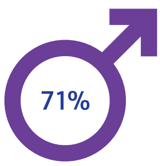
All information shown below is as at 31st March 2021.

Gender diversity*

Female
2 directors

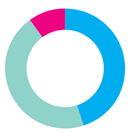


Male
5 directors



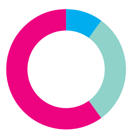
Tenure

- 0-3 years 45%
- 4-7 years 45%
- Over 9 years 10%



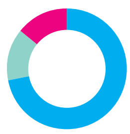
Role

- Chair 10%
- Executive 30%
- Non-Executive 60%



Nationality

- British 72%
- Irish 14%
- German 14%



* At the date of signing this report, the board comprised 2 female directors (25%) and 6 male directors (75%).

The table below shows the changes to the board during the year and up to the date of this report:

Changes to the board	Role changes within the board
Alan Ferguson stepped down from the board on 23rd July 2020	Doug Webb became Chair of the Audit Committee from 23rd July 2020
Anna Manz resigned from the board on 17th November 2020	John O'Higgins became Senior Independent Director from 23rd July 2020
Stephen Oxley was appointed as Chief Financial Officer from 1st April 2021	Jane Griffiths became Chair of the new Societal Value Committee on 26th May 2021

Board of Directors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Patrick Thomas
Chair
1

N R S

Appointed to the board: June 2018

Skills and experience
Between 2015 and May 2018 Patrick was Chief Executive Officer and Chair 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 its demerger from Bayer AG. He is a fellow of the Royal Academy of Engineering.

Contribution
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. and member of the Supervisory Board of Covestro AG.

Robert MacLeod
Chief Executive
2

S

Appointed to the board: June 2009

Skills and experience
Robert was appointed as Chief Executive in June 2014. He joined JM 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.

Contribution
Having been with JM for 11 years and as Chief Executive for six 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.

Stephen Oxley
Chief Financial Officer
3

S

Appointed to the board: April 2021

Skills and experience
Stephen joined from KPMG, where he was a Partner. He brings experience of both audit and advisory roles for large, complex, international companies across a variety of sectors, including FMCG, healthcare, natural resources and industrials. He has worked with major global FTSE 100 and private companies, including JM. Stephen is a chartered accountant.

Contribution
Stephen brings operational and technical understanding of JM and significant experience working with companies going through major change programmes.

Other current appointments
Trustee of Care International UK and is Chair of its Finance and Audit Committee.

John O'Higgins
Senior Independent Non-Executive Director
4

N A R S

Appointed to the board: November 2017

Skills and experience
John was previously Chief Executive of Spectris plc, a position he held from January 2006 to September 2018. During that time, he led the business through a period of significant transformation. Prior to this, he worked for Honeywell in a number of management roles, including as President of automation and control solutions, Asia Pacific. Between 2010 and 2015, John was also a Non-Executive Director of Exide Technologies Inc, a battery technology supplier to automotive and industrial users. John began his career as a design engineer at Daimler-Benz in Stuttgart.

Contribution
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.

Other current appointments
Senior Independent Director of Elementis plc, Non-Executive Director of Oxford Nanopore Technologies Ltd, member of the Supervisory Board of Envea Global SA and Trustee of the Wincott Foundation.

Key

■ Chair of the Committee

N Member of the Nomination Committee

A Member of the Audit Committee

R Member of the Remuneration Committee

S Member of Societal Value Committee (established in May 2021)

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Xiaozhi Liu 5
Independent Non-Executive Director

N A R S

Appointed to the board: April 2019

Skills and experience
Xiaozhi is the founder and Chief Executive of ASL Automobile Science & Technology, a position she has held since 2009. She has previously held senior executive positions in a number of automotive companies including Chair and Chief Executive of General Motors Taiwan. She also has a PhD in chemical engineering and a master's degree in electrical engineering.

Contribution
Xiaozhi has deep knowledge and perspective on technology driven businesses globally. She 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.

Chris Mottershead 6
Independent Non-Executive Director

N A R (Chair) S

Appointed to the board: January 2015

Skills and experience
Chris previously held roles at King's College London until his retirement in 2021. Most recently he held the positions of Senior Vice President of Quality, Strategy and Innovation, 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, including 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.

Contribution
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
None.

Jane Griffiths 7
Independent Non-Executive Director

N A R S (Chair)

Appointed to the board: January 2017

Skills and experience
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.

Contribution
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 sustainability and diversity.

Other current appointments
Non-Executive Director and Sustainability Committee Chair of BAE Systems plc, Non-Executive Director of TB Alliance, Chair of RareiTi Advisory Board and Non-Executive Director of The White Ribbon Alliance.

Doug Webb 8
Independent Non-Executive Director

N A (Chair) R S

Appointed to the board: September 2019

Skills and experience
Doug was Chief Financial Officer at Meggitt plc from 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, in its audit and business advisory team. He is a Fellow of the Institute of Chartered Accountants in England and Wales.

Contribution
Doug brings a strong background in corporate financial management and recent and relevant financial experience to the board and Audit Committee, along with a deep understanding of technology and engineering sectors. Doug chaired the Audit Committee at SEGRO plc for nine years until April 2019; his extensive experience makes him ideally suited to chairing the Audit Committee and acting as its financial expert.

Other current appointments
Non-Executive Director and Audit Committee Chair of The Manufacturing Technology Centre Ltd, Non-Executive Director of United Utilities Group PLC and Non-Executive Director, Senior Independent Director and Audit Committee Chair of BMT Group Ltd.

As at 27th May 2021, our five 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 and knowledge of the company enable them to discharge their respective duties and responsibilities effectively. The Chair was also considered independent upon appointment.

Group Management Committee

1 2 3 4 5

Robert MacLeod 1
Chief Executive

Appointed to GMC and board: June 2009

See page 102

Stephen Oxley 2
Chief Financial Officer

Appointed to GMC and board: April 2021

See page 102

Joan Braca 3
Sector Chief Executive, Clean Air

Appointed to GMC: October 2019

Joan joined JM to lead the next stage of the development of our Clean Air business. She brings seven years' experience from leadership roles at Tate & Lyle, and before that, many years in the speciality chemicals industry with Dow Chemical and the Rohm & Haas Company.

Joan's international experience and knowledge of how to successfully run complex businesses, drive growth in emerging markets and deliver efficiencies in more mature markets means she is well placed to lead Clean Air's transformation and strategy.

Nick Cooper 4
General Counsel and Company Secretary

Appointed to GMC and as Company Secretary: June 2020

Nick brings strong experience from his years working across a diverse range of sectors. After qualifying and then working as a solicitor, he has spent much of his career in General Counsel and Company Secretarial roles across the software, hospitality and telecommunications sectors. More recently, as Corporate Services Director of Cable & Wireless, he led the migration of its central operations from London to the US.

Nick currently serves as Non-Executive Director of Springfield Properties PLC, an AIM listed Scottish housebuilder. His wide knowledge of corporate law and operational experience means he has the ideal mix of skills for JM and our transformation.

Ron Gerrard 5
Chief EHS and Operations Officer

Appointed to GMC: August 2020

Ron has a wealth of global chemical industry experience from his 40 year career at ICI and then Huntsman International and is a chartered engineer.

He has operational, EHS, commercial and capital projects experience through senior management roles at Huntsman, and most recently, had executive responsibility for corporate sustainability at the company. His extensive experience makes him well placed to drive sustainability leadership throughout our business and for our customers.

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Christian Günther 6
Sector Chief Executive, Battery Materials
Appointed to GMC: November 2019

Christian joined from Tasnee, the Saudi Arabian industrial and petrochemicals company, where he was Executive Vice President. Before that, he spent over a decade as a consultant at McKinsey & Company. He holds a doctorate in chemistry.

His scientific knowledge, experience of leading corporate transformations and advising companies on strategies and operational improvements gives him the ideal background to build our Battery Materials business in this growing market.

Annette Kelleher 7
Chief HR Officer
Appointed to GMC: May 2013

Annette joined having spent much of her career at Pilkington Glass in a variety of leadership roles in its businesses and corporate function, including time working in Japan and South East Asia.

Since joining JM, she has been instrumental in reshaping our approach to growing talent, developing our leaders and engaging and energising our people. Her deep experience and her understanding of JM is key to delivering the right culture as we transform our business and deliver our strategy.

Jane Toogood 8
Sector Chief Executive, Efficient Natural Resources
Appointed to GMC: March 2016

Jane brings a wealth of international experience in the chemicals industry working for companies including Borealis, ICI and Uniqema. She has held senior roles in business management, commercial and business development and has experience in leading transformational projects and driving growth.

Jane has chaired our internal Brexit working group, and currently represents JM on the UK Government's Hydrogen Advisory Council. Her wide commercial experience in global chemicals markets gives her the ideal background to drive growth for JM through new solutions for decarbonisation and circularity.

Maurits van Tol 9
Chief Technology Officer
Appointed to GMC: October 2019

Maurits joined after 26 years in the chemical industry and has a PhD in catalysis. Before joining us, he was Senior Vice President (SVP) Innovation and Technology, and SVP Circular Economy Solutions at Borealis. His experience in marketing, business management, business development, R&D, and innovation from senior management roles at Borealis and other multinational chemical companies means he is an expert and passionate leader of our R&D and innovation strategy. Maurits also serves on the Advisory Board of OCSiAl SA, the leading producer of Single Wall Carbon Nanotubes. His passion for innovation and sustainability is making a real difference across JM.

The table below shows the changes to the GMC during the year and up to the date of this report:

Nick Cooper was appointed as General Counsel and Company Secretary from 22nd June 2020

Ron Gerrard was appointed as Chief EHS and Operations Officer from 17th August 2020

Karen Hayzen-Smith was appointed as Interim Chief Financial Officer from 18th November 2020 until 31st March 2021

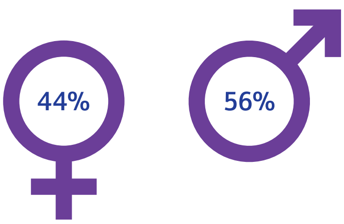
Stephen Oxley was appointed as Chief Financial Officer from 1st April 2021

All information shown below is as at 31st March 2021.

Gender diversity*

Female
4 members

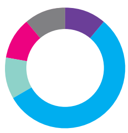
Male
5 members



* At the date of signing this report, the GMC comprised 3 female members and 6 male members.

Nationality

- American 11%
- British 56%
- Dutch 11%
- German 11%
- Irish 11%



Our governance structure

Our board of directors

The board is collectively responsible for the long term success of the company. It provides leadership and direction, and monitors the group's culture and values. The board also sets our strategy and oversees its implementation, ensuring that risks are appropriately managed and that due regard is given to views of our stakeholders.

Responsibilities which our board does not delegate are included in the matters reserved for the board within our Governance Framework, which is available on our website.

matthey.com/governanceframework

Board composition and roles

Chair: Patrick Thomas

Key responsibilities

- Leads the board.
- Ensures an effective board, including by welcoming contribution and challenge from the directors.
- Maintains regular and effective communications with our shareholders and ensures the board has a clear understanding of their views.
- Chairs the Nomination Committee, and, in that role, initiates change and succession planning for the board and GMC.
- Promotes the highest standards of integrity, probity and corporate governance throughout the group.

Independent Non-Executive Directors: Jane Griffiths, Xiaozhi Liu, Chris Mottershead, John O'Higgins and 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.

Senior Independent Director: John O'Higgins

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.

Chief Executive: Robert MacLeod

Key responsibilities

- Has day to day responsibility for running the group's operations.
- Recommends and implements group strategy.
- Applies group policies.
- Promotes the company's culture and standards.

Chief Financial Officer: Stephen Oxley

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: Nick Cooper

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 matters.

Our main board committees

All independent non-executive directors are members of the main board committees. The Chair is a member of the Remuneration Committee and the Societal Value Committee and chairs the Nomination Committee.

Audit Committee

Read more on pages 126 to 135

Nomination Committee

Read more on pages 122 to 125

Remuneration Committee

Read more on pages 136 to 163

Societal Value Committee

The Societal Value Committee was established in May 2021. Further information can be found in the Governance Framework on our website. The work of the committee will be reported in next year's annual report.

Other board committees

The board has delegated specific responsibilities to the Disclosure Committee and Ethics Panel. These committees comprise executive directors or GMC members and relevant senior leaders.

Disclosure Committee

- Identifies and controls inside information.
- Determines how or when that information is disclosed in accordance with applicable legal and regulatory requirements.

Ethics Panel

- Oversees the concerns raised related to our Speak Up Policy, and ensures the effective review and investigation of these concerns.

Group Management Committee

The board delegates responsibility for implementing operational decisions and for the day to day management of the business to the Chief Executive, who is supported by the GMC. In turn, the GMC is supported by the four sub-committees below, each being chaired by a member of the GMC. Our Delegation of Authorities framework sets out levels of authority for decision making throughout the business.

Environment, Health and Safety Leadership Committee

Assists the company in discharging its EHS responsibilities and in creating a positive EHS culture across the group.

Finance and Administration Committee

Responsible for the approval of certain group finance and corporate restructuring matters.

Legal Risk Committee

Reviews contract and litigation risk for the group.

Metal Steering Committee

Manages the risk and mitigating actions in relation to the group's precious metal.

More detail on the role and responsibilities of our committees and the division of responsibilities between the Chief Executive and Chair can be found in our Governance Framework, which is available on our website.
matthey.com/governanceframework

Corporate Governance Report

Our board and its committees

At the date of this report, the board comprises eight directors: the Chair, two executive directors and five independent non-executive directors. Details of their names, responsibilities and contribution to the company are included on pages 102 to 103.

During the year under review, the board held 11 meetings. As a result of COVID-19, all our meetings were held by video conference and no site visits occurred. Due to the delay in preparing and publishing our financial results for the year ended 31st March 2020 and the appointment of Stephen Oxley as our new Chief Financial Officer, it was necessary to hold two additional board meetings. The board continues to keep the number of meetings under review to make sure that the non-executive directors have sufficient time to discharge their duties.

Training and induction

As part of the board's continuous development, we invited Keith Tuffley from Citi to give us a presentation on ESG emerging trends. Keith has significant experience in advising companies on better ways of doing business. He was also an active participant in the Paris Climate Agreement process and the development of the UN Sustainable Development Goals. This presentation gave us a comprehensive insight into investor and social trends and helped shape some of the discussions around JM's sustainability ambitions.

PwC presented a regulatory update to the Audit Committee, which covered the key changes for the next financial year. All directors also complete mandatory training modules that include EHS and ethics and compliance matters, including our Code of Ethics, and receive regular legal and governance updates from the General Counsel and Company Secretary.

In normal circumstances all directors regularly go on site visits. This gives us the chance to engage with all levels of the business and gain a better understanding of the culture at our various sites. Unfortunately, COVID-19 restrictions meant that no site visits took place in this financial year. Nonetheless, the board continued to seek out insights, placing a greater emphasis on employee engagement focus groups to help us understand the culture and dynamics at various sites around the business – these are described on page 109.

All new directors receive a comprehensive and tailored formal induction plan and, when circumstances allow, site visits across various sectors to gain further understanding of the business. Directors follow the induction plan over the first year of their tenure, after which they attend our board development sessions. Stephen Oxley joined the board on 1st April 2021, and we will report on his induction process in next year's report.

Culture

The board is responsible for setting the company's culture. In last year's report we set out our culture ambition, which describes how we will need to work in order to successfully execute our future strategy. The board continually monitors culture through metrics such as JM's global employee yourSay survey, our engagement focus groups, customer satisfaction, customer behaviour statistics, health and safety reports, financial results, internal audit reports and progress against our key transformation project milestones.

+ **Read more** about how our engagement focus groups help the board monitor culture on page 109

We continued to transform our culture and embed our values and behaviours focusing on leadership capability, engagement and enablement. We created more clarity and confidence in our JM story and culture ambition through three virtual senior leadership forums. Our Chair was involved in creating context for our culture ambition in an interview recorded and shared with the senior leadership team (GMC direct reports). Members of our wider leadership team used stories and facilitated breakout sessions to bring our required ways of working to life. The pandemic had an impact on the board's ability to oversee JM's culture first hand, as no site visits were possible. That made the results of our annual employee engagement survey of even greater importance in enabling the board to understand the views and sentiments of the workforce. The number of employees who completed the survey increased 10% from the last financial year, bringing the total participation to over 74% of employees. We were delighted to see increases in both engagement and enablement scores, despite a year of significant change and disruption. The Chief Executive also focused on people, culture and morale in his board reports. This provides the board with an understanding of day to day operations and the cultural context in which employees work. During the pandemic, this was an important part of understanding how employees were coping with a changed working environment. The board continues to monitor culture whether implicitly or explicitly at every meeting.

Our board committees also play an important role in monitoring our culture:

- The Nomination Committee makes sure that succession planning supports our culture ambition (see pages 122 to 125).
- The Remuneration Committee determines the group's approach to reward and benefits to ensure that it promotes our culture ambition and the long term success of the company (see pages 136 to 163).
- The Audit Committee has oversight of internal controls which safeguard our culture, including JM's Speak Up process (see pages 126 to 135)

+ **Read more** about how our values drive our culture on page 72 and how senior management monitor our culture on pages 73 to 77

Employee engagement

The board is committed to engaging with employees in order to understand the culture, issues and challenges across our businesses. The board considered the employee engagement methods specified by the code but felt that an alternative method was more appropriate given our large, global and diverse network of employees. Our engagement focus groups are held in countries where JM has a significant footprint and each session is attended by one of our non-executive directors. The board considers that our engagement focus groups are more direct and effective in providing a range of views from our employees all around the world.

This year, we held virtual engagement focus groups in China, UK, Germany and the US in October 2020 and April 2021. Each session was led by a local senior leader and formed of a diverse group of people drawn from all sectors and functions, job types, ages and tenures. We used the output of the last yourSay survey to select topics for discussion and to assess how people felt that JM was communicating, how we're supporting ways of working through COVID-19, and our progress in building a truly diverse and inclusive organisation.

The focus groups also included separate breakout sessions to encourage further open and frank discussion. The non-executive directors reported back to the board: key actions arising from the sessions were then continually monitored through the year by regular reports to the board.

Number of colleagues who attended

109

Number of sessions held

8

Country	Non-executive attendee
UK	Chris Mottershead
US	Jane Griffiths
China	Xiaozhi Liu
Germany	Patrick Thomas

Common themes:

- Positive feedback about the JM response to COVID-19 and the support given to employees.
- A strong desire to maintain workplace flexibility beyond COVID-19.
- Acknowledgement of strong internal communications, but a call for targeted communication to drive greater knowledge sharing.
- Diversity and inclusion had made great strides thanks to leadership action but could sometimes feel weighted towards gender.
- Engagement focus groups themselves viewed very positively.

Actions for JM:

- Provide a framework for ways of working that can be used by managers and teams after COVID-19.
- Establish a consistent two way dialogue approach to inspire, engage, and involve everyone at JM.
- Continue the positive action on diversity and inclusion by broadening the scope of our diversity roadmap.
- Enable and empower leaders by providing consistent frameworks and tools which complement existing sector and function activities.

> "Employees are our most important asset; they are fundamental to JM's long term success. The engagement focus groups allow us, as non-executive directors, to really understand the culture of the company and provide an insight into the talent and capabilities across the business. By attending these focus groups, and monitoring the actions arising from them, we make sure the board is considering and championing the employee voice in the boardroom."

Xiaozhi Liu
Independent Non-Executive Director

Corporate Governance Report continued

How we engaged with stakeholders and considered their views

Our section 172 statement

We believe that stakeholder engagement is vital to building a sustainable business. The board recognises the need to foster business relationships with suppliers, customers and others. This year, as a board we reviewed our key stakeholders and the ways we engage with them, to ensure our engagement remains effective.

This section details the stakeholders the board considers central to our vision and the engagement mechanisms we used throughout the year. Not every matter under consideration will be equally relevant to each stakeholder, and sometimes stakeholders may have conflicting interests. The board aims to ensure that the key issues relevant to each stakeholder group are considered, and that our decisions will ultimately promote the long term success of the company and support JM's vision, purpose and strategy.

Stakeholders

Customers and innovation partners

How JM engaged

- Annual customer satisfaction survey
- Conference and industry events
- Platinum Group Metals reports

How the board received feedback and engaged

- Chief Executive updates
- Sector updates
- Platinum Group Metals reports

Our people

How JM engaged

- Engagement focus groups and our yourSay survey
- Global town halls
- Yammer
- JM Awards
- Employee resource groups

How the board received feedback and engaged

- Board reports on insights and actions from engagement focus groups
- Non-executive director attendance and feedback from engagement focus groups
- Annual talent review by the Nomination Committee
- People strategy and culture updates from the Chief HR Officer
- Results and feedback from yourSay

Investors

How JM engaged

- Annual General Meeting (AGM) (our 2020 AGM was a closed meeting but questions were submitted and answered through JM's website)
- Results presentations by the Chief Executive and Chief Financial Officer
- Regular meetings with the Chair, Senior Independent Director and committee chairs
- Website updates including regulatory announcements
- Annual report

How the board received feedback and engaged

- Attendance and engagement at the AGM
- Perception survey (completed every two years)
- Regular broker reports
- Feedback following results presentations
- Chief Financial Officer updates
- Feedback following investor meetings
- Review of material news or regulatory announcements through the Disclosure Committee

Suppliers

How JM engaged

- Supplier Code of Conduct
- Payment practices reporting
- Due diligence programmes

How the board received feedback and engaged

- Procurement update
- Payment practices reporting
- Modern Slavery Statement

Governments and trade association

How JM engaged

- Lobbying in the US relating to clean air legislation
- UK Government's Hydrogen Taskforce
- JM representatives on governance bodies

How the board received feedback and engaged

- Chief Executive reports
- Sector updates
- Investment proposals

Communities

How JM engaged

- Charitable donations, including ad hoc sponsorships
- JM staff volunteering days
- Community ambassadors for each JM site
- JM's fund for science education
- Engagement with local communities on specific projects e.g. new manufacturing plants

How the board received feedback and engaged

- Investment proposals
- Sector updates
- Chief Executive reports

Pages 22 to 25 in the Strategic Report details how we create and share value for our stakeholders

Balancing the views of our stakeholders, facing the challenges of COVID-19

The COVID-19 pandemic had an impact on every household, business and community this year – so it is no surprise that it affected all our stakeholders. Throughout JM's decision making during this time, the board has sought to balance the views of our stakeholders while making sure we stay true to our strategy for a cleaner, healthier world and preserve financial stability in a period of significant market uncertainty.

Looking after our employees and focusing on long term financial sustainability

The health and safety of our employees has always been our highest priority. Our Chief Executive regularly updated the board on the company's internal guidance on COVID-19 measures for employees, and on planned returns to specific sites when they were deemed safe and in line with government guidance. We could not carry out board site visits, so we sought feedback through engagement focus groups and JM's annual yourSay survey. As a result of that feedback, we proposed and oversaw a number of changes to improve our internal communications and enhance employee wellbeing. These included the introduction of virtual global town hall events and a library of guidance and support articles on our reward and benefits portal, and support from a network of global wellbeing ambassadors.

The board and the Audit Committee also maintained a particular focus on cash flow, supply management (including precious metal management) and credit risk. That meant balancing the interests of suppliers and customers with the aim of creating the best possible outcomes for all stakeholders. We also considered investors and other stakeholders before taking the difficult decision to reduce the full year and half year dividend to ensure effective cash flow management – a decision we considered prudent to preserve JM's long term financial success. Following extensive scenario testing, the board decided not to take any financial assistance offered by the UK government given the robustness of our balance sheet.

Stakeholders considered

Link to strategy

Link to risk

1 2 4 5 6 7 11

Outcomes and key decisions:

- New processes and protocols to minimise health and safety risks for colleagues working on sites and in offices.
- Virtual global sector and functional town halls.
- Programmes to support the mental wellbeing of employees especially while working from home.
- Regular video blogs from the GMC to keep employees informed and updated, as well as a series of 'get to know' articles for new GMC members.
- GMC review of future ways of working.
- Enhanced precious metal management procedures and governance.
- Enhanced credit control procedures.
- Reduced half year dividend.
- Decision not to take any financial assistance from the UK government.

Drawing on stakeholder insights, setting our sustainability strategy and committing to net zero

Sustainability is an integral part of our governance model, as well as of our strategy. Putting our world class science into action helps solve customers' complex problems – and our drive to help create a cleaner, healthier planet reaches all our stakeholders.

Keeping governance at the heart of our sustainable future

This year, the board considered and approved JM's sustainability strategy and net zero commitments – which meant looking closely at our own impacts, the potential of our unique portfolio of technologies and solutions to help customers and consumers, and the expectations of all our stakeholders. We know that these expectations are evolving fast – so we asked Citi to give the board a presentation on emerging trends in ESG to give us a broader insight. We also considered the specific challenges of eliminating greenhouse gas emissions and considered JM's current footprint, energy use, supply chains, products, and internal governance procedures. We explored each foundation pillar in our sustainability strategy, taking stakeholder expectations into account, and reviewed the goals and targets necessary to deliver against those expectations.

Our board review led to a number of actions including the creation of our Societal Value Committee to support the board in driving our sustainability strategy. It focuses on the actions and targets associated with our net zero ambitions, which is at the heart of our future success.

Outcomes and key decisions:

- New sustainability strategy, including a commitment to net zero by 2040 and verified science based targets for 2030.
- Communicating our strategy internally and externally.
- Engaging our employees on our sustainability agenda.
- Establishment of our Societal Value Committee.

+ **Further detail** about our sustainability strategy and net zero ambitions can be found on pages 62 and 63

Stakeholders considered

Link to strategy

Link to risk

2 3 4 6 11

Fit for future: considering the interests of all stakeholders as we transform our business

JM's transformation programme is designed to make us fit for the future. Announced in June 2020 and overseen by the company's new transformation office, it sets out to simplify the way we work together, create more efficiencies between our businesses and group functions, and drive future growth. Given its importance to stakeholders in terms of JM's long term success, and its impact on stakeholders now and in the future, the board has been closely involved.

Considering impacts, now and in the long term

We monitor progress through regular updates from the transformation office, and have reviewed and considered the impact of JM's planned restructuring. In particular, we have considered the immediate and long term impact on employees, and considered in detail the difficult decision to make job losses (estimated to be up to 2,500) over a three year period, following management consultation with trade unions. To mitigate the impact of this, we will look closely for redeployment opportunities across the group for those employees affected by these changes.

Management was tasked with simplifying the way we work together, removing duplication of effort between businesses and functions. With a less complex, more agile structure, we recognised that JM would be in an even stronger position to innovate new solutions for the future. We have closely monitored the impact on employees of the transformation programme in their daily work, checking that the business was not overburdening the workforce.

The programme is being delivered across our business, and specific sectors have reviewed their own strategies to ensure that they are also fit for the future. In those strategy reviews, management talked extensively with customers, suppliers and industry experts, and the board has heard the results of these reviews through sector strategy updates which we carefully considered before the new strategies were agreed.

Outcomes and key decisions:

- New sector strategies.
- New internal processes and governance procedures.
- Establishment of a transformation office to oversee multiple workstreams.
- Regular dialogue between management and trade unions.
- Approval of up to 2,500 redundancies over three years.
- Regular employee communications from the transformation office.

Stakeholders considered

Link to strategy

Link to risk

1 2 3 4 6 11 13

Corporate Governance Report continued

Board activities

We set our annual agenda plan to reflect our strategy, making sure we have sufficient time to discuss and develop strategic proposals and monitor performance. Below, we have set out some of the matters we considered during the year and up to the date of this report, the stakeholder groups central to those decisions, and the outcomes. Our section 172 statement details more information about how we engage with our stakeholders and the case studies on pages 111 to 113 illustrate how the board considers stakeholder views and the outcome of those considerations.

Read more about how we manage risk on pages 88 to 96 and our strategy on pages 24 and 25

Key areas of activity

	Strategy and execution	Financial oversight	Operational management
Matters considered	Our strategic discussions included a focus on: • Business transformation • Growth strategies and strategic reviews of business sectors • Sustainability strategy and goals	As a result of COVID-19, the board scrutinised and monitored financial data and performance in great detail, including: • Trading and performance • Full and half year results • Going concern and viability statements • Dividend payments	We received regular updates from the Chief Executive on: • Group operations • Capital project execution • EHS performance • Business continuity and ongoing COVID-19 site management • Supply chain management
Stakeholders considered			
Outcomes	• Received detailed updates on the company's transformation programme • Conducted deep dives into each sector's strategy • Commenced a strategic review of our Health Sector • Approved investment in a second eLNO plant in Finland • Set and announced JM's sustainability strategy and goals • Created a Societal Value Committee • Agreed the divestment of non-core businesses in Finland and Israel	• Received detailed reviews of the group's financial position including working capital and net debt • Agreed the budget for 2021/22 and JM's three year plan • Assessed the proposed dividend payment, balancing the views of various stakeholders and the uncertainty of global markets • Approved the going concern and viability statements • Reviewed and approved the full and half year results and annual report	• Received detailed updates on group operations including capital projects, procurement, security, EHS and IT • Monitored and discussed the impact of COVID-19 and reviewed responses and actions taken at site level • Received detailed updates on the group's performance against EHS targets and significant events • Secured the supply of critical raw materials for the eLNO plant
Principal risks	1 2 3 5 11 12	2 5 7 9	4 5 6 7 8 11 13

Key areas of activity

Governance

Matters considered

Governance continued to be at the heart of the board agenda, including consideration of:

- Stakeholder engagement mechanisms
- Board effectiveness
- JM's Governance Framework
- Policies and process

Stakeholders considered

Outcomes

- Reviewed and assessed our key stakeholder groups and how we engage with them
- Concluded the externally facilitated board effectiveness review
- Implemented changes to improve the Governance Framework, including the addition of a Societal Value Committee
- Approved updates to policies to ensure alignment to best practice

Principal risks

6 10 13 14

People and culture

Matters considered

One year after defining our culture ambition the board continued to focus on:

- JM's people strategy and culture
- Diversity and inclusion
- Employee engagement forums
- Speak Up reports

Outcomes

- Considered the next phase of our people strategy including mental wellbeing and the impact of COVID-19
- Became a signatory to the Change the Race Ratio, the campaign to increase racial and ethnic participation in British businesses
- Reviewed the feedback from the employee engagement forums and yourSay, and received status updates on progress against agreed actions
- Reviewed notable Speak Up matters and discussed mitigating actions

Principal risks

2 4 6 10 11

Risk

Matters considered

The board reviewed the group's approach to risk management and completed deep dives into each principal risk

Outcomes

- Considered the impact of COVID-19 on each principal risk
- Reviewed each principal risk to ensure they remained appropriate
- Approved the risk appetite for each principal risk
- Reviewed mitigating activities
- Approved the addition of a new principal risk – customer contract liability

Principal risks

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Corporate Governance Report continued

Board and committee effectiveness

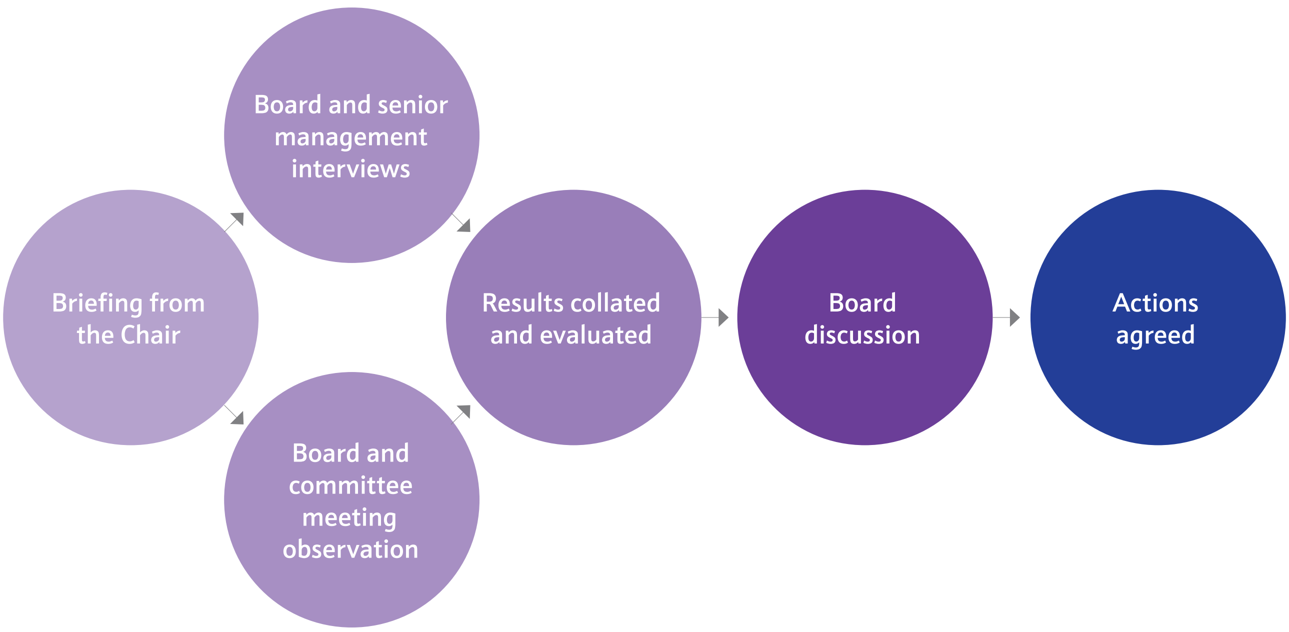
For the two years prior to this reporting period, we have carried out internal reviews of the board's effectiveness. This year, we commissioned an external review by independent consultants, Lorna Parker and Elaine Sullivan of Manchester Square Partners LLP (MSP).

MSP also delivered our previous external review in 2017/18, and we felt that asking them to complete this year's review would provide useful insight and perspective on how the board has developed over the past three years, especially given the changes in board leadership and membership. This had no bearing on MSP's independence, and they have no other connection with the company.

The Chair provided a comprehensive brief to MSP in November 2020. Between November 2020 and January 2021, MSP held individual discussions with each member of the board, the Company Secretary, the Chief HR Officer and the sector chief executives. The conversations were open, confidential and unattributed. Areas discussed included the board composition and dynamics, the agendas and board papers, strategy, culture and values, leadership, risk, and governance. MSP observed the January board and Audit Committee meetings, and had access to board and committee papers through a secure electronic portal.

> The board is open, collegiate, friendly and cohesive. The non-executive directors are supportive of management, while providing them with constructive challenge."
>
> **Patrick Thomas**

MSP prepared a report based on their observations and the information compiled from their discussions. Following discussion with the Chair, Lorna Parker and Elaine Sullivan presented this report to the board in April 2021. The board discussed the report and agreed a number of actions. On the following page we provide an update on the actions undertaken from the 2019/20 internal review, led by the Chair, the feedback and insight from the 2020/21 external review and the actions to be taken in 2021/22. Our intention remains to carry out an externally facilitated review process at least every three years. In the intervening years, the review will be led by the Chair, supported by the committee chairs and the Company Secretary.



How we've delivered against the 2019/20 action plan

The table below shows an update on the actions from our internal review in 2019/20, led by the Chair, and the progress made against these in the 2020/21 financial year.

2019/20 Action	2020/21 Progress and insight
Review and further develop the sector and business strategies	The board reviewed the group's strategy at sector level as well as at specific business level. This review led to refreshed sector strategies as well as the strategic review of the Health business and the decision to divest two non-core businesses in Israel and Finland. The board has also spent time considering the overarching sustainability strategy for the group. Having spent time developing the sustainability strategy, the 2020/21 review highlighted the importance of dedicating regular attention to this topic, to oversee its execution. The board decided to establish a Societal Value Committee to support and oversee this.
Support senior executives in prioritising effectively by agreeing group priorities in the context of significant change and a volatile environment	A new transformation office was established in June 2020 to oversee the priorities that are crucial to JM's success. The board received regular updates on the progress of these activities, which were monitored against key milestones.
Continue to undertake deep dives on each of the group's principal risks	The board has continued to challenge each of its principal risks throughout the year, reviewing JM's risk appetite and ensuring that mitigating actions are in place. The 2020/21 review showed that deep dives on risk have helped to inform the board and facilitate effective contribution and challenge. Next year the board will develop a framework to monitor progress and ensure risk considerations are further embedded within the business. + **Read more** about our principal risks on pages 92 to 96
Review leadership, talent and succession planning to ensure delivery of the group's strategy	Succession planning and talent development continued to be a key focus, particularly within the GMC, with a number of new appointments during the year to further enhance the skills of our senior leadership. Next year, the board's focus will move to the senior leaders, particularly those with potential to succeed to GMC roles or the board in the future.
Develop more ways of monitoring culture globally	Last year the board established engagement focus groups in key countries, attended by non-executive directors to allow them to directly engage with members of the workforce. The 2020/21 review showed that, while these groups have been insightful, it is harder to monitor the culture at ground level when site visits are not possible. Once travel restrictions are lifted, the board intends to resume site visits to engage with and observe the culture first hand.

Corporate Governance Report continued

What our 2020/21 review showed us

We were delighted that MSP felt that the board was highly effective with excellent dynamics. The board has a full, complex, challenging and content rich agenda but continues to perform strongly, providing valuable governance, oversight, challenge and support. Directors had a breadth and depth of complementary skills and experience. Based on MSP's detailed review, the board agreed an action plan which will further support our continuous development.

Action	Responsibility
Ensure regular focus on sustainability matters through establishing a Societal Value Committee	All directors
Enhance key metrics to support the board in monitoring progress in delivering our strategy	Chief Executive
Embed risk management further within the business and continue to monitor the risk framework	Chief Financial Officer
Focus on talent and succession plans for senior leaders below the GMC	Chief Executive
Review the board calendar, including the number of meetings held and the location of such meetings	Company Secretary

Review of the Chair's performance

Led by John O'Higgins, the Senior Independent Director, the non-executive directors met without Patrick Thomas being present to discuss his performance as Chair. They considered that he provided robust leadership for the board, driving the pace of the transformation and facilitating open and constructive challenge. MSP also found that Patrick had made a significant positive impact and provided much valued recent and relevant operational and sector experience.

The board's approach to risk management and internal control

The board 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, It determines the appetite for each risk and ensures appropriate mitigating actions are in place. It does this in accordance with the Guidance on Risk Management, Internal Control and Related Financial and Business Reporting, issued by the FRC in September 2014 and the requirements of the code.

The board also has responsibility for JM's internal control 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 report.

The internal control 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.

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. The board, through the Audit Committee, confirms that a robust assessment of JM's risk management and internal control systems has been carried out taking into consideration the principal risks and uncertainties detailed on pages 92 to 96. This assessment covered all material controls, including financial, operational and compliance controls, and financial reporting processes. Following review, the board is satisfied that no significant failings or weaknesses have been identified and that the company's risk management and internal controls were effectively monitored throughout the year.

The COVID-19 pandemic has altered the external environment and impacted the risks JM manages. Further details on 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 88 to 96.

Risk governance

The board

- Assesses principal risks and determines JM's risk appetite.
- Is 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 each principal risk and agreeing mitigation plans, and monitors progress against JM's risk appetite.

Group assurance function

- Provides independent advice and constructively challenges the range and materiality of risks identified. Provides particular focus on the progress of mitigating actions.

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.

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 base case scenario and a severe but plausible downside 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 2021. Further detail on the group's going concern statement and the audit committee's assessment of that statement can be found on pages 40 and 132.

Viability statement

The directors have assessed the prospects of the company and the group 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 97. 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.

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 board considered the results of an assessment by management to ensure the annual report was critically reviewed. We were satisfied that the narrative reporting presents the full story and is consistent with the financial reporting. In addition, statutory and adjusted measures are clearly explained, and key messages and significant issues are highlighted and appropriately linked through the report.

We concluded that the 2020/21 Annual Report and Accounts taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the group's position and performance, business model and strategy.

+ **Further information** on the process management undertake, and the Audit Committee's assessment of that process is detailed on page 132

Corporate Governance Report continued

Compliance with the UK Corporate Governance Code 2018

Board leadership and company purpose

- The board members have diverse skills and expertise from a range of professional backgrounds. Their experience and contribution to the board is detailed in their biographies on page 102 and 103. They are responsible for the long term sustainable success of the company and consider the interests of shareholders and the wider community in all of their decision making. There is a formal schedule of matters reserved for the board which are detailed in our Governance Framework which is available to view on our website, matthey.com.
- The company's purpose, values and strategy are set out on pages 22 to 25. They are integral to everything we do at JM. Our culture ambition describes our ways of working and is vital to successfully execute and deliver our strategy.
- The group's transformation programme is designed to ensure that the necessary resources are in place to help JM meet its objectives and measure performance against them. The Audit Committee reviews the internal control environment and regularly reports to the board. Further information on the Audit Committee can be found on pages 126 to 135.
- The board actively engages with shareholders and those stakeholders considered key to JM. The engagement mechanisms used by the board are shown within our section 172 statement on page 111 to 113. Further detail about direct employee engagement by the Chair and three of our independent non-executive directors is shown on page 109.
- Our Code of Ethics and associated policies ensure our people understand and follow the company's values and strategy, supporting the long term success of the company. Our Speak Up line provides an anonymous way to raise matters of concern. Read more about our Code of Ethics and Speak Up on page 77.

Division of responsibilities

- Our independent board effectiveness review confirmed that the Chair promotes a culture of openness and debate and encourages the effective contribution of all non-executive directors.
- Our board composition is continually monitored by the Nomination Committee to ensure an appropriate balance of executive and non-executive directors, further information about our board composition and succession planning can be found on page 124. We clearly define the roles of the Chair and Chief Executive in our Governance Framework which can be found on our website matthey.com/governanceframework.
- The board must approve all new external appointments for each director prior to acceptance. As part of this process we assess the existing time commitments of directors to ensure they have sufficient time to meet their board responsibilities. Our board effectiveness review also confirmed that our non-executive directors bring significant experience and knowledge to the board, provide challenge and strategic guidance whilst holding management to account.
- The board has the right policies, processes and information to be able to perform efficiently and effectively. This was confirmed by our external board effectiveness review which is detailed on pages 116 to 118. All directors have access to the advice of the Company Secretary.

Composition, succession and evaluation

- The Nomination Committee ensures effective succession plans are maintained for the board and senior management giving due consideration to diversity of gender, social and ethnic backgrounds, cognitive and personal strengths. There is a clear and transparent process when considering appointments to the board. Details of the appointment of our new Chief Financial Officer are included on page 124 to 125.
- The Nomination Committee regularly reviews the skills and expertise on the board which informs our succession planning process. The board's skills are shown in the table on page 124.
- This year, MSP undertook an external board effectiveness review. In line with the code, the board completes an external review every three years conducting internal reviews in the interim.

Audit, risk and internal control

- The Audit Committee reviews the policies and procedures in place to ensure the independence and effectiveness of internal and external audit and the integrity of financial and narrative statements.
- The board presents a fair, balanced and understandable assessment of the company's position and prospects. To enable the board to do this, the Audit Committee reviews the process used to prepare and verify the fair, balanced and understandable statement.
- The board considers emerging and principal risks throughout the year. In addition, the Audit Committee reviews the internal risk and control environment.

+ **Further information** about the Audit Committee can be found on pages 126 to 135

Remuneration

- The Remuneration Policy was approved at the 2020 AGM. It is clearly aligned to the company's purpose and values and is linked to the successful long term delivery of the company's strategy. The Remuneration Policy can be found on pages 142 to 151.
- The Remuneration Committee is formed by our non-executive directors, who exercise independent judgement and discretion when authorising remuneration outcomes, taking into consideration individual performance and the wider circumstances.
- No director is involved in deciding their own remuneration.

+ **Read more** about the Remuneration Committee on pages 136 to 163

Nomination Committee Report

Patrick Thomas
Chair

Maintaining a board with the diverse skills and expertise to respond to current and future opportunities and challenges.

The committee currently comprises the Chair and all independent non-executive directors. Members' attendance at committee meetings is shown on page 101.

Regular attendees at committee meetings:

Chief Executive

Chief HR Officer

Our key responsibilities at a glance:

- Reviewing the structure, size and composition of the board.
- Ensuring the board has appropriate skills and experience.
- Ensuring adequate succession planning for board and GMC members.
- Overseeing the most senior talent and ensuring a pipeline for the future.

The committee's Terms of Reference set out our full responsibilities. You can view these on our website matthey.com/governanceframework

Our focus areas for 2021/22:

- To ensure there is an appropriate succession planning process and talent pipeline for the most senior roles, including the direct reports of GMC members.
- To select and appoint an additional non-executive director as part of mid-term succession planning and to enhance further our breath of skills.

Planning for the future, ensuring effective leadership today

Our business focuses on the future: we are a company that thinks in the long term as we set out to build a cleaner, healthier world. That long term thinking also applies to the skills and insights of all our people, including our board and senior leadership. And the core responsibilities of our Nomination Committee are to keep our board's composition under review, and to look to the future by ensuring we have a succession plan in place to safeguard the delivery of our strategy.

In this report, we describe some of the steps we have taken this year and the changes to our board. As the Audit Committee reports on page 126, Doug Webb became Chair of the Audit Committee following Alan Ferguson's retirement at the end of our 2020 AGM. John O'Higgins took on the role of Senior Independent Director.

As the Nomination Committee, we have overseen a number of key appointments during the year. In November 2020, Anna Manz stepped down as Chief Financial Officer, having spent almost four years developing the finance and IT foundations of our transformation programme. The committee oversaw an internal and external search for a new Chief Financial Officer, and we were delighted to welcome Stephen Oxley to JM in April 2021. During our search for a replacement, Karen Hayzen-Smith, our Group Financial Controller, was appointed as Interim Chief Financial Officer.

The committee also oversaw the search process for a new General Counsel and Company Secretary and Chief EHS and Operations Officer, both of which are key roles and members of the GMC. These appointments further strengthen our GMC, ensuring it remains effective in executing JM's strategy.

Anna's departure means that the board no longer meets the targets for diversity set in the Hampton-Alexander review. As a committee, we recognise the need for diversity of all kinds in a successful board, including of skills, knowledge, and perspective. We remain committed to ensuring that appointments are made on merit and objective criteria whilst promoting diversity, and we ensured this was reflected in the development of JM's refreshed Board Diversity Policy in May 2021, which is summarised in this report.

"We are a company that thinks in the long term – and that thinking must apply to ensuring the right composition of our board and senior leadership to deliver our strategy for a cleaner, healthier world."

I am pleased to confirm that following an externally facilitated board effectiveness review, the committee was considered to be operating effectively, particularly in ensuring the right leadership is in place with strong capability and diversity of experience and expertise. Looking towards next year, the committee intends to spend more time understanding our talent pipeline, to ensure that we have effective leaders to deliver our strategy in the long term.

Patrick Thomas
Nomination Committee Chair

Governance

How we delivered on our responsibilities: the committee's activities in 2020/21

Board composition	Discussed and recommended proposed changes to the board and its committees. This included the recruitment and appointment of Stephen Oxley as Chief Financial Officer.
Re-appointment of directors	Recommended the re-appointment of Jane Griffiths, Chris Mottershead, John O'Higgins and Patrick Thomas at the conclusion of their specified three year terms.
Election of directors	Recommended that the Chair and all current directors be elected or re-elected at the 2021 AGM having evaluated the performance of individual board members, giving due regard to their time commitment, tenure, performance and contributions to the board.
Succession planning and senior leadership changes	Approved the appointment of the new Chief Executive for the Health Sector, the new Chief EHS and Operations Officer, and the new General Counsel and Company Secretary. Agreed the appointment of Karen Hayzen-Smith as Interim Chief Financial Officer from 19th November 2020. Reviewed the succession plans for the most senior roles, and ensured career and personal development plans were in place to meet future succession needs.
Talent management framework	Reviewed and discussed the approach to talent and leadership development for the GMC and senior leaders.
Diversity	Reviewed and approved a new Board Diversity Policy. Reviewed the directors' combined skills, experience and diversity through self assessment, to identify any areas for development and ensure their effectiveness in driving our strategy.
Review of performance and effectiveness during 2020/21	Considered the outcomes of the external effectiveness review with regard to board composition, talent management and succession planning.

Nomination Committee Report continued

Board composition and succession planning

One of our key roles is to ensure that JM is led by a diverse, high quality board, with the appropriate skills, knowledge and experience. All board appointments and succession plans are based on merit, taking into consideration background, experience and any specific skills or criteria that would enhance the board's collective effectiveness, with due regard to the benefits of diversity.

We spent time this year reviewing the way board members' skills are assessed. We also reviewed the skills and areas of expertise that each director brings to the boardroom to ensure the board is effective in providing good corporate governance and strategic oversight. Our assessment will help us identify gaps in the board's collective skillset and point us to areas where we will seek to strengthen the board through future appointments.

We also considered the succession plans for key roles on the board and other senior leaders, including the GMC and ensured that plans for developing a diverse pipeline of potential successors remained effective.

Non-executive director succession

In accordance with the code, the committee monitors the tenure of JM's non-executive directors against the recommended nine year term, to ensure an orderly succession. The tenures of our non-executive directors and the Chair are illustrated on page 101.

Snapshot: the board's skills

The table below 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 below illustrate the skills in which our directors hold a high level of expertise.

Leadership	7
Finance	4
Health and safety	3
Human Resources	2
International	7
Strategy	7
Risk	2
Commercial	3
Technology	3
Growth / transformation	3

Putting succession planning into action: our search for a new Chief Financial Officer

Candidate

The role of Chief Financial Officer is critical to the future success of our business. Following Anna Manz's resignation, the Nomination Committee oversaw the search process for her successor, considering internal and external candidates. We discussed the requirements for the role as part of the creation of a detailed job description. As well as strong financial experience, we sought candidates with the ability to drive growth and embed change and develop and nurture talent. In identifying candidates, we also recognised the importance of diversity of background and opinion.

Process

The committee agreed that an external search was required and engaged Russell Reynolds Associates, a third party search and recruitment specialist to assist. Russell Reynolds Associates has no other connection with the company or its individual directors aside from the provision of recruitment services, including assessment and some people development services.

A quality diverse list of potential candidates was drawn up, with a range of backgrounds and experiences.

Interviews

Selected candidates had their first interview with the Chief Executive and Chief HR Officer. The Chair and other non-executive directors interviewed the final candidates. The candidates were assessed against the agreed job description which included the required skills and experiences, as well as the behavioural traits to align with the company's values and leadership expectations.

Diversity

The board is committed to supporting diversity at all levels of the organisation, to promote an inclusive culture across JM and ensure a diverse pipeline of talent. Supporting this commitment is an important part of the role of the Nomination Committee. As part of that work, in May 2021, we reviewed JM's new Board Diversity Policy, which the board subsequently approved.

Following the resignation of Anna Manz and subsequent appointment of Stephen Oxley, two members of our board (25%) are female. The board fully supports the recommendations of the Hampton-Alexander Review and aspires to meet its goal of having 33% women on our board in the mid-term and has plans in place to do so. The committee is pleased with the positive progress on gender diversity throughout the organisation, including in the GMC, which currently has three female members (33%), and among the direct reports of the GMC (34%), which helps promote a diverse pipeline of talent for JM.

Further details Information about our approach to diversity in the organisation below board level, including our Equal Opportunities Policy and the gender balance of senior management can be found on page 73.

"We set out to appoint a Chief Financial Officer with the skills and experience to drive our transformation as well as ensure we have the strong financial foundations to execute our strategy. I am confident that, in appointing Stephen, our process has identified the right candidate, and I was delighted to welcome him into the company."

Patrick Thomas

Appointment

The committee agreed that Stephen Oxley's experience of senior financial, audit and advisory matters, as well as his work with global companies going through major change programmes, and his leadership style, qualified him as the best candidate. The committee made its recommendation to the board in January 2021.

The board approved the appointment, which was announced to the market the next day, and we welcomed Stephen Oxley as our Chief Financial Officer on 1st April 2021.

Board Diversity Policy

Our Board Diversity Policy ensures the tone for diversity and inclusion is set from the top. It ensures that our business continues to be governed by a team with a diverse set of views and perspectives, to drive and challenge business performance. The board acknowledges the importance of diversity in its broadest sense in the boardroom as a driver of board effectiveness. Consideration is given to the combination of demographics, skills, experience, race, age, gender, educational and professional background and other relevant personal attributes to provide a range of perspectives, insights and challenge needed to support good decision making. While maintaining a commitment to diversity, all appointments to the board are made on merit, against objective criteria.

Maintain at least 33% female directors on the board

The board recognises that it currently falls short of this aim but the short to mid term intention is to maintain this balance. For all future board appointments, the board will ensure that any executive search firm focuses on securing a gender balanced long list of candidates. We will also be discussing diversity and inclusion in more detail to reflect on the board's role in driving change in JM.

Maintain the appointment of at least one director of colour on the board

Following the appointment of Xiaozhi Liu in April 2019, the board has met the recommendations of the Parker Review to appoint at least one director of colour to the board by 2021.

Only engage executive search consultants who have signed up to the Enhanced Voluntary Code of Conduct for Executive Search Firms on gender diversity

The board supports the terms of the Enhanced Voluntary Code of Conduct for Executive Search Firms and is committed to searching widely to secure a long list of diverse talent, including BAME talent. During the year, the committee's work on succession was supported by EgonZehnder and Russell Reynolds Associates, neither of which have any other connection with the company aside from the provision of recruitment services, including assessment and some people development services.

Report annually against these objectives and other initiatives taking place to promote diversity at board level and across the group

Diversity and inclusion have continued to be promoted across the business, as part of our culture ambition and to support an inclusive working environment. During the year the company became a signatory to the Change the Race Ratio campaign, reflecting its commitment to increasing racial and ethnic diversity among board members and in senior leadership. There has been active participation in key campaigns, including LGBT Pride celebrations, International Women's Day, Black History Week and Mental Health Awareness Week, raising awareness and promoting diversity across the group. Within JM there are a number of active Employee Resource Groups, who, on a fairly regular basis, have time with the GMC and other leaders to discuss and look for ways to further improve inclusion and diversity.

Audit Committee Report

Doug Webb
Chair from 23rd July 2020

Maintaining our focus in a time of rapid change.

The committee currently comprises all five of JM's independent non-executive directors. As required by the code, our Chair, Doug Webb, has significant financial expertise and is an experienced chartered accountant with recent and relevant experience as the former Chief Financial Officer of three listed companies.

The committee's membership draws on a broad range of knowledge, skills and experience gained from a variety of backgrounds, as described on pages 102 to 103, and has considerable experience relevant to our sector. Members' attendance at committee meetings is shown on page 101.

Regular attendees at committee meetings:

Chief Executive

Chief Financial Officer

General Counsel and Company Secretary

Group Assurance and Risk Director

Group Financial Controller

PwC Audit Partner

Our key responsibilities at a glance:

- Monitoring the integrity of the group's financial reporting.
- Reviewing the effectiveness of internal controls.
- Overseeing the relationship with the external auditor.
- Overseeing the execution and effectiveness of the group assurance and risk function and the risk management process.

The committee's Terms of Reference set out the full responsibilities of the committee. You can view these on our website matthey.com/governanceframework

By adapting our ways of working we've continued our vital role in overseeing financial integrity and reviewing JM's internal controls, so the business can continue to contribute to a sustainable future.

This is my first report to you since my appointment as Chair of the committee after the 2020 AGM, following Alan Ferguson's retirement. Alan guided the committee through significant change, and I want to thank him for his contribution over his nine years as Chair.

This year, like everyone at JM, we have adapted to working in a virtual environment. As a committee, it has been vital that we continue to ensure that both JM's management and our auditors are appropriately challenged and held to account while working remotely. I know that both management and PwC have worked hard throughout the year to ensure the integrity of our financial reporting. The internal audit plan has been more dynamic than in the past as a result of COVID-19 to ensure it reflects the changing needs of the business. I have maintained regular dialogue with management, the Group Assurance and Risk Director, and the external auditor to ensure they are supported through the challenges of the pandemic. While I did not have the opportunity to engage in person with shareholders during the year, I remain available to answer any questions on the work of the committee and look forward to engaging in person or virtually at our next AGM.

Read about how the group assurance and risk function adapted during the year on page 133

> This year, like everyone at JM, we have adapted to working in a virtual environment. As a committee, it has been vital that we continue to ensure that both JM's management and our auditors are appropriately challenged and held to account while working remotely."

During the year, we've looked extensively at the controls around precious metal management, credit risk and cash flow management, and spent additional time reviewing the impact on going concern and viability statements. We also continued our series of deep dives with the sector finance directors. The new Efficient Natural Resources Sector Finance Director and Battery Materials Sector Finance Director updated us on plans to enhance the control environment and the key challenges and financial risks facing both sectors. These deep dives give committee members a better understanding of the control framework in these areas, and mean we can engage with managers from outside the central group team, helping us to assess the depth and quality of management throughout the business.

I am pleased to say that the external board effectiveness review confirmed that the committee continues to operate well and remains informed of relevant changes and developments in the external audit market.

+ **Read more** about the external board effectiveness review and the associated actions on pages 116 to 118

As we head into the next financial year, our focus turns to the shifting regulatory landscape and the anticipated outcome of the Department for Business, Energy and Industrial Strategy (BEIS) white paper on restoring trust in audit and corporate governance. We have already started assessing the potential impact and planning for anticipated changes. This includes the development of an internal controls financial reporting framework and the establishment of a fraud risk management programme. The committee also has a crucial role to play in ensuring that ongoing capital projects have effective governance and internal control frameworks to ensure their successful delivery, in turn contributing to JM's drive to help shape a more sustainable future.

Doug Webb
Audit Committee Chair

Our focus areas for 2020/21:

- Monitor controls around our new enterprise resource planning system.
- Review systems and controls in a COVID-19 environment.
- Review revised processes for management of group metal requirements and associated key performance indicators.

Our focus areas for 2021/22:

- Planning for regulatory changes arising from the BEIS white paper 'Restoring trust in audit and corporate governance' and Task Force on Climate-Related Financial Disclosures (TCFD).
- Review internal controls in relation to fraud management.
- Review the governance and controls established for capital projects to ensure they are effective.

Audit Committee Report continued

Overview: how we delivered on our responsibilities

Our responsibility	What we did	Our outcomes
Published financial information		
To monitor the integrity of the reported financial information and to review significant financial considerations and judgements Link to risk 1 2 9 11	• Reviewed the group's full year results and half year 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. • Assessed the process which management put in place to support the board when giving its assurance that the 2020/21 Annual Report and Accounts, taken as a whole, is fair, balanced and understandable. • Reviewed reports from the General Counsel and Company Secretary on group litigation and disputes. • Reviewed reports on credit controls and credit risks. • Approved the 2020/21 Audit Committee report. • Reviewed and recommended the approval of elements of the 2020/21 Annual Report and Accounts to the board. • Reviewed a letter from the FRC which requested additional information regarding our accounting policies for recognising revenue in our refining business. • Reviewed and challenged the payment practices, policies and performance of the company and certain UK subsidiaries.	• Following a thorough review the committee challenged management assumptions and recommended the approval of the half and full year results to the board for approval. • Spent extra time reviewing the detail of the going concern and viability statements and assessed a variety of scenarios with management before recommending the approval of both statements to the board. • Considered the early adoption of certain disclosures required under TCFD with the aim of full compliance in 2021/22. • Determined that the refreshed fair, balanced and understandable process undertaken by management was effective. • Spent extra time reviewing credit controls and risks in the context of COVID-19. • Reviewed management's proposed response to the FRC's letter and concluded that our accounting policy disclosures should be enhanced with respect to the recognition of cash and non-cash refining related revenue.

Our responsibility	What we did	Our outcomes
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 assurance function Link to risk 1 2 3 4 5 6 7 8 9 10 11 12 13 14	• Received reports from the Group Assurance and Risk Director on the group assurance, risk reviews and risk management processes. • Monitored progress against the 2020/21 group assurance and risk plan including the changes made to the plan as a result of COVID-19, and agreed the 2021/22 plan. • 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. • Monitored the effectiveness of the group assurance and risk function. • Reviewed precious metal governance and controls. • Received presentations from the Efficient Natural Resources and Battery Materials Finance Directors on the internal control environment within the sectors. • Met with the Group Assurance and Risk Director without management present.	• Determined whether risk management and internal controls effectively meet the group's needs and manage risk exposure. • Assessed if changes to the internal audit plan were correct to adapt to the changing needs of the business as a result of COVID-19. • Determined that the internal controls could be relied on but agreed with management's suggestions to enhance the internal controls over the financial reporting framework. • Assessed the group assurance and risk function against the results of a self assessment against the Institute of Internal Auditors' standards and determined that the function was effective. • Oversaw comprehensive changes controls and governance procedures in relation to precious metal management.
Our external auditor		
To oversee the relationship with the external auditor, to monitor its independence and objectivity, to approve its fees, recommend its re-appointment or not, and to ensure it delivers a high quality effective audit, based on a sound plan Link to risk 11 13	• Considered reports from the auditor, including its views on our accounting judgements and control observations. • Met with the external auditor without management present. • Considered and reviewed indicators of audit quality. • Assessed the independence and objectivity of the auditor. • Reviewed the non-audit fees incurred during the year and the non-audit fee policy.	• Approved, after due challenge and discussion, PwC's audit plan and fees for 2020/21. • Determined that a good quality, comprehensive audit had been completed, following a review of PwC's regular reports to the committee, the outcome of the FRC Audit Quality Review of PwC and feedback from the Independent Quality Review Partner. • Recommended the re-appointment of PwC as auditor.

Audit Committee Report continued

Financial reporting

Significant issues considered by the committee in relation to the group's and company's accounts

It is a fundamental part of our role that we act independently from management to ensure that the interests of shareholders are properly protected in relation to financial reporting. When the accounts are being prepared, there are areas where management exercises a particular judgement or a high degree of estimation. The committee assesses whether the judgements and estimates made by management are reasonable and appropriate. In the process of applying the group's accounting policies, management also makes judgements and estimates that have a significant effect on the amounts recognised in the financial statements. The group's key accounting judgements discussed and challenged by the Audit Committee are set out below.

Significant current year considerations in relation to the accounts	Work undertaken / outcome
COVID-19 pandemic The COVID-19 pandemic has impacted group operations due to travel restrictions, social distancing and disrupted business activity. The Clean Air Sector, in particular has been impacted by the pandemic as global demand for automotives was adversely affected in the first half. Since then sales have recovered to near to pre COVID-19 levels. Most of our operations continue to navigate positively out of the pandemic however, we continue to monitor regions that face possibility of further restrictions.	We received a report from management which explains the accounting and disclosure implications of COVID-19. The report was reviewed and discussed with management and PwC to ensure that we were satisfied with its conclusions. Since the outbreak at the start of 2020, our operations have navigated positively around the disruption. The recovery has been reflected in our budgets and plans used for the viability and going concern assessment and annual goodwill impairment testing. As a result, there is increased headroom from goodwill testing (see below) and no other impairments have been identified as a direct result of COVID-19. In the year to 31st March 2020, management increased provisions for expected credit losses on trade and contract receivables. The provision has not been utilised during the year but will remain in place as management have assessed that some market uncertainty remains, in addition to the total receivables balance increasing (see note 31 on page 229). We concluded that the financial impact of the COVID-19 pandemic has been appropriately accounted for and disclosed in the group's accounts.

Major impairment and restructuring activities	Work undertaken / outcome
In June 2020, we announced actions to drive efficiency across our manufacturing footprint and operations. Significant progress was made during the year with further recognition of restructuring provisions and impairments as we look to accelerate transformation initiatives. Key judgements in relation to restructuring provisions relate primarily to estimates of future cost. Key judgements in relation to impairment testing relate primarily to estimates in assessing recoverable value against carrying value.	We received a report from management which explains the basis of recognition and estimate for restructuring provisions related to transformation initiatives. The report also detailed asset impairments as management seeks to accelerate plant closures. We considered and debated the nature of the provisions recognised, the identification of impairment triggers across the group's asset portfolio and valuation of those assets as part of the impairment testing. We discussed the rationale behind the presentation of the charges as part of underlying operating profit (see note 5 on page 197) or exceptional (see note 6 on page 199). We focused on the following major impairments and restructuring charges that required judgement, with the remainder mostly relating to cash spend during the reporting period: • **Clean Air**, progress with rebalancing production into our key plants in North Macedonia, China and Poland has resulted in an impairment to plant (£19 million) and associated information systems (£30 million). The Clean Air restructuring charge was £53 million and relates substantially to implementation and redundancy costs. • **Efficient Natural Resources**, the closure of the Catacel Ravenna facility in Ohio (£7 million impairment charge and £4 million for site closure and redundancies). In addition, the Efficient Natural Resources Sector restructuring charge was £10 million and substantially relates to redundancy costs. • **Health**, the planned closure of a production unit in Scotland (£5 million impairment) and other restructuring activities (£6 million restructuring charges) of which the majority is redundancy and compliance costs, associated information systems were impaired by £6 million. • **Corporate**, a review of the scope of the roll out of the global ERP system resulted in a £20 million impairment. We concluded that management's key assumptions and disclosures are reasonable and appropriate.

Significant recurring considerations in relation to the accounts	Work undertaken / outcome
Impairment of goodwill, other intangibles and other assets 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.	We reviewed a report from management which explains the methodology used, assumptions made and significant changes from those used in prior years, including the impact of climate change on the group's long term plans, especially within Clean Air. We discussed with management the rationale behind the key assumptions and sensitivities in the calculations to ensure we were satisfied on their reasonableness. The impairment reviews were an area of focus for PwC who reported their findings to us. Management has not identified any impairments as part of the annual impairment tests. Overall, the headroom over the carrying value of the net assets of the material CGUs has been increased, in particular for the recovery from the impact of COVID-19 on the group's board approved budgets and plans. Further information on this can be found in note 5 of the accounts. We concluded that management's key assumptions and disclosures are reasonable and appropriate.
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.	We received a report from management which summarises the results of the refinery stock takes in the UK, and China. 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. The refining process and stock takes were also an area of focus for PwC who reported their findings to us. We concluded that management's accounting for refining stock take gains and losses was in accordance with the agreed methodology.
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. We concluded that the assumptions used, and accounting treatment, are appropriate for the group's post-employment benefit plans.
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.	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. We also considered the sensitivities around the provisions and debated the circumstances in arriving at the key provisions. Tax provisioning was an area of focus for PwC who reported their findings to us. We concluded that management's key assumptions and disclosures are reasonable and appropriate.
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.	We received a report from management which provides information in respect of disputes and claims and identifies the accounting and disclosure implications which were challenged and discussed. Provisioning for, and disclosure of, disputes and claims was an area of focus for PwC who reported their findings to us. We concurred with management's conclusions regarding provisioning and contingent liability disclosures.

JM received correspondence from the FRC regarding its disclosures related to the revenue recognition for refining services based on their review of the 2019/20 Annual Report and Accounts.

Management responded to outline the group's rationale for its accounting policy and application of IFRS 15 for revenue from refining services; the responses were reviewed by PwC and the audit committee. While there has been no change to the basis or timing of revenue recognition in our accounts following the correspondence with the FRC, we have considered recommendations made and have further enhanced our revenue recognition accounting policy disclosures in respect of refining activities (see note 3 on page 193).

The review by the FRC does not provide any additional assurance regarding the accuracy of the 2019/20 Annual Report and Accounts. The FRC does not accept any liability in relation to its review.

Audit Committee Report continued

Going concern and viability statement

The committee reviewed the matters, assumptions and sensitivities being used to assess 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. Further details on our going concern and viability, and the scenarios considered, are set out on pages 40 to 97.

Following our review, we concluded that the company and group would be able to continue in operation and meet its liabilities as they fall due over a period of at least three years, which remained the most appropriate timespan.

Fair, balanced and understandable

Another of our roles is to review and assess the process which management puts in place to support the board so it can give its assurance that the 2020/21 Annual Report and Accounts, taken as a whole, is fair, balanced and understandable (FBU) and provides the information necessary for shareholders to assess the company's position and performance, business model and strategy.

A group of individuals was selected from a variety of functions across JM; all had not been involved in the drafting process but were familiar with JM's strategy and business model. These individuals were selected by management to form an FBU Panel to carry out a detailed review of the full annual report. The FBU Panel, auditor and project team then met to determine whether the key messages in the annual report were aligned with the company and group's position, performance and strategy, and whether the narrative sections were consistent with the financial statements.

A report detailing the key themes from that review and the discussions at the meeting was also presented to the board. In addition, to further support the board, the Disclosure Committee reviewed the verification process dealing with the factual content. Following a review of the FBU process, the committee provided positive assurance to the board that the process was effective.

At a glance: how we ensure our annual report is FBU

Management selects a group of individuals from a variety of functions across JM to form an FBU Panel and complete a 'cold review'. Panel members are familiar with JM's business model and strategy but have not been involved in the drafting of the annual report

↓

Draft annual report circulated with comprehensive guidance notes and reviewed by the FBU Panel

↓

FBU Panel meeting held with the annual report project team and PwC to discuss key themes and recommendations

↓

Recommendations and key themes incorporated into the final draft of the annual report

↓

Final annual report and paper detailing the key outcomes and themes from the FBU Panel circulated to the board for their FBU assessment

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 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 mitigating actions are properly tracked, challenged and reported on. During the year, a new co-sourcing partnership with Deloitte has ensured access to additional specialist skills and expertise.

Our key control questionnaire process

Our businesses complete the key controls questionnaire

→ Output reviewed with each sector / Output reviewed with each function

→ Sector level reviews with Chief Financial Officer, Group Financial Controller and Group Assurance and Risk Director

→ Findings shared with the Audit Committee

→ Actions tracked at business and group level, including periodic reporting to the Audit Committee

Key control questionnaire

The company's key control questionnaire is an annual, bottom up process that requires the managers of our material businesses to certify the existence and effectiveness of the key controls set out in our policies. The questionnaire is a critical component of our governance and assurance framework, which details 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).

Our businesses assess themselves against the questions, and the results are then reviewed at sector, function and group levels. Despite the change to remote working, the only impact on the key control questionnaire was a small extension to the submission deadline. The committee assessed the effectiveness of the process and considered the nature and quality of managers' responses. We also looked at the level of challenge to the responses, significant findings, areas for improvement and how management intended to address findings. To provide the committee with additional assurance on the process, the group assurance function review the latest key control questionnaire findings to ensure consistency with their internal audit reviews.

Group assurance and risk

The Group Assurance and Risk Director provides us with regular reports on internal audit reviews, including their key findings, the actions needed to address the findings, and the progress made by management in implementing them. The committee pays 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 all our sites, wherever they are, and whatever their size and function.

We continually review the effectiveness of the group assurance and risk function using a variety of inputs including audit reports, discussions with management, and by monitoring the progress of the internal audit plan. We consider whether the function has adequate standing across the group, whether it is free from management influence or other restrictions, and if it is sufficiently resourced.

As mentioned above, the function has successfully begun a co-sourcing partnership with Deloitte for its assurance activities to provide access to subject matter expertise or additional capacity as needed.

This year we also reviewed the results of a stakeholder survey, which included GMC members, sector leadership teams, group function heads and project leads. The responses were consistently positive, and highlighted the agility and partnering support that the team provided during the year.

Having carefully considered all these inputs, the committee concluded that the group assurance and risk team was effective and played a critical role in supporting the business through the pandemic. In line with best practice, an independent external quality assessment of the group assurance and risk team will be carried out in 2021/22.

Case study

The impact of COVID-19 on group assurance and risk

In normal years, our risk management and assurance activities are evaluated and updated regularly but, with the evolving landscape in the last 12 months, the global impact of the pandemic meant plans became out of date almost immediately. Our risk management activities had previously been focused on risks that we considered high impact, and those that were more likely to occur. That quickly shifted towards risks that, in a more stable world, would have a material impact but had been considered highly unlikely to occur. At the same time we realigned from scanning the horizon for emerging risks, to addressing more 'business as usual' risks that needed immediate action such as people safety, counterparty credit risk, working capital / liquidity risk, supply chain and guarantee of supply chain. The board and GMC launched a series of deep dive exercises to understand the impact of COVID-19 on our existing risks and any new actions needed.

Our group assurance function supported the business with projects that had been specifically created to manage the risks caused by remote working (and as such supported delivery of the external year end audit activities). That meant fewer reviews were completed in the first quarter of the financial year. The audit plan was under constant review and discussion with stakeholders to ensure it reflected the key risks and priorities of the organisation, as it navigated the uncertainty caused by the pandemic.

It also led to the function introducing creative and agile ways of working to ensure that virtual audits provided the correct level of assurance and advice for the business, such as merging scope areas where practical and appropriate; performing high level 'desktop reviews' of management assurance activity and attendance at a number of programme boards and steering committees, providing 'real time' challenge and feedback in these forums.

We also reached out more to our co-source partner, Deloitte, to provide specific expertise or presence in the remote locations where our internal team was unable to be on site because of travel restrictions.

While the change to working practices might have been a reaction to the external environment, it highlighted new ways of working which improved efficiency and effectiveness. The team will continue to build on the skills learnt during this year and embed greater flexibility into the audit plan for the next financial year.

Audit Committee Report continued

Group assurance and risk annual plan

The committee spends a significant amount of time reviewing the group assurance and risk annual plan. We aim to ensure it is comprehensive, that it reflects the challenges and changes to our business, and that it provides the appropriate level of assurance over the group's key risks. When we reviewed the 2021/22 plan, we considered the continued impact of the pandemic and the context of business as usual in JM, as well as the macroeconomic environment and business transformation. The plan is based on a risk based audit universe broken into three specialised areas: operational, financial and risk related; IT; and transformation programme assurance. The plan also allows for assurance activity to deal with unexpected events, when approved by the Group Assurance and Risk Director.

The committee believes the 2021/22 plan addresses JM's key risks and identifies where additional assurance is needed, and is appropriately comprehensive for the size and nature of the group.

Risk management

The committee worked with the board to review and refine the risk assurance processes (including the assurance framework and key control questionnaire). The committee concentrates primarily on reviewing the mitigating controls and the levels of assurance over these, while 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 is carried out by the group assurance and risk function, which reports back to the committee.

Speak Up process

We review the company's Speak Up (whistleblowing) process annually to ensure procedures are proportionate and independent. During the year, ethics and compliance made changes to the Speak Up process to reflect lessons learned and to ensure that the actions taken as a result of the most important Speak Up reports would be owned by the sector chief executives. The committee reviewed the new process step by step and agreed that the procedures allowed proportionate and independent investigation and appropriate effective follow up action. We report the findings of this review to the board as appropriate.

+ **More information** on Speak Up can be found on page 77

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 third year the group has been audited by PwC. Mark Gill continues to be the lead audit partner. The committee confirms ongoing compliance with the Competition and Markets Authority's Statutory Audit Services Order.

External audit plan

In developing the external audit plan for 2020/21, PwC performed a risk assessment to identify the potential risks of material misstatement in the financial statements. This assessment considered the nature, magnitude and likelihood of each identified risk, 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 247 to 257 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 2020 and the forecast for 2020/21. Details of the coverage and the agreed scope are set out in the independent auditor's report on page 247. The committee also reviewed the procedures to be performed at a group level, and the impact of COVID-19 on the audit and the planned site visits. Materiality was agreed at 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.

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.

How we reviewed PwC's performance

The committee reviews the ongoing effectiveness and quality of the external auditor and audit process throughout the year. We base our review on the auditor's reports to the committee, on the performance of Mark Gill and his team both in and outside committee meetings, on how they interact with and challenge management, and on how they are building relationships with our internal audit teams.

We also had regard to how the auditor challenged management's judgements and assumptions on the matters highlighted on pages 130 to 131 and asked the auditor to confirm if those matters had been addressed correctly by management. Following detailed analysis of the assurance completed, the auditor confirmed they agreed with management's judgements and assumptions.

We also sought direct feedback from the independent Quality Review Partner to review their assessment of PwC's key planning judgements and the execution of their response to significant risks and reporting. In addition, we feel it is important to understand management's opinion of audit quality and effectiveness: to support this, the executive directors and senior management complete a questionnaire on the external auditor each year.

How we gather feedback on the effectiveness of our external auditor and external audit process

Third party reviews

- Consideration of the external reviews of PwC performed by the FRC's Audit Quality Review team and the Quality Assurance Department of the ICAEW.

Information provided by the auditor

- Details on the delivery of the audit plan and any changes to the scope of work and the impact of COVID-19.
- Assurance on the operation of audit quality control procedures.

Management feedback

- Survey of audit quality and effectiveness completed by executive directors and senior management. This includes recommendations for improvement.
- Assurance on the disclosure process for the provision of information to the auditor.

Committee assessment

- Assessment of the quality of regular audit reports.
- Assessment of feedback from committee members and regular attendees including the Group Financial Controller and Group Assurance and Risk Director.

Provision of non-audit services

Our Non-Audit Services Policy ensures that the provision of non-audit services does not create a threat to PwC's independence and objectivity as an auditor. In accordance with the FRC's Revised Ethical Standard 2019, the auditor can only provide additional services directly linked to the audit.

Our policy sets out how approval should be obtained before PwC is engaged to provide a permitted non-audit service. The 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 less than £100,000 must be approved by the Audit Committee Chair. Services likely to cost over £100,000 must be approved by the Audit Committee.

Compliance with 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 £0.3 million compared with audit fees of £4.6 million, representing 6.5% of the audit fee. 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. The committee considered the information provided by the auditor, confirming that PwC staff involved with the audit have no links or connections to JM, and that the FRC's Revised Ethical Standard was complied with. We concluded that PwC was independent.

Proposed re-appointment of PwC

Following our work to assess PwC's performance and independence, we agreed that PwC continued to provide a robust audit and valuable technical knowledge and that the auditor remained free from third party influence and restrictive contractual clauses. 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 AGM.

Remuneration Committee Report

Chris Mottershead
Chair of the Remuneration Committee

The committee currently comprises all five of JM's independent non-executive directors. Member's attendance at committee meetings is shown on page 152.

Regular attendees at committee meetings:

Chief Executive

Chief HR Officer

Group Total Reward, Wellbeing & People Services Director

Our key responsibilities at a glance:

- Set remuneration policy for executive directors, senior management and the Chairman and determine the application of that policy.
- Oversight of workforce remuneration policies and their alignment with culture.
- The committee's terms of reference set out our full responsibilities. You can view these on our website: matthey.com/governanceframework

Our focus areas for 2021/22:

- Setting sustainability measures for inclusion in our long term incentive plan.
- Review alignment of reward with culture.
- Review broader employee pay equity.

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.

As Chair of the committee, I am pleased to present our report for the year ended 31st March 2021.

We submitted our latest Remuneration Policy to shareholders at our 2020 Annual General Meeting (AGM) and appreciated the high level of support we received (85.7% in favour). We also value the continuing constructive dialogue we've had with a number of our shareholders and representatives of institutional investors.

This Annual Report on Remuneration sets out how we applied the Remuneration Policy in 2020/21 and how we intend to apply it in the forthcoming year.

COVID-19

Over the past year the COVID-19 pandemic has brought extraordinary challenges to our employees, customers, suppliers and the communities in which we operate. No one could have foreseen these challenges. However, through strong leadership that focused on the health, safety and wellbeing of our people, and included implementing the highest safety standards across all our facilities as well as enabling working from home where possible, we demonstrated operational resilience and delivered a strong financial performance.

This outcome was possible thanks to the collective hard work of the entire organisation. We have seen outstanding examples of collaboration, speed, agility, and resilience as our people came together to tackle the complex issues of COVID-19 and overcome hurdles to keep our operations running safely. To recognise this tremendous effort and commitment, all our non-managerial employees received an additional one-off recognition payment of £250 (or local equivalent) over and above their usual annual bonus payment.

In managing through the pandemic, we did not furlough any employees or seek any government financial support, and we did not make any specific COVID-19 related redundancies.

In addition, we delayed the commencement of our pre-planned corporate restructuring until after June 2020, which gave stability to our employees during the period of greatest uncertainty for COVID-19. We also supported our customers, suppliers and the communities in which we operate throughout the crisis.

The strong financial performance delivered following our rapid and effective response to COVID-19 also enabled us to continue to pay dividends and retain a strong balance sheet and share price. Along with our strong financial performance we also executed robustly against our strategic priorities (e.g. progressing our eLNO®, fuel cells and green hydrogen capabilities) which will provide the long term platform for delivering sustainable growth and shareholder returns.

As an organisation we have learned a lot from the challenges we faced over the past year, which we will take with us into the future to help us strengthen our company even further.

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.

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.

As the world 'builds back greener' following the pandemic, we recognise that we have an important role to play in helping society address climate change through our sustainable technologies, products and services. As such, to enable us to continue to invest and meet our strategic objectives, we remain focused on efficiencies and driving cash flow from our more established businesses. We are excited about commercialising our suite of sustainable technologies that will enable decarbonisation and enhance circularity, including our portfolio of eLNO battery materials and hydrogen technologies.

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 meaningful shareholding guidelines for executive directors during and after employment.

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 and culture.

Our remuneration strategy is also designed to be competitive in the various markets in which we operate and compete for quality talent.

Board changes

On 20th November 2020, Anna Manz, Chief Financial Officer (CFO) decided to leave Johnson Matthey after almost four years and join the London Stock Exchange Group (LSEG). No special remuneration arrangements were agreed with Anna on leaving. Further details of Anna's leaving arrangements are provided on page 159.

We announced in January that Stephen Oxley would succeed Anna as our new Chief Financial Officer on 1st April 2021. The board considers Stephen to be an outstanding candidate, joining us after almost 30 years with KPMG where he was a Partner. Stephen joined us with a great enthusiasm for our purpose and our culture.

Stephen's remuneration upon recruitment was set in line with our Remuneration Policy, and further details are provided on page 159.

Performance in the year

In the face of a difficult and very demanding environment brought on by COVID-19, our Chief Executive Officer, Robert MacLeod, and the senior leadership team have delivered a strong performance, exceeding targets set in many areas and delivered a very good total shareholder return.

Following the disruption from COVID-19 earlier in the year, our second half financial performance was materially stronger. This reflected increased activity in the automotive industry and other key end markets, as well as the actions taken to transform our business including tight cost management. Our strong operational performance has also enabled us to continue to invest in our strategic growth projects including battery materials, fuel cells as well as green and blue hydrogen.

Remuneration Committee Report continued

The committee always seek to ensure that there is a clear link between pay and performance. We therefore consider the performance of the wider business and individual accomplishment over the period, including how the performance was delivered, and other achievements such as the response to COVID-19. In that context, we believe that the payments outlined below fairly reflect the performance achieved.

2020/21 incentive plan outcomes

As detailed in last year's Directors' Remuneration Report, we set our incentive plan targets after considering the potential impact that COVID-19 would have on our business in the 2020/21 financial year. The committee revisited those original performance targets at the year end to ensure the targets retained the same level of stretch envisaged when the targets were originally set. As a result of that review, given the increase in activity in the automotive industry relative to the time when the targets were set, the committee increased the target for the Group Profit Before Tax performance measure in the 2020/21 annual incentive plan. This increase to the target ensured that the annual bonus out turn did not benefit from the higher than expected levels of activity in the automotive industry.

Due to the very strong level of financial performance and achievement against the strategic objectives, accompanied by high quality leadership behaviours aligned to our values and a good health and safety record over the year, a bonus of 98% of maximum is payable to Robert MacLeod, of which one half will be deferred in shares for a period of three years. Anna Manz is not eligible for a bonus payment. Further details on the performance against the annual targets and strategic objectives is set out on pages 154 and 155.

The formulaic outcome for the vesting of the long term PSP awards granted on 1st August 2018 was zero. It was not felt appropriate to adjust the outcome and as such there is zero PSP vesting for the executive directors.

In determining the annual and long term incentive plan outcomes the committee carefully considered the performance achieved, including the impact and response to COVID-19 and the retrospectively increased Group Profit Before Tax target. The committee did not deem it necessary to exercise any discretion on the outcomes as they consider the remuneration earned appropriate in light of the performance achieved and after having regard to the company's stakeholders' experiences during the year.

The outcomes, as a percentage of maximum opportunity, for both the annual incentive plan and long term performance share plan for employees below the board are similar to those for executive directors with the same principles applied consistently.

Application of Remuneration Policy for 2021/22

The company's general approach to senior executive salaries is to consider the performance and experience of an individual in the context of comparable rates of pay in similar sized organisations. Executive directors are considered for an increase set at the typical rate of increase applied to the wider workforce in their geographical location. Reflecting this principle, Robert MacLeod received an increase on 1st April 2021 of 2.0%. This compares to no increase in 2020.

The planned reduction in the Chief Executive's pension cash supplement from 23% to 20% will occur on 1st April 2021 with a further reduction from 20% to 15% scheduled for 1st April 2022.

There are no changes anticipated to the wider application of our Remuneration Policy in 2021/22. As a result, Robert MacLeod and Stephen Oxley will continue to be eligible to participate in the annual incentive plan with a maximum bonus opportunity of 180% of base salary and 150% of base salary respectively. The plan will have performance conditions based on a combination of financial (80%) and non-financial (20%) performance. In addition, Robert will be eligible to receive an award equal to 200% of base salary in our long term incentive plan, and Stephen will be eligible for an award equal to 175% of base salary. In both cases the performance conditions will be based on challenging EPS and relative TSR performance targets.

Given Johnson Matthey's unique value proposition and purpose of delivering a 'world that is cleaner and healthier today and for future generations', we are committed to broadening the way we measure our long term success. As part of our Remuneration Policy approved by shareholders at our AGM in 2020, we committed to introduce a third performance measure into our long term incentive plan that focuses on sustainability. This metric will represent no more than one-third of the overall award and would be included in awards from August 2022. The measure will be a scorecard of quantitative measures that cover the company's performance in our operations, people, and delivering products and services that contribute to a more sustainable world. The committee is currently finalising the specific details of this measure and will update shareholders prior to the award in August 2022.

In advance of including sustainability targets in the long term incentive plan from August 2022 a portion of the non-financial targets within the 2021/22 annual incentive plan will be set with reference to evolving our sustainability strategy and delivering progress against it.

Wider employee remuneration

Paying our employees fairly relative to their role, skills, experience and performance is central to our approach to remuneration, and our reward framework and policies support us in doing this. Equal pay is also critical, and we review our pay levels on an ongoing basis to ensure that men and women are paid fairly, and as we get better access to data we will also start to analyse pay different ways including by ethnicity. We are also committed to the real living wage and narrowing the gender pay gap that exists amongst our employees and to tackle the root causes of gender imbalance to ensure a truly inclusive culture that supports diversity. Our UK gender pay gap is currently 6.7%. The full report, including details of what we are doing to eliminate the gap can be found on our website.

2021 Annual General Meeting

I would like to thank shareholders for their input and engagement ahead of last year's AGM and I ask you to support our 2020/21 Annual Report on Remuneration at our forthcoming AGM on 29th July 2021. We believe that our policy remains simple, transparent and effective, strongly supporting our business strategy with remuneration outcomes aligned to the shareholder experience. We welcome an open dialogue with our shareholders, and I will be available at the meeting to answer any questions about the work of the Remuneration Committee.

Chris Mottershead
Chair of the Remuneration Committee

Remuneration at a glance

Aligning remuneration with strategy

Our strategy

We will use our deep knowledge of metals chemistry to help our customers address the complex technical challenges of the four transitions – transport, energy, decarbonising chemicals production and a circular economy – by delivering sustainable products, services and technologies

Our strategic objectives

Invest in growth areas targeted at climate change and circularity

Manage our established businesses to support growth

Promote a fast paced, efficient business and high performance culture

KPIs

Group profit before tax	Group working capital days	Earnings per share	Total shareholder return	Return on invested capital
Annual Incentive Plan (AIP)	Annual Incentive Plan (AIP)	Performance Share Plan	Performance Share Plan[1]	Performance Share Plan

[1] Measure included in awards from 2020 onwards.

Policy for executive directors

Base salary	• Reviewed annually, with any changes normally taking effect from 1st April each year
Benefits	• Includes medical, life and income protection, company car, relocation benefits relating to business moves, and assistance with tax advice and compliance services where appropriate
Pension	• Cash supplement as a percentage of base salary • 15% for all new executive directors, and for current executive directors the percentage is reducing to 15% by 1st April 2022 to align to the cost of providing pension benefits to other employees in the UK
Annual Incentive Plan (AIP)	• Maximum 180% of base salary for Chief Executive, and 150% for other executive directors, with awards of: – 15% of maximum for threshold – 50% of maximum for on target – 100% of maximum for outstanding performance • Assessed against achievement of financial, and where appropriate, non-financial targets • A substantial portion will be based on key financial measures, including underlying profit before tax (PBT) • Paid equally in cash and deferred shares • Deferred shares vest after three years
Performance Share Plan (PSP)	• Granted at maximum of 200% of base salary for Chief Executive, and 175% for other executive directors • Vesting based on performance over three years, with between 15% and 25% vesting for threshold performance, dependent on the performance measure • Subject to financial and / or shareholder return targets with potential to include strategic and / or sustainability targets for future awards • At least two thirds of awards should be subject to financial and / or total shareholder return targets
Shareholding requirements	• Chief Executive 250% of base salary, other executive directors 200% • Requirements to be built up over a reasonable period and apply for the two year period after cessation of employment

Remuneration at a glance continued

2021 performance

Annual Incentive Plan (AIP)

Actual performance against threshold, target and maximum performance for each measure is set out in the charts below:

Financial measures[1]

Performance measure	Weighting	Threshold	Target	Maximum
Group underlying PBT[2]	60%	£250m (90% of target)	£278m[3]	£306m (110% of target)
		Actual: £448m (160% of target)		
Group total working capital days (including precious metal)	10%	42 days (105% of target)	40 days	38 days (95% of target)
		Actual: 34 days (86% of target)		
Group working capital days (excluding precious metal)	10%	68 days (105% of target)	64 days	61 days (95% of target)
		Actual: 58 days (89% of target)		

1 All figures in the table have been rounded to the nearest whole number.

2 Group underlying PBT and group working capital days are measured using budget foreign exchange rates.

3 The original PBT target set was £238 million.

Strategic objectives

	Weighting	Threshold	Maximum
Robert MacLeod	20%	(0%)	(100%)
		Actual 90% of target	

Bonus outcomes

Based on performance against the above targets, total bonuses for the year ended 31st March 2021 were:

	Bonus outcome (% of base salary)			
	Financial measures	Strategic objectives	Total	Value of bonus (£'000)
Robert MacLeod, Chief Executive	144	32.4	176.4	1,479
Anna Manz, Chief Financial Officer[1]	–	–	–	–

1 Anna Manz is not eligible to receive a bonus as she left Johnson Matthey on 20th November 2020.

Further details on the Annual Incentive Plan outcomes can be found on page 154 and 155.

Performance Share Plan (PSP)

The performance condition for the 2018 award and the actual performance achieved are shown below. As performance did not meet threshold, no shares will vest. The committee also considers Return on Invested Capital when assessing the PSP vesting. This assessment did not change the vesting outcome.

Performance measure	Threshold	Target	Maximum
Compound annual growth rate in earnings per share	4%	7%	10%
	Actual -4%		

The table below shows the vesting outcomes based on this performance.

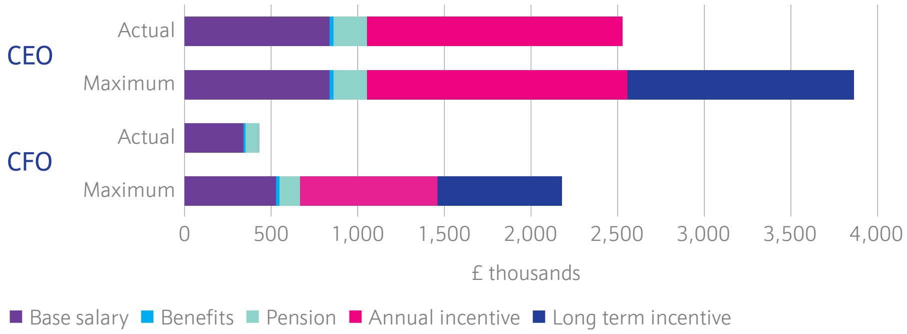
Executive Directors	% of base salary awarded	Shares awarded	% of award to vest	Shares to vest	Estimated value on vesting £
Robert MacLeod	200	43,833	–	–	–
Anna Manz[1]	175	24,174	–	–	–

1 The 2018 award granted to Anna Manz was lapsed in full on 20th November 2020 when she left Johnson Matthey.

2021 outcomes

Executive director remuneration

The charts below set out maximum and actual remuneration for the Chief Executive, Robert MacLeod and the Chief Financial Officer, Anna Manz, who stepped down from the board on 20th November 2020.



Actual is representative of values from the single figure of remuneration table. As such, the figures for Anna Manz only represent the portion of the year before she stepped down from the board.

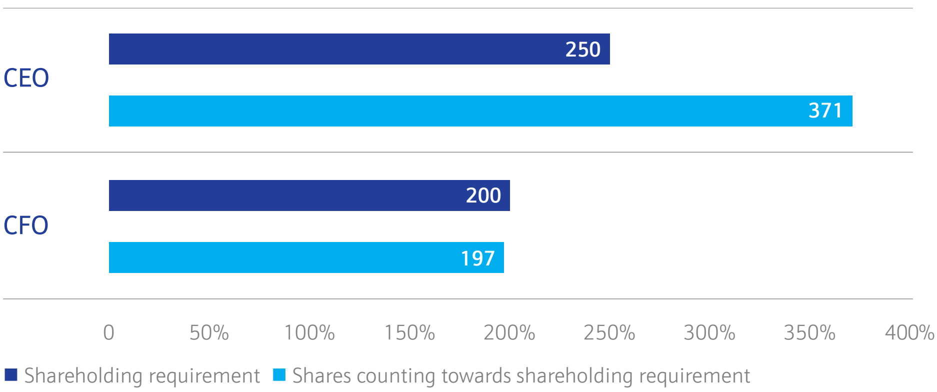
The maximum values for Anna Manz have been calculated based on what would have been payable had she remained a director for the full year. The annual incentive plan values have been calculated using the maximum payout of 180% and 150% of base salary for the CEO and CFO respectively. The long term incentive has been calculated based on the 2018 Performance Share Plan award achieving maximum vesting for the performance period ended 31st March 2021. This value was calculated using the average share price from 1st January 2021 to 31st March 2021 (2,981.78 pence).

Aligning pension benefits

As set out in the remuneration policy approved at the 2020 AGM, Robert MacLeod's pension contribution is being reduced to align to the cost of providing pension benefits to other employees in the UK. As a new executive director, under the same policy, Stephen Oxley's pension contribution is already 15% of base salary. Robert MacLeod's pension contribution is being reduced to 20% from 1st April 2021 and to 15% from 1st April 2022.

Shareholding requirements

Executive director shareholdings as at 31st March 2021 for Robert MacLeod and 20th November 2020 for Anna Manz are shown below as a percentage of base salary. Anna Manz is subject to post cessation shareholding requirements in line with our remuneration policy.



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 was approved at the 2020 AGM and applies to all remuneration for the financial year 1st April 2020 onwards. The approved policy can also be found in our 2020 annual report.

Approach to designing the Remuneration Policy

The committee is responsible for 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 incentive plan, 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 incentive 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		
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.	Base salaries will be reviewed annually and any changes normally take effect from 1st April each year. 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. 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. 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. New appointments or promotions will be paid at a level reflecting the executive director's 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.	**Maximum opportunity** No salary increase will be awarded which results in a base salary which exceeds the competitive market range. Details of the current salaries for the executive directors are shown in the Annual Report on Remuneration on page 154.
Benefits		
To provide a market aligned benefits package. 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.	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. Directors' and officers' liability insurance is maintained for all directors. 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 dependants. The company may pay the tax on these benefits. Directors may be assisted with tax advice and tax compliance services. The company will reimburse all reasonable expenses (including any tax thereon) which the executive director is authorised to incur whilst carrying out executive duties.	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. Car benefits will not exceed a total of £25,000 per annum. The cost of medical insurance for an individual executive director and dependants will not exceed £20,000 per annum. Company sick pay is 52 weeks' full pay.

Remuneration policy continued

<table>
<tr><th>Purpose and link to strategy</th><th>Operation (and changes if appropriate) of the element</th><th>Potential value of element and performance measures</th></tr>
<tr><td colspan="3">Pension</td></tr>
<tr><td>Provides for post-retirement remuneration, ensures that the total package is competitive and aids retention.</td><td>All executive directors will be paid a cash supplement in lieu of membership in a pension scheme.</td><td>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.

The current CFO receives a supplement equal to 15% of base salary. The current CEO's supplement is decreasing over time. It was reduced from 25% to 23% on 1st April 2020 and from 23% to 20% on 1st April 2021, and will reduce again to 15% on 1st April 2022.</td></tr>
<tr><td colspan="3">Annual Incentive Plan</td></tr>
<tr><td>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.

The AIP bonus plays a key part in the motivation and retention of executive directors, one of the key requirements for long term growth.

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.</td><td>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.

Deferral
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.

Malus and clawback
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.</td><td>Performance measures
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.

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 pages 154 and 155.

The performance period for annual bonus purposes matches the financial year (1st April to 31st March).

Maximum opportunity and vesting thresholds
Chief Executive – 180% of base salary.

Other executive directors – 150% of base salary.

Threshold vesting will result in a bonus of 15% of maximum opportunity. On target performance will result in 50% payment of the maximum opportunity.</td></tr>
</table>

Purpose and link to strategy	Operation (and changes if appropriate) of the element	Potential value of element and performance measures

Annual Incentive Plan Continued

Adjustments

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).

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.

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.

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.

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:

a) the compound annual growth rate (CAGR) of underlying EPS; and

b) 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.

Remuneration policy continued

Purpose and link to strategy	Operation (and changes if appropriate) of the element	Potential value of element and performance measures
Performance Share Plan Continued		
	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** The prospective weightings, targets and measures for the year commencing 1st April 2021 are shown on page 163. The Remuneration Committee retains the discretion to amend the weightings, targets and the performance measures detailed on page 163 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 163 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.
All employee share plan		
Encourages share ownership	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. 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.	Executive directors are entitled to participate up to the same limits in force from time to time for all employees.

Purpose and link to strategy	Operation (and changes if appropriate) of the element	Potential value of element and performance measures
Shareholding requirements		
To encourage executive directors to build a shareholding in the company and ensure the interests of management are aligned with those of shareholders.	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. 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. Shares that count toward achieving the post-cessation guideline include the same as those while an executive director, except that only shares that become owned after 1st April 2021 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. 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.	The minimum shareholding requirement while an executive director and for the two year period after cessation of employment is as follows: Chief Executive – 250% of base salary. Other Executive Directors – 200% of base salary. 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. There is no requirement for non-executive directors to hold shares but they are encouraged to acquire a holding over time.
Non-executive director fees		
Attracts, retains and motivates non-executive directors with the required knowledge and experience.	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. Non-executive directors are paid a base fee each year with an additional fee for each committee chairmanship or additional role held. 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. In exceptional circumstances, additional fees may be payable to reflect a substantial increase in time commitment. 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.	Details of the current fee levels for the Chairman and non-executive directors are set out in the Annual Report on Remuneration on page 154. The fee levels are set subject to the maximum limits set out in the Articles of Association.

Remuneration policy 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 143.
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 pages 143 and 144.
Annual Incentive Plan	The maximum level of opportunity is as set out in the policy table on pages 144 and 145. 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 pages 145 and 146. 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 143.

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 for any future executive director.

Summary of key provisions of executive directors' service contracts and treatment of payments on termination

	Robert MacLeod	Anna Manz	Stephen Oxley
Date of service agreement	31st January 2014	25th July 2016	12th January 2021
Date of appointment as director	22nd June 2009	17th October 2016	1st April 2021
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	The contracts of employment contain the following restrictions on the director for the following periods from the date of termination of employment: – 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. – non-solicitation of employees – 12 months.		
Summary termination – payment in lieu of notice (PILON)	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 their 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. 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.		
Termination payment – change of control	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.		
Termination – treatment of annual incentive awards	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. 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: 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 their employment contract, termination agreement or similar agreement. In which case the deferred awards will lapse on cessation of employment. 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).		
Termination – treatment of long term incentive awards	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.		
Redundancy arrangements	The director is not entitled to any benefit under any redundancy payments arrangement operated by the company.		
Holiday	Upon termination for any reason, directors will be entitled to payment in lieu of accrued but untaken holiday entitlement.		

Remuneration policy 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 (Chair)	R, N	1st June 2018	31st May 2024	6 months	6 months
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 2022	1 month	1 month
Chris Mottershead	A, R, N	27th January 2015	26th January 2024	1 month	1 month
John O'Higgins	A, R, N	16th November 2017	15th November 2023	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

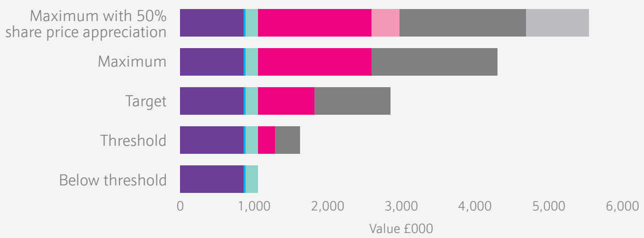
Remuneration scenarios

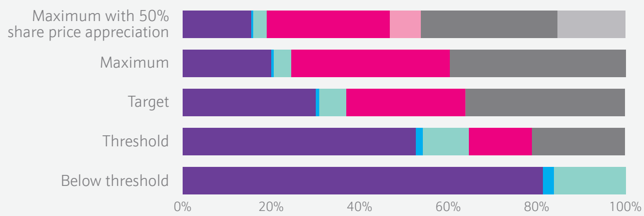
Below is an illustration of the potential future remuneration that could be received by each executive director for the year commencing 1st April 2021, both in absolute terms and as a proportion of the total package under different performance scenarios. The value of the PSP is based on the award that will be granted in August 2021.

Value of package

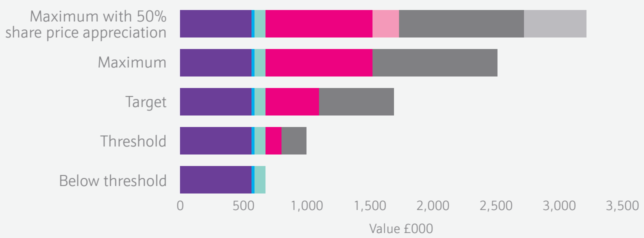
Composition of package

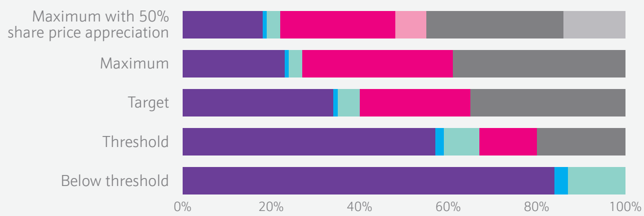
Robert MacLeod





Stephen Oxley





■ Base salary ■ Benefits ■ Pension ■ Bonus ■ Deferred bonus share price appreciation ■ PSP ■ PSP share price appreciation

In developing the scenarios the following assumptions have been made:

Below threshold	Only fixed elements of remuneration (base salary, pension and benefits) are payable
Threshold	Fixed elements of remuneration plus 15% of maximum bonus and 20% vesting of PSP award are payable
Target	Fixed elements of remuneration plus 50% of maximum bonus and 60% vesting of PSP award are payable
Maximum	Fixed elements of remuneration plus 100% of maximum bonus and 100% vesting of PSP award are payable
Maximum plus 50% share price appreciation	Maximum plus a 50% share price appreciation on the PSP award and deferred bonus award

Remuneration in context

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 board has set up country focus groups in China, UK, US and Germany, consisting of diverse groups of 25-30 employees. These groups feed back on a wide variety of topics and provide employee context to decision making.

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 table below sets out how our remuneration arrangements cascade through the organisation:

	Executive directors	Senior managers	Middle managers	Managers	Wider workforce
Base salary	Base salary is set with reference to the relevant local market and takes account of the employee's knowledge, experience and contribution to the role. Base salaries are usually reviewed annually and take into account local salary norms, local inflation and business conditions. Increases in base salary for directors will take into account the level of salary increases granted to all employees within the group.				Base salary is either subject to negotiation with local trade unions or follows the market pay approach outlined for managers.
Pension and benefits	Employment related benefits are offered in line with local market conditions.				
Short term incentives	Annual incentive plan based 80% on financial metrics and 20% on strategic objectives. Compulsory deferral into shares for three years.	Annual incentive plan based on 80% financial or strategic business objectives and 20% individual performance. Compulsory deferral into shares for three years for certain levels within this category.	Annual incentive plan based on 80% financial or strategic business objectives and 20% individual performance.		Annual incentive is either subject to negotiation with local trade unions or follows the standard annual incentive plan framework with financial, non-financial and individual performance measures used.
Long term incentives	Eligible employees may participate in JM's Share Incentive Plan ("ShareMatch"). Two free matching shares are awarded for every one partnership share purchased by the employee subject to an annual maximum employee contribution of GBP 1,500.				
	Performance Share Plan (PSP) awards are subject to a three year performance period and two year holding period. Performance conditions are designed to drive company financial performance and align to stakeholder interests.	PSP awards are subject to a three year performance period. Performance conditions are designed to drive company financial performance and align to stakeholder interests.	Both PSP and Restricted Share Plan (RSP) awards are made dependent on level. PSP awards are subject to a three year performance period and are designed to drive company financial performance and align to stakeholder interests. RSP awards are typically subject to a three year service condition.	RSP awards may be granted as special recognition or to motivate and retain key talent. They are typically subject to a three year service condition.	

Annual Report on Remuneration

This section provides details of how the 2020 Directors' Remuneration Policy was implemented during 2020/21 and how we intend to apply the policy in 2021/22.

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 on pages 102 and 103 including the group Chair Patrick Thomas. Details of attendance at committee meetings during the year ended 31st March 2021 is shown below.

	Date of appointment to committee	Number of meetings eligible to attend	Number of meetings attended	% attended
Chris Mottershead	27th January 2015	7	7	100%
Alan Ferguson[1]	13th January 2011	4	4	100%
Jane Griffiths	1st January 2017	7	7	100%
John O'Higgins	16th November 2017	7	7	100%
Patrick Thomas	1st June 2018	7	7	100%
Xiaozhi Liu	2nd April 2019	7	7	100%
Doug Webb	2nd September 2019	7	7	100%

1 Alan Ferguson stepped down from the board as a Non-Executive Director on 23rd July 2020.

Since the end of the year, the committee has met two 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 is our sole advisor in relation to the advice to the Remuneration Committee, having been appointed following a competitive tender process in 2017. The total fees paid to Korn Ferry in respect of its services to the committee during the year were £37,128 plus VAT. The fees paid to Korn Ferry are based on the standard time and materials market rates Korn Ferry has 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 2020/21 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 2021 is available on our website.

Go online: matthey.com/corporate-governance

Key areas of remuneration committee focus in 2020/21

Wider workforce remuneration	Executive director and GMC remuneration	Governance	Stakeholder management
Considered Johnson Matthey's 2019 UK gender pay gap outcomes.	Approved 2020 pay awards and 2019/20 Annual Incentive Plan payments.	Reviewed the Remuneration Committee terms of reference.	Discussed shareholder consultation feedback and overview of remuneration policy reaction.
Considered below board remuneration principles and objectives and noted below board pay analysis for management level roles.	Approved 2020/21 Annual Incentive Plan measures, including executive director and GMC strategic objectives.	Approved the 2020 remuneration report.	Engaged shareholders on the introduction of an Environmental, Sustainability and Governance measure into the long term incentive.
Considered the 2020/21 Annual Incentive Plan structures below executive director and GMC level.	Approved new CFO and GMC remuneration terms.		
	Discussed impact of COVID-19 on 2020 Performance Share Plan awards, including quantum and performance measures.		

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 2020 AGM and Directors' Annual Report on Remuneration at the July 2020 AGM.

Resolution	Number of votes cast	For	Against	Votes withheld
Remuneration Policy	148,233,329	126,978,681 (85.66%)[1]	21,183,260 (14.29%)[1]	1,552,871
Remuneration Report	149,230,420	140,192,977 (93.94%)[1]	8,966,820 (6.01%)[1]	555,780

1 Percentage of votes cast, excluding votes withheld.

The Remuneration Committee believes that the 85.66% vote in favour of the Directors' Remuneration Policy at the 2020 AGM and the 93.94% vote in favour of the Annual Report on Remuneration at the 2020 AGM showed strong shareholder support for the group's remuneration arrangements at that time.

Annual Report on Remuneration continued

Remuneration for the year ended 31st March 2021

Single figure table of remuneration* (this table is auditable along with any subsequent information marked with a *)

Our Remuneration Policy operated as intended over the year, and the table below sets out the total remuneration and breakdown of the elements each director received in relation to the year ended 31st March 2021, together with a prior year comparative. An explanation of how the figures are calculated follows the table.

	Base salary / fees £'000		Benefits £'000		Pension[1] £'000		Annual incentive £'000		Long term incentive £'000		Total £'000		Total fixed remuneration £'000		Total variable remuneration £'000	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
Executive directors																
Robert MacLeod	838	838	22	22	193	210	1,479	392	–	–	2,532	1,462	1,053	1,070	1,479	392
Anna Manz[2]	340	528	12	19	78	132	–	206	–	–	430	885	430	679	–	206
Non-executive directors																
Patrick Thomas	369	369	–	–	–	–	–	–	–	–	369	369	369	369	–	–
Alan Ferguson[3]	31	98	–	–	–	–	–	–	–	–	31	98	31	98	–	–
Jane Griffiths	67	67	–	–	–	–	–	–	–	–	67	67	67	67	–	–
Chris Mottershead	84	84	–	–	–	–	–	–	–	–	84	84	84	84	–	–
John O'Higgins	79	67	–	–	–	–	–	–	–	–	79	67	79	67	–	–
Xiaozhi Liu	67	64	–	–	–	–	–	–	–	–	67	64	67	64	–	–
Doug Webb	81	39	–	–	–	–	–	–	–	–	81	39	81	39	–	–

1 Represents a cash allowance in lieu of a pension.
2 Anna Manz stepped down from the board as Chief Financial Officer on 20th November 2020.
3 Alan Ferguson stepped down from the board as a Non-Executive Director on 23rd July 2020.

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.
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.
Annual incentives	Annual bonus awarded for the year ended 31st March 2021. The figure includes any amounts deferred and awarded as shares.

Annual bonus for the year ended 31st March 2021*

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 Chief Financial Officer. The 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	Group working capital days[1]	Strategic objectives
Chief Executive	60%	20%	20%
Chief Financial Officer	60%	20%	20%

1 Group working capital days is split 50% total working capital (including precious metals) and 50% total working capital days (excluding precious metals).

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.

Targets for the 2020/21 plan were set in consideration of the potential impact of COVID-19 on our business and the resulting anticipated decline in the automotive industry. The committee also considered the performance range for the group profit measures and concluded that given the ongoing uncertainty and volatility expected in the 2020/21 year, threshold should be set at 90% of the targeted profit number and maximum at 110%. The Remuneration Committee was comfortable that the financial targets were stretching at the time they were set.

The committee revisited the performance targets at the year end to ensure they retained the same level of stretch envisaged when originally set. As a result of that review, given the increase in activity in the automotive industry relative to the time when the targets were set, the committee increased the target for the Group Profit Before Tax performance measure in the 2020/21 annual incentive plan.

The strategic objectives were 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 2021 is set out in the tables below.

Financial measures[1]

Performance measure	Bonus weighting	Threshold	Target	Maximum	Robert MacLeod: Maximum bonus available (% of base salary)	Robert MacLeod: Outcome (% of base salary)
Group underlying PBT[2]	60%	£250m (90% of Target)	£278m[3]	£306m (110% of Target)	108	108
		Actual: £448m (160% of target)				
Group total working capital days (including precious metal)[2]	10%	42 days (105% of Target)	40 days	38 days (95% of Target)	18	18
		Actual: 34 days (86% of target)				
Group working capital days (excluding precious metal)[2]	10%	68 days (105% of Target)	64 days	61 days (95% of Target)	18	18
		Actual: 58 days (89% of target)				
Total bonus for financial measures					**144**	**144**

1 All figures in the table have been rounded to the nearest whole number.

2 Group underlying PBT and group working capital days is measured using budget foreign exchange rates.

3 The original PBT target set was £238 million.

Strategic objectives[1]

Robert MacLeod

Objective	Summary outcome
Objective 1 Execute the group transformation programme to unlock value through improved efficiencies and reduced costs, and ensure that the business is fit for the future to enable delivery in our growth areas such as battery materials, recycling of batteries and the hydrogen economy.	Progress towards the three year target of annualised savings of £225 million by 2022/23 is ahead of plan as a result of effectively and efficiently executing agreed plans with all in year delivery milestones met and cost reductions for the year exceeding original expectations. Continued good progress in establishing our growth business opportunities that will enable decarbonisation and enhance circularity, including our portfolio of eLNO battery materials and hydrogen technologies. The board discussed and agreed the plans and key milestones of our hydrogen technologies growth strategy, including the launch of new capacity to produce products that enable green hydrogen production. In addition, there was solid progress on our Battery Materials plant in Poland and our second commercial plant in Finland as well as the establishment of a number of key strategic partnerships. **Outcome: 44% of 50%**
Objective 2 New group and sector operating models to be defined, with a clear plan to execute. Non-system enabled changes to be largely completed by end of FY21, and system enabled changes / upgrades to be progressed and on track against plan and key milestones.	All target operating models were defined in line with the group principles and presented to the board ahead of the timetable agreed. This process enabled the identification of cost savings targets which were all achieved. The new operating models implemented will simplify operations and enable more agile working across the group and sector and bring ongoing cost savings. The board reviewed the plans for system changes and key delivery milestones were on track against these agreed plans. **Outcome: 23% of 25%**

Annual Report on Remuneration continued

Objective 3	Summary outcome
Enhance senior leadership bench strength, with robust development and succession plans in place for critical roles at both the Group Management Committee (GMC) level and one level below.	A review of GMC roles was undertaken, and an action plan put in place and delivered during the year that enabled a strengthening of the GMC capabilities within the new group and sector operating models. This included the completion of a number of key appointments ahead of expectations including a new CFO (Stephen Oxley), a new General Counsel & Company Secretary (Nick Cooper), a new Chief EHS & Operations Officer (Ron Gerard), and new Health Sector CEO (Niek Stapel). In addition, a review of roles directly below the GMC was undertaken to ensure appropriate leadership and succession was in place. This resulted in a number of internal and external appointments which will not only enhance our near term capabilities but will also provide a pipeline for future succession. Good quality processes are in place to continue further work that will build capabilities and pipeline for the future. **Outcome: 23% of 25%**

Overall	90% achievement of 100%
Robert has performed well against the objectives during the year, and the board is delighted to say that Robert's leadership of JM and the way in which the business and all of its employees where managed and treated during the COVID-19 crisis was of the highest standard.	
Maximum bonus available (% of base salary)	36
Outcome (% of base salary)	**32.4**

At the start of the year, Anna Manz was set a number of strategic objectives that related to the group transformation programme, group and sector operating models, managing working capital, and reviewing the non-core businesses of JM's portfolio. Prior to her leaving, Anna made good progress in all of these areas.

Bonus outcomes

Based on performance against the above targets, total bonuses for the year ended 31st March 2021 were:

	Bonus outcome (% of base salary)			
	Financial measures	Strategic objectives	Total	Value of bonus (£'000)[1]
Robert MacLeod, Chief Executive	144	32.4	176.4	1,479
Anna Manz, Chief Financial Officer[2]	–	–	–	–

1 50% of this figure is deferred into conditional shares subject to a three year vesting period with no further performance conditions.

2 Anna Manz is not eligible to receive a bonus as she left Johnson Matthey on 20th November 2020.

Long term incentives

Performance Share Plan awards vesting for the three year performance period ended 31st March 2021*

The 2018 Performance Share Plan awards were made in August 2018 and performance was measured over the period 1st April 2018 to 31th March 2021. 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.

The awards vest on a straight line basis between threshold (15% vesting) and maximum (100% vesting).

The performance condition for the 2018 award and the actual performance achieved are shown below.

	Weighting	Threshold	Target	Maximum
Compound annual growth rate in earnings per share	100%	4%	7%	10%
		Actual -4%		

The committee also considers Return on Invested Capital when assessing the PSP vesting. This assessment did not change the vesting outcome, which is detailed in the table below.

Executive Directors	% of base salary awarded	Shares awarded	% of award to vest	Shares to vest	Estimated value on vesting £
Robert MacLeod	200	43,833	–	–	–
Anna Manz[1]	175	24,174	–	–	–

1 The 2018 award granted to Anna Manz was lapsed in full on 20th November 2020 when she left Johnson Matthey.

Performance Share Plan awards granted in the year ended 31st March 2021*

The table below provides details of the share awards made to executive directors on 1st August 2020:

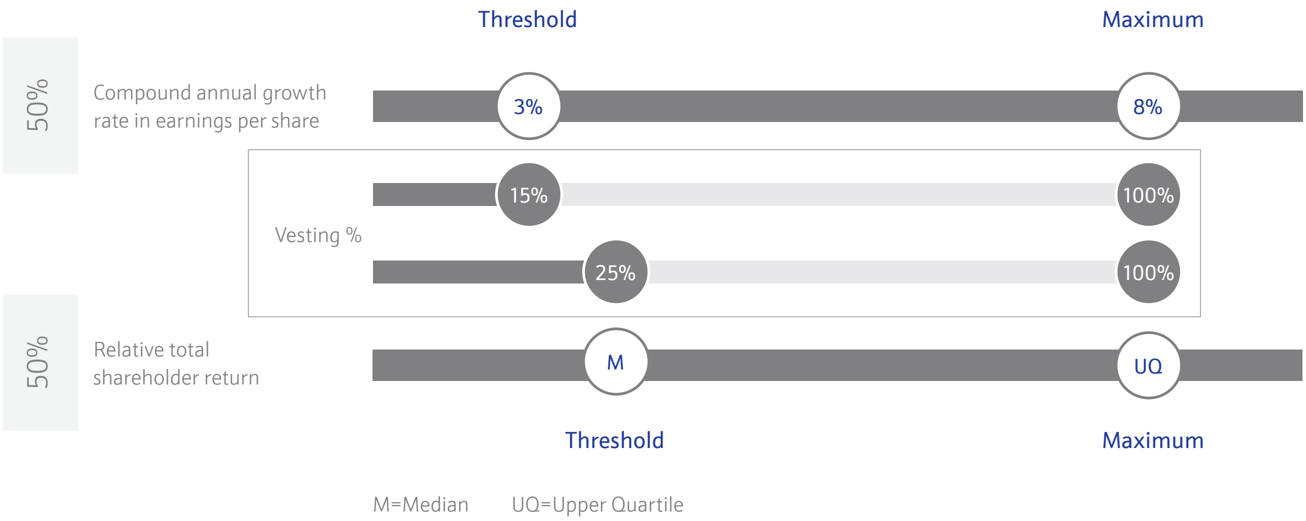
Executive Directors	Award type	Award size (% of base salary)	Number of shares awarded	Face value[1] £	% vesting at threshold[2]	End of performance period	End of holding period
Robert MacLeod	Conditional Shares	200	79,415	£1,676,880	20%	1st August 2023	1st August 2025
Anna Manz[3]	–	–	–	–	–	–	–

1 Face value is calculated using the award share price of 2,111.55 pence, which is the average closing share price over the four week period commencing on 11th June 2020.

2 Threshold vesting is 15% for the EPS measure and 25% for the Relative Total Shareholder Return measure. The value shown is the average threshold vesting for the award.

3 Anna Manz was not eligible for a 2020 PSP award.

The performance targets and vesting ranges for the 2020 award are set out below.



The awards vest on a straight line basis between threshold and maximum. In addition to the EPS and TSR performance conditions, 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 committee has noted the increase in the number of shares granted in 2020 due to the lower share price prevailing at the time the award price was set. The committee will review the vesting levels at the end of the performance period and ensure that the vesting values reflect the underlying business performance and do not result in a windfall gain that is not in line with shareholder experience.

Annual Report on Remuneration continued

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 2021.

	Ordinary shares[1]	Subject to ongoing performance conditions[2]	Not subject to further performance conditions[3]
Executive Directors			
Robert MacLeod	59,556	176,622	44,811
Anna Manz[4]	10,800	–	24,026
Non-Executive Directors			
Patrick Thomas	8,194	–	–
Alan Ferguson[5]	2,078	–	–
Jane Griffiths	2,671	–	–
Chris Mottershead	2,809	–	–
John O'Higgins	1,500	–	–
Xiaozhi Liu	2,000	–	–
Doug Webb	4,000	–	–

1 Includes shares held by the director and / or connected persons, including those in the all employee share matching 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. These awards are not subject to service conditions.

4 Shareholding as at 20th November 2020, when Anna Manz stepped down from the board.

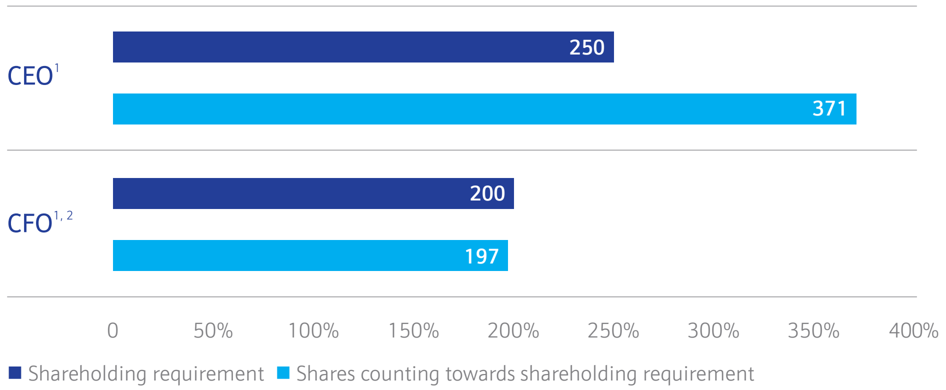
5 Shareholding as at 23rd July 2020, when Alan stepped down from the board.

Directors' interests as at 27th May 2021 were unchanged from those listed above, other than that the trustees of the all employee share matching plan have purchased a further 24 shares for Robert MacLeod.

Executive directors are expected to achieve a shareholding guideline of 250% of base salary for the Chief Executive and 200% for other executive directors, within a reasonable amount of time. 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 incentive plan 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).

From 1st April 2020, a post-cessation shareholding guideline applies that requires 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. 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 2021 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 Performance Share Plan and Deferred Bonus Plan until the required levels of shareholding are achieved.

Executive director shareholdings as at 31st March 2021 as a percentage of base salary are shown below.



1 Value of shares as a percentage of base salary is calculated using a share value of 2,981.78 pence, which was the average share price prevailing between 1st January 2021 and 31st March 2021.

2 Shareholding as at 20th November 2020, when Anna Manz stepped down from the board.

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 23% of base salary in 2020/21, reducing to 20% of base salary from 1st April 2021 and reducing again to 15% of base salary from 1st April 2022. However, Robert MacLeod has 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. Details of the accrued pension benefits of the executive directors as at 31st March 2021 in the UK pension scheme are given below:

	Total accrued annual pension entitlement at 31st March 2021 £'000[2]
Robert MacLeod[1]	11
Anna Manz	–

1 Pension payable from age 65 based on pensionable service in the UK pension scheme up to 31st March 2011.

2 No director would gain any additional benefit by retiring early in line with the scheme rules.

Payments to former directors*

There were no payments made to, or in respect of, any former director in 2020/21 that have not been previously disclosed.

Payments for loss of office*

Anna Manz received no payments for loss of office on leaving Johnson Matthey. The remuneration payable to Anna Manz following her resignation is as follows:

Annual Incentive Plan

Anna Manz will not receive a bonus for the year ended 31st March 2021.

Anna Manz was awarded 6,820 shares under the Deferred Bonus Plan (DBP) in 2018, 5,873 shares under the DBP in 2019 and 4,876 shares under the DBP in 2020. These shares will be released on their normal release dates in August 2021, August 2022 and August 2023 respectively. Dividend equivalent shares will accrue on deferred bonus awards during the relevant vesting period.

Long term incentives

Anna Manz holds an outstanding award under the Long Term Incentive Plan. This relates to the 2016 award, which satisfied performance conditions in August 2019, and which vests in three equal tranches in August 2019, 2020 and 2021. Anna will retain the third tranche of 6,457 shares, which will vest as normal on 1st August 2021. Dividend equivalent shares will accrue on this award between the end of the three year performance period and the date the shares finally vest and are released.

The Performance Share Plan awards granted to Anna Manz in 2018 and 2019 lapsed in full on 20th November 2020. No Performance Share Plan award was made to her in 2020.

Remuneration arrangements for Stephen Oxley

Stephen Oxley joined Johnson Matthey on 1st April 2021 as Chief Financial Officer. His remuneration arrangements are set out below.

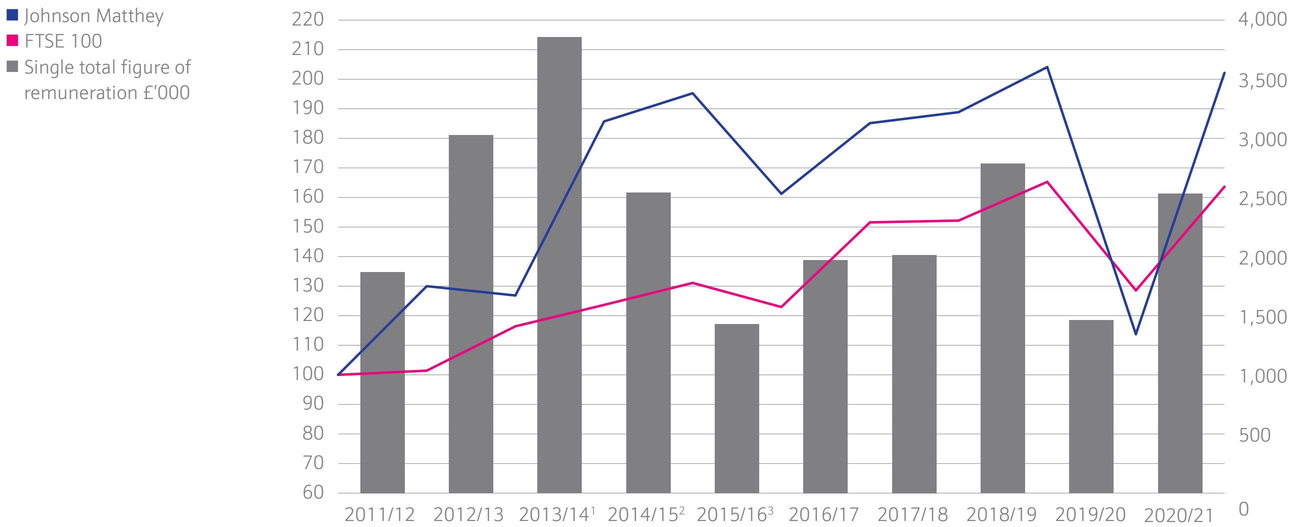
Base salary	£565,000 per annum.
Pension	15% cash supplement.
Benefits	Standard UK benefits, in line with remuneration policy, including: car allowance, medical insurance and health screening, life assurance and ill health benefits, holiday and eligibility to join ShareMatch on the same terms as all UK employees.
Annual Incentive Plan	Maximum opportunity of 150% of base salary, with 50% of any award being deferred into shares for three years.
Performance Share Plan	Maximum opportunity of 175% of base salary. Subject to performance conditions over a three year period, with any vested shares subject to a further two year holding period.
Buy out award	A one off award of 41,500 shares will be granted to Stephen Oxley on 1st August 2021 to compensate for the loss of his KPMG long term deferred cash awards. This award will not be subject to any performance conditions and will vest in August 2024, subject to his continued employment. The remuneration committee believes that this award is comparable to the KPMG awards forgone, albeit the award is in Johnson Matthey shares rather than cash and so is linked to our share price performance. Upon vesting, if Stephen has not satisfied his shareholding requirement at that time, 50% of the net proceeds will need to be held in shares as part of satisfying his shareholding requirement.
Shareholding requirement	200% of base salary, expected to be achieved within four years. Stephen Oxley purchased 5,478 shares in the open market on 8th March 2021 (with a purchase value of £175,814) in order to begin building his shareholding in Johnson Matthey.

Annual Report on Remuneration continued

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 2011 to 31st March 2021 against the FTSE 100 as the most appropriate comparator group, rebased to 100 at 1st April 2011.



Historical data regarding Chief Executive's remuneration

	2011/12	2012/13	2013/14[1]	2014/15[2]	2015/16[3]	2016/17	2017/18	2018/19	2019/20	2020/21
Single total figure of remuneration	1,870	3,025	3,855	2,539	1,429	1,971	2,013	2,784	1,462	2,532
Annual incentives (% of maximum)	75	–	71	54	15	40	69	45	26	98
Long term incentives (% of award vesting)[4]	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 154.

Change in Chief Executive's remuneration

The table below shows how the remuneration of directors, both executive and non-executive, has changed over the year ended 31st March 2021. This is then compared to employees of JM Plc.

	Salary	Bonus[1]	Benefits
Executive Directors			
Robert MacLeod	No change	377% increase	No change in benefits policy. No change on overall costs between 2019/20 and 2020/21
Anna Manz	No change	Not applicable	
Non-Executive Directors			
Patrick Thomas	No change	Not applicable	No change in benefits policy. No change on overall costs between 2019/20 and 2020/21
Alan Ferguson	No change	Not applicable	
Jane Griffiths	No change	Not applicable	
Chris Mottershead	No change	Not applicable	
John O'Higgins[2]	27% increase	Not applicable	
Xiaozhi Liu	No change	Not applicable	
Doug Webb[3]	31% increase	Not applicable	
Comparator group			
JM PLC employees[4]	2% increase	312% increase	No change in benefits policy. No change on overall costs between 2019/20 and 2020/21

1 It was not administratively possible to calculate the individual bonuses due to all employees in the comparator group. As such, the percentage change in bonus was calculated based on the change in bonus accrual taken for JM Plc employees, excluding the Chief Executive, for the 2019/20 and 2020/21 years.

2 Represents the additional fee received for taking the Senior Independent Director role on 23rd July 2020.

3 Represents the additional fee received for taking the Audit Chairman role on 23rd July 2020.

4 Includes promotions and market adjustments.

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 2020 and 31st March 2021.

	Year ended 31st March 2020 £ million	Year ended 31st March 2021 £ million	% change
Payments to shareholders – special dividends	–	–	–
Payments to shareholders – ordinary dividends	167	99	-41%
Total remuneration (all employees)[1]	743	776	3%

1 Excludes termination benefits.

CEO to employee pay ratio

The table below shows the ratio of CEO to employee pay for 2020 and 2021. 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 31st March 2021.

We believe that using total pay and benefits for the year ending 31st March 2021 provides a like for like comparison to the CEO pay data.

CEO pay ratio	2020[1]	2021
Method	A – total pay and benefits in 2019/20	A – total pay and benefits in 2020/21
CEO single figure	1,462,000	2,532,000
Upper quartile	22:1	39:1
Median	**28:1**	**50:1**
Lower quartile	36:1	63:1

1 CEO pay ratio revised to include employee bonuses payable in relation to 2019/20. This changed median from 29:1 to 28:1 and lower quartile from 37:1 to 36:1.

Governance

Annual Report on Remuneration continued

Bonus data for UK employees was omitted from the 2021 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 2022 report. Excluding the 2020/21 bonus payable to the CEO from the calculation would result in the following pay ratios: lower quartile – 26:1, 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 2021 are set out below:

2021	Salary[1]	Total Pay
Upper quartile individual	£52,965	£65,325
Median individual	£32,302	£51,039
Lower quartile individual	£32,855	£40,377

1 Includes shift allowance.

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 and providing the opportunity for individual development and career progression. The pay ratios reflect the difference in role accountabilities which are recognised through our pay structures and the greater variable pay opportunity for more senior positions. 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.

The increase in CEO pay ratio this year is due to the near maximum payout under the annual incentive plan for the year ending 31st March 2021 for Robert MacLeod. It was not administratively possible to calculate the bonus data for the UK employee population before the publication of this report. As such, we have not been able to include this bonus data within the calculations and this affects the ratios disclosed. Our bonus plans cascade through the organisation so our UK employees will see a comparable increase in payout relative to their maximum bonus opportunity. However, as noted above, our executive directors have the highest level of variable remuneration as a percentage of salary, and so the relative pay ratio has increased. There have been no other changes to remuneration arrangements for our UK employees that would impact the CEO pay ratio.

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.

Implementation of the Directors' Remuneration Policy for 2021/22

The table below sets out how the Remuneration Committee intends to apply the Directors' Remuneration Policy for the year ended 31st March 2022.

Salary	The Chief Executive will receive a salary increase of 2% for 2021/22, which is in line with the policy applied to all other UK employees. The Chief Financial Officer is not eligible for a salary increase until 1st April 2022.
Benefits	No change to policy applied in 2021/22.
Pension	New executive directors will have a maximum pension cash supplement of 15%. Robert MacLeod will see his pension cash supplement reduce from 20% to 15% as follows: 1st April 2021 – 20% of base salary 1st April 2022 – 15% of base salary
Annual incentives	The maximum bonus opportunity for 2021/22 remains unchanged at 180% of salary for the Chief Executive and 150% of salary for the Chief Financial Officer. 2021/22 bonus will be based on underlying profit before tax (60%), working capital (20%) and 20% weighting to strategic 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 2021/22 annual bonus have been narrowed compared to 2020/21 to reflect the decrease in uncertainty in the market. The absolute level of profit needing to be achieved has also been reset to better reflect the more positive outlook. The recalibration of targets has been set with reference to both internal and external planning. The 2021/22 targets are considered similarly challenging, if not more challenging to those set in 2020/21. 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 Chief Financial Officer. The long term Performance Share Plan awards will be based on EPS growth targets, subject to achieving a satisfactory level of return on capital invested and relative TSR performance. The 2021 Performance Share Plan award will be 50% based on EPS growth targets and 50% on TSR performance. The range of annualised EPS growth targets that the committee intends to set for the FY 2021/22 awards is higher than the range set for the awards granted in the year under review. The range expected to apply is 4% p.a. growth for 15% vesting, rising to 12% p.a. growth for 100% vesting. This range is above the 3% to 8% range set last year. The committee considers it appropriate to increase the performance range having taken into account the base EPS from which performance will be measured (noting this was impacted by COVID-19) and both current internal planning and external expectations (where available) for our future performance. As part of the committee's discussions a key factor considered was the impact of current metal prices on future EPS. With metal prices at recent historic highs there are clear risks in assuming that these will be sustained over the three year performance period. As a result, the targets set took this into account with the committee noting that it retains discretion to adjust both targets and vesting outcomes if the assumptions on which targets were set are not replicated in practice (e.g. the committee increased the profit target in the FY 2020/21 annual bonus so that it reflected actual activity levels in the automotive market as opposed to basing bonus awards on performance against assumed activity levels when the target was set). Having considered these factors in the round, plus the fact that the EPS targets are subject to a ROIC underpin, the committee was comfortable that the range of intended targets strikes the right balance between being realistic at the lower end of the performance range and stretching at the top end of the range. Overall, the targets were considered similarly challenging to those set in prior years. The committee will revisit both the threshold and maximum performance ranges prior to granting awards in FY 2022/23. 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 2024 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 receive a fee increase in 2021/22, in line with treatment of executive directors and wider global workforce.

This Remuneration Report was approved by the Board of Directors on 27th May 2021 and signed on its behalf by:

Chris Mottershead
Chair of the Remuneration Committee

Directors' Report

Statutory and other information

The Directors' Report required under the Companies Act 2006 (the 2006 Act) comprises the Corporate Governance Report (pages 100 to 170) including the Sustainable Business section for disclosure of our carbon emissions in the Strategic Report (pages 60 to 87). The management report required under Disclosure Guidance and Transparency Rule 4.1.8R comprises the Strategic Report (pages 4 to 97) which includes the risks relating to our business and the Directors' Report.

Business performance		Page reference
Business model	A description of the company's business model is set out in the Strategic Report.	22 – 23
Results	Results for the year ended 31st March 2021 are set out in the Financial Review and the consolidated income statement.	174
Dividends	The interim dividend of 20.00 pence per share (2020: 24.50 pence) was paid in February 2021. The directors recommend a final dividend of 50.00 pence per share in respect of the year (2020: 31.125 pence), making a total for the year of 70.00 pence per share (2020: 55.625 pence), payable on 3rd August 2021 to shareholders on the register at the close of business on 11th June 2021. Other than as referred to under 'Employee share schemes' in this table, 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. 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, and on our website matthey.com	274 – 275
Research and development activities	The Strategic Report details our research and development activities throughout the year.	58 – 59
Future developments	Potential future developments in the group's business can be found in the Strategic Report.	4 – 13
Non-financial key performance indicators	Read more about the group's non-financial key performance indicators.	26 – 30

Directors		Page reference
Directors	Name of directors who served during the financial year and the biographies of the current directors of the company are included in the Corporate Governance Report.	102 – 103
Directors' indemnities and insurance	Johnson Matthey has granted indemnities to each director of the company and its subsidiaries in respect of certain liabilities arising against them in the course of their duties, in relation to the affairs of the company or any group company. 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. The company also maintains appropriate directors' and officers' liability insurance.	

Directors continued		Page reference
Conflicts of interest	The board has a policy to identify and manage directors' conflicts of interest which also extends to cover close family members. As part of this policy, the board completes an annual review of external appointments to consider if any constitute a potential or actual conflict of interest. In the event a conflict of interest is declared, the board will review the authorisation and terms associated to ensure that all matters presented to the board are considered solely with a view of promoting the success of the company. For the year under review, it was determined that there were no potential or actual conflicts of interest.	
External appointments	The board approves all external appointments in advance of acceptance. If an external appointment arises between meetings, this is considered by the Chair and Chief Executive with the assistance of the Company Secretary. In approving each additional external appointment, the time commitment is assessed to ensure that directors have sufficient time to fulfil their duties. This allows the board to ensure that no individuals are considered to be overboarded. During the year, the board considered the additional external appointments for Jane Griffiths (Non-Executive Director at BAE Systems plc and Chair of Advisory Board to RareiTi), Patrick Thomas (Supervisory Board member of Covestro AG), Doug Webb (Non-Executive Director of United Utilities Group PLC) and John O'Higgins (advisor at The Carlyle Group). It was determined that the proposed appointments would further enhance the skills and experience of those individuals, whilst allowing for sufficient time to discharge their role at JM, even with the possibility of additional meetings and time commitments as a result of COVID-19.	
Directors' reappointment	Our Articles of Association (the Articles) provide the rules on director appointments including that all directors will retire and be eligible for re-election at each AGM (except any director appointed after the notice of that AGM meeting has been given and before that AGM has been held). Our Articles are consistent with the recommendation contained within the code.	
Directors' powers	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 this table under the heading 'Authority to purchase own shares'.	
Directors' interests	Details of the interests in the company's shares (or in related derivatives or other financial instruments) held by directors of the company (and of their connected persons) at 31st March 2021, are set out in the Remuneration Report.	158

Directors' Report continued

Constitution		Page reference
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.	
Branches	The company and its subsidiaries have established branches in a number of different countries in which they operate.	
Change of control	As at 31st March 2021 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 to, 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 2021 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 2021 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.	

Stakeholders and policies		Page reference
Corporate governance statement	The Corporate Governance Report is incorporated by reference into this Directors' Report and includes details of our compliance with the code. Our statement includes a description of the main features of our internal control and risk management systems in relation to the financial reporting process and forms part of this Directors' Report. A copy of the 2018 version of the code can be found at the FRC's website frc.org.uk.	100 – 170

Stakeholders and policies continued		Page reference
Section 172 statement and stakeholder engagement	Information about our stakeholders and how the board considers their views in regard to principal decisions can be found in the Corporate Governance Report.	110 – 113
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 UK government's reporting portal.	
	Read more about our enhanced Supplier Code of Conduct.	83
Employee engagement	Our Sustainable Business section in the Strategic Report and the Corporate Governance Report include details on our employee engagement during the year.	71 – 82 109
Diversity and employment of disabled persons	The group is committed to employing a diverse workforce. Information about the diversity policies and practices at company level can be found in the Strategic Report, or the Nomination Committee Report for the board.	73 – 74 125
	Information on the company's policy applied during the year relating to the recruitment, employment, training, career development and promotion of disabled employees can be found in our Strategic Report.	71 – 77
Greenhouse gas emissions	Read more on our greenhouse gas emissions, TCFD reporting and energy efficiency.	64 – 71, 86 – 87
Human rights and anti-bribery and corruption	Read more about the group's human rights and anti-bribery and corruption policies.	71 – 77
Modern slavery and human trafficking statement	The company has approved and published on its website its Modern Slavery Statement in accordance with the Modern Slavery Act 2015.	
Speak Up	We provide employees (and third parties) with an independently run Speak Up helpline to raise concerns anonymously. Further details can be found in the Strategic Report and the Audit Committee Report.	77 134
Political donations	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.	
Events occurring after the reporting period	There have been no important events affecting the company or any subsidiary between 31st March 2021 and the date of approval of this annual report, 27th May 2021.	
Use of financial instruments	Read more 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 in the Strategic Report and Note 31 of the Financial Statements.	41 229 – 234
Related party transactions	Details on the transactions with related parties during the year can be found in Note 36 of the Financial Statements.	239

Directors' Report continued

Shareholders and share capital		Page reference
AGM	Our 2021 AGM will be held on Thursday 29th July 2021 at 11.00 am in the Great Hall, JP Morgan, 60 Victoria Embankment London EC4Y 0JP. We hope that the UK government's roadmap for the easing of COVID-19 restrictions continues to plan so that our AGM can proceed in the traditional format. However, we ask shareholders to consider if attendance at the AGM is necessary and in line with UK government guidance before travelling. A live webcast of the event will be provided to ensure those that cannot attend in person can still participate and ask questions in real time, details of how to join the webcast are included within the Notice of AGM. Shareholders can also send their questions to the company in advance of the AGM by emailing jmir@matthey.com. Questions received in advance of the meeting will be answered on the webcast which will be recorded and available on our website matthey.com/AGM. As set out in the Notice of 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.	
Share capital	As at 31st March 2021, the issued share capital of the company was 193,533,430 ordinary shares of 110$^{49}/_{53}$ pence each (excluding treasury shares) and 5,407,176 treasury shares. There were no purchases, sales or transfers of treasury shares during the year. There were no share allotments during the year.	
Authority to purchase own shares	At the 2020 AGM, shareholders authorised the company to make market purchases of up to 19,353,343 ordinary shares of 110$^{49}/_{53}$ 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 2021 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.	
Rights and obligations attaching to shares	The rights and obligations attaching to the ordinary shares in the company are set out in the Articles. As at 31st March 2021 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 2021 and as at the date of approval of this report: • No person held securities in the company carrying any special rights with regard to control of the company.	

Shareholders and share capital continued		Page reference
Rights and obligations attaching to shares (continued)	• 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. • 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 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	JM'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	JM 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 JMPLY. 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.	275
Employee share schemes	At 31st March 2021, 4,385 current and former employees were shareholders in the company through the group's employee share schemes. Through these schemes, current and former employees held 2,749,742 ordinary shares, 1.42% of issued share capital, excluding treasury shares as at 31st March 2021. Also as at 31st March 2021, 1,971,370 ordinary shares had been awarded but had not yet vested under the company's long term incentive plan to 308 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.	

Directors' Report continued

Shareholders and share capital continued		Page reference
Interests in voting rights	The following information has been disclosed to the company under the Financial Conduct Authority's (FCA) 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 2021:			
Ameriprise Financial Inc.	Direct	84,408	0.04
	Indirect	9,727,409	5.03
BlackRock, Inc.	Indirect[3]	21,004,885	10.83

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.

3 Indirect holdings include qualifying financial instruments and contract for differences.

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, since notification of any change is not required until the next notifiable threshold is crossed, these holdings are likely to have changed. Between 31st March 2021 and the date of this Report, 27th May 2021, the company has been notified of changes in the following interests:

	Nature of holding	Total voting rights[1]	% of total voting rights[2]
BlackRock, Inc.	Indirect[3]	21,395,710	11.04

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.

3 Indirect holdings include qualifying financial instruments and contract for differences.

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.

Asset reunification

The board proactively seeks to reunite shareholders promptly with their shares and dividend payments.

To date, we have successfully reunited £1.3 million of share and dividend payments through our registrar, Equiniti, and its partner ProSearch.

Listing rule disclosures		Page reference
Listing Rule 9.8.4R	Details of the disclosures to be made under Listing Rule 9.8.4R are listed below.	
	• Interest capitalised	203
	• Allotments of equity securities for cash	169
	• Dividend waiver	164
	There are no other applicable disclosures to be made.	

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 financial statements in accordance with applicable law and regulation.

Company law requires the directors to prepare financial statements for each financial year. Under that law the directors have prepared the group financial statements in accordance with international accounting standards in conformity with the requirements of the Companies Act 2006 and the parent company financial statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law). Additionally, the Financial Conduct Authority's Disclosure Guidance and Transparency Rules require the directors to prepare the group financial statements in accordance with international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union.

Under company law, directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the group and parent company and of the profit or loss of the group for that period. In preparing the financial statements, the directors are required to:

- Select suitable accounting policies and then apply them consistently.
- State whether applicable international accounting standards in conformity with the requirements of the Companies Act 2006 and international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union have been followed for the group financial statements and United Kingdom Accounting Standards, comprising FRS 101 have been followed for the parent company financial statements, subject to any material departures disclosed and explained in the financial statements.
- Make judgements and accounting estimates that are reasonable and prudent.
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the group and parent company will continue in business.

The directors are also responsible for safeguarding the assets of the group and parent company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the group's and 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 the financial statements and the Directors' Remuneration Report comply with the Companies Act 2006.

The directors are responsible for the maintenance and integrity of the parent company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

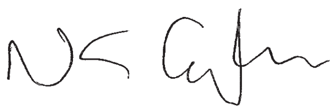
Directors' confirmations

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 parent company's position and performance, business model and strategy.

Each of the directors (who are listed on pages 102 to 103) confirm that, to the best of their knowledge:

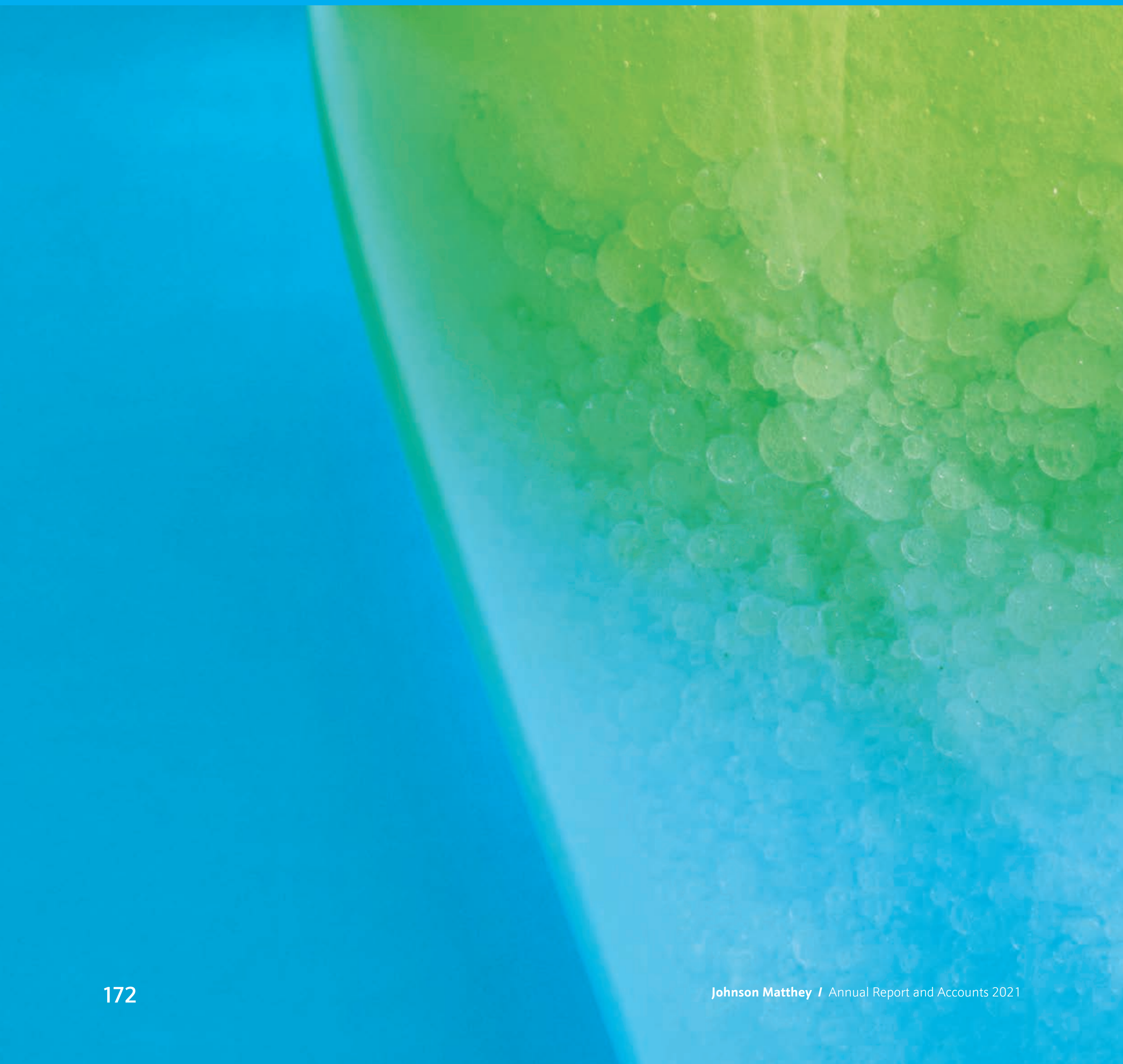
- The group financial statements, which have been prepared in accordance with international accounting standards in conformity with the requirements of the Companies Act 2006 and international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union, give a true and fair view of the assets, liabilities, financial position and profit of the group.
- The parent company financial statements, which have been prepared in accordance with United Kingdom Accounting Standards, comprising FRS 101, give a true and fair view of the assets, liabilities, financial position and profit of the parent company.
- 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.
- As at the date of this report there is no relevant audit information of which the company's auditor is unaware. Each director has taken all the steps he or she should have taken as a director in order to make himself or herself aware of any relevant audit information and to establish that the company's auditor is aware of that information.

The Directors' Report and Responsibilities Statement was approved by the board on 27th May 2021 and is signed on its behalf by:



Nick Cooper
General Counsel and Company Secretary

Accounts



Contents

Case study

Turning waste industrial gases into valuable chemicals to drive down CO_2 emissions

Reaching EU climate targets will be challenging, especially for producers of iron and steel where the processes need high temperatures to proceed and use carbon, in the form of coke, as a raw material. As producers look to reduce their CO_2 emissions by up to 90% by 2050, they need to find creative, cost effective ways to reduce their environmental impact.

We've recently joined a new consortium, called INITIATE, that's taking an innovative approach to this challenge. We know that steel and iron production processes create lots of carbon-rich gases. So we are investigating how to take those gases and use them as a feedstock for producing chemicals. In simple terms – turning redundant gases into valuable chemicals.

Together with our project partners, we will demonstrate how to combine a gas stream containing nitrogen and hydrogen with one containing CO_2 to produce a precursor to the chemical, urea.

Urea has important uses as a fertiliser, as AdBlue® fluid which helps reduce NOx emissions from diesel vehicles, and as a building block for making pharmaceuticals and plastics.

INITIATE has been awarded €21 million of funding by the EU. In addition to demonstrating the concept, the project will also carry out macroeconomic and lifecycle analysis to ensure the sustainability of the process and develop a roadmap for rolling out the technology commercially.

The consortium is bringing together lots of different groups including major steel, urea and energy transition groups, research organisations and experts in circularity, carbon capture and utilisation. It's a great collaboration for JM to be a part of, and another way we're shaping new sustainable and circular solutions to help decarbonise industry for a cleaner healthier world.

Katie Smart
Scientist

Acknowledgements

The INITIATE project has received funding from the European Commission under the Horizon 2020 programme Ref: 958318.

Consolidated Income Statement

for the year ended 31st March 2021

	Notes	2021 £ million	2020 £ million
Revenue	2,3	**15,673**	**14,577**
Cost of sales		(14,654)	(13,576)
Gross profit		**1,019**	**1,001**
Distribution costs		(110)	(126)
Administrative expenses		(404)	(336)
(Loss) / profit on disposal of businesses	30	(1)	2
Amortisation of acquired intangibles	4	(10)	(13)
Major impairment and restructuring charges	6	(171)	(140)
Operating profit	2,4	**323**	**388**
Finance costs	8	(158)	(195)
Finance income	8	73	109
Share of profits of joint ventures and associates	16	–	3
Profit before tax		**238**	**305**
Tax expense	9	(33)	(50)
Profit for the year		**205**	**255**
		pence	pence
Earnings per ordinary share			
Basic	11	106.5	132.3
Diluted	11	106.4	132.1

Consolidated Statement of Total Comprehensive Income

for the year ended 31st March 2021

	Notes	2021 £ million	2020 £ million
Profit for the year		**205**	**255**
Other comprehensive income			
Items that will not be reclassified to the income statement			
Remeasurements of post-employment benefit assets and liabilities	27	(141)	87
Fair value gains / (losses) on equity investments at fair value through other comprehensive income		5	(2)
Tax on items that will not be reclassified to the income statement	10	28	(21)
Total items that will not be reclassified to the income statement		**(108)**	**64**
Items that may be reclassified to the income statement			
Exchange differences on translation of foreign operations	29	(162)	65
Amounts credited to hedging reserve		3	–
Fair value gains / (losses) on net investment hedges		12	(8)
Total items that may be reclassified to the income statement		**(147)**	**57**
Other comprehensive (expense) / income for the year		**(255)**	**121**
Total comprehensive (expense) / income for the year		**(50)**	**376**

The notes on pages 179 to 246 form an integral part of the accounts.

Consolidated and Parent Company Balance Sheets

as at 31st March 2021

	Notes	Group 2021 £ million	Group 2020 £ million	Parent company 2021 £ million	Parent company 2020 £ million
Assets					
Non-current assets					
Property, plant and equipment	*12*	1,424	1,403	307	290
Right-of-use assets	*28*	74	88	15	19
Goodwill	*13*	554	580	115	115
Other intangible assets	*14*	359	396	265	288
Investments in subsidiaries	*15*	–	–	1,921	1,921
Investments in joint ventures and associates	*16*	2	23	–	–
Investments at fair value through other comprehensive income	*17*	53	49	–	7
Other receivables	*20*	50	63	1,315	1,214
Interest rate swaps	*18*	20	34	20	34
Deferred tax assets	*26*	140	66	52	–
Post-employment benefit net assets	*27*	194	317	186	309
Total non-current assets		**2,870**	**3,019**	**4,196**	**4,197**
Current assets					
Inventories	*19*	1,814	1,902	579	779
Current tax assets		13	31	–	–
Trade and other receivables	*20*	2,422	2,077	2,297	2,225
Cash and cash equivalents		581	304	502	214
Other financial assets	*21*	44	28	45	28
Total current assets		**4,874**	**4,342**	**3,423**	**3,246**
Total assets		**7,744**	**7,361**	**7,619**	**7,443**
Liabilities					
Current liabilities					
Trade and other payables	*22*	(3,325)	(2,745)	(4,537)	(4,167)
Lease liabilities	*28*	(11)	(12)	(3)	(3)
Current tax liabilities		(147)	(106)	(36)	(31)
Cash and cash equivalents – bank overdrafts		(36)	(31)	(25)	(20)
Borrowings and related swaps	*23*	(26)	(331)	–	(130)
Other financial liabilities	*21*	(18)	(50)	(22)	(50)
Provisions	*25*	(35)	(11)	(187)	(85)
Total current liabilities		**(3,598)**	**(3,286)**	**(4,810)**	**(4,486)**
Non-current liabilities					
Borrowings and related swaps	*23*	(1,252)	(994)	(1,252)	(994)
Lease liabilities	*28*	(51)	(64)	(13)	(16)
Deferred tax liabilities	*26*	(28)	(74)	–	(32)
Employee benefit obligations	*27*	(98)	(104)	(14)	(12)
Provisions	*25*	(27)	(9)	(18)	(1)
Other payables	*22*	(5)	(6)	(268)	(514)
Total non-current liabilities		**(1,461)**	**(1,251)**	**(1,565)**	**(1,569)**
Total liabilities		**(5,059)**	**(4,537)**	**(6,375)**	**(6,055)**
Net assets		**2,685**	**2,824**	**1,244**	**1,388**
Equity					
Share capital	*29*	221	221	221	221
Share premium		148	148	148	148
Shares held in employee share ownership trust (ESOT)		(29)	(32)	(29)	(32)
Other reserves	*29*	–	142	4	142
Retained earnings[1]		2,345	2,345	900	1,041
Total equity		**2,685**	**2,824**	**1,244**	**1,388**

[1] The parent company's profit for the year is £60 million (2020: £13 million).

The accounts were approved by the Board of Directors on 27th May 2021 and signed on its behalf by:

R J MacLeod
S R Oxley Directors

The notes on pages 179 to 246 form an integral part of the accounts.

Consolidated Cash Flow Statement

for the year ended 31st March 2021

	Notes	2021 £ million	2020 £ million
Cash flows from operating activities			
Profit before tax		238	305
Adjustments for:			
Share of profits of joint ventures and associates		–	(3)
Loss / (profit) on disposal of businesses		1	(2)
Depreciation		158	154
Amortisation		32	24
Impairment losses		122	146
Loss on sale of non-current assets		4	5
Share-based payments		9	(1)
Decrease / (increase) in inventories		19	(575)
Increase in receivables		(430)	(541)
Increase in payables		607	1,115
Increase / (decrease) in provisions		41	(6)
Contributions in excess of employee benefit obligations charge		(7)	(24)
Changes in fair value of financial instruments		(45)	24
Net finance costs		85	86
Income tax paid		(65)	(109)
Net cash inflow from operating activities		**769**	**598**
Cash flows from investing activities			
Interest received		66	104
Purchases of property, plant and equipment		(304)	(332)
Purchases of intangible assets		(77)	(111)
Proceeds from sale of assets held for sale		–	7
Proceeds from sale of non-current assets		5	1
Net proceeds from sale of businesses	*30*	19	–
Net cash outflow from investing activities		**(291)**	**(331)**
Cash flows from financing activities			
Proceeds from borrowings		368	135
Repayment of borrowings		(298)	(123)
Dividends paid to equity shareholders	*29*	(99)	(167)
Interest paid		(159)	(202)
Principal element of lease payments		(14)	(13)
Net cash outflow from financing activities		**(202)**	**(370)**
Increase / (decrease) in cash and cash equivalents		276	(103)
Exchange differences on cash and cash equivalents		(4)	(2)
Cash and cash equivalents at beginning of year		273	378
Cash and cash equivalents at end of year		**545**	**273**
Cash and deposits		119	112
Money market funds		462	192
Bank overdrafts		(36)	(31)
Cash and cash equivalents		**545**	**273**

The notes on pages 179 to 246 form an integral part of the accounts.

Consolidated Statement of Changes in Equity

for the year ended 31st March 2021

	Share capital £ million	Share premium account £ million	Shares held in ESOT £ million	Other reserves (note 29) £ million	Retained earnings £ million	Total equity £ million
At 1st April 2019	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 29)	–	–	–	–	(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
Profit for the year	–	–	–	–	205	205
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	(141)	(141)
Fair value gains on investments at fair value through other comprehensive income	–	–	–	5	–	5
Exchange differences on translation of foreign operations	–	–	–	(162)	–	(162)
Amounts credited to hedging reserve	–	–	–	3	–	3
Fair value gains on net investment hedges taken to equity	–	–	–	12	–	12
Tax on other comprehensive income	–	–	–	–	28	28
Total comprehensive (expense) / income	–	–	–	(142)	92	(50)
Dividends paid (note 29)	–	–	–	–	(99)	(99)
Share-based payments	–	–	–	–	16	16
Cost of shares transferred to employees	–	–	3	–	(10)	(7)
Tax on share-based payments	–	–	–	–	1	1
At 31st March 2021	**221**	**148**	**(29)**	**–**	**2,345**	**2,685**

The notes on pages 179 to 246 form an integral part of the accounts.

Parent Company Statement of Changes in Equity

for the year ended 31st March 2021

	Share capital £ million	Share premium account £ million	Shares held in ESOT £ million	Other reserves (note 29) £ million	Retained earnings £ million	Total equity £ million
At 1st April 2019	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 29)	–	–	–	–	(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
Profit for the year	–	–	–	–	60	60
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	(135)	(135)
Impairment losses on equity investments through other comprehensive income	–	–	–	(3)	–	(3)
Amounts charged to hedging reserve	–	–	–	(3)	–	(3)
Tax on other comprehensive income	–	–	–	–	26	26
Total comprehensive expense	–	–	–	(6)	(49)	(55)
Dividends paid (note 29)	–	–	–	–	(99)	(99)
Share-based payments	–	–	–	–	15	15
Cost of shares transferred to employees	–	–	3	–	(9)	(6)
Tax on share-based payments	–	–	–	–	1	1
At 31st March 2021	**221**	**148**	**(29)**	**4**	**900**	**1,244**

The notes on pages 179 to 246 form an integral part of the accounts.

Notes on the accounts
for the year ended 31st March 2021

1 Accounting policies

Basis of accounting and preparation – group

The financial statements of the group have been prepared on a going concern basis in accordance with International Accounting Standards (IAS) in conformity with the requirements of the Companies Act 2006. The financial statements are also prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), adopted pursuant to Regulation (EC) No 1606/2002 as it applies to the European Union, including the interpretations issued by the IFRS Interpretations Committee.

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.

Going concern

The group has navigated positively through the COVID-19 pandemic, with financial performance above the directors projections both in terms of operating profit and cash flow when compared to base case projections set in the prior year going concern assessment. As at 31st March 2021, the group maintains a strong balance sheet, with over £1.5 billion of available liquidity and undrawn committed facilities. Our net debt has improved by £0.3 billion since 31st March 2020 and we have made £nil drawings under committed facilities.

The directors have reviewed the base case scenario forecasts for the group and have a reasonable expectation that there are no material uncertainties that cast doubt about the group's ability to continue operating for at least twelve months from the date of signing these financial statements. In forming this view, the base case scenario was stress tested to represent a severe but plausible downside case scenario which modelled a material deterioration in trading volumes. The directors consider this to be an extreme scenario given it is significantly adverse to market projections.

In both scenarios outlined above, the group has sufficient headroom against committed facilities and key financial covenants are not in breach during the going concern period. Accordingly, the directors continue to adopt the going concern basis in preparing the financial statements, (see going concern section on pages 40 and 41).

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 international accounting standards in conformity with the requirements of the Companies Act 2006, but makes amendments where necessary to comply with the Act 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*.

Notes on the accounts continued

for the year ended 31st March 2021

1 Accounting policies (continued)

Basis of accounting and preparation – parent company (continued)

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.

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.

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.

1 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.

For more detail of our revenue recognition policy see note 3.

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.

Notes on the accounts continued

for the year ended 31st March 2021

1 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 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:

- buildings – 30 years; and
- plant and machinery – 4 to 10 years.
- land is not depreciated.

The expected lives of property, plant and equipment tends to be short to medium term, as such the physical risk posed by climate change in the long term is low.

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

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.

1 Accounting policies (continued)

Leases (continued)

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.

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 the impairment of 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.

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.

Notes on the accounts continued

for the year ended 31st March 2021

1 Accounting policies (continued)

Financial instruments (continued)

Derivative financial instruments (continued)

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.

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.

1 Accounting policies (continued)

Taxation (continued)

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 virtually certain.

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. 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 stocktakes 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.

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.

Notes on the accounts continued

for the year ended 31st March 2021

1 Accounting policies (continued)

Sources of estimation uncertainty (continued)

Goodwill, other intangibles and other assets (continued)

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 then extrapolated using long term growth rates, and the pre-tax discount rates used in discounting projected cash flows.

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 27 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 income tax liabilities at 31st March 2021 of £147 million (2020: £106 million) include tax provisions of £102 million (2020: £106 million) and the estimation of the range of possible outcomes is an increase in those liabilities by £97 million (2020: £106 million) to a decrease of £78 million (2020: £90 million). 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.

Deferred tax assets

Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary difference can be utilised, based on management's assumptions relating to future taxable profits.

Determination of future taxable profits requires application of judgement and estimates, including: market share, expected changes to selling prices, product profitability, precious metal prices and other direct input costs, based on management's expectations of future changes in the markets using external sources of information where appropriate. The estimates take account of the inherent uncertainties, constraining the expected level of profit as appropriate. Changes in these estimates will affect future profits and therefore the recoverability of the deferred tax assets.

Refining process and stocktakes

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 five million ounces of platinum group metals per annum with a market value of around £11 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 stock take 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.

Stocktakes 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. Stocktakes 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.

1 Accounting policies (continued)

Sources of estimation uncertainty (continued)

Climate change

The impact of climate change presented in the group's Strategic Report (see page 2) and the stated net zero targets have been considered in preparing the group accounts.

The following considerations were made:

Impact on the going concern period and viability of the group over the next three years. The latest forecasts reflect the continuous investment in sustainable technologies including commercialisation of our high nickel cathode material, eLNO, products used in green hydrogen production and higher performance fuel cell components for a range of automotive, non-automotive and stationary applications.

The potential impact of climate change on a number of areas within the financial statements has been considered, including:

- The forecasts of cash flows used in impairment assessments for the carrying value of non-current assets including goodwill (see note 5).
- Impairment considerations related to the decommissioning of Clean Air's plants.
- Recoverability of deferred tax assets which are expected to be recovered in five years (see note 26).
- The expected lives of fixed assets and their exposure to the physical risk posed by climate change.

Judgements made in applying accounting policies

Metal

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, 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.

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. Judgement is required to determine if an outflow of economic resources is probable, or possible but not probable for such events. Where it is probable, a liability is recognised and further judgement is used to determine the amount of the provision. Where it is possible but not probable, further judgement is used to determine if the likelihood is remote, in which case no disclosures are provided; if the likelihood is not remote then judgement is required to determine the contingent liability disclosed. Provisions and contingent liabilities are set out in notes 25 and 35, 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

Interest Rate Benchmark Reform Phase 2 – Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16

The IBOR reform, Phase 2 amendments were effective for annual periods beginning on or after the 1st January 2021. The Phase 2 amendments address issues that arise from implementation of the reforms, including the replacement of one benchmark with an alternative one. A practical expedient is provided such that the change to contractual cash flows for financial assets and liabilities (including lease liabilities) is accounted for prospectively by revising the effective interest rate. In addition, hedge accounting will not be discontinued solely because of the IBOR reform. The amendments are not expected to have a material impact on the results or financial position of the group.

Notes on the accounts continued

for the year ended 31st March 2021

1 Accounting policies (continued)

Changes in accounting policies (continued)

Interest Rate Benchmark Reform Phase 2 – Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 (continued)

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, before the amendments are effective for the group.
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 2020, but did not have a significant effect on their reported results or net assets:

- Amendments to References to Conceptual Framework in IFRS Standards
- Amendments to IAS 1 and IAS 8: *Definition of Material*
- Amendments to IFRS 3: *Definition of a Business*.

The group has elected not to apply the exemption granted in the 'COVID-19 related rent concessions' amendment to IFRS 16, Leases, as the group has not received material COVID-19 related rent concessions as a lessee.

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 38.

2 Segmental information

Revenue, sales and underlying operating profit by sector

Excluding Corporate costs, the group has four core operating sectors, aligned to the needs of our customers and the global challenges we are tackling.

Clean Air – provides catalysts for emission control after-treatment systems to remove harmful emissions from vehicles. Catalysts are provided for light duty vehicles powered by diesel and gasoline, heavy duty diesel trucks, buses, and non-road equipment.

Efficient Natural Resources – provides products and processing services for the efficient use and transformation of critical natural resources including oil, gas, biomass and platinum group metals.

Health – develops and manufactures active pharmaceutical ingredients (APIs) for a variety of treatments and new drugs during their lifecycle, including for initial clinical evaluation and subsequently for commercial supply post regulatory approval.

New Markets – a portfolio of businesses with particular focus on potential growth and value realisation opportunities. This includes battery systems for a range of applications, fuel cell technologies and battery materials for automotive applications. The sector also develops products found in devices used in medical procedures and advanced catalysts for pharmaceutical and agricultural chemicals markets.

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 42 to 57. The performance of the group's operating sectors is assessed on sales and underlying operating profit (see note 38). Sales between segments are made at market prices, taking into account the volumes involved.

Year ended 31st March 2021	**Clean Air £ million**	**Efficient Natural Resources £ million**	**Health £ million**	**New Markets £ million**	**Corporate £ million**	**Eliminations £ million**	**Total £ million**
Revenue from external customers	6,985	7,916	238	534	–	–	**15,673**
Inter-segment revenue	2	4,851	–	53	–	(4,906)	**–**
Revenue	**6,987**	**12,767**	**238**	**587**	**–**	**(4,906)**	**15,673**
External sales	2,412	921	236	353	–	–	**3,922**
Inter-segment sales	–	136	1	3	–	(140)	**–**
Sales[1]	**2,412**	**1,057**	**237**	**356**	**–**	**(140)**	**3,922**
Underlying operating profit[1]	**269**	**268**	**31**	**9**	**(73)**	**–**	**504**

Year ended 31st March 2020	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Eliminations £ million	Total £ million
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)	–
Sales[1]	**2,618**	**1,079**	**223**	**389**	**–**	**(139)**	**4,170**
Underlying operating profit[1]	**295**	**256**	**27**	**(1)**	**(38)**	**–**	**539**

[1] Sales and underlying operating profit are non-GAAP measures (see note 38). Sales excludes the sale of precious metals. 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 2021

2 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	2021	2020
US dollar / £	1.31	1.27
Euro / £	1.12	1.14
Chinese renminbi / £	8.85	8.85

	Year ended 31st March 2021 £ million	Year ended 31st March 2020 At last year's rates £ million	Year ended 31st March 2020 At this year's rates £ million	Change at this year's rates %
Clean Air	2,412	2,618	2,590	-7
Efficient Natural Resources	1,057	1,079	1,069	-1
Health	237	223	220	+8
New Markets	356	389	380	-6
Inter-segment sales	(140)	(139)	(139)	
Sales[1]	**3,922**	**4,170**	**4,120**	**-5**
Clean Air	269	295	293	-8
Efficient Natural Resources	268	256	253	+6
Health	31	27	27	+15
New Markets	9	(1)	(2)	n/a
Corporate	(73)	(38)	(38)	
Underlying operating profit[1]	**504**	**539**	**533**	**-5**

Reconciliation from underlying operating profit to operating profit by sector

Year ended 31st March 2021	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Total £ million
Underlying operating profit[1]	**269**	**268**	**31**	**9**	**(73)**	**504**
Amortisation of acquired intangibles	(2)	(6)	–	(2)	–	**(10)**
Major impairment and restructuring charges (note 6)	(102)	(21)	(17)	(7)	(24)	**(171)**
Operating profit	**165**	**241**	**14**	**–**	**(97)**	**323**

Year ended 31st March 2020	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Total £ million
Underlying operating profit[1]	**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 (note 6)	(56)	–	(17)	(57)	(10)	**(140)**
Operating profit	**236**	**250**	**10**	**(62)**	**(46)**	**388**

[1] Sales and underlying operating profit are non-GAAP measures (see note 38). Sales excludes the sale of precious metals. 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.

2 Segmental information (continued)

Other segmental information

Year ended 31st March 2021	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Total £ million
Segmental net assets	**1,480**	**705**	**469**	**310**	**353**	**3,317**
Net debt (note 38)						**(775)**
Post-employment benefit net assets and liabilities						**96**
Deferred tax net assets						**112**
Provisions and non-current other payables						**(67)**
Investments in joint ventures and associates						**2**
Net assets						**2,685**
Property, plant and equipment	94	67	24	87	11	**283**
Intangible assets	1	4	5	21	44	**75**
Capital expenditure	**95**	**71**	**29**	**108**	**55**	**358**
Depreciation	67	49	20	12	10	**158**
Amortisation	8	8	1	2	13	**32**
Impairment losses (notes 5 and 6)	51	34	11	4	22	**122**
Total	**126**	**91**	**32**	**18**	**45**	**312**

Year ended 31st March 2020	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Corporate £ million	Total £ million
Segmental net assets	**1,361**	**1,267**	**520**	**236**	**332**	**3,716**
Net debt (note 38)						**(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 ventures and associates						**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 (notes 5 and 6)	55	1	18	66	6	**146**
Total	**124**	**58**	**40**	**82**	**20**	**324**

Notes on the accounts continued

for the year ended 31st March 2021

3 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.

Sub-sector	Primary industry	Principal products and services	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	Point in time	On despatch or delivery
		Process technology licences	Over time	Based on costs incurred or straight-line over the licence term[1]
		Engineering design services	Over time	Based on costs incurred
Platinum Group Metal Services	Various	Platinum Group Metal refining and recycling services	Over time	Based on output
		Other precious metal products	Point in time	On despatch or delivery
		Platinum Group Metal chemical and industrial products	Point in time	On despatch or delivery
Advanced Glass Technologies	Automotive	Precious metal pastes and enamels	Point in time	On despatch or delivery
Diagnostic Services	Oil and gas	Detection, diagnostic and measurement solutions	Over time	Based on costs incurred
Health				
Generics	Pharmaceuticals	Manufacture of active pharmaceutical ingredients	Point in time	On despatch or delivery
Innovators	Pharmaceuticals	Development and manufacture of active pharmaceutical ingredients	Over time	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.

3 Revenue (continued)

Revenue judgements

Over time revenue

Over time revenue recognition predominantly occurs in Efficient Natural Resources (Refining Services) and Health, see criteria for over time recognition as defined by the groups accounting policies in note 1.

Refining Services

The majority of the metal processed by the group 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 providing a service to enhance an asset controlled by the customer. The customer controls the metal throughout the refining process, the key indicators being legal ownership, metal price risk and that the customer has the right to claim the equivalent metal at all stages of processing.

The performance obligation contained in all refining contracts is a service arrangement to refine customer metal to a specified quality and volume by a certain date. For a contract that has multiple metals, the refinement of each metal is a separate performance obligation. We receive the contracted cash fee which is set with reference to market price at the start of the contract. Upon delivery of the refined metal to the customer, the percentage of the refined metal that we may retain at settlement is considered to be a non-cash consideration and is recognised as part of revenue at fair value.

Revenue from refining services is recognised using an output method by estimating the progress of the metal in the refining process. Once the customer metal is in the refining process it is commingled with metal from other customers and it is not separately identifiable. Because we have a consistent volume of metal flowing through the refinery process, we estimate that all of the metal in the refinery is on average 50% of the way through the process. We therefore recognise up to 50% of the revenue (cash service fee and non-cash consideration) for our services when metal enters the refining process. Since refining each type of metal is a separate performance obligation, once we have returned the metal to the customer, we recognise the remaining 50% of revenue for that particular metal while other metal may still be due to the same customer.

Health and New Markets

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. These products and services are highly specialised assets with no alternative use and we have an enforceable right to payment (including reasonable profit margin) for performance completed to date according to the contracts.

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. Most of the group's and parent company's contracts satisfy the point in time criteria.

Notes on the accounts continued

for the year ended 31st March 2021

3 Revenue (continued)

Revenue from external customers by principal products and services

Year ended 31st March 2021	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Total £ million
Metal	4,573	6,995	2	181	**11,751**
Heavy Duty Catalysts	741	–	–	–	**741**
Light Duty Catalysts	1,641	–	–	–	**1,641**
Catalyst Technologies	–	436	–	–	**436**
Platinum Group Metal Services	–	376	–	–	**376**
Advanced Glass Technologies	–	66	–	–	**66**
Diagnostic Services	–	43	–	–	**43**
Generics	–	–	146	–	**146**
Innovators	–	–	90	–	**90**
Alternative Powertrain	–	–	–	225	**225**
Medical Device Components	–	–	–	60	**60**
Life Science Technologies	–	–	–	50	**50**
Other	30	–	–	18	**48**
Revenue	**6,985**	**7,916**	**238**	**534**	**15,673**

Year ended 31st March 2020	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Total £ million
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**

Revenue from external customers by point in time and over time performance obligations

Year ended 31st March 2021	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Total £ million
Revenue recognised at a point in time	6,985	7,579	157	528	**15,249**
Revenue recognised over time	–	337	81	6	**424**
Revenue	**6,985**	**7,916**	**238**	**534**	**15,673**

Year ended 31st March 2020	Clean Air £ million	Efficient Natural Resources £ million	Health £ million	New Markets £ million	Total £ million
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**

3 Revenue (continued)

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	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
UK	3,354	3,275	990	1,007
Germany	1,512	1,422	251	271
Rest of Europe	2,035	2,125	384	366
USA	2,457	2,750	422	483
Rest of North America	625	477	46	48
China (including Hong Kong)	2,632	2,182	216	224
Rest of Asia	1,997	1,288	135	148
Rest of World	1,061	1,058	19	6
			2,463	**2,553**
Investments at fair value through other comprehensive income			53	49
Interest rate swaps			20	34
Deferred income tax assets			140	66
Post-employment benefit net assets			194	317
Total	**15,673**	**14,577**	**2,870**	**3,019**

Major customers

The group received £1.9 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 2021 (2020: £1.8 billion of revenue from one external customer in the Clean Air sector).

Unsatisfied performance obligations

At 31st March 2021, for contracts that had an original expected duration of more than one year, the group had unsatisfied performance obligations of £921 million (2020: £397 million), representing contractually committed revenue to be recognised at a future date. Of this amount, £361 million (2020: £88 million) is expected to be recognised within one year and £560 million (2020: £309 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 it does not have any customer 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 2021

4 Operating profit

Operating profit is arrived at after charging / (crediting):

	2021 £ million	2020 £ million
Total research and development expenditure	194	199
Less: Development expenditure capitalised	(22)	(23)
Research and development expenditure charged to the income statement	172	176
Less: External funding received – from governments	(12)	(13)
– from other organisations	–	(1)
Net research and development expenditure charged to the income statement	**160**	**162**
Inventories recognised as an expense	13,689	12,585
Write-down of inventories recognised as an expense	27	70
Reversal of write-down of inventories from increases in net realisable value	(12)	(17)
Net gains on foreign exchange	(56)	(17)
Net losses on foreign currency forwards at fair value through profit or loss	58	24
Past service credit	(3)	(20)
Depreciation of:		
Property, plant and equipment	144	140
Right-of-use assets	14	14
Depreciation	**158**	**154**
Amortisation of:		
Internally generated intangible assets	3	3
Acquired intangibles	10	12
Other intangible assets	19	9
Amortisation	**32**	**24**
Impairment losses included in administrative expenses	31	10
Impairment losses included in amortisation of acquired intangibles	–	1
Impairment losses (note 5)	**31**	**11**
Impairment losses included in major impairment and restructuring charges	91	135
Restructuring charges included in major impairment and restructuring charges	80	5
Major impairment and restructuring charges (note 6)	**171**	**140**
Fees payable to the company's auditor and its associates for:		
The audit of these accounts	2.0	1.2
The audit of the accounts of the company's subsidiaries	2.3	2.2
The audit of prior period accounts	0.7	0.9
Total audit fees	**5.0**	**4.3**
Audit-related assurance services	0.3	0.2
Other services	–	0.4
Total non-audit fees	**0.3**	**0.6**
Total fees payable to the company's auditor and its associates	**5.3**	**4.9**

No audit fees were paid to other auditors (2020: £nil).

Audit-related assurance services predominantly comprise of reviews of interim financial information.

Amortisation and impairment of acquired intangibles which arose on the acquisition of businesses totalled £10 million (2020: £13 million).

Please see note 5 for the impairment losses in administration expenses and note 6 for the major impairments and restructuring charges.

5 Impairment losses

During the year ended 31st March 2021, as part of our review for impairment triggers an impairment loss has been recognised in the group income statement within underlying operating profit. These losses are stated below:

	2021 £ million	2020 £ million
Impairment losses included in administrative expenses		
– other intangible assets	8	1
– property, plant and equipment	2	9
– investments in joint ventures and associates	21	–
Impairment losses included in amortisation of acquired intangibles		
– other intangible assets	–	1
Total impairment losses	**31**	**11**

The group recognised impairments during the year in relation to its investments in associates, Shanghai Bi Ke Clean Energy Technology Co Ltd (£17 million) and, Qingdao Johnson Matthey Hero Catalyst Company Ltd (£4 million), see note 16.

The group monitors impairment triggers and performs impairment reviews as directed by accounting policies which resulted in additional impairments of £10 million. Prior year impairments recognised in administrative expenses include an impairment in respect of demonstration plants for Battery Materials eLNO (£8 million).

Goodwill

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 cash-generating units (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.

Significant 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	
	2021 £ million	2020 £ million	2021 £ million	2020 £ million
Clean Air				
– Heavy Duty Catalysts	83	88	–	–
Efficient Natural Resources				
– Catalyst Technologies	264	272	113	113
– Diagnostic Services	49	49	–	–
– Other	2	2	–	–
Health				
– Generics[1]	117	117	–	–
– Innovators	26	29	2	2
New Markets[2]	13	23	–	–
Total carrying amount at 31st March (note 13)	**554**	**580**	**115**	**115**

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 £5 million.

Notes on the accounts continued

for the year ended 31st March 2021

5 Impairment losses (continued)

Goodwill (continued)

Significant CGUs (continued)

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.

The expected economic life of the Heavy Duty Catalysts CGU has been restricted to 2040 reflecting climate change targets. In the medium term, growth will come from tightening emissions legislation driving demand for more sophisticated catalyst systems. Beyond the medium term, the world will increasingly use alternatives to the internal combustion engine.

Pre-tax discount rates, derived from the group's post-tax weighted average cost of capital of 6.3% (2020: 6.5%), 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	
	2021	2020	**2021**	2020
Clean Air				
– Heavy Duty Catalysts	9.3%	9.8%	-1.2%	-1.2%
Efficient Natural Resources				
– Catalyst Technologies	8.7%	8.3%	2.5%	2.8%
– Diagnostic Services	9.2%	9.7%	1.3%	1.3%
Health				
– Generics	8.6%	9.9%	2.0%	2.0%
– Innovators	8.5%	8.4%	3.0%	3.0%

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 year four is expected to be 0% (2020: 1% for years four to ten). After that, growth is expected to slow and, therefore, the long term growth rate above is used for year five onwards.

Different long term growth rates are used for the Health – Generics and Innovators CGUs 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 6% (2020: 4%). The long term growth rate above is used for year eleven onwards.

Sensitivity analysis

The headroom for the significant CGUs, calculated as the difference between net assets including allocated goodwill at 31st March 2021 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 as at 31st March 2021 £ 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	486	427	411
Efficient Natural Resources			
– Catalyst Technologies	793	575	560
– Diagnostic Services	60	42	40
Health			
– Generics	183	90	83
– Innovators	367	287	282

A reduction in the Heavy Duty Catalysts CGU's expected economic life by one year to 2039, reduces headroom by approximately £30 million from £486 million.

6 Major impairment and restructuring charges

The below amounts are excluded from the underlying operating profit of the group.

	2021 £ million	2020 £ million
Property, plant and equipment	31	90
Right-of-use assets	1	1
Goodwill	–	7
Other intangible assets	59	31
Inventories	–	(3)
Trade and other receivables	–	9
Impairment losses	**91**	**135**
Restructuring charges	**80**	**5**
Total major impairments and restructuring charges	**171**	**140**

Major impairment and restructuring charges are shown separately on the face of the income statement and excluded from underlying operating profit (see note 38)

Through our programme of active efficiency initiatives, we are transforming our organisation to create a more simple and efficient group, allowing us to act with greater agility and pace in a dynamic external environment. This includes the consolidation of our Clean Air manufacturing footprint and implementation of the new group operating model. Total costs associated with the group's programme amount to £311 million of which £140 million was recognised in prior periods, and £171 million during this year:

- **Clean Air manufacturing plants**, We have accelerated the rebalancing of production into our key plants in North Macedonia, and new facilities in Poland and China to create a simplified and agile structure. As a result, the carrying value of our plant that was impaired in the prior year was further impaired by £19 million to £2 million, together with associated information systems (£30 million). The impairments were 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 – based on the IFRS 13 fair value hierarchy). The Clean Air restructuring charge was £53 million and includes substantial implementation and redundancy costs.
- **Efficient Natural Resources operating model**, The operating model initiative targets to remove duplication, standardise global systems and processes and reduce complexity to increase overall effectiveness and efficiency. The Efficient Natural Resources restructuring charge was £10 million and includes substantial redundancy costs.
- **Efficient Natural Resources site closure**, The operating model workstream within Efficient Natural Resources includes closure of the Catacel Ravenna facility in Ohio which we acquired in 2014. The site was closed in February 2021 and results in a £7 million impairment charge. A further restructuring charge of £4 million for site closure and redundancy costs was recognised.
- **Health footprint consolidation**, Closure of a production unit in Scotland was announced during the year. Operations will be wound down over the next two years with production transferred to other units, this results in a £5 million impairment charge. The sector is also right-sizing another business unit, combined with this a further restructuring charge of £6 million is recognised of which the majority is redundancy and compliance costs, associated information systems were impaired by £6 million.
- **Battery Materials LFP business**, In the prior year, the Battery Materials lithium iron phosphate (LFP) business was impaired by £57 million. This was due to the anticipated site closure following sales that fell short of expectations and focusing our science and innovative solutions on cathode materials that are truly market leading, principally eLNO, our ultra-high energy density cathode material. During the year a plant including associated inventory that was previously written down to £nil was sold for £3 million, a decision to close the remainder of the LFP site was announced which resulted in closure costs of £5 million.
- **New Markets businesses**, Our drive for efficiency and disciplined capital allocation enhances returns, and we continue to actively manage our portfolio. In November 2020, we divested our activities in Water and Atmosphere Control Technologies which is not core in our growth strategy. In accordance with IFRS 5, the businesses were disclosed as a disposal group held for sale in our half year results which resulted in a £4 million impairment charge following a fair value assessment of Water. Other restructuring activities within New Markets results in a restructuring charge of £1 million related to redundancy costs.
- **Group wide organisational efficiencies**, The group function is reviewing the existing corporate functional organisation structures, cost base and efficiency opportunities. In the year to 31st March 2021, £4 million had been charged for restructuring costs and a £20 million impairment charge following a review of the scope of the roll out of the global enterprise resource planning (ERP).

Notes on the accounts continued

for the year ended 31st March 2021

7 Employee information

Employee numbers

	2021	2020
Clean Air	5,602	6,087
Efficient Natural Resources	3,913	3,981
Health	914	878
New Markets	1,994	1,927
Corporate	1,137	1,066
Monthly average number of employees	**13,560**	**13,939**

The number of temporary employees included above at 31st March 2021 is 543 (2020: 583).

The monthly average number of employees in the parent company is 3,878 (2020: 3,654).

	At 31st March 2021			At 31st March 2020		
	Actual employees	Agency staff	Total headcount	Actual employees	Agency staff	Total headcount
Clean Air	5,958	331	6,289	6,226	458	6,684
Efficient Natural Resources	3,855	162	4,017	3,988	134	4,122
Health	903	55	958	907	8	915
New Markets	1,757	375	2,132	1,952	381	2,333
Corporate	1,167	19	1,186	1,079	219	1,298
Year-end headcount	**13,640**	**942**	**14,582**	**14,152**	**1,200**	**15,352**

Employee costs

	Group		Parent company	
	2021 £ million	2020 £ million	2021 £ million	2020 £ million
Wages and salaries	626	621	221	187
Social security costs	69	68	26	19
Post-employment costs	65	49	37	38
Share-based payments	16	5	15	4
Termination benefits	4	2	1	1
Employee benefits expense	**780**	**745**	**300**	**249**

8 Net finance costs

	2021 £ million	2020 £ million
Net loss on remeasurement of foreign currency swaps held at fair value through profit or loss	(8)	(5)
Interest payable on financial liabilities held at amortised cost and interest on related swaps	(53)	(43)
Interest payable on other liabilities[1]	(94)	(144)
Interest payable on lease liabilities	(3)	(3)
Total finance costs	**(158)**	**(195)**
Interest receivable on financial assets held at amortised cost	4	4
Interest receivable on other assets[1]	64	103
Interest on post-employment benefits	5	2
Total finance income	**73**	**109**
Net finance costs	**(85)**	**(86)**

1 Interest payable and receivable on other liabilities and assets mainly comprises interest on precious metal leases and the amortisation of contango and backwardation on precious metal inventory and sale and repurchase agreements.

9 Tax expense

	2021 £ million	2020 £ million
Current tax		
Corporation tax on profit for the year	131	99
Adjustment for prior years	(4)	(3)
Total current tax	**127**	**96**
Deferred tax		
Origination and reversal of temporary differences	(92)	(47)
Tax rate adjustments	–	3
Adjustment for prior years	(2)	(2)
Total deferred tax (note 26)	**(94)**	**(46)**
Tax expense	**33**	**50**

The tax expense can be reconciled to profit before tax in the income statement as follows:

	2021 £ million	2020 £ million
Profit before tax	**238**	**305**
Tax expense at UK corporation tax rate of 19% (2020: 19%)	45	58
Effects of:		
Overseas tax rates	4	(7)
Expenses not deductible for tax purposes	2	3
Losses and other temporary differences not recognised	5	21
Recognition or utilisation of previously unrecognised tax assets	(7)	(10)
Adjustment for prior years	(6)	(5)
Patent box / Innovation box	(14)	(19)
Other tax incentives	(4)	(5)
Tax rate adjustments	–	2
Irrecoverable withholding tax	–	2
Other	8	10
Tax expense	**33**	**50**

In the March 2021 budget the UK government announced that legislation will be introduced in Finance Bill 2021 to increase the main rate of UK corporation tax from 19% to 25%, effective 1st April 2023.

As the changes had not been substantively enacted at the balance sheet date, the deferred tax balances as at 31st March 2021 continue to be measured at a rate of 19%. If the 25% tax rate had been used at the balance sheet date, the deferred tax asset would have been £17 million higher.

Losses and other temporary differences not recognised includes current year tax losses arising in Canada 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 losses in Brazil.

Adjustments for prior years includes current and deferred tax adjustments in respect of the UK, US and Germany, 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.

Other movements mainly includes movements in respect of provisions for uncertain tax positions.

Notes on the accounts continued

for the year ended 31st March 2021

10 Tax on other comprehensive (expense) / income

	2021			2020		
	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	(141)	28	(113)	87	(18)	69
Fair value gains / (losses) on equity investments at fair value through other comprehensive income	5	–	5	(2)	–	(2)
Tax rate adjustments	–	–	–	–	(3)	(3)
Items that may be reclassified to the income statement						
Exchange differences on translation of foreign operations	(162)	–	(162)	65	–	65
Amounts credited to hedging reserve	3	–	3	–	–	–
Fair value gains / (losses) on net investment hedges	12	–	12	(8)	–	(8)
Total other comprehensive (expense) / income	**(283)**	**28**	**(255)**	**142**	**(21)**	**121**

11 Earnings per ordinary share

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.

	2021 pence	2020 pence
Earnings per share		
Basic	106.5	132.3
Diluted	106.4	132.1

	2021	2020
Earnings (£ million)		
Basic and diluted earnings	205	255
Weighted average number of shares in issue		
Basic	192,711,413	192,437,993
Dilution for long-term incentive plans	260,753	314,053
Diluted	**192,972,166**	**192,752,046**

12 Property, plant and equipment

Group

	Land and buildings £ million	Leasehold improvements £ million	Plant and machinery £ million	Assets in the course of construction £ million	Total £ million
Cost					
At 1st April 2019	607	25	2,056	296	2,984
Additions	2	–	33	316	351
Reclassification	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
Additions	1	–	28	254	283
Reclassification	78	10	247	(335)	–
Disposals	(1)	(1)	(29)	(6)	(37)
Disposal of businesses (note 30)	–	(1)	(10)	–	(11)
Exchange adjustments	(38)	(1)	(97)	(22)	(158)
At 31st March 2021	667	31	2,310	377	3,385
Accumulated depreciation and impairment					
At 1st April 2019	268	15	1,414	16	1,713
Charge for the year	18	2	120	–	140
Impairment losses (notes 5 and 6)	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
Charge for the year	20	1	123	–	144
Impairment losses (notes 5 and 6)	3	–	27	3	33
Disposals	(2)	(1)	(26)	(1)	(30)
Disposal of businesses (note 30)	–	–	(7)	–	(7)
Exchange adjustments	(17)	–	(65)	(2)	(84)
At 31st March 2021	321	17	1,606	17	1,961
Carrying amount at 31st March 2021	**346**	**14**	**704**	**360**	**1,424**
Carrying amount at 31st March 2020	310	7	617	469	1,403
Carrying amount at 1st April 2019	339	10	642	280	1,271

Finance costs capitalised were £5 million (2020: £7 million) and the capitalisation rate used to determine the amount of finance costs eligible for capitalisation was 2.9% (2020: 3.0%).

During the year, the group recognised impairments in respect of four sites and plants, Clean Air (£18 million), Efficient Natural Resources (£4 million), Health (£5 million), and New Markets (£4 million), which have been included in major impairment and restructuring charges (see note 6). The group monitors impairment triggers and performs impairment reviews as directed by accounting policies which resulted in additional impairments of £2 million, which have been recognised in underlying operating profit (see note 5).

Notes on the accounts continued
for the year ended 31st March 2021

12 Property, plant and equipment (continued)
Parent company

	Land and buildings £ million	Leasehold improvements £ million	Plant and machinery £ million	Assets in the course of construction £ million	Total £ million
Cost					
At 31st March 2020	127	3	581	99	810
Additions	–	–	14	61	75
Reclassification	–	(1)	38	(37)	–
Disposals	–	–	(6)	(1)	(7)
At 31st March 2021	127	2	627	122	878
Accumulated depreciation and impairment					
At 31st March 2020	74	2	445	(1)	520
Depreciation charge for the year	4	–	32	–	36
Impairment losses	3	–	17	–	20
Disposals	–	–	(5)	–	(5)
At 31st March 2021	81	2	489	(1)	571
Carrying amount at 31st March 2021	**46**	**–**	**138**	**123**	**307**
Carrying amount at 31st March 2020	53	1	136	100	290

Finance costs capitalised were £1 million (2020: £1 million) and the capitalisation rate used to determine the amount of finance costs eligible for capitalisation was 2.9% (2020: 3.0%).

During the year, the parent company recognised impairments in respect of a plant in Clean Air (£18 million) which has been included in major impairment and restructuring charges (see note 6). The parent company monitors impairment triggers and performs impairment reviews as directed by accounting policies which resulted in additional impairments of £2 million, which have been recognised in underlying operating profit.

13 Goodwill

	Group £ million	Parent company £ million
Cost		
At 1st April 2019	589	123
Exchange adjustments	9	–
At 31st March 2020	598	123
Disposal of businesses (note 30)	(9)	–
Exchange adjustments	(18)	–
At 31st March 2021	572	123
Impairment		
At 1st April 2019	11	–
Impairment losses	7	8
At 31st March 2020	18	8
At 31st March 2021	18	8
Carrying amount at 31st March 2021	**554**	**115**
Carrying amount at 31st March 2020	580	115
Carrying amount at 1st April 2019	578	123

During the year, the group disposed of the Atmosphere Control Technologies businesses. The sale completed on 16th November 2020 and resulted in the disposal of £9 million goodwill associated with the business (note 30).

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for the year ended 31st March 2021

14 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 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
Additions	–	53	–	–	22	75
Disposals	–	(3)	(2)	–	(4)	(9)
Reclassification	–	–	5	(5)	–	–
Disposal of businesses (note 30)	(9)	–	–	(1)	–	(10)
Exchange adjustments	(4)	(4)	(2)	(2)	(10)	(22)
At 31st March 2021	133	367	65	42	226	833
Accumulated amortisation and impairment						
At 1st April 2019	114	54	35	34	131	368
Charge for the year	5	10	2	4	3	24
Impairment losses (notes 5 and 6)	–	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
Charge for the year	5	19	1	4	3	32
Impairment losses (notes 5 and 6)	–	58	9	–	–	67
Disposals	–	(2)	(1)	–	(4)	(7)
Disposal of businesses (note 30)	(4)	–	–	(1)	–	(5)
Exchange adjustments	(6)	(2)	(3)	(1)	(4)	(16)
At 31st March 2021	108	144	46	41	135	474
Carrying amount at 31st March 2021	**25**	**223**	**19**	**1**	**91**	**359**
Carrying amount at 31st March 2020	33	250	24	11	78	396
Carrying amount at 1st April 2019	38	177	28	18	75	336

During the year, the group recognised impairments in respect of licences (£3 million) as part of a site closure in Efficient Natural Resources and information systems (£56 million), which have been included in major impairment and restructuring charges (see note 6). The group monitors impairment triggers and performs impairment reviews as directed by accounting policies which resulted in additional impairments of £8 million, which have been recognised in underlying operating profit (see note 5).

14 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 2020	276	27	10	34	347
Additions	47	–	–	17	64
Reclassification	–	5	(5)	–	–
Disposals	(1)	–	–	–	(1)
At 31st March 2021	322	32	5	51	410
Accumulated amortisation and impairment					
At 31st March 2020	34	3	7	15	59
Charge for the year	17	1	–	2	20
Impairment losses	58	9	–	–	67
Disposals	(1)	–	–	–	(1)
At 31st March 2021	108	13	7	17	145
Carrying amount at 31st March 2021	**214**	**19**	**(2)**	**34**	**265**
Carrying amount at 31st March 2020	242	24	3	19	288

During the year, the group recognised impairments in respect of licences (£3 million) as part of a site closure in Efficient Natural Resources and information systems (£56 million), which have been included in major impairment and restructuring charges (see note 6). The group monitors impairment triggers and performs impairment reviews as directed by accounting policies which resulted in additional impairments of £8 million, which have been recognised in underlying operating profit (see note 5).

15 Investments in subsidiaries

	Cost of investments in subsidiaries £ million	Accumulated impairment £ million	Carrying amount £ million
At 1st April 2019	2,170	(258)	1,912
Additions	13	–	13
Impairment loss	–	(4)	(4)
At 31st March 2020 and 31st March 2021	**2,183**	**(262)**	**1,921**

The parent company recognised an impairment during the prior year in respect of its investment in Johnson Matthey Argentina S.A.

The parent company's subsidiaries are shown in note 37.

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for the year ended 31st March 2021

16 Investments in joint ventures and associates

	2021 £ million	2020 £ million
Investments in joint ventures	2	6
Investments in associates	–	17
Investments in joint ventures and associates	**2**	**23**

The movements in the year were:

	Joint ventures £ million	Associates £ million	Total £ million
1st April 2019	5	15	20
Group's share of profit for the year	1	2	3
At 31st March 2020	6	17	23
Impairment losses	(4)	(17)	(21)
At 31st March 2021	**2**	**–**	**2**

The group recognised a total impairment of £17 million during the year in respect of an 11.1% interest in the ordinary share capital of Shanghai Bi Ke Clean Energy Technology Co Ltd (CECC) and revenue share agreement. The group 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.

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. The group has recognised an impairment in the year totalling £4 million in respect of this joint venture.

During the year ended 31st March 2021, the group made £nil (2020: £1 million) purchases from its joint venture and associate.

17 Investments at fair value through other comprehensive income

	Group		Parent company	
	2021 £ million	2020 £ million	2021 £ million	2020 £ million
Quoted bonds purchased to fund pension deficit	53	49	–	–
Unquoted investments	–	–	–	7
Investments at fair value through other comprehensive income	**53**	**49**	**–**	**7**

There is no active market for the unquoted investments and, therefore, they are categorised as level 3 inputs based on the IFRS 13 fair value hierarchy (note 32). The parent company's investment is the revenue share agreement with CECC (note 16). Movements in the unquoted investments in the year are shown below:

	Parent company £ million
At 1st April 2019 and 31st March 2020	7
Impairment loss	(7)
At 31st March 2021	**–**

The parent company has recognised an impairment of £7 million in the year, £4 million recognised in administrative expenses and £3 million recognised through other comprehensive income in respect of a revenue share agreement with CECC.

18 Interest rate swaps

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Cross currency interest rate swaps designated as cash flow hedges	8	19	8	19
Interest rate swaps designated as fair value hedges	12	15	12	15
Interest rate swaps	**20**	**34**	**20**	**34**

19 Inventories

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Raw materials and consumables	286	292	45	43
Work in progress	1,213	1,289	481	675
Finished goods and goods for resale	315	321	53	61
Inventories	**1,814**	**1,902**	**579**	**779**

Work in progress includes £0.9 billion (31st March 2020: £0.9 billion) of precious metal which is committed to future sales to customers and valued at the price at which it is contractually committed.

20 Trade and other receivables

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Current				
Trade receivables	1,571	1,228	310	291
Contract receivables	181	163	60	29
Amounts receivable from subsidiaries	–	–	1,438	1,404
Prepayments	88	80	34	41
Value added tax and other sales tax receivable	119	71	34	–
Advance payments to customers	11	8	–	–
Amounts receivable under precious metal sale and repurchase agreements	308	457	307	427
Other receivables	144	70	114	33
Trade and other receivables	**2,422**	**2,077**	**2,297**	**2,225**
Non-current				
Amounts receivable from subsidiaries	–	–	1,312	1,211
Value added tax and other sales tax receivable	2	2	–	–
Prepayments	3	3	3	3
Advance payments to customers	45	58	–	–
Other receivables	**50**	**63**	**1,315**	**1,214**

The fair value of the precious metal contracted to be sold by the group under sale and repurchase agreements is £407 million (2020: £760 million).

Of the parent company's amounts receivable from subsidiaries, £153 million is impaired (2020: £153 million). Future expected credit losses on intercompany receivables are immaterial.

The group enters into factoring type arrangements in a small number of countries as part of normal business due to longer than standard payment terms. We seek to collect payments in the month following sale. As at 31st March 2021, the level of these arrangements was approximately £300 million (31st March 2020: approximately £350 million).

Notes on the accounts continued

for the year ended 31st March 2021

21 Other financial assets and liabilities

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Forward foreign exchange contracts designated as cash flow hedges	12	4	12	6
Forward precious metal price contracts designated as cash flow hedges	–	2	–	2
Forward foreign exchange contracts and currency swaps at fair value through profit or loss	32	22	33	20
Other financial assets	**44**	**28**	**45**	**28**
Forward foreign exchange contracts designated as cash flow hedges	(4)	(10)	(8)	(10)
Forward precious metal price contracts designated as cash flow hedges	(8)	–	(8)	–
Forward foreign exchange contracts and currency swaps at fair value through profit or loss	(6)	(40)	(6)	(40)
Other financial liabilities	**(18)**	**(50)**	**(22)**	**(50)**

22 Trade and other payables

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Current				
Trade payables	996	677	321	261
Contract liabilities	184	134	78	5
Amounts payable to subsidiaries	–	–	2,354	2,372
Accruals	369	312	167	117
Amounts payable under precious metal sale and repurchase agreements	1,442	1,491	1,371	1,357
Other payables	334	131	246	55
Current trade and other payables	**3,325**	**2,745**	**4,537**	**4,167**
Non-current				
Amounts payable to subsidiaries	–	–	267	510
Other payables	5	6	1	4
Non-current other payables	**5**	**6**	**268**	**514**

The amount of the contract liabilities balance at 31st March 2020 which was recognised in revenue during the year ended 31st March 2021 for the group and parent company was £91 million (2020: £85 million) and £0.1 million (2020: £17 million), respectively.

The fair value of the precious metal contracted to be repurchased by the group under sale and repurchase agreements is £1,766 million (2020: £1,738 million).

23 Borrowings and related swaps

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Non-current				
Bank and other loans				
€166 million EIB loan 2022	(141)	(148)	(141)	(148)
3.26% $150 million Bonds 2022	(113)	(128)	(113)	(128)
2.99% $165 million Bonds 2023	(120)	(134)	(120)	(134)
2.44% €20 million Bonds 2023	(17)	(18)	(17)	(18)
3.57% £65 million Bonds 2024	(65)	(65)	(65)	(65)
3.565% $50 million KfW loan 2024	(36)	(41)	(36)	(41)
3.14% $130 million Bonds 2025	(94)	(106)	(94)	(106)
1.40% €77 million Bonds 2025	(67)	(71)	(67)	(71)
2.54% £45 million Bonds 2025	(45)	(45)	(45)	(45)
€45 million KfW loan 2025	(38)	–	(38)	–
3.79% $130 million Bonds 2025	(95)	–	(95)	–
3.97% $120 million Bonds 2027	(87)	–	(87)	–
€90 million EBRD loan 2027	(76)	–	(76)	–
3.39% $180 million Bonds 2028	(131)	(146)	(131)	(146)
1.81% €90 million Bonds 2028	(81)	(86)	(81)	(86)
4.10% $30 million Bonds 2030	(22)	–	(22)	–
2.92% €25 million Bonds 2030	(21)	–	(21)	–
Cross currency interest rate swaps designated as net investment hedges	(3)	(6)	–	–
Cross currency interest rate swaps designated as fair value hedges	–	–	(3)	(6)
Borrowings and related swaps	**(1,252)**	**(994)**	**(1,252)**	**(994)**
Current				
$50 million KfW IPEX-Bank GmbH loan 2020	–	(41)	–	(41)
4.66% €100 million Bonds 2021	–	(89)	–	(89)
Other bank loans	(26)	(201)	–	–
Borrowings and related swaps	**(26)**	**(331)**	**–**	**(130)**

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 EIB loan 2022, the KfW loan 2025, the EBRD loan 2027 and the bank overdrafts, which bear interest at commercial floating rates.

Notes on the accounts continued
for the year ended 31st March 2021

24 Movements in assets and liabilities arising from financing activities

	2020 £ million	Cash (inflow)/ outflow £ million	Non-cash movements: Transfers £ million	Non-cash movements: Foreign exchange movements £ million	Non-cash movements: Fair value and other movements £ million	**2021 £ million**
Non-current assets						
Interest rate swaps	34	–	–	–	(14)	**20**
Non-current liabilities						
Borrowings and related swaps	(994)	(366)	–	100	8	**(1,252)**
Lease liabilities	(64)	–	14	1	(2)	**(51)**
Current liabilities						
Borrowings and related swaps	(331)	296	–	9	–	**(26)**
Lease liabilities	(12)	14	(14)	1	–	**(11)**
Net movements in assets and liabilities arising from financing activities	**–**	**(56)**	**–**	**111**	**(8)**	
Dividends paid to equity shareholders	–	99				
Interest paid	–	159				
Net cash outflow from financing activities	–	**202**				

	2019 £ million	Cash (inflow)/ outflow £ million	Non-cash movements: Transfers £ million	Non-cash movements: IFRS16 transition £ million	Non-cash movements: Foreign exchange movements £ million	Non-cash movements: Fair value and other movements £ million	2020 £ 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)**
Net movements in assets and liabilities arising from financing activities	**–**	**1**	**–**	**(77)**	**(45)**	**(2)**	
Dividends paid to equity shareholders	–	167					
Interest paid	–	202					
Net cash outflow from financing activities	**–**	**370**					

25 Provisions

Group

	Restructuring provisions £ million	Warranty and technology provisions £ million	Other provisions £ million	Total £ million
At 1st April 2019	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
Charge for the year	69	2	7	78
Utilised	(23)	–	(4)	(27)
Released	(6)	(3)	(1)	(10)
Exchange adjustments	–	–	1	1
At 31st March 2021	**42**	**8**	**12**	**62**

	2021 £ million	2020 £ million
Current	35	11
Non-current	27	9
Total provisions	**62**	**20**

Restructuring

The restructuring provisions are part of the group's efficiency initiatives (see note 6).

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.

Notes on the accounts continued

for the year ended 31st March 2021

25 Provisions (continued)

Parent company

	Restructuring provisions £ million	Other provisions £ million	Total £ million
At 1st April 2019	1	22	**23**
Charge for the year	–	35	**35**
Net sale of metal	–	29	**29**
Utilised	(1)	–	**(1)**
At 31st March 2020	–	86	**86**
Charge for the year	53	–	**53**
Net sale of metal	–	86	**86**
Utilised	(14)	–	**(14)**
Released	(6)	–	**(6)**
At 31st March 2021	**33**	**172**	**205**

	2021 £ million	2020 £ million
Current	**187**	85
Non-current	**18**	1
Total provisions	**205**	**86**

The restructuring provisions are part of the parent company's efficiency initiatives (see note 6).

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 and its exposure at 31st March 2021 was £35 million (2020: £177 million).

26 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 2019	30	23	(25)	(18)	21	2	33
Charge / (credit) 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
Charge / (credit) to the income statement (note 9)	(22)	2	(25)	(45)	(9)	5	(94)
Tax on items taken directly to or transferred from equity	–	(28)	–	–	–	(1)	(29)
Exchange adjustments	(2)	1	3	2	(1)	–	3
At 31st March 2021	**1**	**27**	**(48)**	**(94)**	**2**	**–**	**(112)**

	2021 £ million	2020 £ million
Deferred tax assets	(140)	(66)
Deferred tax liabilities	28	74
Net amount	**(112)**	**8**

26 Deferred tax (continued)

Group (continued)

Deferred tax has not been recognised in respect of tax losses of £165 million (2020: £212 million) and other temporary differences of £22 million (2020: £10 million). Of the total tax losses, £43 million (2020: £50 million) is expected to expire within five years, £18 million within five to ten years (2020: £16 million), £35 million after ten years (2020: £102 million) and £69 million carry no expiry (2020: £102 million). These deferred tax assets have not been recognised on the basis that their future economic benefit is not probable.

In addition, the group's overseas subsidiaries have net unremitted earnings of £1,763 million (2020: £1,769 million), resulting in temporary differences of £479 million (2020: £393 million). No deferred tax has been provided in respect of these differences since the timing of the reversals can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

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 profits in relevant businesses. The forecasted profits are expected to be recovered in five years and are therefore not exposed to the longer term impact from climate change on consumer demand and legislation. 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 2019	1	40	(1)	(11)	1	9	39
Charge / (credit) to the 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
(Credit) / charge to income statement	(14)	1	(5)	(40)	–	–	(58)
Tax on items taken directly to or transferred from equity	–	(25)	–	–	–	(1)	(26)
At 31st March 2021	**(17)**	**41**	**(5)**	**(83)**	**1**	**11**	**(52)**

Deductible temporary differences, unused tax losses and unused tax credits not recognised on the balance sheet are £6 million (2020: £6 million) and have no expiry date.

27 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.

Notes on the accounts continued

for the year ended 31st March 2021

27 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 JMEPS Trustee Board considers how climate risk is integrated within investment processes when appointing, monitoring and withdrawing from investment managers using the investment consultant's Environmental, Social and Governance (ESG) ratings. The ESG ratings include consideration of climate risk management policies. On a periodic basis, JMEPS will review the ESG ratings assigned to the underlying investments based on the investment consultant's ESG research.

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, and the US hourly pension plan was closed to new entrants on 1st January 2019, but both plans remains open to future accrual for existing members. All new 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.

27 Post-employment benefits (continued)

Group (continued)

Background (continued)

Maturity profile

The estimated weighted average durations of the defined benefit obligations of the main plans as at 31st March 2021 are:

	Weighted average duration Years
Pensions:	
UK	**20**
US	**12**
Post-retirement medical benefits:	
UK	**11**
US	**12**

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 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 additional deficit contributions that would remove this deficit by 31st December 2019. At 31st March 2018, £43 million also remained available within the SPV for future distribution which created an overall surplus of £9 million in the legacy section of the plan as at 1st April 2018. The valuation also showed a surplus in the cash balance section of the plan. The next triennial actuarial valuation of JMEPS will be carried out as at 1st April 2021 with the results known later in the year. The assumptions used for funding valuations may differ to the actuarial assumptions used for IAS 19 accounting purposes.

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 2020 and showed that there was a surplus of $9.4 million on the projected funding basis.

The assumptions used for funding valuations may differ to the actuarial assumptions used for IAS 19 accounting purposes.

Notes on the accounts continued

for the year ended 31st March 2021

27 Post-employment benefits (continued)

Group (continued)

Funding (continued)

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.

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
Market (investment) risk Asset returns may not move in line with the liabilities and may be subject to volatility.	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. 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. The plans implement partial currency hedging on their overseas assets to mitigate currency risk.
Interest (discount) rate risk 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.	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. In the UK, this interest rate hedge is extended by the use of interest rate swaps, such that approximately 80% of the plan's interest rate risk is currently hedged. The swaps are held with several banks to reduce counterparty risk.
Inflation risk Liabilities are sensitive to movements in inflation, with higher inflation leading to an increase in the valuation of liabilities.	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. In the UK, this inflation hedge is extended by the use of inflation swaps, such that approximately 80% of the plan's inflation risk is currently hedged. The swaps are held with several banks to reduce counterparty risk.
Longevity risk 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.	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. 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.

Contributions

During the year, total contributions to the group's post-employment defined benefit plans were £49 million (2020: £52 million).

It is estimated that the group will contribute approximately £40 million to the post-employment defined benefit plans during the year ending 31st March 2022.

27 Post-employment benefits (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 2021. 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

	2021 UK plan %	**2021 US plans %**	**2021 Other plans %**	2020 UK plan %	2020 US plans %	2020 Other plans %
First year's rate of increase in salaries	3.40	3.00	2.06	–	–	2.15
Ultimate rate of increase in salaries	3.40	3.00	2.06	2.60	3.00	2.15
Rate of increase in pensions in payment	3.05	–	1.70	2.50	–	1.70
Discount rate	2.10	3.00	1.53	2.30	3.00	1.87
Inflation		2.20	1.64		2.20	1.65
– UK Retail Prices Index (RPI)	3.20	–	–	2.50	–	–
– UK Consumer Prices Index (CPI)	2.65	–	–	1.85	–	–
Current medical benefits cost trend rate	5.40	2.20	–	5.40	2.20	–
Ultimate medical benefits cost trend rate	5.40	2.20	–	5.40	2.20	–

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	89

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	US pensions £ million	US post – retirement medical benefits £ million	Other £ million	Total £ million
At 1st April 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
Administrative expenses	(3)	–	(1)	–	–	(4)
Interest income	46	2	10	–	2	60
Return on plan assets excluding interest	125	11	(4)	–	3	135
Employee contributions	3	7	1	1	–	12
Company contributions	9	21	16	1	1	48
Benefits paid	(65)	(3)	(32)	(2)	(2)	(104)
Exchange adjustments	–	–	(38)	–	(3)	(41)
At 31st March 2021	**2,142**	**128**	**320**	**–**	**56**	**2,646**

Notes on the accounts continued

for the year ended 31st March 2021

27 Post-employment benefits (continued)

Financial information (continued)

Plan assets

The fair values of plan assets are analysed as follows:

	2021				2020			
	UK pension – legacy section £ million	**UK pension – cash balance section £ million**	**US pensions £ million**	**Other £ million**	UK pension – legacy section £ million	UK pension – cash balance section £ million	US pensions £ million	Other £ million
Quoted corporate bonds	829	84	199	6	700	73	178	6
Inflation and interest rate swaps	(52)	–	–	–	37	–	–	–
Quoted government bonds	698	–	97	–	809	–	150	–
Cash and cash equivalents	113	2	4	–	89	1	8	–
Quoted equity	442	42	20	1	290	16	32	1
Unquoted equity	46	–	–	–	40	–	–	–
Property	63	–	–	–	62	–	–	–
Insurance policies	–	–	–	49	–	–	–	48
Other	3	–	–	–	–	–	–	–
Plan assets	**2,142**	**128**	**320**	**56**	**2,027**	**90**	**368**	**55**

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.

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 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)
Current service cost	(6)	(20)	–	(9)	(1)	(1)	(37)
Past service credit	(1)	–	4	–	–	–	3
Interest cost	(39)	(3)	–	(11)	(1)	(2)	(56)
Employee contributions	(3)	(7)	–	(1)	(1)	–	(12)
Remeasurements due to changes in:							
Financial assumptions	(259)	(20)	–	(2)	(1)	(4)	(286)
Demographic assumptions	8	–	–	2	1	1	12
Benefits paid	65	3	–	32	2	2	104
Exchange adjustments	–	–	–	41	4	5	50
At 31st March 2021	**(1,956)**	**(134)**	**(8)**	**(340)**	**(31)**	**(83)**	**(2,552)**

27 Post-employment benefits (continued)

Financial information (continued)

Defined benefit obligation (continued)

In the year ended 31st March 2021, a past service credit of £3.5 million was recognised in relation to the UK Post-retirement Medical Plan design to recognise that spouses are not eligible to receive a benefit in the plan in the event of the death of the main member. This is partially offset by the past service cost due to individual augmentations.

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 2019	–	–	–	–	8	1	9
Return on assets excluding interest	–	–	–	–	(1)	–	(1)
At 31st March 2020	–	–	–	–	7	1	8
Return on assets excluding interest	–	–	–	–	(1)	(1)	(2)
At 31st March 2021	**–**	**–**	**–**	**–**	**6**	**–**	**6**

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 2021							
Defined benefit obligation	(1,956)	(134)	(8)	(340)	(31)	(83)	(2,552)
Fair value of plan assets	2,142	128	–	320	–	56	2,646
Reimbursement rights	–	–	–	–	6	–	6
Net post-employment benefit assets and liabilities	**186**	**(6)**	**(8)**	**(20)**	**(25)**	**(27)**	**100**
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**

Notes on the accounts continued

for the year ended 31st March 2021

27 Post-employment benefits (continued)

Financial information (continued)

Net post-employment benefit assets and liabilities (continued)

These are included in the balance sheet as follows:

	2021			2020		
	Post-employment benefit net assets £ million	**Employee benefit net obligations £ million**	**Total £ million**	Post-employment benefit net assets £ million	Employee benefit net obligations £ million	Total £ million
UK pension – legacy section	186	–	186	306	–	306
UK pension – cash balance section	–	(6)	(6)	3	–	3
UK post-retirement medical benefits	–	(8)	(8)	–	(12)	(12)
US pensions	–	(20)	(20)	–	(24)	(24)
US post-retirement medical benefits	6	(31)	(25)	7	(34)	(27)
Other	2	(29)	(27)	1	(29)	(28)
Total post-employment plans	**194**	**(94)**	**100**	**317**	**(99)**	**218**
Other long-term employee benefits	–	(4)	–	–	(5)	–
Total long-term employee benefit obligations	**–**	**(98)**	**–**	**–**	**(104)**	**–**

Income statement

Amounts recognised in the income statement for long term employment benefits were:

	2021 £ million	2020 £ million
Administrative expenses	(4)	(4)
Current service cost	(37)	(41)
Past service credit	3	20
Defined benefit post-employment costs charged to operating profit	**(38)**	**(25)**
Defined contribution plans' expense	(26)	(23)
Other long term employee benefits	(1)	(1)
Charge to operating profit	**(65)**	**(49)**
Interest on post-employment benefits charged to finance income	5	2
Charge to profit before tax	**(60)**	**(47)**

27 Post-employment benefits (continued)

Financial information (continued)

Net post-employment benefit assets and liabilities (continued)

Statement of total comprehensive income

Amounts recognised in the statement of total comprehensive income for long term employment benefits were:

	2021 £ million	2020 £ million
Return on plan assets excluding interest	135	32
Remeasurements due to changes in:		
Financial assumptions	(286)	90
Demographic assumptions	12	(34)
Reimbursement rights – return on assets excluding interest	(2)	(1)
Remeasurements of post-employment benefit assets and liabilities	**(141)**	**87**

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 2021 as follows:

	0.1% increase		0.1% decrease	
	UK plan £ million	US plans £ million	UK plan £ million	US plans £ million
Effect of discount rate	42	4	(41)	(4)
Effect of inflation	(31)	–	32	–

Demographic assumptions

A one-year increase in life expectancy would increase the UK and US pension plans' defined benefit obligation by £87 million and £7 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 2021

28 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.

Right-of-use assets

Group	Land and buildings £ million	Plant and machinery £ million	Total £ million
At 1st April 2020	72	16	88
New leases, remeasurements and modifications	3	1	4
Depreciation charge for the year	(10)	(4)	(14)
Disposal of businesses (note 30)	(1)	–	(1)
Impairment losses (note 6)	–	(1)	(1)
Exchange adjustments	(1)	(1)	(2)
At 31st March 2021	**63**	**11**	**74**

Parent company	Land and buildings £ million	Plant and machinery £ million	Total £ million
At 1st April 2020	13	6	19
Depreciation charge for the year	(2)	(1)	(3)
Impairment losses	–	(1)	(1)
At 31st March 2021	**11**	**4**	**15**

During the year, the group and parent company recognised a £1 million impairment in respect of a Clean Air plant associated intangible asset (note 6).

	Group		Parent company	
Lease liabilities	**2021 £ million**	2020 £ million	**2021 £ million**	2020 £ million
Current	11	12	3	3
Non-current	51	64	13	16
Total liabilities	**62**	**76**	**16**	**19**

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Interest expense	3	3	1	1

The weighted average incremental borrowing rate applied to the group's lease liabilities was 4.5% (2020: 4.2%) and 4.3% (2020: 3.5%) for the parent company.

A maturity analysis of lease liabilities is disclosed in note 31.

	Group		Parent company	
Other	**2021 £ million**	2020 £ million	**2021 £ million**	2020 £ million
Total cash outflow for leases	17	16	4	5

The expense relating to low-value and short-term leases is immaterial.

29 Share capital and other reserves

Share capital	Number	£ million
Issued and fully paid ordinary shares		
At 1st April 2019, 31st March 2020 and 31st March 2021	**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 33.

At the last annual general meeting on 23rd July 2020, shareholders approved a resolution for the company to purchases 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 directors have no present intention of exercising this authority but will keep the matter under review, taking into account the financial resources of the company, the company's share price and future funding opportunities. The directors would only exercise this authority in circumstances where they believed that to do so would result in an increase in earnings per share and be in the interests of shareholders generally.

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 2021, the ESOT held 894,670 shares (2020: 1,011,913 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 (2020: 5,407,176) at a total cost of £92 million (2020: £92 million).

Dividends	2021 £ million	2020 £ million
2018/19 final ordinary dividend paid – 62.25 pence per share	–	120
2019/20 interim ordinary dividend paid – 24.50 pence per share	–	47
2019/20 final ordinary dividend paid – 31.125 pence per share	60	–
2020/21 interim ordinary dividend paid – 20.00 pence per share	39	–
Total dividends	**99**	**167**

A final dividend of 50.0 pence per ordinary share has been proposed by the board which will be paid on 3rd August 2021 to shareholders on the register at the close of business on 11th June 2021, subject to shareholders' approval. The estimated amount to be paid is £97 million and has not been recognised in these accounts.

The board is responsible for the group's capital management including the approval of dividends. This includes an assessment of both the level of reserves legally available for distribution and consideration as to whether Johnson Matthey Plc would be solvent and maintain sufficient liquidity following any proposed distribution. The board has assessed the level of distributable profits as at 31st March 2021 and is satisfied that they are sufficient to support the proposed dividend.

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 2021

29 Share capital and other reserves (continued)

Group

	Capital redemption reserve £ million	Foreign currency translation reserve £ million	Fair value through other comprehensive income reserve £ million	Hedging reserve: Forward currency contracts £ million	Hedging reserve: Cross currency contracts £ million	Hedging reserve: Forward metal contracts £ million	Total other reserves £ million
At 1st April 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 above items taken directly to or transferred from equity	–	–	–	1	(1)	–	–
At 31st March 2020	7	139	–	(7)	1	2	142
Cash flow hedges – gains / (losses) taken to equity	–	–	–	7	(10)	(8)	(11)
Cash flow hedges – transferred to revenue (income statement)	–	–	–	1	–	–	1
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	9	–	9
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	6	–	(2)	4
Fair value gains on net investment hedges taken to equity	–	12	–	–	–	–	12
Fair value gains on investments at fair value through other comprehensive income	–	–	5	–	–	–	5
Exchange differences on translation of foreign operations taken to equity	–	(162)	–	–	–	–	(162)
Tax on above items taken directly to or transferred from equity	–	–	–	–	–	–	–
At 31st March 2021	**7**	**(11)**	**5**	**7**	**–**	**(8)**	**–**

29 Share capital and other reserves (continued)

Parent company

	Capital redemption reserve £ million	Foreign currency translation reserve £ million	Fair value through other comprehensive income reserve £ million	Hedging reserve: Forward currency contracts £ million	Hedging reserve: Cross currency contracts £ million	Hedging reserve: Forward metal contracts £ million	Total other reserves £ million
At 1st April 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
Cash flow hedges – gains / (losses) taken to equity	–	–	–	6	(10)	(8)	(12)
Cash flow hedges – transferred to revenue (income statement)	–	–	–	(1)	–	–	(1)
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	9	–	9
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	3	–	(2)	1
Other movements	–	–	(3)	–	–	–	(3)
Tax on items taken directly to or transferred from equity	–	–	–	–	–	–	–
At 31st March 2021	**7**	**–**	**–**	**5**	**–**	**(8)**	**4**

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 to provide a measure of its efficiency in allocating the capital under its control to profitable investments (see note 38). 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.

Notes on the accounts continued

for the year ended 31st March 2021

30 Disposals

Water and Atmosphere Control Technologies

On 17th November 2020, the group completed the sale of its Water business for a cash consideration of £1 million. The business was disclosed as a disposal group held for sale as at 30th September 2020 which in accordance with IFRS 5 resulted in an impairment charge of £4 million following a fair value assessment.

On 16th November 2020, the group completed the sale of its Atmosphere Control Technologies business for a cash consideration of £33 million. The business was disclosed as a disposal group held for sale as at 30th September 2020. Upon the disposal of Atmosphere Control Technologies, and in accordance with IAS 21, *The Effects of Changes in Foreign Exchange Rates* we have recycled the cumulative currency translation reserve through the income statement during the year. This has resulted in a cumulative currency translation gain of £4 million and overall loss on disposal of £1 million.

	Water £ million	Atmosphere Control Technologies £ million	Total £ million
Proceeds			
Cash consideration	1	33	**34**
Cash and cash equivalents disposed	–	(14)	**(14)**
Net cash consideration	**1**	**19**	**20**
Disposal costs paid	–	(1)	**(1)**
Net cash inflow	**1**	**18**	**19**
Assets and liabilities disposed			
Non-current assets			
Property, plant and equipment	–	4	**4**
Right-of-use-assets	–	1	**1**
Goodwill	–	9	**9**
Other intangible assets	–	5	**5**
Current assets			
Inventories	1	5	**6**
Trade and other receivables	1	5	**6**
Cash and cash equivalents – cash and deposits	–	14	**14**
Current liabilities			
Trade and other payables	(1)	(5)	**(6)**
Non-current liabilities			
Lease liabilities	–	(1)	**(1)**
Net assets disposed	**1**	**37**	**38**

The loss on disposal of businesses totalled £1 million.

	Water £ million	Atmosphere Control Technologies £ million	Total £ million
Cash consideration	1	33	**34**
Less: carrying amount of net assets sold	(1)	(37)	**(38)**
Less: disposal costs	–	(1)	**(1)**
Cumulative currency translation gain recycled from other comprehensive income	–	4	**4**
Loss recognised in the income statement	**–**	**(1)**	**(1)**

31 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.

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 2021, trade receivables for the group amounted to £1,571 million (2020: £1,228 million), of which £1,317 million (2020: £906 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 2021, no single outstanding balance exceeded 2% (2020: 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 £23 million (2020: £21 million) reflecting the larger trade receivables balance at year end and 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**					
At 31st March 2021	**Total**	**Impaired**	**Not past due**	**< 30 days overdue**	**30-90 days overdue**	**>90 days overdue**	**Total**
Expected credit loss rate (%)	1%	100%	1%	2%	7%	11%	
Gross carrying value (£ million)	184	7	1,513	60	11	7	1,598
Expected credit losses (£ million)	(3)	(7)	(17)	(1)	(1)	(1)	(27)
Net carrying value (£ million)	**181**						**1,571**

	Contract receivables	Trade receivables					
At 31st March 2020	Total	Impaired	Not past due	< 30 days overdue	30-90 days overdue	>90 days overdue	Total
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**

Accounts

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31 Financial risk management (continued)

Credit risk (continued)

Movements in the allowance for credit losses on trade and contract receivables are as follows:

	Group	
	2021 £ million	2020 £ million
At beginning of year	37	15
Charge for year	7	25
Utilised	(5)	(1)
Released	(9)	(2)
At end of year	**30**	**37**

The group's maximum exposure to default on trade and contract receivables is £1,782 million (2020: £1,428 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 2021, the maximum net exposure with a single bank for cash and deposits was £26 million (2020: £41 million), whilst the largest mark to market exposure for derivative financial instruments to a single bank was £9 million (2020: £22 million). The group also uses money market funds to invest surplus cash thereby further diversifying credit risk and, at 31st March 2021, the group's exposure to these funds was £462 million (2020: £192 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 euro and a 5% (5.6 cent (2020: 5.7 cent)) movement in the average exchange rate for the euro against sterling would have had a £9 million (2020: £10 million) impact on underlying operating profit. The group is also exposed to the US dollar and a 5% (6.5 cent (2020: 6.4 cent)) movement in the average exchange rate for the US dollar against sterling would have had a £7 million (2020: £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	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Cash flow hedges	12	12	(14)	(15)
Net investment hedges	12	21	(15)	(26)

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.

31 Financial risk management (continued)

Foreign currency risk (continued)

Investments in foreign operations (continued)

Year ended 31st March 2021	US dollar and euro loans[1] £ million	Cross currency swap[2] £ million	Total £ million
Carrying value of hedging instruments at 31st March 2021	(69)	(3)	**(72)**
Change in carrying value of hedging instruments recognised in equity during the year	9	3	**12**
Change in fair value of hedged items during the year used to determine hedge effectiveness	(9)	(3)	**(12)**

Year ended 31st March 2020	US dollar and euro loans[1] £ million	Cross currency swap[2] £ million	Total £ million
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**

1 The designated hedging instruments are the $75 million of the 3.26% $150 million Bonds 2022 and €17 million of the 2.44% €20 million Bonds 2023. The 4.66% €100 million Bonds matured in January 2021.

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 2021	Sterling / US dollar £ million	Sterling / euro £ million	Other £ million	Total £ million
Carrying value of hedging instruments at 31st March 2021 – assets	3	4	5	**12**
– liabilities	(1)	–	(3)	**(4)**
Change in carrying value of hedging instruments recognised in equity during the year	2	7	(2)	**7**
Change in fair value of hedged items during the year used to determine hedge effectiveness	(2)	(7)	2	**(7)**
Notional amount[1]	97	91	13	**–**

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	–	**–**

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 1.34 and 0.89 (2020: 1.27 and 1.14), respectively. The hedged, highly probable forecast transactions denominated in foreign currencies are expected to occur over the next 12 months.

Notes on the accounts continued

for the year ended 31st March 2021

31 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	
	2021 £ million	2020 £ million
Carrying value of hedging instruments at 31st March[1]	8	19
Change in carrying value of hedging instruments recognised in equity during the year	(11)	11
Change in fair value of hedged items during the year used to determine hedge effectiveness	11	(11)

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 2021, 107% (2020: 84%) of the group's net debt was at fixed rates with an average interest rate of 3.5% (2020: 3.6%). 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 £0.5 million impact on the group's profit before tax (2020: £2 million).

The group has designated four (2020: 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.

	2021 £ million	2020 £ million
Carrying value of hedging instruments at 31st March[1]	**12**	**15**
Amortised cost	(251)	(270)
Fair value adjustment	(10)	(15)
Carrying value of hedged items at 31st March[1]	**(261)**	**(285)**
Change in carrying value of hedging instruments recognised in profit or loss during the year	(3)	10
Change in fair value of hedged items during the year used to determine hedge effectiveness	5	(10)

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.

31 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 2021, the group had borrowings under committed bank facilities of £nil (2020: £nil). The group also has a number of uncommitted facilities and overdraft lines at its disposal.

The group's undrawn £1 billion revolving credit facility includes Environmental, Social and Governance KPIs which provides the group with an interest saving or cost depending on our performance. One of the Key Performance Indicators tracks the amount of renewable energy sourced by the group.

	2021 £ million	2020 £ million
Expiring within one year	–	125
Expiring in more than one year	1,000	1,000
Undrawn committed bank facilities	**1,000**	**1,125**

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:

At 31st March 2021	Within 1 year £ million	1 to 2 years £ million	2 to 5 years £ million	After 5 years £ million	Total £ million
Bank overdrafts	36	–	–	–	36
Bank and other loans – principal	26	250	575	414	1,265
Bank and other loans – interest payments	32	29	61	24	146
Lease liabilities – principal	11	10	17	25	63
Lease liabilities – interest payments	3	2	5	8	18
Financial liabilities in trade and other payables	3,141	1	–	3	3,145
Total non-derivative financial liabilities	**3,249**	**292**	**658**	**474**	**4,673**
Forward foreign exchange contracts – payments	289	–	–	–	289
Forward foreign exchange contracts – receipts	(284)	–	–	–	(284)
Currency swaps – payments	821	–	–	–	821
Currency swaps – receipts	(816)	–	–	–	(816)
Cross currency interest rate swaps – payments	2	2	68	–	72
Cross currency interest rate swaps – receipts	(2)	(2)	(68)	–	(72)
Total derivative financial liabilities	**10**	**–**	**–**	**–**	**10**

At 31st March 2020	Within 1 year £ million	1 to 2 years £ million	2 to 5 years £ million	After 5 years £ million	Total £ million
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**

Notes on the accounts continued

for the year ended 31st March 2021

31 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:

At 31st March 2021	Gross financial assets / (liabilities) £ million	Amounts set off £ million	Net amounts in balance sheet £ million	Amounts not set off[1] £ million	Net £ million
Non-current interest rate swaps	20	–	20	(3)	17
Cash and cash equivalents	582	(1)	581	–	581
Other financial assets	44	–	44	(9)	35
Cash and cash equivalents – bank overdrafts	(37)	1	(36)	–	(36)
Other financial liabilities	(18)	–	(18)	9	(9)
Non-current borrowings and related swaps	(1,252)	–	(1,252)	3	(1,249)

At 31st March 2020	Gross financial assets / (liabilities) £ million	Amounts set off £ million	Net amounts in balance sheet £ million	Amounts not set off[1] £ million	Net £ million
Non-current interest rate swaps	34	–	34	(6)	28
Cash and cash equivalents	304	–	304	–	304
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)

[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.

32 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.

32 Fair values (continued)

	2021 £ million	2020 £ million	Fair value hierarchy Level	Note
Financial instruments measured at fair value				
Non-current				
Investments at fair value through other comprehensive income	53	49	1	17
Interest rate swaps	20	34	2	18
Borrowings and related swaps	(3)	(6)	2	23
Current				
Trade receivables[1]	423	328	2	20
Other receivables[2]	58	72	2	20
Cash and cash equivalents – money market funds	462	192	2	
Other financial assets[3]	44	28	2	21
Other financial liabilities[3]	(18)	(50)	2	21
Financial instruments not measured at fair value				
Non-current				
Borrowings and related swaps	(1,249)	(988)	–	23
Lease liabilities	(51)	(64)	–	28
Current				
Cash and cash equivalents – cash and deposits	119	112	–	
Cash and cash equivalents – bank overdrafts	(36)	(31)	–	
Borrowings and related swaps	(26)	(331)	–	23
Lease liabilities	(11)	(12)	–	28

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:

	2021		2020	
	Carrying amount £ million	Fair value £ million	Carrying amount £ million	Fair value £ million
US Dollar Bonds 2022, 2023, 2025, 2027, 2028 and 2030	(662)	(689)	(514)	(496)
Euro Bonds 2021, 2023, 2025, 2028 and 2030	(186)	(193)	(264)	(247)
Sterling Bonds 2024 and 2025	(110)	(116)	(110)	(108)
KfW US dollar loan 2024	(36)	(39)	(41)	(41)

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.

33 Share-based payments

The total expense recognised during the year in respect of equity-settled share-based payments was £16 million (2020: £5 million). The increase in the expense recognised represents the negative growth in underlying earnings per share achieved during the prior year and current year offset by the forecast underlying earnings per share for the years ending 31st March 2022 and 2023.

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 2021, 1,267,198 shares awarded in 2018, 2019 and 2020 were outstanding (31st March 2020: 1,037,536 shares awarded in 2017, 2018 and 2019).

Notes on the accounts continued

for the year ended 31st March 2021

33 Share-based payments (continued)

Performance share plan (PSP) (continued)

The PSP shares awarded prior to 1st August 2020 are subject to the below criteria for release:

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 2018 and 2019 awards, there was no uEPS growth and, therefore, the awards will lapse.

The PSP shares awarded post the 1st August 2020 are subject to the below criteria for release:

The 2020 Performance Share Plan award will be 50% based on EPS growth targets and 50% on Total Shareholder Return (TSR). 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. 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).

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:

	2021 Number of awarded shares	2020 Number of awarded shares
Outstanding at the start of the year	1,037,536	684,015
Awarded during the year	723,758	442,905
Forfeited during the year	(494,096)	(89,384)
Outstanding at the end of the year	**1,267,198**	**1,037,536**

The fair value of the shares awarded during the year under the PSP was 2,078.9 pence per share (2020: 2,964.6 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 2,239.0 pence (2020: 3,210.0 pence) adjusted for the present value of the expected dividends that will not be received at an expected dividend rate of 2.48% (2020: 2.66%).

At 31st March 2021 the weighted average remaining contracted life of the awarded shares is 1.3 years (2020: 1.1 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:

	2021 Number of awarded shares	2020 Number of awarded shares
Outstanding at the start of the year	247,021	161,691
Awarded during the year	534,516	125,243
Forfeited during the year	(29,587)	(29,618)
Released during the year	(65,782)	(7,557)
Expired during the year	(5,804)	(2,738)
Outstanding at the end of the year	**680,364**	**247,021**

The fair value of the shares awarded during the year under the RSP was 2,078.9 pence per share (2020: 2,964.6 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 2,239.0 pence (2020: 3,210.0 pence) adjusted for the present value of the expected dividends that will not be received at an expected dividend rate of 2.48% (2020: 2.66%).

At 31st March 2021 the weighted average remaining contracted life of the awarded shares is 1.7 years (2020: 1.3 years).

33 Share-based payments (continued)

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 2021, 23,808 shares awarded in 2016 were subject to deferred release as explained below (31st March 2020: 71,277 shares awarded in 2016).

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 2020 24,357 shares were released with a further 23,808 shares subject to deferred release.

Awards to the executive directors were 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:

	2021 Number of awarded shares	2020 Number of awarded shares
Outstanding at the start of the year	71,277	703,698
Awarded during the year	553	–
Forfeited during the year	–	(34,059)
Released during the year	(24,357)	(402,410)
Expired during the year	(23,665)	(195,952)
Outstanding at the end of the year	**23,808**	**71,277**

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:

	2021 Number of awarded shares	2020 Number of awarded shares
Outstanding at the start of the year	105,530	81,625
Awarded during the year	34,264	42,009
Released during the year	(26,710)	(18,104)
Outstanding at the end of the year	**113,084**	**105,530**

The fair value of the shares awarded during the year under the deferred bonus was 2,028.2 pence per share (2020: 2,887.0 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 2,239.0 pence (2020: 3,210.0 pence) adjusted for the present value of the expected dividends that will not be received at an expected dividend rate of 2.48% (2020: 2.66%).

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for the year ended 31st March 2021

33 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, 284,808 (2020: 227,974) 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, 6,632 (2020: 5,652) 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.

34 Commitments

	Group		Parent company	
	2021 £ million	2020 £ million	**2021 £ million**	2020 £ million
Capital commitments – future capital expenditure contracted but not provided				
Property, plant and equipment	167	41	23	12
Other intangible assets	29	9	21	–

At 31st March 2021, precious metal leases were £437 million (31st March 2020: £451 million) at year end prices.

35 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.

35 Contingent liabilities (continued)

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.

On a separate matter, the group is involved in investigating and remediating environmental contamination at certain sites for which it has been identified as a potentially responsible party under US law. Johnson Matthey Inc. is party to litigation brought by the Pennsylvania Department of Environmental Protection regarding contamination at a site in Chester County, Pennsylvania, that was operated by Johnson Matthey Inc. between 1951 and 1969. A site investigation has been completed, but remediation has not yet commenced. Johnson Matthey has asserted various legal defences. In addition, there are several variables that may influence the nature of the remediation to be conducted, such as the future use of the site. Whether and to what extent Johnson Matthey and other potentially responsible parties (given subsequent use of the site by third-party entities) have any liability for the remediation has not yet been determined. It is the directors' current view that the group cannot reliably assess the outcome of the litigation nor reasonably estimate the quantum of future remediation costs or the group's share of such costs and as such no provision for the remediation has been recognised in these consolidated accounts. Estimated legal and technical fees associated with the litigation of £2 million have been provided for as at 31st March 2021.

36 Transactions with related parties

The group has a related party relationship with its joint venture and associate (note 16), its post-employment benefit plans (note 27) and its key management personnel (below). Transactions between the Company and its subsidiaries, which are related parties of the Company, have been eliminated on consolidation and are not disclosed in this note.

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 2021, the GMC had an average of 9 members (2020: 9 members). The only transactions with any key management personnel was compensation charged in the year which was:

	2021 £ million	2020 £ million
Short term employee benefits	7	6
Share-based payments	1	–
Non-executive directors' fees and benefits	1	1
Total compensation of key management personnel	**9**	**7**

There were no balances outstanding as at 31st March 2021 (2020: £nil). Information on directors' remuneration is given in the Remuneration Report.

Guarantees of subsidiaries' liabilities are disclosed in note 25.

Notes on the accounts continued

for the year ended 31st March 2021

37 Related undertakings

A full list of related undertakings at 31st March 2021 (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, C1049AAA, Buenos Aires, Argentina
Johnson Matthey (Aust.) Ltd	64 Lillee Crescent, Tullamarine VIC 3043, Australia
+Johnson Matthey Holdings Limited	64 Lillee Crescent, Tullamarine VIC 3043, Australia
+Johnson Matthey Belgium BVBA	Pegasuslaan 5, 1831 Diegem, Belgium
+Tracerco Europe BVBA	Zone 3, Doorneveld 115, 1731 Zellik, Brussels, Belgium
The Argent Insurance Co. Limited	Power House, 7 Par-la-Ville Road, Hamilton HM11, Bermuda
Johnson Matthey Brasil Ltda	Avenida Macuco, 726, 12th Floor, Edifício International Office, CEP04523-001, Brazil
Stepac Brazil Ltda[5]	Estrada dos Bandeirantes, 1793, Taquara, Jacarepagua, Brazil
Tracerco do Brasil – Diagnosticos de Processos Industriais Ltda	Estrada dos Bandeirantes, 1793, Curicica, Jacarepagua, Rio de Janeiro, Brazil
Johnson Matthey Battery Materials Ltd.	McCarthy Tetrault LLP, Le Complexe St-Amable, 1150, rue de Claire-Fontaine, 7e étage, Quebec G1R 5G4, Canada
Tracerco Radioactive Diagnostic Services Canada Inc.	8908 60 Avenue NW, Edmonton AB, T6E 6A6, Canada
Johnson Matthey Argillon (Shanghai) Emission Control Technologies Ltd.	Ground Floor, Building 2, No. 298, Rongle East Road, Songjiang Industrial Zone, Shanghai 201613, 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	20th Floor, Tower F, Phoenix Place, No.21 Building, Shuguangxi Lane A5, Chaoyang District, Beijing 100028, China
Johnson Matthey Process Technologies (Beijing) Co., Ltd.	20th Floor, Tower F, Phoenix Place, No.21 Building, Shuguangxi Lane A5, Chaoyang District, Beijing 100028, 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 and 599 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.	Room 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.	No. 48, the west of Beijing Road, Jingang Town, Yangtze River International Chemical Industrial Park, Jiangsu, China
Qingdao Johnson Matthey Hero Catalyst Company Limited (51.0%)	Shiyuan Road, Jihongtan Street, Chengyang District, Qingdao, 200331, China
Shanghai Bi Ke Clean Energy Technology Co Ltd (11.1%)	Room 8708, No. 315 Emei Road, Hongkou District, Shanghai, 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.	Area G, 2nd Floor, Building 7, 298 East Rongle Road, Songjiang District, Shanghai, China
Johnson Matthey A/S	c/o 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
Ilumink 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 Battery Materials Limited[6]	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

37 Related undertakings (continued)

Entity	Registered address
*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[5]	Seppolantie 1, Kotka, 48230, Finland
Johnson Matthey Finland Oy (in liquidation)	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	Ostenriederstrasse 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 (in liquidation)	Room 802-6, 909 Cheung Sha Wan Road, Kowloon, Hong Kong
Johnson Matthey Pacific Limited[3]	Room 802-6, 909 Cheung Sha Wan Road, Kowloon, Hong Kong
Johnson Matthey Process Technologies Holdings Hong Kong Limited	Room 802-6, 909 Cheung Sha Wan Road, Kowloon, Hong Kong
Johnson Matthey Tracerco Holdings Hong Kong Limited	Room 802-6, 909 Cheung Sha Wan Road, Kowloon, Hong Kong
Macfarlan Smith (Hong Kong) Limited	Room 802-6, 909 Cheung Sha Wan Road, Kowloon, Hong Kong
Johnson Matthey Chemicals India Private Limited	Plot No 6A, MIDC Industrial Estate, Taloja, District Raigad, Maharashtra 410208, India
Johnson Matthey India Private Limited	5th Floor, Regus Business Centre, 1st Floor, M-4, South Extension-II, New Dehli, 110049, India
Johnson Matthey Limited	13-18 City Quay, Dublin 2, D02 ED70, Ireland
Stepac L.A. Ltd.[5]	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
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.	c/o Cacheaux, Cavazos and Newton, No. 437 Col. Colinas del Cimatario, CP 76090 Queretaro, Mexico
Johnson Matthey Servicios, S. de R.L. de C.V.	c/o Cacheaux, Cavazos and Newton, No. 437 Col. Colinas del Cimatario, CP 76090 Queretaro, 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.[5]	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 Spólka z ograniczoną odpowiedzialnocścią	Ul. Alberta Einsteina 6, 44-109, Gliwice, Poland
Johnson Matthey Poland Spólka z ograniczoną odpowiedzialnocścią	Ul. Alberta Einsteina 6, 44-109, Gliwice, Poland
Johnson Matthey Battery Materials Poland spółka z ograniczona odpowiedzialnosci	Ul. Hutnicza 1, 62-510 Konin, Poland

Accounts

Notes on the accounts continued

for the year ended 31st March 2021

37 Related undertakings (continued)

Entity	Registered address
+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%)	PO Box 251, Riyadh 11411, 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	50 Raffles Place, #19-00, Singapore Lane Tower, Singapore 048623
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	Glatttalstrasse 18, 8052 Zurich, Switzerland
Johnson Matthey Finance GmbH	Hertensteinstrasse 51, 6004 Lucerne, Switzerland
Johnson Matthey Finance Zurich GmbH	Glatttalstrasse 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 (in liquidation)	Güzeloba Mah. Rauf Denktaş Cad., No.56/101, Muratpaşa/Antalya, Turkey
Johnson Matthey Fuel Cells, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Holdings, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Inc.[4]	Corporation Service Company, 2595 Interstate Drive, Suite 103, PA 17110, USA
Johnson Matthey Japan, Inc.[5]	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Materials, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey North America, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Pharmaceutical Materials, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Process Technologies, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Stationary Emissions Control LLC	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Red Maple LLC (50.0%)	Corporation Service Company, 251 Little Falls Drive, 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.
5 Sold/dissolved during current financial year.
6 Incorporated during current financial year.

38 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]	Annualised underlying operating profit divided by the 12 month average equity, excluding post tax pension net assets, plus average net debt for the same period.	Provides a measure of the group's efficiency in allocating the capital under its control to profitable investments. 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 ventures and associates 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.

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**, In the prior year the group released a residual provision for environmental liabilities of £2 million which has 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.
- **Amortisation of acquired intangibles**, Amortisation and impairment of intangible assets which arose on the acquisition of businesses totalled £10 million (2020: £13 million).
- **Major impairment and restructuring charges**, The group recognised £171 million in major impairment and restructuring charges (2020: £140 million) see note 6.

Notes on the accounts continued

for the year ended 31st March 2021

38 Non-GAAP measures (continued)

Reconciliations to GAAP measures

Sales

See note 2.

Underlying profit measures

Year ended 31st March 2021	Operating profit £ million	Profit before tax £ million	Tax expense £ million	Profit for the year £ million
Underlying	504	419	(68)	351
Amortisation of acquired intangibles	(10)	(10)	2	(8)
Major impairment and restructuring charges	(171)	(171)	33	(138)
Reported	**323**	**238**	**(33)**	**205**

Year ended 31st March 2020	Operating profit £ million	Profit before tax £ million	Tax expense £ million	Profit for the year £ million
Underlying	539	455	(72)	383
Profit on disposal of businesses	2	2	–	2
Amortisation of acquired intangibles	(13)	(13)	3	(10)
Major impairment and restructuring charges	(140)	(140)	16	(124)
Interest on non-underlying tax provisions	–	1	–	1
Change in non-underlying tax provisions	–	–	3	3
Reported	**388**	**305**	**(50)**	**255**

Underlying earnings per share

	2021	2020
Underlying profit for the year (£ million)	351	383
Weighted average number of shares in issue (number)	192,711,413	192,437,993
Underlying earnings per share (pence)	182.0	199.2

Return on invested capital (ROIC) – unaudited

	2021 £ million	2020 £ million
Underlying operating profit	**504**	**539**
Average net debt	1,294	1,489
Average equity	2,771	2,733
Average capital employed	**4,065**	**4,222**
Less: Average pension net assets	(261)	(212)
Less: Average related deferred taxation	47	32
Average capital employed (excluding post tax pension net assets)	**3,851**	**4,042**
ROIC (excluding post tax pension net assets)	**13.1%**	**13.3%**
ROIC	12.4%	12.8%

38 Non-GAAP measures (continued)

Average working capital days (excluding precious metals) – unaudited

	2021 £ million	2020 £ million
Inventories	1,814	1,902
Trade and other receivables	2,422	2,077
Trade and other payables	(3,325)	(2,745)
Total working capital	**911**	**1,234**
Less: Precious metal working capital	(552)	(597)
Working capital (excluding precious metals)	**359**	**637**
Average working capital days (excluding precious metals)	**57**	**63**

Free cash flow

	2021 £ million	2020 £ million
Net cash inflow from operating activities	769	598
Interest received	66	104
Interest paid	(159)	(202)
Purchases of property, plant and equipment	(304)	(332)
Purchases of intangible assets	(77)	(111)
Proceeds from sale of businesses	19	–
Proceeds from sale of assets held for sale	–	7
Proceeds from sale of non-current assets	5	1
Principal element of lease payments	(14)	(13)
Free cash flow	**305**	**52**

Notes on the accounts continued

for the year ended 31st March 2021

38 Non-GAAP measures (continued)

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

	2021 £ million	2020 £ million
Cash and deposits	119	112
Money market funds	462	192
Bank overdrafts	(36)	(31)
Cash and cash equivalents	**545**	**273**
Borrowings and related swaps – current	(26)	(331)
Borrowings and related swaps – non-current	(1,252)	(994)
Interest rate swaps – non-current	20	34
Lease liabilities – current	(11)	(12)
Lease liabilities – non-current	(51)	(64)
Net debt	**(775)**	**(1,094)**
Increase / (decrease) increase in cash and cash equivalents	276	(103)
Less: Increase in borrowings	(70)	(12)
Less: Principal element of lease payments	14	13
Increase in net debt resulting from cash flows	**220**	**(102)**
New leases, remeasurements and modifications	(3)	(13)
Disposal of businesses	1	1
Exchange differences on net debt	107	(47)
Other non-cash movements	(6)	10
Movement in net debt	**319**	**(151)**
Net debt at beginning of year	(1,094)	(866)
Impact of adoption of IFRS 16	–	(77)
Net debt at end of year	**(775)**	**(1,094)**
Net debt	(775)	(1,094)
Add: Pension deficits	(49)	(53)
Add: Related deferred tax	9	10
Net debt (including post tax pension deficits)	**(815)**	**(1,137)**
Underlying operating profit	504	539
Add back: Depreciation and amortisation excluding amortisation of acquired intangibles	180	166
Underlying EBITDA	**684**	**705**
Net debt (including post tax pension deficits) to underlying EBITDA	**1.2**	**1.6**
Underlying EBITDA	**684**	**705**
Depreciation and amortisation	(190)	(179)
Major impairment and restructuring charges	(171)	(140)
Profit on disposal of businesses[1]	–	2
Finance costs	(158)	(195)
Finance income	73	109
Share of profits of joint ventures and associates	–	3
Income tax expense	(33)	(50)
Profit for the year	**205**	**255**

[1] The loss on disposal of businesses for 2021 of £1 million is included in underlying operating profit.

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 2021 and of the group's profit and the group's cash flows for the year then ended;
- the group financial statements have been properly prepared in accordance with international accounting standards in conformity with the requirements of the Companies Act 2006;
- the parent company financial statements have been properly prepared in accordance with 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.

We have audited the financial statements, included within the Annual Report, which comprise: the Consolidated and Parent Company Balance Sheets as at 31 March 2021; 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.

Separate opinion in relation to international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union

As explained in note 1 to the financial statements, the group, in addition to applying international accounting standards in conformity with the requirements of the Companies Act 2006, has also applied international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union.

In our opinion, the group financial statements have been properly prepared in accordance with international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union.

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.

Other than those disclosed in note 4, we have provided no non-audit services to the parent company in the period under audit.

Independent auditors' report continued

to the members of Johnson Matthey Plc

Our audit approach

Overview

Audit scope

- We conducted a full scope audit or specified procedures at 60 components which together account for 84% of group revenue and 78% of group profit before taxation.
- We maintained regular contact with our component teams and evaluated the outcome of their audit work.

Key audit matters

- Carrying value of goodwill, and capitalised development costs (group and parent company)
- Refinery metal accounting (group and parent company)
- Uncertain tax provisions (group)
- Claims, uncertainties and other provisions (group)
- COVID-19 (group and parent company)
- Carrying value of Property, plant and equipment and Other intangible assets associated with the transformation programme (group and parent company)

Materiality

- Overall group materiality: £22.6 million (2020: £23.7 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: £70 million (2020: £70 million) based on approximately 1% of total assets. However the materiality is capped at £20 million (2020: £18 million) for the purpose of the audit of the consolidated financial statements, this being the maximum allocation of group materiality to a component.
- Performance materiality: £16.9 million (group) and £15 million (parent 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.

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.

Carrying value of Property, plant and equipment and Other intangible assets associated with the transformation programme is a new key audit matter this year. Otherwise, the key audit matters below are consistent with last year.

Key audit matter	How our audit addressed the key audit matter
Carrying value of goodwill, and capitalised development costs (group and parent company) Refer to the Significant issues considered by the Audit Committee on page 131 and notes 1, 5, 13 and 14 to the financial statements. The group holds goodwill of £554 million (2020: £580 million) and capitalised development costs of £91 million (2020: £78 million) at 31 March 2021. 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 (CGU) to which it relates. 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. The impairment reviews performed by management contain significant estimation, where changes in the key 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. The impairment assessments prepared by management reflect its best estimates of expected future cash flows, as well as other assumptions that influence the impairment conclusions. The nature of these estimates means that they are inherently judgemental and therefore an area of focus in our audit procedures. Management included detailed disclosures to explain its key judgements and estimates as part of notes 1 and 5.	Goodwill - We obtained management's value in use goodwill impairment models and tested and evaluated the reasonableness of operating cash flow forecasts and key assumptions including long term growth rates and discount rates. We agreed the forecast cash flows to board-approved budgets, assessed how these budgets are compiled, confirmed data accuracy and understood key related judgements and estimates. We assessed management's historical forecasting accuracy by comparing the prior year forecasts with actual results. This informed our independent sensitivity analysis. 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 the board-approved three year forecasts and we corroborated the assumptions to supporting evidence which included both internal and external sources of evidence. In addition, we assessed the appropriateness and impact of the specific growth assumptions applied by management for the period after the year three forecast but before a long term growth rate is applied (typically year ten). 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. 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. 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. Capitalised development costs - We obtained the impairment models for a sample of molecules which 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 either corroborated certain key assumptions to external data points or performed sensitivity analysis. 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 that no impairments should be recognised. We have assessed management's disclosures in light of the impairment testing performed. We consider the disclosures made to be adequate and to appropriately present the sensitivities relevant to the goodwill.

Independent auditors' report continued

to the members of Johnson Matthey Plc

Key audit matter	How our audit addressed the key audit matter
Refinery metal accounting (group and parent company) Refer to the Significant issues considered by the Audit Committee on page 131 and note 1 to the financial statements. The group refines a significant amount of metal. Complex estimates are applied in determining the year-end inventory balances including: (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 stocktakes, and the subsequent sampling and assaying to assess the precious metal content on stocktake 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. 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 in excess of this pre-agreed quantity is retained by the group. As such, the group makes an estimate of how much metal it will recover as part of its refining operations. 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. 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. 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.	We evaluated the design and operation of key controls at the main refining locations over stocktakes, and metal assaying procedures. We tested that the metal balance sheet was prepared and reviewed on a monthly basis. 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 balance of customer metal that was in the refining process, but not contractually due. We assessed management's policy for recognising stocktake gains and losses arising from the stocktakes 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 the existence of inventory and adherence to the group's stocktake processes, and the reasonableness of stocktake gains and losses that have been recorded at these sites. We assessed the underlying controls that have been implemented by management, to monitor potential inventory gains or losses through the refining process. We assessed provisions for inventory process losses compared to historical trends and stocktake results, to assess the likelihood and quantum of processing losses (if any) of metal between the date of the stocktake and the year-end date. 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. We considered the adequacy of the group's disclosures about the degree of estimation involved in arriving at the value of metal inventory. We are satisfied that the metal inventory balances were appropriately recognised at a supportable value, and in line with relevant group accounting policies.
Uncertain tax provisions (group) Refer to the Significant issues considered by the Audit Committee on page 131 and note 1 to the financial statements. As described by management in the accounting policies to the financial statements there is inherent judgement and estimation uncertainty involved in determining when and how much to provide for uncertain tax positions. 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 the tax effect of cross border transactions including transfer pricing arrangements. 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. As at 31 March 2021 the group had current income tax liabilities of £147 million (2020: £106 million) including tax provisions of £102 million (2020: £106 million). Management's estimate of the range of possible outcomes is an increase in those liabilities of £97 million (2020: £106 million) to a decrease of £78 million (2020: £90 million).	We engaged our tax specialists to support 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, using 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. We 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 under IFRIC 23. We evaluated the consistency of management's approach to identifying triggering events to reassess or record a provision for an exposure.

Key audit matter	How our audit addressed the key audit matter
	We also evaluated the consistency of management's approach to establishing or changing prior period 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 represents 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 (group) Refer to the Significant issues considered by the Audit Committee on page 131 and notes 25 and 35 to the financial statements. This risk covers warranty provisions, product liability issues, and other litigious matters across the group. There is inherent judgement and estimation involved in determining when and how much to provide for claims and uncertainties. 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 assumptions underpinning these claims and the identification of when such claims arise 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 all third party legal counsel used by management and as appropriate included them in our circularisation. 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, and being sceptical of where a constructive obligation existed but management considered a reliable estimate could not be made. 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.
COVID-19 (group and parent company) Refer to the Significant issues considered by the Audit Committee on page 130 and note 1 to the financial statements. The COVID-19 pandemic has continued to impact on the financial performance of the group in the year. Therefore, there is inherent uncertainty in determining the ongoing impact of the pandemic on certain aspects of the financial statements. 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 reflect management's best estimate of the future performance of the group, taking into account the ongoing effects of the pandemic. 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. These models also underpin management's going concern and viability assessment and form the basis of management's impairment assessments.	(i) We have tested the consistency of cash flow forecast models used across the goodwill impairment, going concern and viability modelling and fixed asset impairment assessments. See the Key Audit Matter above for a description of our work over goodwill. 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 the viability model and going concern. Our conclusions in respect of going concern are set out separately within this report. (ii) We evaluated management's assessment of the composition of receivables (by counterparty, 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, incorporating potential future impacts of the pandemic. Specifically we: • Reviewed the sector by sector assessment that considered the latest credit rating information and compared this to the updated credit loss percentage. • We recalculated the implied bad debt provision using the higher expected credit loss percentage.

Independent auditors' report continued

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Key audit matter	How our audit addressed the key audit matter
(ii) The group has £1,752 million (2020: £1,391 million) of trade and contract receivables, 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 31) management has determined that the expected credit loss is now greater than it was prior to the pandemic, albeit lower than at 31 March 2020. Management's total provision has decreased from £37 million to £30 million. In addition, management's ways of working, including how controls have operated, have 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. There is also an inevitable increase in risk due to the remote accessing of IT systems, and further consideration of cyber risk as a consequence of remote working has been necessary.	The overall expected credit loss remains low and the movement in expected credit loss provision in the year is immaterial which is as expected given the nature of the group's customer base and past success in credit collection. We have performed additional procedures to assess whether remote working has impacted the operation of IT and business process controls, and whether there has been any impact on the group given the heightened cyber risk. 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. 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. 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.
Carrying value of Property, plant and equipment and Other intangible assets associated with the transformation programme (group and parent company) Refer to the Significant issues considered by the Audit Committee on page 130 and notes 1, 6, 12 and 14 in the financial statements. The group announced a transformation programme in June 2020 and as a result, 'Major restructuring and impairment charges' of £171 million have been recognised in the year. Certain locations in the group's manufacturing footprint are impacted by the programme which constitutes an impairment trigger. As such, management has performed an impairment review of Property, plant and equipment and Other intangible assets at the impacted locations. Management has recognised impairments of £35 million in respect of manufacturing plants and £56 million in respect of IT systems. The remaining charges of £80 million are largely implementation and redundancy costs.	We agreed that the transformation announcement constitutes a triggering event. For Property, plant and equipment, no individual impairment was greater than our overall materiality level, and most assets were fully written off. That said, for certain impairments we obtained management's value in use impairment models for the impacted sites and evaluated the reasonableness of key assumptions, operating cash flow forecasts and discount rates. We verified the consistency between the assumptions used in these models and those used in the goodwill impairment reviews (see above). We obtained evidence of management's intentions with respect to closure of the sites, including correspondence with employees. We tested the mathematical accuracy of the valuation models used and agreed the carrying values in management's impairment models to underlying accounting records. Specific to the IT systems we considered whether the identified assets were still in use or obsolete, and for those that were obsolete agreed the carrying values to underlying accounting records and recalculated the impairment. For the residual assets we assessed the recoverable value with reference to the cash flow forecasts of the respective CGUs that use the IT systems. We verified the consistency between the board-approved forecasts and assumptions used in these models and those used in the goodwill impairment reviews (see above). As a result of our work, we agreed with management's conclusions to record impairments with respect to the above assets, and consider the amounts recorded to be reasonable. We have assessed management's disclosures in respect of these impairments and consider them to be appropriate.

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 continued impacts of COVID-19, certain countries remained under restrictive government lockdowns for the duration of our audit. Consistent with the prior year we planned and executed more procedures remotely and as necessary additional work was 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 where restrictions permitted, or they had original documentation sent to them electronically or by mail. 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, in response to COVID-19 restrictions our planned inventory counting procedures in some countries continued to use alternative approaches to obtain sufficient, appropriate evidence.

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 310 business units. We have identified each individual business unit, or a series of business units where they map to one legal statutory entity, as a component. 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 11 business units which, in our view, required an audit of their complete financial information, due to size or risk characteristics. 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. We performed audits of complete financial information at a further 36 business units. In addition to those full scope components, we performed specified procedures at 13 business units 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 60 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, 11 business units 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, China 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 84% of group revenue and 78% 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 material components 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 and instead we conducted frequent video conferences with the PwC teams.

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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.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Financial statements – group	Financial statements – parent company
Overall materiality	£22.6 million (2020: £23.7 million).	£20 million (2020: £18 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 £20 million for the purpose of the audit of the consolidated financial statements, this being 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 and key management personnel 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, incurs corporate costs and enters into financing on behalf of the group. The materiality level was capped at £20 million given overall group materiality for the purposes of the audit of the consolidated financial statements, this being the maximum allocation of group materiality to a component.

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 £20 million. Certain components were audited to a local statutory audit materiality that was also less than our overall group materiality.

We use performance materiality to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds overall materiality. Specifically, we use performance materiality in determining the scope of our audit and the nature and extent of our testing of account balances, classes of transactions and disclosures, for example in determining sample sizes. Our performance materiality was 75% of overall materiality, amounting to £16.9 million for the group financial statements and £15 million for the parent company financial statements.

In determining the performance materiality, we considered a number of factors - the history of misstatements, risk assessment and aggregation risk and the effectiveness of controls - and concluded that an amount at the upper end of our normal range was appropriate.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £1.1 million (group audit) (2020: £1.3 million) and £1.1 million (parent company audit) (2020: £1.3 million) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

Our evaluation of the directors' assessment of the group's and the parent company's ability to continue to adopt the going concern basis of accounting included:

- Evaluation of management's base case and downside case scenarios, understanding and evaluating the key assumptions, including assumptions related to COVID-19;
- Validation that the cash flow forecasts used to support management's impairment, going concern and viability assessments were consistent;
- Assessment of the historical accuracy and reasonableness of management's forecasting;
- Consideration of the group's available financing and debt maturity profile;
- Testing of the mathematical integrity of management's liquidity headroom, covenant compliance, sensitivity and stress testing calculations;
- Assessment of the reasonableness of management's planned or potential mitigating actions; and
- Review of the related disclosures in the Annual Report.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group's and the parent company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

However, because not all future events or conditions can be predicted, this conclusion is not a guarantee as to the group's and the parent company's ability to continue as a going concern.

In relation to the directors' reporting on how they have applied the UK Corporate Governance Code, we have nothing material to add or draw attention to in relation to the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

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 our work undertaken in the course of the audit, the Companies Act 2006 requires us also to report certain opinions and matters as described below.

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 2021 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

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.

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.

Corporate governance statement

The Listing Rules require us to review the directors' statements in relation to going concern, longer-term viability and that part of the corporate governance statement relating to the parent company's compliance with the provisions of the UK Corporate Governance Code specified for our review. Our additional responsibilities with respect to the corporate governance statement as other information are described in the Reporting on other information section of this report.

Based on the work undertaken as part of our audit, we have concluded that each of the following elements of the corporate governance statement is materially consistent with the financial statements and our knowledge obtained during the audit, and we have nothing material to add or draw attention to in relation to:

- The directors' confirmation that they have carried out a robust assessment of the emerging and principal risks;
- The disclosures in the Annual Report that describe those principal risks, what procedures are in place to identify emerging risks and an explanation of how these are being managed or mitigated;
- The directors' statement in the financial statements about whether they considered it appropriate to adopt the going concern basis of accounting in preparing them, and their identification of any material uncertainties to the group's and parent company's ability to continue to do so over a period of at least twelve months from the date of approval of the financial statements;
- The directors' explanation as to their assessment of the group's and parent company's prospects, the period this assessment covers and why the period is appropriate; and
- The directors' statement as to whether they have a reasonable expectation that the parent company will be able to continue in operation and meet its liabilities as they fall due over the period of its assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

Our review of the directors' statement regarding the longer-term viability of the group was substantially less in scope than an audit and only consisted of making inquiries and considering the directors' process supporting their statement; checking that the statement is in alignment with the relevant provisions of the UK Corporate Governance Code; and considering whether the statement is consistent with the financial statements and our knowledge and understanding of the group and parent company and their environment obtained in the course of the audit.

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In addition, based on the work undertaken as part of our audit, we have concluded that each of the following elements of the corporate governance statement is materially consistent with the financial statements and our knowledge obtained during the audit:

- The directors' statement that they consider the Annual Report, taken as a whole, is fair, balanced and understandable, and provides the information necessary for the members to assess the group's and parent company's position, performance, business model and strategy;
- The section of the Annual Report that describes the review of effectiveness of risk management and internal control systems; and
- The section of the Annual Report describing the work of the Audit Committee.

We have nothing to report in respect of our responsibility to report when 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.

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of directors' responsibilities in respect of the Annual Report and Accounts, 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.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below.

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 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, management bias in accounting estimates including those related to capitalised development costs, expected credit losses, timing of recognition of litigation provisions and metal gains and losses. 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, and the head of ethics and compliance including consideration of known or suspected instances of non-compliance with laws and regulations and fraud;
- Reading the minutes of board meetings and the Ethics Committee, and assessment of "SpeakUp" matters through the ethics reporting line and the results of management's investigation into these matters;
- Reviewing financial statement disclosures to supporting documentation to assess compliance with applicable laws and regulations;
- Challenging management's significant judgements and estimates in particular those relating to the carrying value of goodwill, other intangibles and other assets, post-employment benefits, tax provisions, deferred tax assets, refining processes and stocktakes, climate change, metal accounting and provisions and contingent liabilities; and
- Identifying and testing manual journal entries, in particular any journal entries posted with unusual account combinations, and all material consolidation journals.

There are inherent limitations in the audit procedures described above. We are less likely to become aware of instances of non-compliance with laws and regulations that are not closely related to events and transactions reflected in the financial statements. 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.

Our audit testing might include testing complete populations of certain transactions and balances, possibly using data auditing techniques. However, it typically involves selecting a limited number of items for testing, rather than testing complete populations. We will often seek to target particular items for testing based on their size or risk characteristics. In other cases, we will use audit sampling to enable us to draw a conclusion about the population from which the sample is selected.

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 obtained 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 three years, covering the years ended 31 March 2019 to 31 March 2021.

Mark Gill (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London

27 May 2021

Other information

Case study

World class collaboration in ammonia production

Ammonia is made up of one nitrogen atom bonded to three hydrogen atoms and today, around 80% of all ammonia produced is used to make fertilisers. But it has the potential for much more. It's a gas that can readily be converted into a liquid, making it easy to ship and distribute. As a liquid, it can be transported to power plants to generate carbon-free electricity. It can also be split into hydrogen which is a valuable energy source for a whole range of applications.

At Johnson Matthey we've been manufacturing catalysts that are used to make ammonia for decades. And for over 20 years, we've collaborated with the industrial engineering group, thyssenkrupp, which provides technology for building world scale ammonia plants.

Through this exclusive partnership, thyssenkrupp has built over 20 ammonia plants that use our catalysts, with a total capacity of 40,000 tonnes of ammonia per day. That represents almost 9% of annual global nitrogen fertiliser production, enough to feed 350 million people.

It's obviously a partnership built to last; and in late 2020 we renewed our agreement to collaborate around ammonia process and catalyst supply.

It's been fantastic to see our world class catalysts perform reliably with the lowest operating expense for the thyssenkrupp uhde® ammonia process for five of the world's largest scale ammonia plants. We're extremely proud of our ongoing partnership and are thrilled with the opportunity to continue to share our deep knowledge in catalysis to push the boundaries in energy efficiency and higher capacity.

Liliana Lukashuk
Senior Scientist

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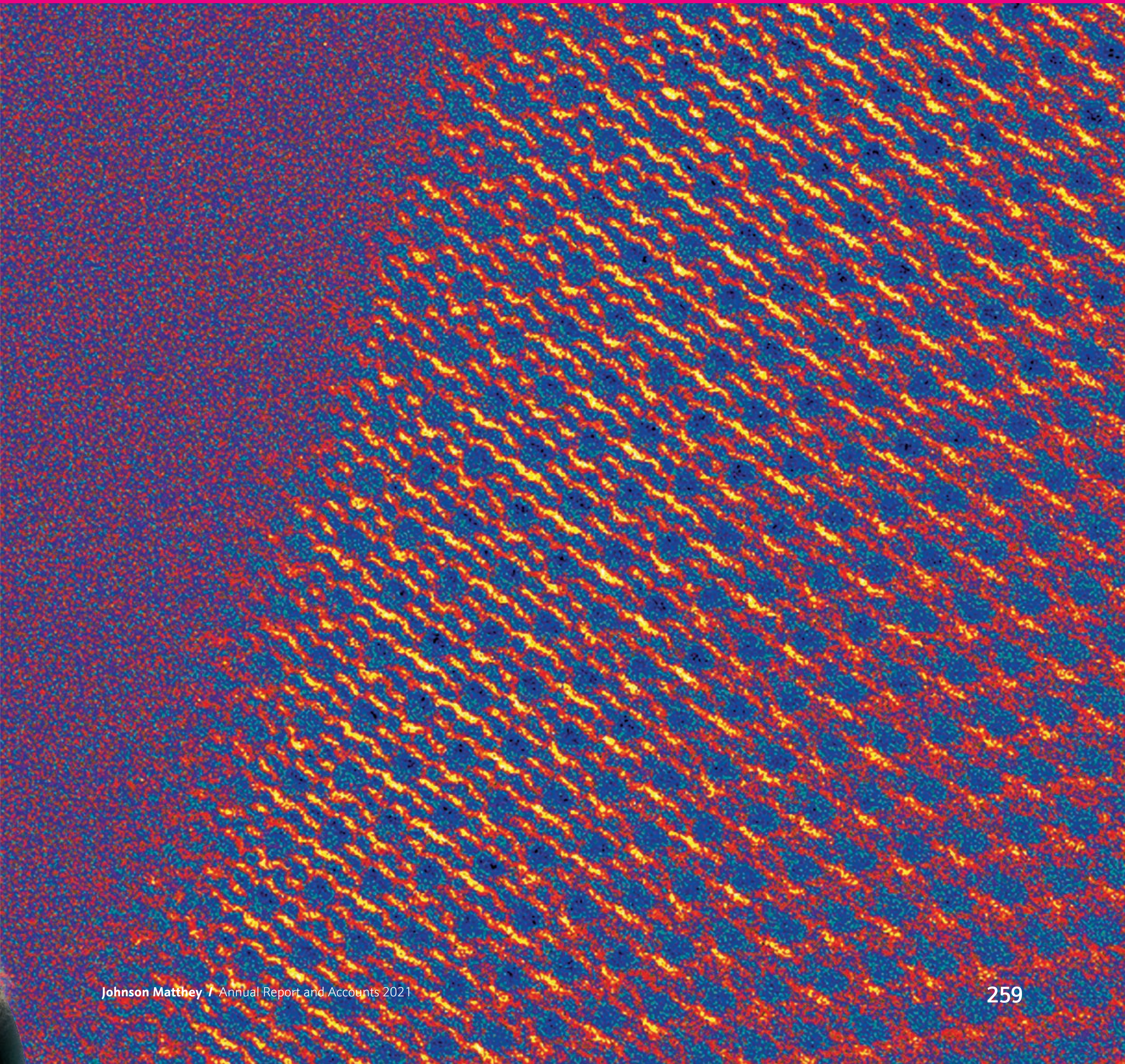

Basis of reporting – non-financial data

This report has been prepared in accordance with the GRI Standard: Core option.

It covers the period from 1st April 2020 to 31st March 2021. Our last annual report was published in June 2020.

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 2030. 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 85 sites was included in this report, 55 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 265. Certain employee data is included in the financial accounts and is also subject to separate external audit.

Previous years' data is 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 restatements of environmental performance data for one KPI this year:

- Our NOx emissions to air has been restated following a data review in which we discovered an error in our NOx calculations at one of our biggest emitting sites in India. We have subsequently amended our internal calculation procedures to correct the calculations and restated our NOx totals for 2018/19 and 2019/20 (see page 268).

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 the relevant KPIs on page 29, and in the Sustainable business section on pages 60 to 85 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.

Calculation methodologies for KPIs relating to our sustainable business goals to 2030

Products and services

Goal: Produce and innovate products for a cleaner, healthier world

We measure and track the positive impact of our products towards a cleaner, healthier world, aligned with our strategic aims. We focus on the products in our portfolio that support our four priority UN Sustainable Development Goals (SDGs): SDG 3 (Good Health and Wellbeing), SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).

We use a financial lens to quantify impacts in two ways:

(i) We measure the correlation and classification of annualised sales of our products, services and technologies against our four priority UN SDGs. Sales are excluding precious metals. By increasing the percentage of JM's sales that contribute to our priority UN SDGs we will be increasing our societal value.

(ii) We classify all our R&D spend according to the contribution any resulting commercial offering would bring to society in line with our four priority UN SDGs.

A judgement is made as to whether our products or R&D activities contribute to our four priority UN SDGs, either directly or by enabling others to contribute. This is done by considering the attributes of the products, or the intended outcome of the R&D work, and cross-referencing these against the priority UN SDGs and their accompanying targets.

Goal: Drive lower greenhouse gas emissions

We are still developing our overarching metric to report the contribution of our products to net zero. In this report we continue to report two metrics that we have been using since 2017 which can be found on page 65 and are defined as follows:

- **The tonnes of greenhouse gases avoided using our products and services**, expressed as tonnes of carbon dioxide equivalent (CO_2 eq). This includes CO_2 eq avoided from the use of Johnson Matthey's battery materials and fuel cell components in key automotive and stationary energy applications. The calculation is based on emission savings compared with conventional technologies used in their respective applications and considers any CO_2 associated with fuelling the products.
- **The tonnes of greenhouse gases removed using our products and services**, expressed as tonnes of carbon dioxide equivalent (CO_2 eq). This includes CO_2 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).

We have also identified revenues aligned to the SASB Chemicals Sustainability Accounting Standard definition of **products designed for use-phase resource efficiency**, which includes products that "through their use – can be shown to improve energy efficiency, eliminate or lower greenhouse gas (GHG) emissions, reduce raw materials consumption, increase product longevity, and/or reduce water consumption". Qualifying products are those that either:

- increase the efficiency of a product during its use phase (for example, our battery materials and fuel cell components); or
- increase the efficiency of the manufacturing process used to make a product (for example, our catalysts and additives for the chemical, oil and gas industries).

Products beyond the scope of this assessment include those specifically designed to meet environmental regulatory requirements, our pharmaceutical and medical-related products, and any product where a use-phase resource efficiency benefit is unclear. Revenues aligned to the use-phase resource efficiency criteria represent sales excluding precious metals.

Operations

Goal: Achieve net zero by 2040

Our operational carbon footprint, reported in tonnes of carbon dioxide (CO_2) equivalent, includes Scope 1 and Scope 2 emissions.

Our Scope 1 greenhouse gas (GHG) emissions are calculated in tonnes CO_2 equivalent using conversion factors for each energy source as published by Defra in July 2020. We include carbon dioxide (CO_2), nitrous oxide (N_2O), refrigerant and methane (CH_4) 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 2018 made available in the 2020 edition of the world CO_2 emissions database of the International Energy Agency. They were purchased under licence in January 2021 for sole use in company reporting. For US facilities we use regional carbon factors published by the Environmental Protection Agency in February 2021 edition of, eGRID data 2019. 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.

Basis of reporting – non-financial data continued

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 (CO_2, N_2O, CH_4 and refrigerants) on our premises and company-owned or leased vehicles.
- **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 and we report this in our 2020/21 Scope 1 data.

Scope 3 GHG emissions

Our annual Scope 3 GHG emissions are reported according to the methodology of the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. A variety of accounting techniques were used depending on the availability of data. All value chain emissions over which JM has financial control are included; the key exclusion from this is raw materials where JM is a toll manufacturer i.e. when raw materials being used in our factories but remain in the financial ownership of our customer at all times.

When calculating the GHG footprint of each Scope 3 category, our principle of using the most accurate data sources was applied in the following order:

1. GHG footprint data obtained directly from value chain partners.
2. Mass based calculations using carbon intensity factors from respected databases, such as Defra's GHG reporting conversion factors and EcoInvent.
3. Financial allocation based using Avieco's proprietary Input-Output model (EIO). This combines economic data from central banks and treasury departments with research data from the World Bank, OECD and other leading environmental agencies.

Scope 3 GHG category	Calculation methodology
Purchased goods and services	Where mass of purchased goods was available, this was used in combination with GHG intensity factors obtained either from suppliers or EcoInvent. For the remaining goods and for purchased services a financial allocation (EIO model) was used
Capital goods	Financial allocation (EIO model) using geographical breakdown of data shown in Accounting note 12 "Property, plant & equipment" on page 203
Fuel- and energy-related activities	Defra's GHG reporting conversion factors 2020 were used to calculate well-to-tank GHG emissions from fuel usage, transmission and distribution losses from purchased electricity, and well-to-tank and transmission and distribution losses of energy from steam
Upstream transportation and distribution	Where mass and distance of goods transported was available, this was used in combination with Defra's GHG reporting conversion factors 2019. Otherwise, a financial allocation was made based on spend and intensity factors from the EIO model
Waste generated in operations	Where GHG footprints were available from waste service providers they were used, otherwise Defra's GHG reporting conversion factors 2020 were used according to mass of waste disposal by destination see page 268
Business travel	Footprint business travel for air and rail was obtained from our business travel service providers. Where available mileage for personal car, taxi and public transport use was used in combination with Defra's GHG reporting conversion factors 2020. In the absence of mileage, a financial allocation was made based on expenses spend and intensity factors from the EIO model. Accounting is by date of financial transaction
Employee commuting	Data is obtained by employee survey of miles travelled per week by modes of transport. Defra's GHG reporting conversion factors 2020 are used to calculate the GHG intensity of each transport type
Upstream leased assets	Financial allocation (EIO model) using floor space and geographical location
Downstream transportation and distribution	Where JM takes responsibility for the downstream distribution of goods, it was included in the upstream category calculation. Where our customers takes responsibility, no data is available
Processing of sold products	No quantitative data available, but not expected to be material based on our knowledge of how our customers use our products
Use of sold products	JM is a B2B manufacturer. Financial allocation (EIO model) using market sector (automotive, industrial chemicals and energy generation) and geographical breakdown of data
End of life treatment of sold products	Many of JM's products are returned to the company for recovery of the precious metals and thus end of life treatment is included in our Scope 1 + 2 footprint. JM does not have visibility of other end of life treatments
Downstream leased assets	Included in Upstream leased assets category
Investments	Financial allocation (EIO model) using geographical breakdown of investment revenues from each entity

Goal: Reduce water consumption and waste

Net fresh water consumption

This KPI is a record of how much water we withdraw through our operations. The KPI includes all freshwater sources - mains supplied water that we receive from municipalities, public or private utility companies, ground water that is extracted from below the earth's surface and fresh surface water that we extract from rivers, wetlands, lakes etc. We do not include rainwater or any brackish surface water. We subtract any water that is returned to the source from which it is extracted at the same or better quality.

Hazardous waste

This KPI is a record of how much hazardous waste we generate from our operations that can no longer be used by Johnson Matthey and has to be sent off site for treatment. We define hazardous waste in line with local regulatory requirements in the particular territory where the waste is generated. For example, in Europe we consider the EU Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council). We measure the amount of solid and liquid hazardous waste and report in metric tonnes of material. We measure the total weights sent off site, including any entrained water, and we consider all material waste no longer of use to Johnson Matthey. We categorise its destination in the following ways:

- Sent outside JM for beneficial reuse.
- Sent outside JM for recycling.
- Sent outside JM for incineration with energy recovery.
- Sent outside JM for incineration or treatment without energy recovery.
- Sent outside JM for landfill disposal.

NOx emissions

This KPI is a record of direct emissions of harmful nitrogen oxides to the environment from our manufacturing facilities. NOx is a generic term which includes nitric oxide (NO) and nitrogen dioxide (NO_2), but excludes nitrous oxide (N_2O). We measure this KPI in metric tonnes. The value is derived from continuous monitoring equipment where present, or from stoichiometric calculations based on our knowledge of NOx generation from our chemical processes. We consider all sources of NOx from the combustion of fuel in steam boilers to the gaseous output of our processes that emit NOx. We report the value after any abatement or treatment has taken place within our chimney stacks.

Basis of reporting – non-financial data continued

People

Goal: Keep people safe

Total recordable injury and illness rate (TRIIR) is defined as the number of recordable cases per 200,000 hours worked in a rolling year and includes cases affecting both our employees and contractors.

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 = ([total lost days and restricted days in the year x 200,000] ÷ total hours worked during the year).

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.

Process safety performance indicator (PSPI) 2 =
Process safety event severity rate (PSESR) Level 1 to 4 =

$$\frac{\text{(Total severity score for all events x 200,000)}}{\text{(Total worker hours)}}$$

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).

Goal: A diverse, inclusive and engaged company

Johnson Matthey invites all its permanent and fixed term contract employees to voluntarily complete its employee survey every one to two years to determine the wellbeing of its staff using a standard methodology defined and audited by 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.

Goal: Invest in our local communities

Our target 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 days, assuming that the standard full-time equivalent employee day is 8 hours. 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.

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.

$$\text{Average cost of one day of employee time} = \frac{\text{total employee benefits expense in year}}{\text{Number of working days in year x Average number of permanent employees}}$$

Number of working days in a year is five days per week for 50 weeks per year.

Independent greenhouse gas and health and safety assurance statement

Independent assurance

In 2020/21 Johnson Matthey appointed sustainability consultancy Avieco to provide independent external assurance of our 2020/21 GHG 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 for the time period: 1st April 2020 to 31st March 2021. 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 OHSA 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 2020/21 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 OHSA 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 in conjunction with Avieco's full assurance statement available at matthey.com/avieco-assurance

Additional non-financial performance information

This section should be read in conjunction with the Sustainable business section pages 60 to 85. All performance data is for the year ended 31st March. Data relating to greenhouse gas emissions, energy generation and consumption water and waste management, emissions to air, contractor injury and illness rates and Tier 1 process safety incidents have been externally assured as described on page 265.

Operations

Scope 1 and 2 greenhouse gas (GHG) footprint and efficiency[1]

	2020/21			2019/20			
	Global	**UK only**	**Global (excl UK)**	Global	UK only	Global (excl UK)	% change (global)
Scope 1 (tonnes CO_2 eq)	203,930	66,634	137,296	199,125*	59,669	139,456	+2.4%
Scope 2 – market based method (tonnes CO_2 eq)	184,974	3,969	181,005	192,334*	3,761	188,572	-3.8%
Scope 2 – location based method (tonnes CO_2 eq)	227,381	34,871	192,510	252,757*	40,407	212,350	-10.0%
Total operational carbon footprint – Scope 1 and 2 market based method (tonnes CO_2 eq)	**388,904**	**70,603**	**318,301**	**391,459***	**63,430**	**328,028**	**-0.6%**
Total operational carbon footprint – Scope 1 and 2 location based method (tonnes CO_2 eq)	431,311	101,505	329,806	451,882*	100,075	351,807	-4.5%
Total Scope 1 and 2 carbon intensity – market based (tonnes CO_2 eq/tonnes sales)	3.4	7.1	3.1	3.2	2.6	3.3	+16.3%

Energy efficiency and consumption

	2020/21			2019/20			
	Global	**UK only**	**Global (excl UK)**	Global	UK only	Global (excl UK)	% change (global)
Total energy consumption ('000kWh)	**1,312,084**	**431,466**	**880,618**	1,355,295*	421,979	933,316	-3.2%
Total energy efficiency (kWh/tonne)	**11,548**	**43,468**	**8,492**	11,000*	17,222	9,444	+5.0%

* Restated following review and reclassification of data submitted by some sites after the year end (below our 5% materiality threshold).

Five-year performance

	2020/21	2019/20	2018/19	2017/18	2016/17
Total energy consumption ('000 GJ)	**4,724**	4,879	5,202	5,104	5,147
Total energy consumption ('000 kWh)	**1,312,084**	1,355,295	1,444,890	1,431,360	1,475,472
Total Scope 1 and Scope 2 (market based) GHG emission (tonnes CO_2 eq)	**388,904**	391,459	423,130	445,509	468,489

1 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.

Scope 3 greenhouse gas (GHG) emissions

Scope 3 GHG category	Tonnes CO_2 eq 2020/21	Tonnes CO_2 eq 2019/20	% change vs baseline
TOTAL	**4,578,945**	**5,255,320**	**-13%**
Purchased goods and services	**3,139,540**	3,859,969	-19%
Capital goods	**266,513**	341,441	-22%
Fuel- and energy-related transport and distribution losses	**40,515**	42,200	-4%
Upstream transportation and distribution	**37,859**	37,859	0%
Waste generated in operations	**5,273**	5,303	-1%
Business travel	**67**	9,202	-99%
Employee commuting	**29,957**	29,957	0%
Upstream leased assets	**602**	5,094	-88%
Downstream transportation and distribution**			
Processing of sold products**			
Use of sold products	**1,057,318**	913,297	16%
End of life treatment of sold products**			
Downstream leased assets**			
Franchises**			
Investments	**1,302**	10,997	-88%

** Not calculated or included in another category. Please refer to basis for reporting on page 262.

Water management

		2020/21	2019/20	2018/19	2017/18	2016/17
2030 target: reduce Net freshwater consumption	Total '000 m^3	**2,039**	2,254			
Water withdrawal	Total '000 m^3	**2,144**	2,372	2,611	2,729	2,643
	m^3/tonne product sold	**18.9**	19.2	18.5	20.6	21.6
Water sources	Municipal authorities ('000 m^3)	**1,984**	2,201	2,427	2,489	2,438
	Ground water ('000 m^3)	**114**	108	156	189	161
	Fresh surface water ('000 m^3)	**47**	63	47	50	44
Waste water discharged	Total '000 m^3	**1,777**	1,679	1,780	1,592	1,630
	Discharged to municipal authorities ('000 m^3)	**1,665**	1,547	1,476	1,355	1,396
	Discharged to fresh surface water ('000 m^3)	**105**	118	272	208	223
	Discharged to brackish surface water ('000 m^3)	**7**	14	25	29	11
Average COD of waste water discharge	mg/l	**103.05**	240	171	197	n/a
	% waste water discharge covered by COD data	**72.5**	72	71	65	n/a

Additional non-financial performance information continued

Operations continued

Waste management

		2020/21	2019/20	2018/19	2017/18	2016/17
2030 target: reduce total hazardous waste	Tonnes hazardous waste generated and sent off site to third party	**57,213**	56,751			
Waste disposed by third parties	tonnes	**87,546**	79,831	86,370	71,788	87,887
	tonnes per unit production	**0.78**	0.69	0.61	0.54	0.72
Type of waste (tonnes)	Liquid hazardous waste	**54,170**	53,777	59,823	44,519	43,284
	Solid hazardous waste	**3,043**	2,973	2,432	1,823	2,363
	Liquid non-hazardous waste	**18,166**	7,903	8,050	11,909	11,936
	Solid non-hazardous waste	**12,167**	15,178	16,065	13,537	30,304
Treatment type (tonnes)	Reuse	**1,895**	2,912	4,553	3,801	3,142
	Recycling	**25,845**	22,133	25,391	17,996	22,422
	Off site incineration with energy recovery	**3,314**	4,264	4,306	6,134	5,376
	Off site treatment or incineration without energy recovery	**52,890**	47,115	48,195	37,585	32,371
	Landfill	**3,601**	3,407	3,925	6,271	24,576
Destination (tonnes)	Total hazardous waste sent internationally	**1,598**	1,569	1,585	751	624

Defining hazardous waste: As a UK listed company, Johnson Matthey defines hazardous waste in its internal reporting systems in line with EU Waste Framework Directive (Directive 2008/98/EC on waste, including its subsequent amendments).

Emissions to air

	2020/21	2019/20	2018/19	2017/18	2016/17
NOx (tonnes)	**299**	301[1]	409[1]	383	348
SOx (tonnes)	**51.0**	28	61	44	51
VOC (tonnes)	**81.9**	99	107	100	132
Sites covered	**74%**	67%	60%	39%	39%

In general, hazardous air pollutants (HAPs) are not a significant part of our process chemistry and we do not routinely collate data on this list of materials. We are currently investigating how best to monitor and report on HAPs and we expect to include a fuller report on our HAP emissions next year.

Production

Segment	Clean Air	Efficient Natural Resources	Health	New Markets	**Total group**
Production (tonnes)	65,567	40,079	94	7,833	**113,623**

1 Our NOx emissions to air have been restated following a data review in which we discovered an error in our NOx calculations at one of our biggest emitting sites in India. We have subsequently amended our internal calculation procedures to correct the calculations and restated our NOx totals for 2018/19 and 2019/20.

People

Health and safety

Contractor health and safety

		2020/21	2019/20	2018/19	2017/18	2016/17
Contractor LTIIR	Number of injuries and illnesses / 200,000 hours	**0.23**	0.27[1]	0.40	0.74	3.15
Contractor TRIIR	Number of injuries and illnesses / 200,000 hours	**0.45**	0.80	0.53	1.29	4.72

Trade union health and safety representation

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 shown in the table below:

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

Measuring our process safety events

		2020/21	2019/20	2018/19	2017/18
Tier 1	Number of events / 1 million hours	**0.154**	0.110	0.091	0.035

Our process safety severity rate data is given on page 79.

How we classify process safety events

A Tier 1 Process Safety Event is a loss of primary containment with consequence. It is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials, from a process that results in consequences as listed, per the API 754 Guide. A Tier 1 Process Safety event may involve a significant actual or potential impact.

Speak Up reports

Concern / allegation raised	Number of cases
Bribery and corruption	18
Business and financial reporting	4
Competition / anti-trust	1
Confidential information and intellectual property	1
Conflict of interest	15
Discrimination, including harassment and retaliation	44
Employee rights	18
Enquiry	3
Environmental protection, product stewardship or health and safety	12
Insider trading	1
Misconduct or inappropriate behaviour	5
Physical assets	1
Theft	1
Violence or threats	5
Total	**129**

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

Additional non-financial performance information continued

People

Our people

Number of staff* as of 31st March 2021

	Permanent employees		Temporary employees		Total (excluding agency staff)		Agency staff		Total	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
Europe	7,573	7,445	257	316	7,830	7,761	734	1,056	8,564	8,817
North America	2,738	3,099	55	34	2,793	3,133	38	33	2,831	3,166
Asia	2,354	2,423	27	96	2,381	2,519	169	110	2,550	2,629
Rest of World	593	665	43	74	636	739	1	1	637	740
Total group	**13,258**	**13,632**	**382**	**520**	**13,640**	**14,152**	**942**	**1,200**	**14,582**	**15,352**

* For definitions see page 260.

Employee turnover by region

	Voluntary employee turnover 2021	Voluntary employee turnover 2020	**Total employee turnover 2021**	Total employee turnover 2020
Europe	**6.3%**	8.3%	**10.9%**	10.0%
North America	**13.8%**	10.4%	**27.5%**	15.1%
Asia	**9.8%**	10.6%	**20.4%**	14.2%
Rest of World	**5.1%**	4.1%	**12.8%**	8.6%
Total group	**8.2%**	9.0%	**15.7%**	11.8%

Trade union representation

	Average number of employees represented*	% represented
Europe	2,134	27%
North America	494	18%
Asia	118	5%
Rest of World	320	50%
Total group	**3,066**	**22%**

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

Employees by gender and region as at 31st March 2021

	Permanent employees		Temporary employees		Total (excluding agency staff)	
	Male	Female	Male	Female	Male	Female
Europe	69%	31%	60%	40%	69%	31%
North America	76%	24%	93%	7%	76%	24%
Asia	81%	19%	48%	52%	81%	19%
Rest of World	67%	33%	56%	44%	66%	34%
Total group	**73%**	**27%**	**63%**	**37%**	**72%**	**28%**

New joiners by gender and region

	Total joiners	Joiners male	Joiners female	Total Joiners aged < 30	Total Joiners aged 30-50	Total Joiners aged > 50
Europe	839	64%	36%	37%	53%	10%
North America	344	74%	26%	46%	40%	14%
Asia	352	83%	17%	31%	68%	0%
Rest of World	57	54%	46%	46%	54%	0%
Total group	**1,592**	**70%**	**30%**	**38%**	**53%**	**8%**

Sustainability Accounting Standards Board (SASB) index

The following table shows how the report meets the requirements of the SASB Sustainability Accounting Standard for Chemicals (Version 2018-10).

Sustainability disclosure topics and accounting metrics

Topic	Accounting metric	SASB code	Page
Greenhouse gas emissions	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	RT-CH-110a.1	67-68; 266
	Discussion of long term and short term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	RT-CH-110a.2	67
Air quality	Air emissions of the following pollutants: (1) NOX (excluding N_2O), (2) SOX, (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)	RT-CH-120a.1	70 268
Energy management	1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy[1]	RT-CH-130a.1	68; 266
Water management	1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	RT-CH-140a.1	69; 267
	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	RT-CH-140a.2	69
	Description of water management risks and discussion of strategies and practices to mitigate those risks	RT-CH-140a.3	not disclosed
Hazardous waste management	Amount of hazardous waste generated, percentage recycled[2]	RT-CH-150a.1	69; 268
Community relations	Discussion of engagement processes to manage risks and opportunities associated with community interests	RT-CH-210a.1	not disclosed
Workforce health and safety	1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	RT-CH-320a.1	80-81; 269
	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	RT-CH-320a.2	81
Product design for use-phase efficiency	Revenue from products designed for use phase resource efficiency	RT-CH-410a.1	65
Safety and environmental stewardship of chemicals	(1) Percentage of products that contain Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment	RT-CH-410b.1	81-82
	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	RT-CH-410b.2	82
Genetically modified organisms	Percentage of products by revenue that contain genetically modified organisms (GMOs)	RT-CH-410c.1	82
Management of the legal and regulatory environment	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	RT-CH-530a.1	82
Operational safety, emergency preparedness and response	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)[3]	RT-CH-540a.1	79
	Number of transport incidents[4]	RT-CH-540a.2	80
Activity metrics	Production by reportable segment[5]	RT-CH-000.A	268

1 Note to **RT-CH-130a.1** – The entity shall discuss its efforts to reduce energy consumption and / or improve energy efficiency throughout the production processes.

2 Note to **RT-CH-150a.1** – The entity shall disclose the legal or regulatory framework(s) used to define hazardous waste and recycled hazardous waste, and the amounts of waste defined in accordance with each applicable framework.

3 Note to **RT-CH-540a.1** – The entity shall describe incidents with a severity rating of 1 or 2, including their root cause, outcomes, and corrective actions implemented in response.

4 Note to **RT-CH-540a.2** – The entity shall describe significant transport incidents, including their root causes, outcomes, and corrective actions implemented in response.

5 Note to **RT-CH-000.A** – Production should be disclosed for each of the entity's reportable segments, where products and service segments are determined according to FASB ASC 280-10 and production is reported as weight for solid products and volume for liquid and gas products.

GRI Standard Content index

This report has been prepared in accordance with GRI Standard: Core Option

General disclosures in accordance with GR1 102

Disclosure	GRI code	Page
Organisational profile		
Name of the organisation	102-1	277
Activities, brands, products, and services	102-2	4-13; 23
Location of headquarters	102-3	277
Location of operations	102-4	14
Ownership and legal form	102-5	164-171
Markets served	102-6	4-13
Scale of the organization	102-7	200; 270
Information on employees and other workers	102-8	270
Supply chain	102-9	84
Significant changes to the organisation and its supply chain	102-10	–
Precautionary principle or approach	102-11	–
External initiatives	102-12	110
Membership of associations	102-13	84
Strategy		
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Governance structure	102-18	106-107
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Consulting stakeholders on economic, environmental and social topics	102-21	110
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Identifying and managing economic, environmental and social impacts	102-29	112
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Stakeholders' involvement in remuneration	102-37	153
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Go online for our full GRI Index: matthey.com/gri-2020-21

Specific GRI disclosures for Johnson Matthey's material topics

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Sustainability Leadership		
GRI-103 Management approach 2016	103	16-21; 29-30; 60-63; 112
GRI-102 General disclosures 2016	102-14; 102-29	18-21; 60-63
Financial Sustainability		
GRI-103 Management approach 2016	103	26-27; 58-59; 132-135
GRI-201 Economic performance 2016	201-3	215-223
Health and Safety		
GRI-103 Management approach 2016	103	29; 62-63; 78-80; 260; 264-265
GRI-403 Occupational health and safety 2016	403-1; 403-2; 403-4	80; 269
Greenhouse Gas Emissions		
GRI-103 Management approach 2016	103	30; 62-63; 66-68; 260-262; 265
GRI-302 Energy 2016	302-1; 302-3; 302-4	68; 266
GRI-305 Emissions 2016	305-1; 305-2; 305-3; 305-4	67-68; 266-267
Air Quality		
GRI-103 Management approach 2016	103	62-63; 66; 70; 263; 265
GRI 305: Emissions 2016	305-7	70; 268
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GRI-103 Management approach 2016	103	66-67; 86-87; 265 CDP score
GRI-201 Economic performance 2016	201-2	86-87; CDP disclosure
Modern Slavery and Child Labour		
GRI-103 Management approach 2016	103	83-85
GRI-408 Child labour 2016	408-1	84-85
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GRI-306 Effluents and waste 2016	306-1	267
Ethical Business Practices and Compliance		
GRI-103 Management approach 2016	103	77; 269
GRI-205 Anti-corruption 2016	205-1; 205-2; 205-3	77
GRI-206 Anti-competitive behaviour 2016	206-1	not disclosed
GRI-415 Public policy 2016	415-1	167
GRI-419 Socioeconomic compliance 2016	419-1	not disclosed
Resource Scarcity		
GRI-103 Management approach 2016	103	10-11; 65; 84
GRI-301 Materials 2016	301-2	not disclosed
Employee Recruitment and Retention		
GRI-103 Management approach 2016	103	29; 63; 72-76
GRI-102 General disclosures 2016	102-8	200; 270
GRI-401 Employment 2016	401-1	270
GRI-404 Training and education 2016	404-2; 404-3	75-76
Responsible Sourcing		
GRI-103 Management approach 2016	103	83-85
GRI-308 Supplier environmental assessment 2016	308-1; 308-2	–
GRI-414 Supplier social assessment 2016	414-1; 414-2	–
GRI-407 Freedom of association and collective bargaining 2016	407-1	–
Diversity and Inclusion		
GRI-103 Management approach 2016	103	29; 73-74; 167; 263
GRI-405 Diversity and equal opportunity 2016	405-1; 405-2	29; 74; 105; 125; 270
GRI-406 Non-discrimination 2016	406-1	269
Community Engagement		
GRI-103 Management approach 2016	103	85
GRI-413 Local communities 2016	413-1	not disclosed

Shareholder information

Key shareholder facts

Johnson Matthey share price as at 31st March	2016	2017	2018	2019	2020	2021
	2,744p	3,080p	3,042p	3,142p	1,798p	3,013p

By location	Number of shares	Percentage
UK	100,341,662	50.44
North America	41,608,481	20.92
Europe	38,808,637	19.51
Asia Pacific	8,401,026	4.22
Rest of World	120,034	0.06
Unidentified	9,660,766	4.86
Total	**198,940,606**	**100.0**

By category	Number of shares	Percentage
Investment and unit trusts	98,083,390	50.67
Pension funds	28,393,738	14.67
Individuals	11,361,288	5.87
Custodians	11,025,122	5.7
Insurance companies	5,498,988	2.84
Treasury shares and employee share schemes	8,902,362	4.6
Sovereign wealth funds	6,709,341	3.47
Charities	710,578	0.37
Other	28,255,799	11.81
Total	**198,940,606**	**100.0**

By size of holding	Number of holdings	Percentage	Number of shares	Percentage
1 – 1,000	4,665	71.65	1,422,575	0.72
1,001 – 10,000	1,208	18.55	3,433,621	1.73
10,001 – 100,000	402	6.17	13,856,718	6.97
100,001 – 1,000,000	202	3.10	59,856,438	30.09
1,000,001 – 5,000,000	29	0.45	66,832,991	33.59
5,000,001 and over	5	0.08	53,538,263	26.91
Total	**6,511**	**100.0**	**198,940,606**	**100.0**

Dividend – pence per share

	2016	2017	2018	2019	2020	2021
Interim	19.5	20.5	21.75	23.25	24.50	20.00
Final	52.0	54.5	58.25	62.25	31.125	50.00
Total ordinary	71.5	75.0	80.0	85.5	55.625	70.00
Special	150.0	–	–	–	–	–

The board is proposing a final dividend for 2020/21 of 50.00 pence, to take the total for the year to 70.00 pence.

Electronic communications

We're encouraging our shareholders to receive their shareholder information by email and via our website. This not only allow us to provide you with information quicker, it also helps us to be more sustainable by reducing paper and printing materials.

To register for electronic shareholder communications, visit our registrar's website shareview.co.uk.

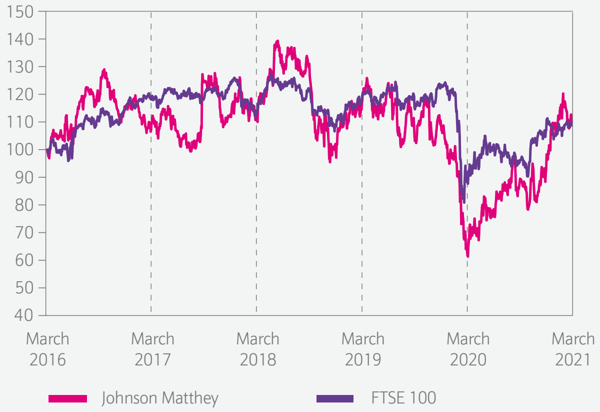
Dividends

Dividends can be paid directly into shareholders' bank or building society accounts. This allows you to receive your dividend immediately and is cost-effective for your company. To take advantage of this, please contact Equiniti via shareview.co.uk or complete the dividend mandate form you receive with your next dividend cheque. A Dividend Reinvestment Plan is also available which allows shareholders to purchase additional shares in the company.

Matthey.com

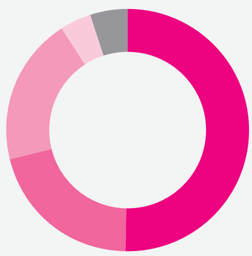
You can find information about the company quickly and easily on our website Matthey.com. Here you will find information on the company's current share price together with copies of the group's annual and half-yearly reports and major presentations to analysts and institutional shareholders.

Johnson Matthey share price five year performance versus FTSE 100 Rebased to 100 at 31st March 2021



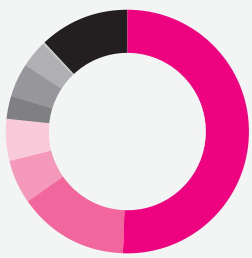
By location

- UK 50.44%
- North America 20.92%
- Europe 19.51%
- Asia Pacific 4.22%
- Rest of World 0.06%
- Unidentified 4.86%



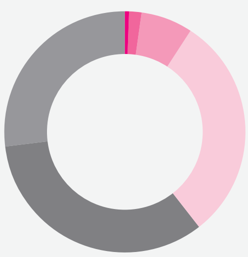
By category

- Investment and unit trusts 50.67%
- Pension funds 14.67%
- Individuals 5.87%
- Custodians 5.7%
- Insurance companies 2.84%
- Treasury shares and employee share schemes 4.6%
- Sovereign wealth funds 3.47%
- Charities 0.37%
- Other 11.81%



By size of holding

- 1 – 1,000 0.72%
- 1,001 – 10,000 1.73%
- 10,001 – 100,000 6.97%
- 100,001 – 1,000,000 30.09%
- 1,000,001 – 5,000,000 33.59%
- 5,000,001 and over 26.91%



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. Their contact details are included below. Equiniti also offer a share dealing service by telephone: 0345 603 7037 or online shareview.co.uk/dealing.

By phone: 0371 384 2344* (in the UK); +44 121 415 0804 (outside the UK)

Telephone lines are open 8.30am to 5.30pm Monday to Friday excluding public holidays in England

By post: Equiniti, Aspect House, Spencer Road, Lancing, West Sussex BN99 6DA

Online: shareview.co.uk

Shareholders may also contact the company directly using the details below.

By phone: +44 20 7269 8400

By email: jmir@matthey.com

By post: The Company Secretary, Johnson Matthey Plc, 5th Floor 25 Farringdon Street, London EC4A 4AB

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 Depositary. 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 Depositary 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.

Financial calendar 2021/22

2021

10th June
Ex dividend date

11th June
Final dividend record date

29th July
130th Annual General Meeting (AGM)

3rd August
Payment of final dividend subject to the approval of shareholders at the AGM

24th November
Announcement of results for the six months ending 30th September 2021

9th December
Ex dividend date

10th December
Interim dividend record date

2022 (provisional)*

1st February
Payment of interim dividend

26th May
Announcement of results for year ending 31st March 2022

21st July
131st AGM

* 2022 dates will be published on our website, matthey.com/financial-calendar, once finalised.

Glossary of key terms

2006 Act	The Companies Act 2006
ADHD	Attention Deficit Hyperactivity Disorder
ADR	American Depositary Receipt
AGM	Annual general meeting
API	Active pharmaceutical ingredient
BEV	Battery electric vehicle
CAGR	Compound annual growth rate
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
CCM	Catalyst coated membrane
CDP	Carbon Disclosure Project
CEFIC	The Council of European Chemical Industry
CGU	Cash-generating unit
CH_4	Methane
CO_2	Carbon dioxide
COD	Chemical oxygen demand
CPI	Consumer price index
D&I	Diversity and inclusion
EBITDA	Earnings before interest, tax, depreciation and amortisation
EHS	Environment, health and safety
EIB	European Investment Bank
eLNO®	JM's family of nickel rich advanced battery cathode materials
EPS	Earnings per share
ESG	Environment, social and governance
ESOT	Employee Share Ownership Trust
EU	European Union
FCA	Financial Conduct Authority
FRC	Financial Reporting Council
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
Fuel cell	Technology which converts hydrogen or other fuels (methanol, natural gas) into clean electricity
GAAP	Generally accepted accounting principles
GHG	Greenhouse gas
GMC	Group Management Committee
GRI	Global Reporting Initiative
HDD	Heavy duty diesel
HDV	Heavy duty vehicle
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IFRIC	International Financial Reporting
IFRS	International Financial Reporting Standards
ISA	International Standards on Auditing
ISO 14000	Internationally recognised series of standards which specify the requirements for an environmental management system
ISO 45001 / ISO 18001	International standard giving guidelines for occupational health and safety
ISO 31000	International standard giving guidelines on risk management
ISO 50001	International standard giving guidelines on an energy management system
JM	Johnson Matthey
JMEPS	Johnson Matthey Employees Pension Scheme
KfW	KfW IPEX – Bank GmbH
KPI	Key performance indicator
LCA	Lifecycle analysis
LDV	Light duty vehicle
LFP	Lithium iron phosphate, a cathode material
LTIIR	Lost time injury and illness rate
LTIP	Long term incentive plan
OEM	Original equipment manufacturer
Margin	Underlying operating profit divided by sales excluding precious metals
NOx	Oxides of nitrogen
OSHA	Occupational Safety and Health Administration
OTC	Over-the-counter
PBT	Profit before tax
PEM	Proton exchange membrane
Pgm	Platinum group metal
PILON	Payments in lieu of notice
PSP	Performance share plan
R&D	Research and development
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation
ROIC	Return on invested capital
RPI	Retail price index
RSP	Restricted share plan
SAICM	Strategic Approach to International Chemicals Management
Sales	Sales excluding the value of precious metals
SASB	Sustainability Accounting Standards Board
SBT	Science based target
SIP	Share incentive plan
SOx	Oxides of sulphur
SPV	Special purpose vehicle
SVHC	Substance of very high concern
Syngas	A gaseous mixture of carbon oxides and hydrogen
TCFD	Task Force on Climate-related Financial Disclosures
The Code	The UK Corporate Governance Code, issued by the FRC
TRIIR	Total recordable injury and illness rate
UN	United Nations
UN SDGs	United Nations Sustainable Development Goals
VOC	Volatile organic compound
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

Company details

Registered Office

Johnson Matthey Plc

5th Floor
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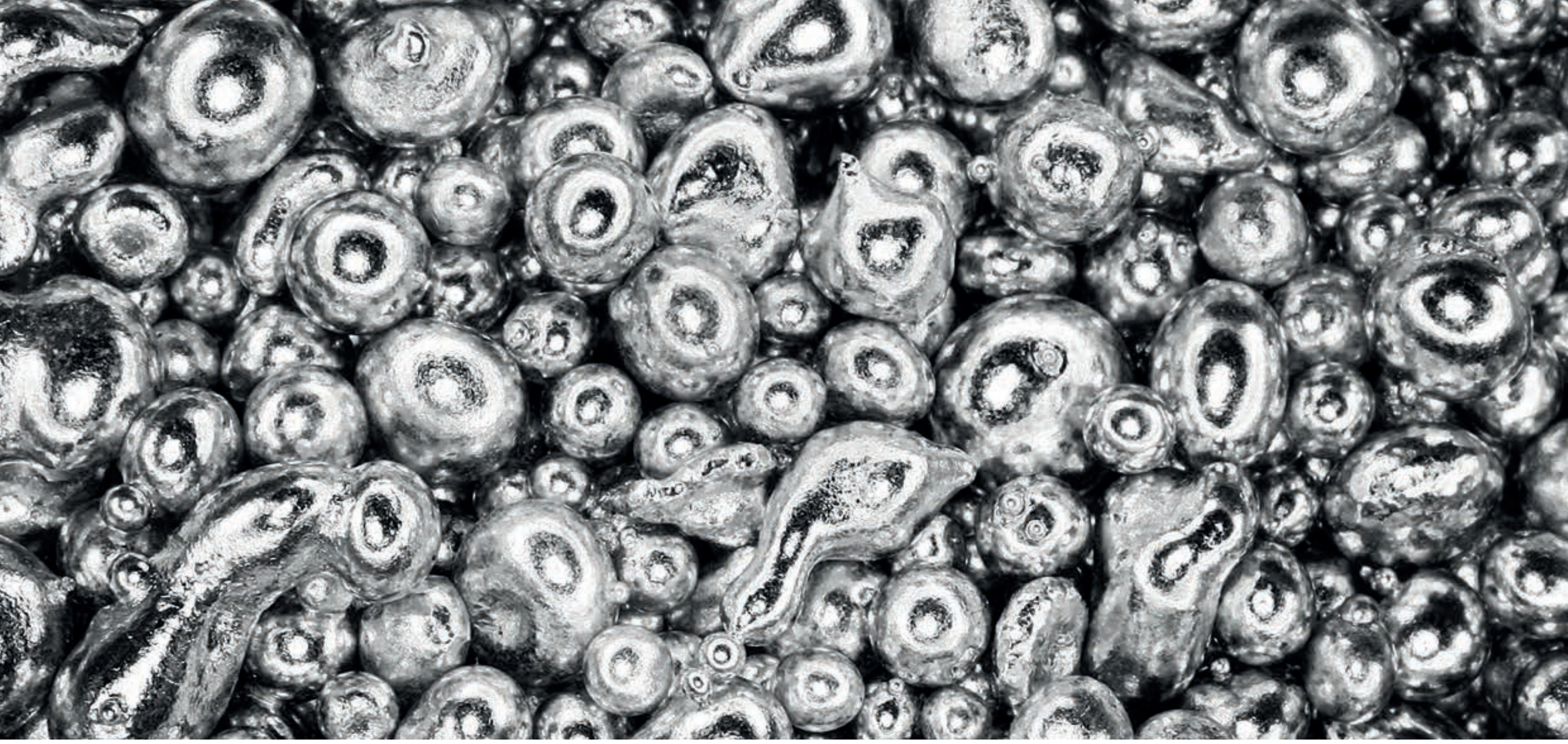

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