Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Johnson Matthey is a leader in sustainable technologies. Today, some 84.7% of the group's sales represent products and services which provide sustainability benefits through their positive impact on the environment, resource efficiency or our health, as determined by their alignment with four of the UN SDGs. Are sales and R+D efforts are aligned to good health and wellbeing (UNSDG 3), affordable and clean energy (UN SDG 7), responsible consumption and production (UN SDG 12) and climate action (UN SDG 13)
Our business is divided into four sectors for reporting purposes, based around the four different applications of our products:
1. Clean Air Sector - catalysts for gasoline and diesel powered vehicles, including hybrids, trucks buses, non-road machinery and stationary equipment
2. Efficient Natural Resources Sector - Catalyst Technologies and additives, licenses process technology and services to the chemical and oil & gas industry; precious metal refining and recycling services to a wide variety sectors from industrial chemicals to jewellery.
3. Hydrogen Technologies Sector - provides battery materials for automotive applications and battery systems for a range of non automotive applications; fuel cell technologies for automotive and stationary applications; Medical Device Components and advanced catalysts derived from precious metals to the pharmaceutical and agricultural chemicals markets
4. Health Sector - Leading provider of complex chemistry solutions to generic and innovator pharmaceutical companies; develops and manufactures active pharmaceutical ingredients (APIs) for a variety of treatments. This business was divested in June 2022 (after year end).

We have operations in over 30 countries and employ around 14,000 people worldwide.
Our latest annual integrated report can be found at https://matthey.com/ar22
For more information about Johnson Matthey, see our corporate website : www.matthey.com

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	April 1, 2021	March 31, 2022	Yes	3 years

C0.3

(C0.3) Select the countries/areas in which you operate.

Argentina
Australia
Brazil
Canada
China
Finland
Germany
Hong Kong SAR, China
India
Japan
Malaysia
Mexico
Netherlands
North Macedonia
Poland
Republic of Korea
Russian Federation
South Africa
Sweden
Switzerland
United Kingdom of Great Britain and Northern Ireland
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

GBP

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Financial control

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

Bulk inorganic chemicals

Other chemicals

Specialty chemicals

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	GB00BZ4BQC70

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	Johnson Matthey's strategy is embodied by its purpose purpose statement "Catalysing the Net zero transition". It is the responsibility of the Board Chair to ensure the company delivers on its strategy. See Chair's statement in Annual report 2022 page 2-3. "A new energy to help accelerate net zero". The Societal Value Committee (SVC) is our Board subcommittee with responsibility for ensuring we meet all our Sustainability commitments, including our science-based GHG reduction targets for 2030 and net zero commitment for 2040.

	The chair of the SVC is a non-executive director on the Board. The SVC meets three times per year and reviews the governance of all aspects of climate change across JM, include implementing the recommendations of TCFD. Annual Report 2022 - TCFD report on governance: page 60-61 Board governance and SVC : Page 89, 98-99

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	Our business purpose statement is "Catalysing the Net Zero Transition". Our strategy is all about transitioning to selling only products that advance the net zero world and thus the Board review climate-related issues at every meeting. Specifically we are growing our Hydrogen Technologies business which sells active components for green hydrogen electrolysers and fuel cells to advance the the hydrogen economy. For more information on other aspects of climate-related strategy see Annual Report 2022 pages 14 - 19 and 60-61

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	The skills and experience of the Board are detailed on page 86-87 of Annual Report 2022. For example, Chris Mottershead is also a global advisor on climate change. During the year, the whole board received an update on climate-related legislation and a training session on the implementation of TCFD recommendations. AR2022 page 60. Board effectiveness review process is outlined on page 96-97

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The board delegates responsibility for running the business to the Chief Executive; this includes overall responsibility for climate-related issues, which resides with the Chief Executive, assisted by the Group Leadership Team (GLT). The Chief Executive is supported by the Chief Sustainability Officer who is responsible for day-to-day climate-related matters and provides updates to the GLT on the steps taken to develop or implement our sustainability strategy, including key metrics, risks and opportunities. The Chief Sustainability Officer is in turn supported by the Sustainability Council. The Sustainability Council is made up of managers from across our sectors and functions who, together, develop our sustainability vision, goals and targets. The Chief Sustainability Officer reports to the Chief Executive and be a member of the GLT. (Prior to the appointment of the Chief Sustainability Officer, the Chief EHS and Operations Officer held this responsibility.)

Annual report 2022 - TCFD governance section page 61. Overall governance section page 89.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	The long-term Performance Share Plan is based on EPS growth targets (40% of the award), relative TSR performance (40% of the award) and specific and measurable sustainability metrics (20% of award). The sustainability scorecard consists of three equally weighted metrics, each related to a pillar of our sustainability framework. Two of the three metrics related to GHG emissions: • Products and services – tonnes of greenhouse gases (GHG) avoided during the period using technologies enabled by our products and solutions, compared to conventional solutions, where threshold vesting will be 5.2 million tonnes GHG avoided and maximum will be 6.0 million tonnes GHG avoided. • Operations – reduction in Scope 1 and 2 GHG emissions (from the FY20 baseline), where threshold vesting will be achieved for a 12% reduction in GHG emissions and maximum vesting for a 14% reduction in GHG emissions. Annual Report 2022 page 130

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target	The Chief Executive award level is 250% of base salary . The long-term Performance Share Plan is based on EPS growth targets (40% of the award), relative TSR performance (40% of the award) and specific and measurable sustainability metrics (20% of award). The sustainability scorecard consists of three equally weighted metrics, each related to a pillar of our sustainability framework. Two of the three metrics related to GHG emissions: • Products and services – tonnes of greenhouse gases

			(GHG) avoided during the period using technologies enabled by our products and solutions, compared to conventional solutions, where threshold vesting will be 5.2 million tonnes GHG avoided and maximum will be 6.0 million tonnes GHG avoided. • Operations – reduction in Scope 1 and 2 GHG emissions (from the FY20 baseline), where threshold vesting will be achieved for a 12% reduction in GHG emissions and maximum vesting for a 14% reduction in GHG emissions. Annual Report 2022 page 130
Chief Financial Officer (CFO)	Monetary reward	Emissions reduction target	The Chief Financial Officer award level is 175% of base salary. The long-term Performance Share Plan is based on EPS growth targets (40% of the award), relative TSR performance (40% of the award) and specific and measurable sustainability metrics (20% of award). The sustainability scorecard consists of three equally weighted metrics, each related to a pillar of our sustainability framework. Two of the three metrics related to GHG emissions: • Products and services – tonnes of greenhouse gases (GHG) avoided during the period using technologies enabled by our products and solutions, compared to conventional solutions, where threshold vesting will be 5.2 million tonnes GHG avoided and maximum will be 6.0 million tonnes GHG avoided. • Operations – reduction in Scope 1 and 2 GHG emissions (from the FY20 baseline), where threshold vesting will be achieved for a 12% reduction in GHG emissions and maximum vesting for a 14% reduction in GHG emissions. Annual Report 2022 page 130

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	This time frame is aligned with our other business strategy reviews.
Medium-term	3	10	This time frame is aligned with our other business strategy reviews.
Long-term	10	30	This time frame is aligned with our other business strategy reviews.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

All risks are scored using a standardised scoring methodology (1-5), which operates on two levels:
1. Principal risk level
2. Operational business risk level

Both of these methodologies require risk to be scored on both financial and strategic level.

Operational business risks identified at strategic sites are the only ones that meet the criteria to be included in response to W1.4.
We have 8 (out of 53) sites that are classified as "strategic " because their failure could have a substantive financial impact on the business.

We define strategic suppliers as those suppliers of raw material that are critical to the operation of our strategic products.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream

Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Our long-term success, and how we achieve our strategic objectives, is grounded in how well
we manage the risks our business faces. To do that well, we've made managing those risks an
integral part of how we are governed and of how we work at all levels of the organisation. We
keep ahead of potential risks by training our people and investing in awareness campaigns.
We've also established an integrated governance, risk and compliance (GRC) platform –
called JMProtect – to help us oversee our risks, processes and controls.

Assessing those risks
JM's group risk framework provides guidance on the tools and processes required to manage
and assess all risk types, including climate-related risks. During the year, with the help of EY,
and approved for use by ERM, we developed a standardised group risk impact scoring methodology.
We set up a cross-functional working group to help us identify, assess and manage the impact of climate on our business. The group includes representatives from our finance,
strategy, sustainability and risk teams, and is supported by sustainability consultancy ERM.
Identifying climate-related risks
Through a series of workshops, the cross-functional working group identified six potentially
significant climate-related risks, covering both the physical (extreme events, slow-onset hazards) and transitional (policy, legal, market, technology and reputation) aspects of climate change. Materiality was defined as
a matter that in the short, medium or long term could significantly influence our ability to meet our strategic objectives.
As part of our work with ERM this year, they provided detailed guidance on how to carry

out
a thorough assessment of climate-change risk. During the identification stage of this process,
we used a range of inputs, including:
• The TCFD risk taxonomy, including physical and transitional climate risks.
• Expert judgement within our TCFD working group, including technical experts from our finance, strategy, sustainability and risk teams.
• Consideration of risks in the context of our climate scenarios used for businesses strategic planning.
• An external review of risks disclosed by industry peers.
We documented what drives these risks, what their potential effects might be, and what mitigating actions we need to take to manage them. We also had the risks validated by ERM.
We will continue to develop and refine our response to risk and target our mitigating actions
towards the root causes of those risks.

Integrating those risks
It is essential that we integrate climate-related risks and opportunities into our strategic decision making, and our risk management framework guides us on the tools and processes
we need to manage all risk types, including those related to climate. We want considering
climate change to be an everyday part of how we operate, so we've included climate in our
bottom-up operational risk management process, giving us a clear view of climate-related
risks across the organisation. We've aligned our climate change work with the TCFD risk
taxonomy to make sure we're covering physical and transitional climate risks.
This focused climate-change work now sees us aligning strategic growth with the transition
to a low-carbon economy and including this as a standalone principal risk. We're also embedding what we've learnt from our early assessments of physical climate risk into our
principal risk of asset failure and supply failure. Prioritising climate by incorporating it into
our principal risk process means it will be reviewed formally, twice a year, by the GLT and the
board – on top of the more detailed and focused review already done by the SVC.
In the coming year, we aim to:
• Continue to integrate the six climate-related risks we've identified.
• Strengthen our overall governance of climate-related risks.
• Ensure we are properly monitoring the risks themselves, and how we are mitigating them,
by tracking progress against the targets we have set.

Managing those risks
The board SVC committee oversees our sustainability strategy, including climate-related risks.
Our climate risks may have a direct or indirect impact on our principal risks and are therefore
managed alongside and integrated within our principal risk process. Each of our climate risks
has been assigned a risk coordinator. These individuals are senior stakeholders who are
accountable for reviewing, monitoring and assessing the magnitude of the risk as well as
overseeing the implementation of appropriate mitigations to treat the risk.

Annual report 2022 pages 68 and 70 - 74

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Impact of current regulation is one of the topics in the Risk library. As a provider of emissions reduction technology most of our markets are driven by national and international regulation of vehicle emissions or carbon emissions from energy or chemical industries. See description of our key markets on pages 18-19 and Strategic Growth risk #1 in Annual Report 2022 page 74
Emerging regulation	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Potential impact of emerging regulation is one of the topics in the Risk library. Identifying emerging risks and opportunities relies on how well we understand the context of the markets we operate in – in particular, the transition to a low-carbon economy. We use our internal climate scenarios to model how the transition might play out in industries like automotive and hydrogen. We also consider trends – such as carbon pricing and regulations – that could affect the bigger picture, globally and regionally. Understanding market context feeds into our strategy,

		too. It's an exercise that helps us see opportunities to strengthen our existing growth businesses and find new opportunities. As a provider of emissions reduction technology most of our markets are driven by national and international regulation of vehicle emissions or carbon emissions from energy or chemical industries. See description of our key markets on pages 18-19, Strategic Growth principal risk #1 in Annual Report 2022 page 74 and emerging risks on page 73.
Technology	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Changes in technology and customer/market demands for different technology is one of the topics in the risk library. We are a high value technology driven company and so it is essential we maintain a global view of how our technology stack up compared to emerging competition. See Maintaining Competitive Advantage risk #2 and Intellectual Property management risk #7 in Annual Report 2022 pages 74 and 77.
Legal	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Changes in technology and customer/market demands for different technology is one of the topics in the risk library. See Customer Contract liability risk #12 in Annual Report 2022 page 79
Market	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Changes in technology and customer/market demands for different technology is one of the topics in the risk library. Identifying emerging risks and opportunities relies on how well we understand the context of the markets we operate in – in particular, the transition to a low-carbon economy. We use our internal climate scenarios to model how the transition might play out in industries like automotive and hydrogen. As the net zero economy emerges, understand and reacting to market shifts in customer demand are key to our profitability. See description of our key markets on pages 18-19 and Strategic Growth risk #1 & Competitive Advantage risk #2 in Annual Report 2022 pages 74

Reputation	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Our reputation as a sustainable technology leader and a sustainability leader is key to our market capitalisation. See Customer Contract liability risk #12 in Annual Report 2022 page 79
Acute physical	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Climate change could expose us to physical risks to our assets or our supply chains and so it is important to consider these risks as part of our Asset Failure #8 and supply failure risks #4 in Annual Report 2022 pages 75, 77
Chronic physical	Relevant, always included	The central Group Assurance and Risk team provides a risk library of issues to all businesses to work through and consider at each 6 monthly review. Climate change could expose us to physical risks to our assets or our supply chains and so it is important to consider these risks as part of our Asset Failure #8 and supply failure risks #4 in Annual Report 2022 pages 75, 77

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Emerging regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Without adaptation of our portfolio, there is a long-term risk that we may not have a financially viable future business model and / or capability as society transitions away from
fossil fuels, driven by regulation and increasing carbon taxation.

A significant tightening of legislation regulating GHG emissions from vehicles could adversely affect group sales and profitability, if we don t respond. For example, introduction of EU legislation to phase out or ban internal combustion engine (ICE) powered cars over time (illustrated by the ban of future sales of new cars with ICEs in Europe after 2035) could adversely impact our Clean Air business (c. 60% of JM sales in FY2022).

To manage this risk we are heavily investing in technology to protect our leadership in Clean Air, closely monitoring market shifts, rationalising our cost base; we are also investing in alternative powertrains such as Hydrogen powered fuel cell vehicles and sustainable fuels . So we expect our Clean Air business to remain cash generative by the end of the decade (c. £2bn sales forecast in FY31) and decline thereafter, whilst sales of components for fuel cell vehicles (and other hydrogen power applications) increase. Our risk modelling assumes a 15% penetration of fuel cell vehicles by 2040, especially in heavy duty segments, where we have a robust market share.

Market trends - Annual report 2022 page 18. Assumptions for powertrain evolution driven by regulation see TCFD scenario descriptions page 62.
See our TCFD report Climate risk 1 - changing customer and consumer demand for products - Annual Report 2022 page 63 for a general description of this risk, which is mirrored also in Principle risk 1 - Strategic Growth - Annual Report 2022 page 74

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,500,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact figure given is the highest possible eventual annual loss of sales in the long term, if we do nothing to mitigate the risk; included in the number is 100% of our revenue from light duty vehicle catalyst sales in FY2021/22. Annual Report 2022 page 24.

Cost of response to risk

300,000,000

Description of response and explanation of cost calculation

We focus on managing our existing businesses effectively, while pivoting away from fossil fuels-based industries to ones based on sustainable chemicals, fuels and clean energy as markets develop.
• We are closely monitoring the changing market environment, updating our climate scenarios at least once a year to inform our strategic decisions.
• We keep investing in innovation to make sure we have products that differentiate us in all our markets.
• For our maturing businesses, we have a plan to reduce our cost base to improve efficiency and cash flow
• For some of our growth businesses, we plan to invest in production assets and to make sure our capital projects are implemented effectively through our capital expenditure control programme.

Costs
c. £300m of cumulative capital expenditures dedicated to businesses related to the net zero transition over 2022/23-2024/25. £100m-£200m fixed cost savings from Clean Air by 2030/31.

For more information see Capital Markets presentation slide 51
https://matthey.com/documents/161599/348557/JOHNSO~1.pdf/051461a6-6224-ce4f-ee66-9e3c0d22fdc5?t=1653562764575

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver
Acute physical
Flood (coastal, fluvial, pluvial, groundwater)

Primary potential financial impact
Decreased revenues due to reduced production capacity

Company-specific description
Changing weather patterns as the climate warms may result in physical risks to our assets and
supply chains. During the year, we worked with Zurich Resilience Solutions to evaluate the
exposure of all our assets, They examined 10 weather related perils and which found that flood and hurricane are our most significant emerging risks, though . which could damage our sites and disrupt production.

The consequences associated
with this risk include loss of sales, due to inability to satisfy customer demand, increased costs to mitigate the risks, as well as posing health risks to our employees, if we do not mitigate adequately..
Annual Report pages 66 -67 "Our physical risks"

Time horizon
Medium-term

Likelihood
Unlikely

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
250,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The estimated financial implication given in answer to this question is the level of retention or deductible, before transfer to insurance, for the risk of physical damage to manufacturing assets and for loss of sales due to an unexpected failure of one of our largest manufacturing facilities.

Cost of response to risk

6,500,000

Description of response and explanation of cost calculation

Integration of weather-related risks in business continuity plans and follow-up action plans.

We regularly review the type and limit of insurance available for climate risks to our portfolio. See more in risk 8 Asset failure on page 77. (medium term)
Climate change considered as part of new investments, including new sites with the business in transition e.g. China – fuel cell vehicles growth market, which reduces our operating costs. (medium term)

Costs

Zurich's analysis of our ten most critical locations shows that there is no material financial impact from climate change risks on the quantifiable hazards (flood and windstorm in the medium term). We are currently assessing whether we will need to do any mitigation to improve asset resilience in the medium term.

We have insurance to cover interruptions to production due to extreme weather events and also permanent loss
of a facility. For permanent loss of a facility, we would look to replace the capacity with an associated
£200M insured loss of sales.
This annual cost of the insurance cover (£6.5M) is what is included in the "cost of response to risk" given in this answer.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Market
Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Increased demand for low-carbon manufacturing and products made from recycled raw materials. As our growth strategy is centred around products that will help our customers achieve their own net zero goals (transition to a hydrogen economy and sustainability fuels and decarbonising the chemical sector), it is likely that our customers will demand products are manufactured in a net zero way ahead of some other market sectors.

We have a risk that we cannot transition our operations for net zero at the correct pace to meet customer demand of low carbon products.

Transitioning our existing manufacturing facilities to net zero operation will required increased capital investment to replace existing gas fired ovens and CHP generators before the end of their natural life, and/or the installation of carbon capture technology to reduce our 1 GHG footprint. We also risk rising energy prices to access the alternative renewable energy sources needed to meet our renewable electricity targets (scope 2) .

Platinum group metal procurement makes up more than half of our scope 3 GHG

footprint. The carbon footprint of virgin platinum group metals is about 50 times higher (global average from IPA data) than that of secondary sources, and so demand for recycled pgm in products is rising. We are currently the world's largest recycler of platinum group metals (pgms). As demand rises for recycled metal, there is also a risk that we could become unable to resource sufficient scrap (secondary) sources of platinum group metals (pgms) to run our refineries at capacity or meet customer demand for secondary pgm in our products. We could also face increase competition in the market place.

Time horizon

Medium-term

Likelihood

Unlikely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

16,025,000,000

Explanation of financial impact figure

This revenues figure represents all our revenues from FY2021/22 because we are still evaluating its likelihood for each part of our portfolio. Virtually all our products contain platinum group metals and most service the growing net zero transition of the automotive, energy and chemicals sectors. Thus all our our revenues could in principle be affected in some way by the extremes of this risk, if we fail to manage our portfolio to meet customer demand for products manufactured in a net zero way, although this is exceptionally unlikely. We are working to quantify this risk to a tighter financial range, as we better understand customer demand.

Cost of response to risk

0

Description of response and explanation of cost calculation

Managing this risk in the short term is part of normal business, so no additional costs. There may be some additional capital costs to transition our existing manufacturing

assets to zero carbon operation, but this will likely only occur in the medium term timeframe (5-10 years in the future) and so are not yet costed. Our Net Zero activities at the moment are about energy efficiency (which saves money - see question C4.3 and switching to renewable electricity procurement which has been largely cost neutral to date.
We have set challenging recycling, and net zero targets to decarbonise our manufacturing operations - 33% reduction in scope 1 & 2 footprint by 20203 and 75% recycled metal in our products -(see annual report 2022 page 34 -35)
• We have established a cross-functional Sustainability Council to drive progress towards these targets
• We have introduced an internal carbon price for our capital investment decisions to help us make the right choices for decarbonising our operations for net zero in the long term
• We are developing a roadmap to net zero by 2040 (published on page 44 of Annual report 2022, and we plan to quantify it in FY2022/2023
• We closely monitor pgm markets and price trends. We are signing longer term partnerships with our pgm suppliers to ensure security of supply of low carbon pgm.to meet anticipated demand

See Capital Markets day presentation May 2022 for latest financial assessment of market opportunity - slide 30 for latest information on market demand for recycled pgms. https://matthey.com/documents/161599/348557/JOHNSO~1.pdf/051461a6-6224-ce4f-ee66-9e3c0d22fdc5?t=1653562764575

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

FUEL CELLS FOR LOW CARBON AUTOMOTIVE APPLICATONS Fuel cell technology for transport applications, especially for larger vehicles is an important opportunity for Johnson Matthey that we have been working to realise for more than a decade. With the acceleration of demand for zero emission vehicles and increasing regulatory pressure, major car companies have reaffirmed their interest in fuel cell powertrains as part of a balanced portfolio of electric vehicles. We continue to develop technology for automotive membrane electrode assemblies and our products have been well received by automakers, providing cost and performance characteristics in line with their needs. The European Commission's Fit for 55 package which agreed goal of all new vehicle sales being zero emission from 2035 is accelerating interest and uptake. https://www.europarl.europa.eu/news/en/press-room/20220603IPR32129/fit-for-55-meps-back-objective-of-zero-emissions-for-cars-and-vans-in-2035 .

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

2,000,000,000

Potential financial impact figure – maximum (currency)

4,000,000,000

Explanation of financial impact figure

See Capital Markets day presentation May 2022 for latest financial assessment of total addressable market opportunity for JM for new sales of fuel cell components for heavy duty and light duty vehicles in 2030 - see slides 23 and 44-45 to understand the £2-4bn range in more detail.

We have targeted more than £200m sales for 2024/25 from our Hydrogen Technologies

business (see slide 48)

https://matthey.com/documents/161599/348557/JOHNSO~1.pdf/

Cost to realize opportunity

250,000,000

Strategy to realize opportunity and explanation of cost calculation

In total we have committed to invest £250m capital by 2025 for all our Fuel Cells and green hydrogen technologies business growth. (Opp#1 + part of Opp #2 combined as they can share manufacturing facilities).
https://matthey.com/documents/161599/348557/JOHNSO~1.pdf slide 51

As an early step on this journey, recently announced announced that we are building a £80 million gigafactory at our existing site in Royston, UK, to scale up the manufacture of hydrogen fuel cell components. Earlier this year, we announced a refreshed strategy, with an ambition to be the “market leader in performance components for fuel cells and electrolysers”, targeting more than £200 million sales in Hydrogen Technologies by end of 2024/25. The gigafactory will initially be capable of manufacturing 3GW of proton exchange membrane (PEM) fuel cell components annually for hydrogen vehicles and is supported by the UK Government through the Automotive Transformation Fund (ATF). The APC forecasts that the UK will need 14GW of fuel cell stack production and 400,000 high pressure carbon fibre tanks annually to meet local vehicle production demands by 2035 whilst the market expects that there could be as many as three million fuel cell electric vehicles (FCEVs) on the road globally by 2030.

For more information about this investment see https://matthey.com/hydrogen-gigafactory

Investment in advancing hydrogen fuel cell technology through internal R&D programs was about £5m last year and continues to rise on a yearly basis.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Other opportunities arising from Climate Change for JM include the development of solutions for low carbon hydrogen generation, fuelled by a need to shift energy generation towards low emission sources. JM is well-positioned to develop these solutions, leveraging its expertise in electrolysis, reforming processes, catalysts and sorbents. Our award-winning LCHTM technology helps make clean hydrogen from natural gas while capturing more than 95% of the associated CO2. Crucially, it's available at scale today and is already being incorporated into the UK's flagship HyNet North West hydrogen project.
Meanwhile, we're making key components that are helping to demonstrate commercial-scale renewable hydrogen production by using renewable energy to power water electrolysis with a
number of key electrolyser producers including Plug Power, Hystar and Hoeller.
Whether a country chooses to produce hydrogen with carbon capture or renewable hydrogen or a mixture of both, will depend on local circumstances. Typically, hydrogen with carbon capture is a
good fit for places like the UK and the USA east coast, which both have natural gas availability, industrial clusters providing concentrated demand, and access to carbon sequestration sites.
Meanwhile, renewable hydrogen will better suit geographies like North Africa and South America, where these resources are not as readily available, but where there is an abundance of solar or wind. So, there is a place for both in future. Whichever route a country chooses, JM's technologies will be right
at the core of this hydrogen revolution.

"Unlocking the potential of Hydrogen" Annual report 2022 - pages 16-17

For example, JM's Low Carbon Hydrogen process is world leading for producing blue hydrogen "CLEANPACE", reducing CO2 emissions by over 95%, but also offering the highest feedstock efficiency with lower capital expenditure.
https://matthey.com/cleanpace

JM is also expanding into the green hydrogen electrolyser market, building on its experience in the fuel market.
https://matthey.com/johnson-matthey-expands-presence-in-green-hydrogen-with-stake-in-aem-electrolyser-pioneer-enapter

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

3,000,000,000

Potential financial impact figure – maximum (currency)

18,000,000,000

Explanation of financial impact figure

See Capital Markets day presentation May 2022 for latest financial assessment of total addressable market opportunity for JM for products to support the emerging low carbon hydrogen generation market:
Blue hydrogen total addressable market share of £1-8 bn to 2030 , which is equivalent to 11-69 million tons additional hydrogen generation per year - see slides 42 for more detail
Green hydrogen electrolyser total addressable market share of £2-10 bn to 2030 , which is equivalent to 150-800GW Green hydrogen capacity by 2030, of which assumed PEM eelctrolyser takes a 40% share.

https://matthey.com/documents/161599/348557/JOHNSO~1.pdf/ see slides 44- 45 for more detail

Cost to realize opportunity

250,000,000

Strategy to realize opportunity and explanation of cost calculation

In total we have committed to invest £250m capital by 2025 for all our green hydrogen and fuel cell technologies business growth. (Opp#1 + part of Opp #2 combined, as they can share manufacturing facilities).

Blue Hydrogen is a capital light business with low near-term investment needs but larger growth investments in the medium term
We have committed to invest around £120 m capital in our blue hydrogen technologies business and sustainable fuels business combined n the medium term,

See Capital markets day 2022 presentation

https://matthey.com/documents/161599/348557/JOHNSO~1.pdf/ page 51

Investment in advancing hydrogen technology through internal R&D programs was about £5m last year and continues to rise on a yearly basis.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Sustainable Aviation Fuels:

Today, aviation is responsible for around 12% of all transport-related CO2 emissions. The lack
of alternative fuels means it's been hard to decarbonise air travel. Until now.
Using our expertise in PGM chemistry and catalysis, we've designed clever ways to make
sustainable aviation fuel (SAF) from alternative feedstocks. For example, our award-winning
FT CANSTM technology, developed in partnership with bp, converts synthesis gas (a mixture of
hydrogen and carbon monoxide, also known as syngas), made from household waste, into
synthetic crude oil. Refiners can upgrade this crude oil into SAF.
From 2022, our technology will begin helping Fulcrum Bioenergy make millions of gallons of
synthetic crude, while diverting thousands of tonnes of waste from landfills every year.
We also launched our HyCOgenTM technology in January 2022, which captures CO2 from
existing emissions or from the air, and reacts it with zero-carbon 'green' hydrogen to generate syngas that can be turned into SAF.
We can now combine HyCOgenTM and FT CANS technology to create an end-to-end,

low-carbon process to make synthetic crude. And in May 2022, Aramco and Repsol selected
both for a new synthetic fuels plant in Bilbao, Spain. Once online in 2024, the plant will make a sustainable synthetic ‘drop-in’ fuel that can be blended for a variety of vehicles, including planes.
The SAF market will grow quickly. The International Air Transport Association (IATA), which
represents major airlines in 120 countries, wants members to increase the amount of SAF
they use from 5% in 2030 to 65% by 2050. The good news is our technologies are ready today to help meet that growing demand.

https://matthey.com/ar22 page 14-15

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

1,000,000,000

Potential financial impact figure – maximum (currency)

2,000,000,000

Explanation of financial impact figure

Addition of 4-8 millions tons per year of capacity to produce sustainable aviation fuels using Fischer Tropsch routes will create total addressable market until 2030 of £1-2bn for our FT CANS technology.

Cost to realize opportunity

120,000,000

Strategy to realize opportunity and explanation of cost calculation

See Capital Markets day presentation May 2022 for latest financial assessment of total addressable market opportunity for JM for products to support the emerging low carbon hydrogen generation market:

https://matthey.com/documents/161599/348557/JOHNSO~1.pdf/ page 51

FT CANS is a capital light business with low near-term investment needs but larger growth investments in the medium term
We have committed to invest around £120 m capital in our blue hydrogen technologies business and sustainable fuels business combined in the medium term,

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan

Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan

Yes

Mechanism by which feedback is collected from shareholders on your transition plan

We do not have a feedback mechanism in place, but we plan to introduce one within the next two years

Attach any relevant documents which detail your transition plan (optional)

Our company purpose statement is "Catalysing the net zero transition" and our strategy to transform our portfolio to achieve this can be found on pages 6 -21 of Annual report. and in TCFD report

Johnson Matthey - Annual Report and Accounts 2022.pdf

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA NZE 2050	Company-wide		We have developed three transition scenarios that represent a wide range of outcomes: (1) rapid transition scenario (aligned to 1.5C, assuming net zero achieved by 2050), reflecting swift and decisive action with regard to policy interventions and decarbonisation commitments; (2) pragmatic evolution scenario (aligned to 2C, assuming net zero achieved by 2080), reflecting a set-up in policy interventions and decarbonisation commitments compared with today, but not as decisive as under the rapid transition scenario; (3) slow transition scenario (aligned to 3C, assuming net zero not achieved by 2100), reflecting global lack of urgency on climate change. We developed our scenarios internally with support from an external expert, reflecting external sources such as IEA's NZES, SDS, and SPS scenarios. Our methodology breaks down different energy sources and considers forecasts for each source by demand type. We developed in-house forecasts for specific source/demand combinations close to our areas of expertise in automotive, chemicals, hydrogen and other industries. Some of the quantitative assumptions are provided in our Annual Report 2022 (p62)
Physical climate scenarios RCP 8.5	Company-wide		During the year, we worked with Zurich Resilience Solutions to evaluate the exposure of all our assets and those of our strategic suppliers to these risks. To support this work, we used the Shared Socio-economic Pathways (SSPs), the latest climate change modelling scenarios from the Intergovernmental Panel on Climate Change (IPCC). The SSPs produce forward-looking climate data by running climate models driven by assumptions about future global GHG emissions, together with plausible future socio-economic development metrics (economic growth / GDP, demographics, land use and urbanisation), and incorporating the likely implementation of adaptation and mitigation measures. We looked at three SSPs for the locations of all our own operations and those of our strategic suppliers. We considered four time horizons - 2020 (our

			baseline), 2030, 2040 and 2050 to identify the top hazards and how they are likely to change. SSP 1-2.6 assumes the lowest temperature rise, and therefore the least physical impact, disruption and adaptation costs; SSP 2-4.5 is the middle temperature rise; and SSP 5-8.5 assumes the highest temperature rise, and therefore the greatest physical impact, and disruption adaptation costs. Given its potential severity, for scenario SSP 5-8.5, the resilience of our most critical sites. SSP5-8.5 is an extreme scenario that is unlikely to arise, but it is useful for stress testing.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

The focal questions we seek to address through our climate-related scenario analysis are:
(1) How to characterise the risks associated with the climate transition, from a qualitative and quantitative perspective? What would it take to mitigate these risks?
(2) How to characterise the market opportunities associated with the climate transition, from a qualitative and quantitative perspective? What would it take for Johnson Matthey to capture these opportunities? (e.g. portfolio management, R&D investment, capital expenditure)
(3) What are the physical risks associated with the climate transition? How to mitigate them?

Results of the climate-related scenario analysis with respect to the focal questions

The results of the scenario analysis can be found in the TCDF section of our Annual report 2022 page 61-65

(1) We have identified that without adaptation of our portfolio, there is a long-term risk that we may not have a financially viable future business model and / or capability as society transitions away from fossil fuels.
• Reduced demand for existing autocatalyst products for diesel and petrol powered light duty vehicles
• Uncertainty in the rate of market evolution from existing to new technology options (whether the world is on a 1.5C, 2C or 3+C pathway) could affect profitability

(2) Opportunities for new products in the medium and long term:
• Technology to generate low carbon energy sources (blue and green hydrogen).
• Technology to enable hydrogen-powered vehicles (fuel cells) and sustainable aviation fuels.
• Technology to enable low-carbon solutions for the chemicals industry.

If the world transition to a 2D or 1.5C pathway, we can achieve accelerating profit growth, with low double-digit growth rate towards end of this decade (2030) and around 40% of profit coming from businesses related to the net zero transition by 2031/32. We estimate it will take approximately £300m of cumulative capital expenditures dedicated to businesses related to the net zero transition over 2022/23-2024/25.

(3) Analysis of our ten most critical locations shows that there is no material financial impact from climate change risks on the quantifiable hazards (flood and windstorm) on the medium
time horizon (to 2030) in any of the scenarios. The most significant impact predicted by the models out to 2030, under the worst case scenario (3C+ warming SSP5-8.5), was an additional 35% of our physical asset value to be subject to a high rainfall hazard. This includes our facilities in Skopje (N. Macedonia), Devon (USA), Manesar (India) and Royston (UK). Over time, drought may also become more significant. We have evaluated the impact this could have on water availability to our operations using the World Resource Institute's (WRI) Water Risk Atlas tool see page 46 for more information about this.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Annual report 2022 page 6 Our purpose statement of "Catalysing the Net Zero Transition" 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. 1. Hydrogen Technologies – decarbonising transport and

		energy Combining our PGM and catalysis expertise with our fuel cell and green hydrogen activities, our Hydrogen Technologies business will help decarbonise the transport and energy sectors and create very significant growth in the medium-longer term. We aim to become the market leader in high value performance components that are essential to power fuel cells and green hydrogen electrolysers. 2. Catalyst Technologies – decarbonising chemicals and creating sustainable fuels We are already an established, leading provider of process technology and catalysts to the chemicals and energy sectors, especially in syngas . Our Catalyst Technologies business will strengthen our focus on the syngas value chain, growing our existing business alongside newer opportunities in blue hydrogen, sustainable fuels and low-carbon solutions. Fueled by the net zero transition, we expect these markets to grow rapidly in the medium term as future production needs to decarbonise. We intend to move quickly and strengthen our leading positions across Catalyst Technologies to deliver high single digit growth over the medium term. 3. Clean Air – continuing to play a leading role in the autocatalyst market Clean Air will remain a significant business well into the next decade even as the world transitions towards lower and zero-carbon technologies. That transition will take time; in the meantime Clean Air will create significant value generating at least £4 billion of cash to 2030, 4.PGM Services – the backbone of our business JM is the world's largest recycler of secondary PGMs. PGM Services provides the flexible metal sourcing and price risk management that we need to run the rest of JM, and is key to the trust our customers place in us. They depend on us for access to a reliable supply of metals and recycling services to support a circular economy. We have a competitive advantage that is both very hard to replicate and essential

		for helping the world reach net zero.
Supply chain and/or value chain	Yes	We are aware that climate risks impact the operations of our suppliers as much, if not more, than our own operations. We are committed to achieve Net Zero by 2040 and this includes our Scope GHG emissions embedded in our supply chains. Therefore, we have set an intermediate science-based GHG reduction target to reduce our upstream scope 3 GHG emission from purchase goods and services by 20% by 2020 -2030. We monitor our suppliers' environmental performance through our supplier relation management due diligence activities and advise them of our requirements to minimise GHG emissions through our Supplier code of Code, which is published on www.matthey.com. During the last year we have also assessed the physical climate risk of a strategic suppliers key locations using the Shared Socio-economic Pathways (SSPs) climate scenarios. on the shorter-term horizon of 2030, climate change under the worst case scenario of SSP5-8.5 is expected to cause a small number of our strategic suppliers' locations to be subject to a high rainfall hazard, heat stress or high or very high drought. In particular, this includes suppliers' locations in South Africa, Vietnam, India, and USA Over the next year, we will start to use this information to communicate with our strategic suppliers about their climate adaption plans and resilience.
Investment in R&D	Yes	Our R&D programs are what enable us to deliver our strategy for a cleaner, healthier world. In 2021/22 we invested £215million in R&D and 30% of that spend was directly on development of products that directly support the low carbon and circular economy (see Annual Report 2022 page 37). We are especially focussed on catalyst technologies to enable the production of clean hydrogen. the next generation fuel cell catalyst and electrochemical membrane assemblies and recycling of platinum group metals. We are also using our R&D expertise to enable the chemical industry to switch to alternative feedstocks, to support a

		lower carbon future. For example, our expertise in the generation, purification and chemical modification of syngas opens the door to renewable feedstocks, sustainable aviation fuel and low carbon technologies.
Operations	Yes	Realisation of the impact climate change could have on the world caused us to set our first operational carbon footprint reduction target as early as 2006. We met our first target and have continued to expand our ambition ever since. We are aware that, particularly as many of our products support the advancement of the net zero economy, we will face increasing demand from our customers to manufacture them in a net zero way. We are also aware of the increasing cost of carbon, as more than half the global economy now has introduced carbon pricing mechanisms. Whilst our direct costs from carbon taxation under ETS schemes are currently low, we have introduced an internal price of carbon to prepare for a future where the cost rises. In order to drive decarbonisation of our own energy use, in April 2021 we committed to net zero by 2040 and set a science-based GHG reduction targets in line with the Business Ambition for 1.5C. We have committed to a 33% absolute reduction in scope 1 + 2 GHG emissions by 2030, even as we grow our business. In further support this goal we also have a target to increase the amount of mount of renewable electricity we use to 60% by 2025. We published our net zero roadmap for scope 1 & 2 in our Annual report (pages 42- 45).

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence

Row 1	Capital expenditures Capital allocation	Our long term capital allocation plan is heavily focussed on building assets to produce products hat will help our customers reduce their own GHG emissions, as we catalyst the net zero transition. We have committed to helping our customers avoid 50 million tonnes of GHG emissions by 2030, compared to technology used in 2020, and allocating about £350,000,000 capital to building new assets for production of these technologies by 2025 (approximately 35% of our capital allocation) See our capital markets day presentation 2022 page 23& 24 for technologies and page 51 for capital allocation https://matthey.com/documents/161599/348557/JOHNSO~1.pdf/ In order to ensure we build these in a low carbon way and to transition of existing assets to low carbon operations, we have introduced a shadow carbon price to our capital investment business case assessment process, as recommended by the Bank of England. This incentivises us to reach net zero operation, by ensuring all investments are made for a low-carbon world where the price of carbon is higher than it is today. Although the ICP is not a real cost of the investment, it demonstrates what the impact would be of carbon taxation forecast for 2030 and beyond, and we will use it to evaluate and compare potential investments. At this stage, we apply the ICP only to scope 1 and 2 GHG emissions related to the asset when operational. We do not apply them to emissions related to the development of the project itself, such as equipment manufacture, or to construction-related emissions, since such emissions are both short term and generally minor in relation to the overall life of the assets. We are using a price of £100 per tonne to evaluate investment cases with variation to £50 and £150 for sensitivity analysis. https://matthey.com/ar22 page 69

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

Yes

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's transition to a 1.5°C world.

Financial Metric

Revenue

Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)

11.1

Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)

Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)

Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world

In our Annual report 2022 on page 37, you can see a report on the alignment of our sales with SDGs. In this question we include all sales aligned with SDG7, SDG12 and SDG13 - which is a sum of our Hydrogen business, fuel cell components business, and sustainable aviation fuels business,

Future forecasts are commercially sensitive and thus confidential

Financial Metric

Other, please specify

R&D spend

Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)

29.6

Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)

Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)

Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world

In our Annual report 2022 on page 37, you can see a report on the alignment of our sales with SDGs. In this question we include all sales aligned with SDG7, SDG12 and SDG13 - which is a sum of our Hydrogen business, fuel cell components business, sustainable aviation fuels business, and PGM recycling business

Future forecasts are commercially sensitive and thus confidential

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2020

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Base year

2020

Base year Scope 1 emissions covered by target (metric tons CO2e)

199,125

Base year Scope 2 emissions covered by target (metric tons CO2e)

192,334

Base year Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

391,459

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2030

Targeted reduction from base year (%)

33

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

262,277.53

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

219,846

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

180,060

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

399,906

% of target achieved relative to base year [auto-calculated]

-6.5388635073

Target status in reporting year

Underway

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

Well-below 2°C aligned

Please explain target coverage and identify any exclusions

Our targets were approved by SBTi in October 2021

Plan for achieving target, and progress made to the end of the reporting year

We have published out Net Zero roadmap to 2040 in Annual report 2022 page 44.

List the emissions reduction initiatives which contributed most to achieving this target

Target reference number

Abs 2

Year target was set

2021

Target coverage

Company-wide

Scope(s)

Scope 3

Scope 2 accounting method

Scope 3 category(ies)

Category 1: Purchased goods and services

Base year

2020

Base year Scope 1 emissions covered by target (metric tons CO2e)

Base year Scope 2 emissions covered by target (metric tons CO2e)

Base year Scope 3 emissions covered by target (metric tons CO2e)

3,282,096

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

3,282,096

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

84.4

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

84.4

Target year

2030

Targeted reduction from base year (%)

20

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

2,625,676.8

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

3,008,648

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

3,008,648

% of target achieved relative to base year [auto-calculated]

41.6575261662

Target status in reporting year

Underway

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

Well-below 2°C aligned

Please explain target coverage and identify any exclusions

Our targets were approved by SBTi in October 2021

Plan for achieving target, and progress made to the end of the reporting year

We are working with our raw material suppliers, wso haev net zero commitments and targets to reduce their ssope 1 & 2 GHG emissions.
1. We are aiming for a 10% energy efficiency by 2030 from energy savings programmes, managed through ISO50001 certification at our largest manufacturing sites .
2. We are rationalising our manufacturing footprint by moving production from older less efficient site to new assets.
3. We are switching to renewable electricity at almost all our sites; we have target to acheive 60% renewable electricity by 2025 and go beyond to around 90% by the end of the decade.

List the emissions reduction initiatives which contributed most to achieving this target

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Target(s) to increase low-carbon energy consumption or production

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number

Low 1

Year target was set

2019

Target coverage

Company-wide

Target type: energy carrier

Electricity

Target type: activity

Consumption

Target type: energy source

Renewable energy source(s) only

Base year

2019

Consumption or production of selected energy carrier in base year (MWh)

620,330

% share of low-carbon or renewable energy in base year

28

Target year

2025

% share of low-carbon or renewable energy in target year

60

% share of low-carbon or renewable energy in reporting year

34

% of target achieved relative to base year [auto-calculated]

18.75

Target status in reporting year

Underway

Is this target part of an emissions target?

This target is in addition to our emissions target, but it is there to support and accelerate our progress towards our 2030 targets for scope 1 + 2 emissions reduction.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

100% of our electricity use across all our operations is included in this target, whether generated on site or purchased through national grids.

Plan for achieving target, and progress made to the end of the reporting year

To accelerate our progress to source renewable electricity in countries where it is not so readily
available in the market, this year we employed third-party specialists, South Pole Group. So far, they
have worked with our sites that use the most energy in Europe, the USA and India to identify
new low-carbon energy opportunities. These include power purchase agreements, electricity
from certified renewable sources and on-site electricity generation, with particular focus on
sites that could have the most impact on our 2030 target.

Annual report 2022 page 45

List the actions which contributed most to achieving this target

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	1	
To be implemented*	1	36,745
Implementation commenced*	2	8,500
Implemented*	3	8,394
Not to be implemented	0	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Low-carbon energy consumption

Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)

7,891

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

3-5 years

Comment

During the last year we switched our CA manufacturing site in Poland over to renewable electricity - procured over the local electricity grid with renewable energy certificate for guarantee of origin (REGOs). No capital investment required. No monetary saving as renewable electricity is more expensive than standard electricity from the Polish national grid

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

12

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

300,000

Investment required (unit currency – as specified in C0.4)

0

Payback period

<1 year

Estimated lifetime of the initiative

>30 years

Comment

Savings at one of our manufacturing facilities in Germany (Emmerich). Batch time was reduced saving a substantial amount of energy. This site already uses 100% renewable electricity, so whilst the energy saving was substantial in kWh, the carbon saving only relates to a reduction in use of natural gas.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

491

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

900,000

Investment required (unit currency – as specified in C0.4)

0

Payback period

<1 year

Estimated lifetime of the initiative

>30 years

Comment

Savings at one of our manufacturing facilities in Germany (Oberhaussen) due to a optimisation of batch sizes which reduces energy demand per tonne of product. This substantially increased energy efficiency per tonne of product.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for low-carbon product R&D	Within our R&D portfolio, we have multiple projects which address low carbon opportunities including, battery materials, fuel cells, carbon capture & storage, making chemicals from bio feedstocks, materials for solar PV. These are described in more detail on Annual Report 2021 page 58-59. We also have a KPI which we track to identify % R&D spend which is dedicated to supporting UN SDG13 climate action. In FY2020/21 19% of our R&D budget was directly at SDG13 and a further 3% at accelerating the clean energy transition SDG7.
Internal incentives/recognition programs	We run an annual JM awards competition which all employees are eligible to enter. The categories are aligned with our values and awards are given for outstanding contribution to each - there are two categories which are relevant to reduction in energy and associated carbon emissions are considered: "Protecting people and Planet" and "Innovating and improving" our operations or our products. These

	are described in more detail on Annual Report 2019 page 74-75 and in summary on Annual report 2021 page 32
Compliance with regulatory requirements/standards	We are fully compliant with our obligations for energy efficiency and emissions reduction . These include EU-ETS and UK regulations e. UK CCA (Climate Change Agreements) , ESOS (Energy Savings Opportunities Scheme)..
Partnering with governments on technology development	Multiple research projects with UK/EU funding bodies to investigate low carbon technology solutions e.g. working on projects sponsored by the UK government's Faraday Battery Challenge for the development of improved battery materials for transport. https://www.gov.uk/government/news/future-electric-vehicles-new-faraday-battery-challenge-funding

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

The EU Taxonomy for environmentally sustainable economic activities

Type of product(s) or service(s)

Hydrogen

Electrolysis

Description of product(s) or service(s)

JOHNSON MATTHEY OFFERS TECHNOLOGY SOLUTIONS TO AVOID THE USE OF FOSSIL FUELS IN THE COMBINED HEAT AND POWER, BACKUP POWER SECTOR. We manufacture electrodes for hydrogen electrolysers fuel cell components for stationary energy storage applications. . We are a world leader in fuel cell technology for generating low carbon power via hydrogen production. Where the hydrogen has been generated from a low-carbon source, or where electricity generation becomes

more efficient by use of a fuel cell than by burning fossil fuels, GHG emissions are saved.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Addressing the Avoided Emissions Challenge- Chemicals sector

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

tCO2e/TWh produced in hydrogen powered utility generation plant

Reference product/service or baseline scenario used

tCO2e/TWh produced in natural gas powered utility generation plant

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

464,817

Explain your calculation of avoided emissions, including any assumptions

This is calculated by comparison of a utility generation plant using JM's fuel cell components and one using natural gas. We account for the emissions we have enabled our customers to avoid during the reporting period based on the number of operational power plants using JM's fuel cell technology during the reporting period. This assumes an average plant lifespan of 8 years but therefore accounts for the emissions avoided during one years' use of our technology. The difference in emissions per TWh between a natural gas powered utility generation plant and a hydrogen-powered utility generation plant is multiplied by the number of utility generation plants JM's fuel cells components are used in and the average TWh generation of a single plant. Assumptions around natural gas utility generations plants emission per TWh are calculated using US EIA data from 2021.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.15

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

The EU Taxonomy for environmentally sustainable economic activities

Type of product(s) or service(s)

Road

Lithium-ion batteries

Description of product(s) or service(s)

Lithium - ion cathode material (LFP) for the manufacture of batteries for use in electric passenger cars.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Addressing the Avoided Emissions Challenge- Chemicals sector

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

tCO2e per km driven in one year by car containing JM's lithium ion battery technology

Reference product/service or baseline scenario used

tCO2e per km driven in one year by diesel car

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

18,179

Explain your calculation of avoided emissions, including any assumptions

This is calculated from two applications: the use of JM lithium ion battery technology in battery electric vehicles (BEVs) and the use of lithium ion battery technology in start-stop diesel combustion engine vehicles. We account for the emissions we have enabled our customers to avoid during the reporting period based on the use of BEVs and start-stop diesel combustion engine vehicles using JM's lithium-ion battery technology in operation during the reporting period. This assumes an average lifespan of 10 years but therefore accounts for the emissions avoided during one years' use of our technology. The difference in emissions per km driven between a BEV or stop-start vehicle and the corresponding diesel model is multiplied by the number of cars JM's lithium ion battery technology is used in and their average annual mileage (assumed to be 13,000km). Diesel, BEV and start-stop emissions per km are sourced from the manufacturer of the specific model.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.1

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

The EU Taxonomy for environmentally sustainable economic activities

Type of product(s) or service(s)

Road

Hydrogen fuel cell

Description of product(s) or service(s)

JOHNSON MATTHEY OFFERS TECHNOLOGY SOLUTIONS TO AVOID THE USE OF FOSSIL FUELS IN THE AUTOMOTIVE TRANSPORTATION SECTOR. We manufacture electrodes for hydrogen electrolysers fuel cell components for electric vehicles. We are a world leader in fuel cell technology for generating low carbon power via hydrogen production. Where the hydrogen has been generated from a low-carbon source, or where electricity generation becomes more efficient by use of a fuel cell than by burning fossil fuels, GHG emissions are saved.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Addressing the Avoided Emissions Challenge- Chemicals sector

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

tCO2e per km driven in one year by fuel cell bus or truck (depending on the customers' application of JM's product)

Reference product/service or baseline scenario used

tCO2e per km driven in one year by diesel bus or truck (depending on the customers' application of JM's product)

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

5,889

Explain your calculation of avoided emissions, including any assumptions

This is calculated from two applications: use of JM fuel cell components in fuel cell buses and fuel cell trucks. We account for the emissions we have enabled our customers to avoid during the reporting period based on the buses and trucks in operation using JM's fuel cell components during the reporting period. This assumes an average lifespan of 10 years but therefore accounts for the emissions avoided during one years' use of our technology.. The difference in diesel and fuel cell emissions per km driven per bus or truck is multiplied by the number of trucks and/or buses JM fuel cells components are used in and their average annual mileage (assumed to be 130,000km and 75,000km respectively). Assumptions around diesel emission per km are calculated from the average CO2e emissions per km travelled for diesel trucks and buses, based on publicly available online sources such as unilink buses, fch europa, carbon independent and itdp.org. The emissions from consumption of hydrogen produced in the countries of application is multiplied by the fuel cell efficiency of the bus or truck to calculate annual emissions per FC truck.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.01

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

No

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?
Row 1	No, but we have discovered significant errors in our previous response(s)

C5.1c

(C5.1c) Have your organization's base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	Yes	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%. Base Year (2020) has changed for 4 scope 3 GHG emissions categories due to improvements in methodology: • Scope 3 emissions from purchased goods and services for 2019/20 and 2020/21 have been restated after the collection of more granular purchasing data. This has allowed us to apply more accurate GHG intensity factors. • Scope 3 emissions from capital goods has been restated after reallocating emissions using an improved geographical basis. We have amended the totals for 2019/20 and 2020/21. • Scope 3 emissions from upstream transportation and distribution has been restated to account for our full logistics operations in 2019/20 and 2020/21. Previously, this data was only representative of emissions where the mode of transportation was known. The restated figures now include emissions where the mode of transport was unknown. • Scope 3 emissions from investments has been restated following a data review in which we discovered an error in emissions allocation in 2020/21. Previously this data accounted for the entire emissions for each entity and has been corrected to reflect JM's share for 2020/21 This is detailed in our Annual Report 2022 page 215

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start

April 1, 2016

Base year end

March 31, 2017

Base year emissions (metric tons CO2e)

228,778

Comment

not changed

Scope 2 (location-based)

Base year start

April 1, 2016

Base year end

March 31, 2017

Base year emissions (metric tons CO2e)

286,294

Comment

not changed

Scope 2 (market-based)

Base year start

April 1, 2016

Base year end

March 31, 2017

Base year emissions (metric tons CO2e)

239,711

Comment

not changed

Scope 3 category 1: Purchased goods and services

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

3,282,096

Comment

This category uses a hybrid methodology. For the precious metals that are the core ingredient of the majority of our products we use carbon footprint information developed and published in partnership with members of the International Platinum Association. It is a Cradle-to-Gate LCA carried out and 3rd party assured to the requirements of the ISO14040 and ISO14044 standards. For other raw materials we use EcoInvent v3.7 data and a mass based calculation. For the remainder of our Purchased goods and services, we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.

Scope 3 category 2: Capital goods

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

399,630

Comment

We use a Financial allocation method to calculate the GHG emissions associated with our capital expenditure on Plant, Property and Equipment. This involves licensing a proprietary Economic Input-Output model (EIO) provided by Avieco Ltd. 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 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

41,425

Comment

Our Scope 3 emissions for electricity distribution and transmission losses are calculated using the methodology outlined in the GHG Protocol corporate standard 2015 revision, www.ghgprotocol.org. For all facilities outside of the US, we use national carbon intensity factors related to the consumption of grid electricity in 2016 made available in the 2020 edition of the world CO2 emissions database of the International Energy

Agency. They were purchased under licence for sole use in company reporting. For US facilities we use regional carbon factors published by the Environmental Protection Agency in January 2019, eGRID data 2018. For Well-to-tank carbon footprint of purchased fuels and steam, we use Defra emissions factors. For well-to-tank factors for fuels and steam we used Defra conversion factors https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2019.

Scope 3 category 4: Upstream transportation and distribution

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

102,552

Comment

This category uses a hybrid methodology. Where emissions data were provided by our suppliers this was used. If weight and distance data were available, per shipment, Scope 3 emissions associated with Upstream Transportation and Distribution were calculated using Defra emissions factors for freighting goods https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2019. For the remaining emissions we used a Avieco Ltd's proprietary Environmentally Extended Input-Output database for the logistics sector. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others. Where no supplier information was available, emissions were scaled to represent the total transportation and distribution expenditure of Johnson Matthey in 2019/20.

Scope 3 category 5: Waste generated in operations

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

5,303

Comment

not changed

Scope 3 category 6: Business travel

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
9,202

Comment
not changed

Scope 3 category 7: Employee commuting

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
29,957

Comment
not changed

Scope 3 category 8: Upstream leased assets

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
5,094

Comment
not changed

Scope 3 category 9: Downstream transportation and distribution

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
0

Comment

not changed

Scope 3 category 10: Processing of sold products

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

not changed

Scope 3 category 11: Use of sold products

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

During the validation process for JM's science-based targets in 2021, the assessor identified that all emissions from JM's sold products should be classified as indirect emissions. SBTi required us to agree to exclude these emissions from our Scope 3 inventory and set this category to 0 in future, as indirect emissions should be reported separately from the scope 3 inventory according the GHG protocol.

Scope 3 category 12: End of life treatment of sold products

Base year start

April 1, 2019

Base year end

March 31, 2020

Base year emissions (metric tons CO2e)

0

Comment

no change

Scope 3 category 13: Downstream leased assets

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
0

Comment
no change

Scope 3 category 14: Franchises

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
0

Comment
no change

Scope 3 category 15: Investments

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
10,997

Comment
no change

Scope 3: Other (upstream)

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
0

Comment

no change

Scope 3: Other (downstream)

Base year start
April 1, 2019

Base year end
March 31, 2020

Base year emissions (metric tons CO2e)
0

Comment
no change

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
219,846

Start date
April 1, 2021

End date
March 31, 2022

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
203,930

Start date

April 1, 2020

End date

March 31, 2021

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

199,125

Start date

April 1, 2019

End date

March 31, 2020

Comment

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

220,317

Start date

April 1, 2018

End date

March 31, 2019

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

240,897

Scope 2, market-based (if applicable)

180,060

Start date

April 1, 2021

End date

March 31, 2022

Comment

Past year 1

Scope 2, location-based

227,381

Scope 2, market-based (if applicable)

181,525

Start date

April 1, 2020

End date

March 31, 2021

Comment

change in scope 2 market-based number due to an error in last year's submission.

Past year 2

Scope 2, location-based

252,757

Scope 2, market-based (if applicable)

192,334

Start date

April 1, 2019

End date

March 31, 2020

Comment

no change

Past year 3

Scope 2, location-based

227,861

Scope 2, market-based (if applicable)

202,813

Start date

April 1, 2018

End date

March 31, 2019

Comment

no change

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

3,008,648

Emissions calculation methodology

Hybrid method
Average data method
Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

This category uses a hybrid methodology. For the precious metals that are the core ingredient of the majority of our products we use carbon footprint information developed and published in partnership with members of the International Platinum Association. It is a Cradle-to-Gate LCA carried out and 3rd party assured to the requirements of the ISO14040 and ISO14044 standards. For other raw materials we use EcoInvent v3.7 data and a mass based calculation. For the remainder of our Purchased goods and services, we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

349,214

Emissions calculation methodology

Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Our capital expenditure is publicly reported on our financial accounts page 164 of our Annual Report 2022. This category required a subset of that total related to Plant, Property and Equipment. We use a Financial allocation method to calculate the GHG emissions associated with these investments - licensing a proprietary Economic Input-Output model (EIO) provided by Avieco Ltd. This combines economic data from central banks and treasury departments with research data from the World Bank, OECD and other leading environmental agencies.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

46,990

Emissions calculation methodology

Fuel-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Our Scope 3 emissions for electricity distribution and transmission losses are calculated using the methodology outlined in the GHG Protocol corporate standard 2015 revision, www.ghgprotocol.org. For all facilities outside of the US, we use national carbon intensity factors related to the consumption of grid electricity in 2017 made available in the 2021 edition of the world CO2 emissions database of the International Energy Agency. They were purchased under licence for sole use in company reporting. For US facilities we use regional carbon factors published by the Environmental Protection Agency in January 2021, eGRID data 2020. For Well-to-tank carbon footprint of purchased fuels and steam, we use Defra emissions factors. For well-to-tank factors for fuels and steam we used Defra conversion factors https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2021.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

168,750

Emissions calculation methodology

Supplier-specific method
Hybrid method
Spend-based method
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

92

Please explain

This category uses a hybrid methodology. Where emissions data were provided by our suppliers this was used. If weight and distance data were available, per shipment, Scope 3 emissions associated with Upstream Transportation and Distribution were calculated using Defra emissions factors for freighting goods https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2021. For the remaining emissions we used a Avieco Ltd's proprietary Environmentally Extended Input-Output database for the logistics sector. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the

European Commission, the IMF and the World Bank amongst others. Where no supplier information was available, emissions were scaled to represent the total transportation and distribution expenditure of Johnson Matthey in 2021/22.

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

5,775

Emissions calculation methodology

Supplier-specific method
Hybrid method
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

53

Please explain

Where emissions factors were available from an LCA conducted by our third-parties, these values were used to calculate emissions associated with the relevant supplier. For all other waste volumes handled by third-parties, we used Defra emission factors for waste disposal by type and treatment method.
https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2021

Business travel

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,336

Emissions calculation methodology

Supplier-specific method
Hybrid method
Spend-based method
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

96

Please explain

The carbon footprint of our business travel was calculated according to the GHG Protocol Corporate Accounting Standard. Air travel emissions are reported directly to us

by our travel agent partners. Remaining emissions are calculated using Defra emissions factors https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2021 for rail, private vehicle, taxi and public transportation.

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

15,718

Emissions calculation methodology

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

The carbon footprint of employee commuting was calculated according to the GHG Protocol Corporate Accounting Standard. The distance and method of travel was reported by employees through a global commuting survey in 2022 using estimated fuel efficiency and Defra emissions factors https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2021. 7% of the 2022 workforce were accounted for in this survey and emissions were scaled to represent JM's total workforce in 2022.

Upstream leased assets

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

698

Emissions calculation methodology

Hybrid method
Asset-specific method
Site-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

For Upstream Leased Assets, the carbon footprint was calculated using CIBSE benchmarks for to calculate kWh/yr of electricity consumed. Defra emissions factors https://www.gov.uk/government/publications/greenhouse-gasreporting-conversionfactors-2021 and IEA scope 1 and 2 electricity conversion factors

https://www.iea.org/reports/world-energy-balances-overview were used. Where we collect asset energy data, these assets have been included in JM's scope 1 and 2 emissions totals for 2021/22.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

All downstream transportation and distribution over which we have any control has been included in our upstream transportation and distribution calculations.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

Our products are not subject to energy-intensive downstream processing. As solid supported catalysts, they are typically manually inserted into metallic containers, which are then either held together with clamps or welded closed.

Use of sold products

Evaluation status

Not relevant, explanation provided

Please explain

During the validation process for JM's science-based targets in 2021, it was identified that all emissions from JM's sold products should be classified as indirect emissions. Upon recommendation from SBTi we have hence excluded these emissions from our Scope 3 inventory.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

We receive a very high percentage of our precious metal-containing products back to our own factories at End-of-Life. We then recycle them internally, and the emissions associated with this activity are thus included in our Scope1+2 reporting. Most exceptions to this rule are from our pharmaceutical and medical components businesses where the products are either consumed or remain in the body until death.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

We do not have any downstream leased assets.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

We do not have any franchises.

Investments

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

16

Emissions calculation methodology

Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

For Investment emissions, we used JM's revenues generated by our investments and a Avieco Ltd's proprietary Environmentally-Extended Input-Output database to calculate emissions in the Energy and Chemicals sectors. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain database. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

We do not believe we have any other upstream emissions not already accounted for in our scope 3 GHG emissions.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

We do not believe we have any other downstream emissions not already accounted for in our scope 3 GHG emissions.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

April 1, 2020

End date

March 31, 2021

Scope 3: Purchased goods and services (metric tons CO2e)

2,851,616

Scope 3: Capital goods (metric tons CO2e)

308,835

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

39,725

Scope 3: Upstream transportation and distribution (metric tons CO2e)

102,552

Scope 3: Waste generated in operations (metric tons CO2e)

5,257

Scope 3: Business travel (metric tons CO2e)

67

Scope 3: Employee commuting (metric tons CO2e)

29,957

Scope 3: Upstream leased assets (metric tons CO2e)

602

Scope 3: Downstream transportation and distribution (metric tons CO2e)

0

Scope 3: Processing of sold products (metric tons CO2e)

0

Scope 3: Use of sold products (metric tons CO2e)

0

Scope 3: End of life treatment of sold products (metric tons CO2e)

0

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

665

Scope 3: Other (upstream) (metric tons CO2e)

0

Scope 3: Other (downstream) (metric tons CO2e)

0

Comment

Past year 2

Start date

End date

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

This is our baseline year and had been provided in question C5.2

Past year 3

Start date

End date

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

3.5

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

399,906

Metric denominator

metric ton of product

Metric denominator: Unit total

114,175

Scope 2 figure used

Market-based

% change from previous year

3

Direction of change

Increased

Reason for change

Our energy efficiency performance shows
a similar trend. This decline in performance occurred because we brought two new large facilities online in our Clean Air business during the year . It is normal, at start-up, to operate at reduced
throughput as you start to validate parts and finish commissioning equipment. As the sites
move to full production, we expect our efficiency will improve again

Intensity figure

0.000025

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

399,906

Metric denominator

unit total revenue

Metric denominator: Unit total

16,025,000,000

Scope 2 figure used

Market-based

% change from previous year

0.07

Direction of change

Decreased

Reason for change

Our revenue has increased faster than our production rate, so although Scope 1 & 2 GHG emissions have risen, our carbon intensity as a function of revenue has stayed the same,

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	185,989	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	24,853	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	1,755	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	7,249	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United Kingdom of Great Britain and Northern Ireland	68,282
Europe, the Middle East, Africa and Russia (EMEAR)	23,930
Americas	86,716
Asia, Australasia	40,918

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Clean Air Sector	58,444
Efficient Natural Resources Sector	135,341
Health Sector	15,034
Value Businesses Sector	6,690
Corporate	3,908
Hydrogen Technologies Sector	429

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Chemicals production activities	193,785	These are scope 1 emissions from the combined facilities of our Clean Air and Efficient Natural Resources sectors. These are the sectors of our business where we manufacture industrial and automotive catalysts, which are classified as "speciality chemicals" in CH0.7.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
United Kingdom of Great Britain and Northern Ireland	29,768	1,488
Europe, the Middle East, Africa and Russia (EMEAR)	101,582	85,926
Americas	43,880	27,697
Asia, Australasia	65,667	64,949

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Clean Air Sector	165,612	131,794
Efficient Natural Resources Sector	54,511	35,004
Health Sector	11,436	9,222
Value Businesses Sector	5,963	2,935
Corporate	1,670	353
Hydrogen Technologies Sector	1,705	752

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-	Scope 2, market-based (if	Comment

	based, metric tons CO2e	applicable), metric tons CO2e	
Chemicals production activities	220,123	166,798	These are scope 2 emissions from the combined facilities of our Clean Air and Efficient Natural Resources sectors. These are the sectors of our business where we manufacture industrial and automotive catalysts, which are classified as "speciality chemicals" in CH0.7

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Ammonia	0.2	Ammonia containing products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Methanol	0.01	Methanol products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Ethanol	0.1	Ethanol products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using

		purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Nitric acid	2	Nitric acid products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Soda ash	0.5	Sodium carbonate products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Carbon black	0.01	Activated carbon products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by

		organisations such as the European Commission, the IMF and the World Bank amongst others.
Polymers	0.1	Polymer and resin products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Specialty chemicals	1	All other specialty and commodity chemical products not included in this table already that are purchased by JM, are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Other base chemicals	3	Base chemical products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.
Lubricants	0.3	White spirit products that are purchased by JM are calculated using EcoInvent v3.7 data and a mass-based calculation using purchased volumes in 2021/22. Where mass data is unavailable we used a Avieco Ltd's proprietary Economic Input-Output database. EEIO analysis estimates the emissions

		resulting from the production and upstream supply chain activities of sectors and products in an economy. The Multi-region input-output data and matching environmental satellite accounts are sourced from EORA Global Supply Chain data base. This database is widely cited and used by organisations such as the European Commission, the IMF and the World Bank amongst others.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	We do not sell any greenhouse gases
Methane (CH4)	0	We do not sell any greenhouse gases
Nitrous oxide (N2O)	0	We do not sell any greenhouse gases
Hydrofluorocarbons (HFC)	0	We do not sell any greenhouse gases
Perfluorocarbons (PFC)	0	We do not sell any greenhouse gases
Sulphur hexafluoride (SF6)	0	We do not sell any greenhouse gases
Nitrogen trifluoride (NF3)	0	We do not sell any greenhouse gases

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	7,855	Decreased	2	New renewable energy contracts this year for several sites in Europe and America decreased our Scope 2 emissions this year. The Scope 2 emissions at these sites dropped by 7,855 tonnes in FY21/22 which is 2% of total Scope 1 and 2 emission this year.

Other emissions reduction activities	0	No change	0	Not applicable
Divestment	1,369	Decreased	0.3	The AGT business, made up of 6 sites, was divested towards the end of the financial year.
Acquisitions	0		0	No acquisitions
Mergers	0		0	No mergers
Change in output	1,927	Increased	0.5	Production started this year at new sites in China and India, as well as a small increase in output at our site in Poland.
Change in methodology	0	No change	0	
Change in boundary	0	No change	0	
Change in physical operating conditions	21,748	Increased	5.5	This decline in performance occurred because we brought two new large facilities online in our Clean Air business during the year. It is normal, at start-up, to operate at reduced throughput as you start to validate parts and finish commissioning equipment. As the sites move to full production, we expect our efficiency will improve again.
Unidentified	0	No change	0	
Other	0	No change	0	

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	813,286	813,286
Consumption of purchased or acquired electricity		193,431	348,993	542,424

Consumption of purchased or acquired steam		0	24,294	24,294
Consumption of self-generated non-fuel renewable energy		230		230
Total energy consumption		193,661	1,186,573	1,380,234

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

Consumption of fuel (excluding feedstocks)

Heating value

HHV (higher heating value)

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

716,206

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

716,206

Consumption of purchased or acquired electricity

MWh consumed from renewable sources inside chemical sector boundary

155,231

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

302,997

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

458,228

Consumption of purchased or acquired steam

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

23,888

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

23,888

Consumption of self-generated non-fuel renewable energy

MWh consumed from renewable sources inside chemical sector boundary

113

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

113

Total energy consumption

MWh consumed from renewable sources inside chemical sector boundary

155,344

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

1,043,091

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

1,198,435

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other biomass

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Coal

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Oil

Heating value

HHV

Total fuel MWh consumed by the organization

9,842

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

9,842

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Fuel Oil

Gas

Heating value

HHV

Total fuel MWh consumed by the organization

709,582

MWh fuel consumed for self-generation of electricity

2,271

MWh fuel consumed for self-generation of heat

707,311

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Mains supply of Natural Gas

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

83,632

MWh fuel consumed for self-generation of electricity

6,620

MWh fuel consumed for self-generation of heat

77,012

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Diesel, Petrol, LNG and LPG
33252.67

Total fuel

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

803,056

MWh fuel consumed for self-generation of electricity

8,891

MWh fuel consumed for self-generation of heat

794,165

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	33,446	33,446	230	230
Heat	769.61	769,610	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Electricity

Total gross generation inside chemicals sector boundary (MWh)

29,166

Generation that is consumed inside chemicals sector boundary (MWh)

29,166

Generation from renewable sources inside chemical sector boundary (MWh)

113

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Heat

Total gross generation inside chemicals sector boundary (MWh)

684,882

Generation that is consumed inside chemicals sector boundary (MWh)

684,882

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Steam

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Cooling

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Purchase from an on-site installation owned by a third party

Energy carrier

Electricity

Low-carbon technology type

Solar

Country/area of low-carbon energy consumption

United States of America

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

7,009

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,018

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Sustainable biomass

Country/area of low-carbon energy consumption
United Kingdom of Great Britain and Northern Ireland

Tracking instrument used
Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
134,650

Country/area of origin (generation) of the low-carbon energy or energy attribute
United Kingdom of Great Britain and Northern Ireland

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2,019

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Nuclear

Country/area of low-carbon energy consumption
United States of America

Tracking instrument used
Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

40,544

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,019

Comment

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Hydropower (capacity unknown)

Country/area of low-carbon energy consumption

Sweden

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

6,642

Country/area of origin (generation) of the low-carbon energy or energy attribute

Sweden

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,019

Comment

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Wind

Country/area of low-carbon energy consumption

Germany

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

14,558

Country/area of origin (generation) of the low-carbon energy or energy attribute

Germany

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,019

Comment

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Wind

Country/area of low-carbon energy consumption

Poland

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

20,574

Country/area of origin (generation) of the low-carbon energy or energy attribute

Poland

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,021

Comment

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area

United Kingdom of Great Britain and Northern Ireland

Consumption of electricity (MWh)

160,692

Consumption of heat, steam, and cooling (MWh)

4,118

Total non-fuel energy consumption (MWh) [Auto-calculated]

164,810

Country/area

United States of America

Consumption of electricity (MWh)

122,024

Consumption of heat, steam, and cooling (MWh)

16,611

Total non-fuel energy consumption (MWh) [Auto-calculated]

138,635

Country/area

China

Consumption of electricity (MWh)

60,948

Consumption of heat, steam, and cooling (MWh)

2,759

Total non-fuel energy consumption (MWh) [Auto-calculated]

63,707

Country/area

South Africa

Consumption of electricity (MWh)

33,315

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

33,315

Country/area

Argentina

Consumption of electricity (MWh)

6,204

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

6,204

Country/area

Canada

Consumption of electricity (MWh)

6,902

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

6,902

Country/area

Mexico

Consumption of electricity (MWh)

13,715

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

13,715

Country/area

India

Consumption of electricity (MWh)

25,266

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

25,266

Country/area

Japan

Consumption of electricity (MWh)

11,459

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

11,459

Country/area
Malaysia

Consumption of electricity (MWh)
8,852

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

8,852

Country/area
Germany

Consumption of electricity (MWh)
38,906

Consumption of heat, steam, and cooling (MWh)
10,053

Total non-fuel energy consumption (MWh) [Auto-calculated]

48,959

Country/area
North Macedonia

Consumption of electricity (MWh)
51,215

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

51,215

Country/area
Netherlands

Consumption of electricity (MWh)
6,270

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

6,270

Country/area
Poland

Consumption of electricity (MWh)
20,587

Consumption of heat, steam, and cooling (MWh)
163

Total non-fuel energy consumption (MWh) [Auto-calculated]

20,750

Country/area
Russian Federation

Consumption of electricity (MWh)
2,755

Consumption of heat, steam, and cooling (MWh)
1,106

Total non-fuel energy consumption (MWh) [Auto-calculated]

3,861

Country/area
Sweden

Consumption of electricity (MWh)
6,642

Consumption of heat, steam, and cooling (MWh)
6,093

Total non-fuel energy consumption (MWh) [Auto-calculated]

12,735

Country/area
Australia

Consumption of electricity (MWh)
117

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

117

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?
No

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Energy usage

Metric value
12.1

Metric numerator
total energy used during the year in MWh

Metric denominator (intensity metric only)
tonnes of JM manufactured product sold

% change from previous year
2.5

Direction of change
Increased

Please explain

Commissioned 2 new facilities this year and production is less efficient during commissioning phase.

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product
Specialty chemicals

Production (metric tons)
105,615

Capacity (metric tons)
105,615

Direct emissions intensity (metric tons CO2e per metric ton of product)
3.41

Electricity intensity (MWh per metric ton of product)
4.61

Steam intensity (MWh per metric ton of product)
0.23

Steam/ heat recovered (MWh per metric ton of product)
0

Comment
Production capacity is confidential and highly dependent on the product mix.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	We heavily invest in developing catalysts which enable our partners in the chemical sector to use renewable feedstocks to product bulk chemicals. See Annual Report 2022 page 18 and 19.

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Bio technology	Pilot demonstration	≤20%		Alternative feedstocks for a sustainable future: We have projects at all the listed stages of development in this area. For information see our Annual Report 2022 page 14 "Using our expertise in PGM chemistry and catalysis, we've designed clever ways to make sustainable aviation fuel (SAF) from alternative feedstocks..."

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

Johson Matthey - EHS assurance statement for ARAC FY202122 V1.2.pdf

Page/ section reference
Scope 1 emissions are found on page 2

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

Johson Matthey - EHS assurance statement for ARAC FY202122 V1.2.pdf

Page/ section reference
Scope 2 emissions are found on page 2.

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Johson Matthey - EHS assurance statement for ARAC FY202122 V1.2.pdf

Page/section reference

2

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module	Data verified	Verification standard	Please explain

verification relates to			
C4. Targets and performance	Year on year emissions intensity figure	ISAE3410 Limited assurance	C4.1b target Int 1: Our operational carbon intensity (scope 1 + 2 per tonnes product) has been 3rd party verified for the last 5 years. The past 3 years of data are displayed on the assurance certificate on page 2. Prior years of data can be found on last year's assurance certificate. 1, 2
C5. Emissions performance	Year on year change in emissions (Scope 1)	ISAE3410 Limited assurance	Our scope 1 emissions has been 3rd party verified for the last 5 years. The past 3 years of data are displayed on the assurance certificate on page 2. Prior years of data can be found on last year's assurance certificate. 1, 2
C5. Emissions performance	Year on year change in emissions (Scope 1 and 2)	ISAE3410 Limited assurance	Our scope 1&2 emissions has been 3rd party verified for the last 5 years. The past 3 years of data are displayed on the assurance certificate on page 2. Prior years of data can be found on last year's assurance certificate. 1, 2
C8. Energy	Energy consumption	ISAE3410 Limited assurance	The following data required for C8.2 are all shown on our 3rd party assurance certificate on page 3: Total energy consumption, Total natural gas consumption, Total electricity consumption, Total non-renewable energy consumption, Non-renewable fuels purchased and consumed, Non-renewable electricity purchased, Steam / heating / cooling and other energy (non-renewable) purchased, Total renewable energy purchased or generated, Percentage renewable electricity consumed 1, 2
C4. Targets and performance	Progress against emissions reduction target	ISAE3410 Limited assurance	C4.2a target: % renewable electricity consumed is show on the assurance certificate on page 3

[1]Johnson Matthey - EHS assurance statement FY202021.pdf

[2]Johson Matthey - EHS assurance statement for ARAC FY202122 V1.2.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

UK carbon price floor

UK ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

1.02

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2021

Period end date

December 31, 2021

Allowances allocated

3,221

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

3,126

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

UK ETS

% of Scope 1 emissions covered by the ETS
8.09

% of Scope 2 emissions covered by the ETS
0

Period start date
January 1, 2021

Period end date
December 31, 2021

Allowances allocated
4,964

Allowances purchased
12,000

Verified Scope 1 emissions in metric tons CO2e
16,477

Verified Scope 2 emissions in metric tons CO2e
0

Details of ownership
Facilities we own and operate

Comment

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

UK carbon price floor

Period start date
January 1, 2021

Period end date
December 31, 2021

% of total Scope 1 emissions covered by tax
0

Total cost of tax paid

0

Comment

We have two sites in the UK with CHP that are normally subject to CPS tax under the Carbon floor scheme. One CHP was offline for improvement works and has not restarted in 2021 so we did not pay any tax during the year for this plant. The Other CHP was updated during 2019 with new modern engines. This CHP is now defined as Good Quality CHP under the CHP QA scheme and its therefore no longer subject to any taxation

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

The Sustainability Council, which reports directly to the Group Leadership Team, is responsible for our strategy regards Emission Trading Schemes. It is their responsibility to monitor all existing and forthcoming schemes globally and keep track of which JM sites might be affected by them.

Our strategy for compliance within these schemes is, first & foremost, to reduce our GHG emissions. We will then make up any shortfall between verified emissions and allowances allocated in the most cost-effective way possible.

Our science-based targets to reduce our GHG emissions by 2030 supports this strategy. Our quantitative targets is:
33% reduction in absolute scope 1 + 2 GHG emissions 2020 -2030

We also have a target to increase % renewable electricity we use to 60% by 2025 (from 24% in 2019)

Each site is responsible for its own plan as to how to achieve these targets, and presents their plan to the GMC for approval on an annual basis.

1. We aim to reduce energy consumption through many avenues including installing more efficient equipment and improving the efficiency of our chemical processing. We have many projects running concurrently throughout our sites at any one time towards this objective.

2. Our Royston site is the only one large enough to participate in UK--ETS. We have a Combined Heat and Power plant on site producing a large proportion of the site's power needs and it consumes the majority of the Royston site's natural gas. This plant is part of the CHP Quality Assurance scheme which incentivises efficient electrical production. The CHP plant is Fully Qualified under the CHPQA. From April 2016 we switched to using zero carbon grid electricity at this site, and are now using our on-site CHP generators (which are natural gas

powered) less often. This will substantially reduce our carbon emissions from the site in the year ahead.

3. We also use Climate-Change Agreements (CCAs) to minimise our commitment to UK-ETS. The Royston and Brimsdown sites have agreed to reduce their energy consumption by 11.8% between 2008 -2020 under a Climate Change Agreement (CCA)

4. To make up any shortfall between our allocation and verified emissions, we purchase EUAs on the open market, when prices are favourable.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Change internal behavior
Drive low-carbon investment
Stress test investments

GHG Scope

Scope 1
Scope 2

Application

We are currently piloting the use of a shadow carbon price in our capital investment business case assessment process. This is to
incentivise us to reach net zero, by ensuring all investments are made for a low-carbon world
where the price of carbon is higher than it is today. Although the ICP is not a real cost of the
investment, it demonstrates what the impact would be of carbon taxation forecast for 2030
and beyond, and we use it to evaluate and compare potential investments. At this stage,

we plan to apply the ICP only to emissions related to the asset when operational (including
raw material and supply chain impacts emissions). We do not plan to apply them to emissions related to the development of the project itself, such as equipment manufacture,
or to construction-related emissions, since such emissions are both short term and generally
minor in relation to the overall life of the assets.

Actual price(s) used (Currency /metric ton)

100

Variance of price(s) used

50 -150

Type of internal carbon price

Shadow price

Impact & implication

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers/clients

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

0

% total procurement spend (direct and indirect)

0

% of supplier-related Scope 3 emissions as reported in C6.5

25

Rationale for the coverage of your engagement

We are beginning this work with 100 suppliers that we know make the most significant contribution to our scope 3 GHG footprint. This is less than 1% of our suppliers by number but more than 25% by GHG footprint.

Impact of engagement, including measures of success

The impacts of the engagement are incremental:
Stage 1 success is when we receive GHG emissions information from the supplier that we can independently verify and thus we have a higher quality number for our scope 3 GHG emissions total, that we can get using industry average data sources.
Stage 2 is and where we know we are working with suppliers that have Net Zero goals and intermediate GHG reduction targets for 2030 that are consistent with our own.
Stage 3 is when we are able to select new suppliers based on their net zero ambitions.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Collaboration & innovation
Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

100

Please explain the rationale for selecting this group of customers and scope of engagement

We are very clear about our commitment to reducing climate change impacts with all our customers . Our company purpose statement is "Catalysing the Net Zero transition" - see front page of Annual report 2022. We are working with all our customers to achieve this. We have many high profile partnerships with are able enabling the Hydrogen Economy. We work with all the major OEMs to ensure that they have emissions technology available that will enable them to reduce the GHG emissions of vehicles, and introduce all new and tighter emissions standards globally.

Impact of engagement, including measures of success

Sales of technology that contribute to our Avoided GHG emissions target for 2030. We are committed to sales of technology which help our customers avoid 5-0 million tonnes of CO2 by 2030.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

No, but we plan to introduce climate-related requirements within the next two years

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers
Yes, we engage indirectly through trade associations

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

We are a member of the UN Global Compact's Business Ambition for 1.5C. This is documented on page 41 of our Annual report 2022 and can also be verified on the UN Global Compact website.
We have publicly committed to Net Zero by 2040 and had our 2030 targets independently verified by the science based targets initiative. (pages 41-42)
Our company purpose statement is " Catalysing the Net Zero Ambition" see page 1 of Annual report

Johnson Matthey - Annual Report and Accounts 2022.pdf

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

All our external advocacy is coordinated by our central Corporate Affairs function. The Corporate Affairs Director reports into the Chief Sustainability Officer, who reports directly to the CEO.
Our corporate purpose statement is "catalysing the net zero transition" and all our advocacy is in support of the products that we manufacture to help our customers reduce their greenhouse gas emissions, thus achieving their own net zero ambitions..

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Focus of policy, law, or regulation that may impact the climate

Emissions trading schemes

Specify the policy, law, or regulation on which your organization is engaging with policy makers

UK - ETS scheme

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

United Kingdom of Great Britain and Northern Ireland

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

Response to public consultation.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Climate-related targets

Specify the policy, law, or regulation on which your organization is engaging with policy makers

EURO7 emissions regulation for vehicles

Policy, law, or regulation geographic coverage

Regional

Country/region the policy, law, or regulation applies to

Europe

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

We engage with the European Commission in support of the introduction of tighter emissions standards for vehicles to limit emissions of both greenhouse gases and air pollutants that are harmful to human health (proposed EURO 7 regulation). When the European Commission recently delayed a decision on this important environmental regulation, we put out a statement urging them not to delay introduction

https://matthey.com/johnson-matthey-reacts-to-european-commission-delay-to-euro-7-proposals

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Low-carbon, non-renewable energy generation

Specify the policy, law, or regulation on which your organization is engaging with policy makers

We support the UK government of their Hydrogen economy policy which is part of their strategy to achieve net zero by 2050. The UK government policy includes supporting up to 10GW of low carbon hydrogen production capacity by 2030, running annual allocation rounds for electrolytic hydrogen, and designing new business models for hydrogen transport and storage infrastructure.

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

United Kingdom of Great Britain and Northern Ireland

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

One of our executive directors is the UK government's Hydrogen Champion. In her role as Co-Chair (with the Secretary of State) of the UK Hydrogen Advisory Council, Jane plays a leading independent role bringing industry and government together to identify the policies needed to ensure the successful implementation of the UK's Hydrogen Strategy, which is part of its strategy to achieve net zero by 2050.

"Kwasi Kwarteng, Business and Energy Secretary, said: “The UK’s hydrogen sector is open for business. With the right investment, we can unlock the enormous potential of hydrogen by reindustrialising our economy and ending our dependency on expensive fossil fuels.

Claire Jackson, Chief Executive of Hydrogen UK, said: “Jane Toogood’s appointment as the UK’s first Hydrogen Champion – and opening of the joint allocation round for green hydrogen projects – is a welcome statement of intent from the government. Hydrogen UK looks forward to working closely with policy officials to review progress against the landmark Hydrogen Strategy of 2021, and to setting ambitious goals for the future as we work together to build a British hydrogen economy, which is crucial if we are to reach our much-needed net zero goals.”

Jane said: "The government has ambitious plans for the UK to ramp up hydrogen technology. Hydrogen deployment as a clean energy source is one of the key solutions to help the UK reach its net zero targets and I strongly believe there is an opportunity to accelerate this, working collaboratively across industry and government to land projects and infrastructure on a timeline that serves stakeholder and customers' needs.

"At Johnson Matthey, we see that demand for hydrogen ecosystems globally is being taken up across industry, transportation and the power sector at a rapid pace, especially with the increased focus on energy security. As the UK's Hydrogen Champion, working with industry and government, I hope to ensure we make progress in building a thriving hydrogen economy ensuring private sector investment and policy decisions are aligned to support timely decisions and outcomes."

https://matthey.com/uk-government-appoints-jane-toogood-as-national-hydrogen-champion

Details of exceptions (if applicable) and your organization’s proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization’s engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Eurometaux

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

From Eurometaux website:
"Our industry is committed to meeting the EU's 2050 climate-neutrality objective and to supply the metals
demanded for clean energy technologies. We are investing to further reduce our greenhouse gas emissions
and working to improve the conditions for signing renewable energy power purchase agreements. "

https://www.eurometaux.eu/media/eoagpalu/metals-for-clean-energy-final.pdf

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

200,000

Describe the aim of your organization's funding

Membership fee.

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

European Chemical Industry Council (CEFIC)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

CEFIC supports the EU Green deal and measures to enable the European chemical industry to achieve net zero by 2050.

From their website:
"The European chemical industry has the ambition to become climate neutral by 2050 and is uniquely positioned at the heart of European manufacturing to contribute to realizing a climate neutral society. The industry invites the European Commission to work on a joint roadmap for the EU Chemical sector, setting out the conditions for a successful deployment of innovative technologies in order to meet this objective. Access to abundant and competitive low carbon energy, development of relevant infrastructure, as well as new market opportunities related to sustainable products, are key conditions to ensure that industry stays globally competitive during the transition.

We support the Paris Climate Agreement and a strong action on climate change in line with the scientific advice provided by the Intergovernmental Panel on Climate Change (IPCC). Cefic also supports the European Green Deal and Europe's ambition to become climate neutral by 2050 and the European chemical industry has the ambition to become climate neutral by 2050. "

https://cefic.org/policy-matters/chemical-industry-green-deal/how-can-europes-chemical-industry-help-deliver-on-the-green-deal/

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

European Automobile Manufacturers' Association (ACEA)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Support fit for 55 ambitions to achieve zero emission transportation in Europe by 2035. Support introduction of tighter vehicle fleet CO2 emission standards by 2025 as part of EURO7 emissions regulations.

https://www.acea.auto/press-release/european-parliament-vote-on-co2-for-cars-and-vans-automobile-manufacturers-react/
https://www.acea.auto/message-dg/eu-climate-package-decision-makers-must-look-at-the-big-picture/

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

200,000

Describe the aim of your organization's funding

membership fee

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

Johnson Matthey - Annual Report and Accounts 2022.pdf

Page/Section reference

TCFD report is pages 60 - 69
Emissions figures and targets is pages 42-44

Content elements

Governance

Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication
In voluntary communications

Status
Complete

Attach the document

JM Capital Markets Day presentation May 2022.pdf

Page/Section reference
This capital markets day presentation contains all the financial information relating to our climate-related opportunities - pages 37 - 51 for details on our products to catalyse the net zero transition in the chemical sector and grow the hydrogen economy.

Content elements
Strategy
Risks & opportunities

Comment
This capital markets day presentation contains all the financial information relating to our climate-related opportunities.

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, executive management-level responsibility	As a chemicals manufacturing company, all our biodiversity-related impacts originate in our upstream supply chain. Issues are tackled when they arise because we only

		purchase a very small amount of Palm Oil and Timber products (<<1% total procurement spend annually).

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments
Row 1	Yes, we have made public commitments only	Other, please specify Our supplier code of conduct is available to download from our website and contains 2.5.1. which requests our tier 1 suppliers to monitor their impact on biodiversity of land local to their premises and take appropriate actions.

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	Yes, we assess impacts on biodiversity in our upstream value chain only

C15.4

(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity-related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Other, please specify We have started assessing our existing suppliers using EcoVadis which aligns with 96% of our Supplier Code of Conduct and 100% of the habitat protection statements within the code.

C15.5

(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	

C15.6

(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
Other, please specify Supplier Code of Conduct	Other, please specify Supply chain management of land and associated biodiversity monitoring	p19 section 2.5 contains JM's principles for habitat protection and the expectations we have for our suppliers within this. 1

[1]Supplier Code of Conduct_2020.pdf

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer	Chief Executive Officer (CEO)