Climate Change Report 2021

AngloAmerican

Re-imagining mining to improve people's lives

Tackling climate change is the defining challenge of our time

Understanding the implications for Anglo American is a significant strategic matter for us. But being resilient as a company is not enough. We understand that mining has a critical enabling role to play in providing the metals and minerals needed for a low carbon world. In this context, we are working actively to be part of the solution to climate change, because it is the right thing for the long term sustainability of our business, and also the right thing for society.

Climate change performance

Scope 1 emissions 2020

10.0 Mt CO_2e

2019: 10.9 Mt CO_2e

Scope 2 emissions 2020

6.1 Mt CO_2e

2019: 6.9 Mt CO_2e

Scope 3 emissions 2020

114.8 Mt CO_2e

2018: 225.7 Mt CO_2e*

*2020 Scope 3 data based on updated methodology

Delivered against 2020 target

29%

reduction of emissions by 2019 against projected business as usual (BAU) emissions[1]

Scopes 1 and 2 target

30%

reduction by 2030*

*on a 2016 baseline

Scopes 1 and 2 goal

Carbon neutral

by 2040

Scope 3 ambition

50%

reduction by 2040*

*on a 2020 baseline

Portfolio evolution

85%

of portfolio focused on future enabling products

[1] 2020 target was 22% reduction against BAU.

This report provides our stakeholders with transparent disclosure of Anglo American's comprehensive approach to climate change.

The report is aimed at investors, customers, suppliers, governments, non-governmental organisations (NGOs) and those who work for us. In addition to reporting, we use a variety of tools to ensure that we engage with all interested stakeholder groups on climate change. In some cases, individual business unit reports are also published and provide greater detail on performance. These are available on the Anglo American website. The Anglo American Integrated Annual Report and Sustainability Report include additional information about the Group's management, operations, financial performance and sustainable development.

The Anglo American chairman and chief executive, and the Board's Sustainability Committee have reviewed this report, which has been approved by the Board.

Scope of the report

The Climate Change Report covers subsidiaries and joint operations over which the Anglo American Group has management control or acts as operator. It does not include independently managed operations, such as Cerrejón, Collahuasi and Samancor, unless specifically stipulated. It also excludes De Beers' non-managed joint operations in Namibia and Botswana from our reporting scope, unless specifically stipulated in the reporting.

Contents

Other sources of information

More information about sustainability at Anglo American, including an Excel download of our sustainability data, business unit sustainability reports, and historical reports, can be found in our Integrated Annual Report and online at: **www.angloamerican.com**

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References to Anglo American plc

In this document, references to 'Anglo American', the 'Anglo American Group', the 'Group', 'we', 'us', and 'our' are to refer to either Anglo American plc and its subsidiaries and/or those who work for them generally, or where it is not necessary to refer to a particular entity, entities or persons. The use of those generic terms herein is for convenience only, and is in no way indicative of how the Anglo American Group or any entity within it is structured, managed or controlled. Anglo American subsidiaries, and their management, are responsible for their own day-to-day operations, including but not limited to securing and maintaining all relevant licences and permits, operational adaptation and implementation of Group policies, management, training and any applicable local grievance mechanisms. Anglo American produces Groupwide policies and procedures to ensure best uniform practices and standardisation across the Anglo American Group, but is not responsible for the day-to-day implementation of such policies. Such policies and procedures constitute prescribed minimum standards only. Group operating subsidiaries are responsible for adapting those policies and procedures to reflect local conditions where appropriate, and for implementation, oversight and monitoring within their specific businesses.

Cover image
General worker Heinrich Strong conducting assessments at the Sishen iron ore mine rehabilitation nursery that was established to cultivate indigenous tree seedlings for planting in rehabilitated mine areas.

Our reporting suite
You can find this report and others, including the Integrated Annual Report and Sustainability Report, on our corporate website.

For more information, see www.angloamerican.com/investors/annual-reporting

FutureSmart Mining™
To deliver on our Purpose, we are changing the way we mine through smart innovation across technology, digitalisation and sustainability.

To discover more about the future of mining, see www.angloamerican.com/futuresmart/futuresmart-mining

Our business at a glance

Anglo American is a leading global mining company, with a world class portfolio of mining and processing operations and undeveloped resources, with more than 95,000 people working for us around the world, in 15 countries.

We provide many of the essential metals and minerals that are fundamental to the transition to a low carbon economy and enabling a cleaner, greener, more sustainable world, as well as meeting the growing consumer-driven demands of the world's developed and maturing economies. And we do so in a way that not only generates sustainable returns for our shareholders, but that also strives to make a real and lasting positive contribution to society as a whole.

For more information, see our Tax and Economic Contribution Report
www.angloamerican.com/investors/annual-reporting

Our overview video gives a complete introduction to what we do and our ambitions for the future
https://youtu.be/jayeulVYhM4

North America

800 employees[2]
$61 m wages and benefits paid[3]
$6 m taxes borne[4]
$77 m local procurement spend

Canada 1

Brazil

3,900 employees[2]
$137 m wages and benefits paid[3]
$163 m taxes borne[4]
$1,021 m local procurement spend

1 Colombia

Peru

400 employees[2]
$60 m wages and benefits paid[3]
$9 m taxes borne[4]
$1,091 m local procurement spend

1 Peru
3 Chile
Brazil 2 1

Chile

3,800 employees[2]
$381 m wages and benefits paid[3]
$490 m taxes borne[4]
$1,280 m local procurement spend

Product groups

- Diamonds
- Copper
- Platinum Group Metals
- Iron Ore
- Metallurgical Coal
- Thermal Coal
- Nickel and Manganese
- Crop Nutrients

See page 96 of the Integrated Annual Report 2020 for footnotes.
Data is for year ended 31 December 2020.

Climate Action 100+

"The dialogue between Anglo American, the Central Finance Board of the Methodist Church, EOS at Federated Hermes and other supporting investors collaborating under Climate Action 100+ began in early 2018, with regular engagement since. It has been a robust discourse and we have challenged areas of Anglo American's approach and pace of action. In general, we have found Anglo American responsive to our concerns and welcomed the steps taken in line with these, including on target setting; scenario analysis; trade associations; and disclosure. Most notably we welcomed the company's target to become carbon neutral on operational emissions by 2040 and to play a broader role in decarbonising the steel value chain, and the detailed work undertaken to determine how these will be achieved.

We have sought an increasingly joined up approach to climate action across core business functions and expect to see Anglo American's further alignment with the actions sought by Climate Action 100+ and ongoing improvements in its net zero benchmark assessment as a result. Areas of current focus for engagement include delivery of the carbon neutral targets, the mitigation of transition risks and related value chain goals, engagement with trade associations, and a Just Transition. We look forward to continuing our dialogue with Anglo American in the pursuit of a more sustainable future."

Rev Dr Andrew Harper
Head of Ethics,
Central Finance Board of the Methodist Church/Epworth Investment Management

Andy Jones
Director,
EOS at Federated Hermes

Climate Action 100+ engagement leads with Anglo American

Finland
United Kingdom 1

Europe

2,400 employees[2]
$457 m wages and benefits paid[3]
$110 m taxes borne[4]
$459 m local procurement spend

Shanghai

Australia/Asia

2,800 employees[2]
$443 m wages and benefits paid[3]
$221 m taxes borne[4]
$2,355 m local procurement spend

Other Africa

4,500 employees[2]
$194 m wages and benefits paid[3]
$202 m taxes borne[4]
$610 m local procurement spend

Singapore
2 Botswana
Zimbabwe 1
2 Namibia
South Africa 1 2 5 1
Australia 1 5

South Africa

44,700 employees[2]
$1,628 m wages and benefits paid[3]
$1,626 m taxes borne[4]
$3,115 m local procurement spend

"We recognise that the world cannot decarbonise without many of the metals and minerals we produce … we must do what we can to minimise the emissions related to the supply of those products."

Stuart Chambers
Chairman

We are committed to playing our part

Climate change is the defining challenge of our time. The August 2021 report from the Inter-governmental Panel on Climate Change (IPCC) has provided the clearest evidence so far of the importance and urgency of transitioning to a net zero future. COP26 in Glasgow in November 2021 represents the next vital step in building co-ordinated, global action, bringing together governments, the private sector, the investment community, NGOs and many other elements of society to tackle climate change.

At Anglo American we are committed to playing our part. We recognise that the world cannot decarbonise without many of the metals and minerals that we produce. But we also recognise that we must do what we can to minimise the emissions related to the supply of those products as quickly as we can. We also accept the role we must play in supporting the decarbonisation of our value chains.

This report sets out our plans to achieve operational carbon neutrality and our ambition to reduce our Scope 3 emissions by 50%, both by 2040. We recognise the challenge we are setting ourselves, but the Board has agreed with the executive team that the level of ambition we have set is necessary and achievable. The report also explains the progress we have made to date in reducing emissions and increasing energy efficiency, and demonstrates our determination to be financially resilient in the 1.5°C world. And it details the structures we have in place to ensure climate change is embedded across our decision-making processes.

We welcome the interest from our shareholders, customers, suppliers, host communities and employees in our thinking about climate change, and we will provide regular updates on our progress.

Technician Moses Murefu inspecting the berm monitoring system at Kolomela iron ore mine in South Africa, which monitors any movement or height deficiencies in the berms, and is partially powered by solar power.

"Our approach reflects the simple fact that climate change is affecting us all and that navigating the transition is both a shared and urgent endeavour."

Mark Cutifani
Chief Executive

Embedding our response to climate change across our business

The challenge that climate science sets, as so clearly stated in the August 2021 IPCC report, is to decarbonise the global economy as quickly as possible. Our response to this challenge is guided by our Purpose, *re-imagining mining to improve people's lives,* and affects every person, process and asset across Anglo American.

Our Climate Change Report sets out the full extent of Anglo American's response to the challenge and specifically defines how we are playing our role as a supplier of many of the products required to enable the transition to a low carbon future. There is growing awareness of the centrality of mining to the energy transition and the importance of the contribution we can make to delivering on our shared aspiration to achieve a net zero future. The International Energy Agency's 2021 report, *The Role of Critical Minerals in Clean Energy Transitions*, which detailed the necessity of metals and minerals to enable the transition, was an important contribution to that debate. But the report also highlighted other challenges to miners, including the importance of sustainability in the production of those transition metals and minerals.

We have defined, and evolved, the role we play in the energy transition over recent years. With the demerger of Thungela Resources (previously our thermal coal operations in South Africa) and our agreement to sell our minority stake in Cerrejón, we will complete our exit from thermal coal mining operations. The result is that 85% of our portfolio will be made up of future-enabling products. This increasing trend will continue with the commissioning of our Quellaveco copper mine, expected in 2022, and then our work to develop the Woodsmith mine that will produce an extremely low carbon, organic fertiliser for the global agriculture market.

We have continually increased our level of ambition with respect to decarbonising our operations. This report sets out how we intend to deliver our goal to be carbon neutral across our operations by 2040, including the partnerships we are building with governments, our host communities and others in South Africa, to create a regional renewable energy ecosystem. The system seeks to deliver renewable power to our operations, support the resilience of the national grid and provide sustainable, reliable and affordable energy.

Our approach to the emissions in our value chains (Scope 3) is necessarily different from those (Scope 1 and 2) emissions where we have direct control. We recognise our responsibility to act, and the work we have done in the past two years has helped us to understand more fully our own Scope 3 inventory and the levers that we can pull to influence the reduction of those emissions. Coupled with our assessment of the evolution of the steel industry in the coming decades, we believe we can reduce our Scope 3 emissions by 50% by 2040. If the decarbonisation of the steel sector accelerates, in part because of the partnerships we are building, this will allow us to go further.

The coronavirus pandemic sets the backdrop for this report, as it has for all our lives since early 2020. While the pandemic has affected and tested all of us, it has not changed or slowed our commitment to being part of the solution to climate change. The pandemic has required a greater focus on the importance of resilience, for individuals, communities and societies, as well as businesses. Our report lays out the way in which we ensure Anglo American is resilient to the challenge of climate change, including an updated scenario analysis, building on the work we published in 2019, but it also lays out our thinking on supporting host communities and others through periods of uncertainty, as we work to ensure a 'Just Energy Transition'.

As we develop each facet of our work, we understand partnerships are crucial to both our individual and shared success. This approach reflects the simple fact that climate change is affecting us all and that navigating the transition is both a shared and urgent endeavour.

Purpose to Value

Guided by our Purpose – *re-imagining mining to improve people's lives* – our strategy is to secure, develop and operate a portfolio of high quality, long life resource assets. We then apply innovative practices and technologies in the hands of our world class people to deliver sustainable value for all our stakeholders.

Our Values

Anglo American's Values and behaviours are at the heart of everything we do. Guided by our Purpose and our Values, we enable high performance and purposeful action. Our Values and the way in which we, as individuals, are expected to behave are the foundation of our Code of Conduct.

Our strategy

The quality and long life of our mineral assets are the foundations of our global business.

We actively manage our asset portfolio to improve its overall competitive position, providing products that increasingly support a fast-growing population and a cleaner, greener, more sustainable world.

Across every aspect of our business, we are thinking innovatively about how we work to ensure the safety of our people, enhance our sustainability performance, and deliver industry-leading margins and returns. We are developing a replicable model of differentiated practices and capabilities that is designed to deliver superior value to all our stakeholders from assets that are in our hands.

Our people are critical to all that we do: we create working environments and an inclusive and diverse culture that encourage and support high performance and innovative thinking. The partnerships we build, both within Anglo American and with our stakeholders – locally and globally – are central to maintaining our regulatory and social licences to operate and our sustained commercial success.

Capital allocation

Our capital allocation framework has sustainability in general, and climate change in particular, embedded within it.

Measuring delivery of our strategy
We track our strategic progress holistically – spanning non-financial and financial performance – and throughout the year, using KPIs that are based on our seven pillars of value:

- **Safety and health** To do no harm to our workforce
- **Environment** To minimise our impact on the environment
- **Socio-political** To partner in the benefits of mining with local communities and government
- **People** To create a sustainable competitive advantage through capable people and an effective, purpose-led, high performance culture
- **Production** To sustainably produce valuable product
- **Cost** To be competitive by operating as efficiently as possible
- **Financial** To deliver sustainable returns to our shareholders

Delivering sustainable value for all our stakeholders

Balanced reward

Anglo American's directors' remuneration policy is designed to encourage delivery of the Group's strategy and creation of stakeholder value in a responsible and sustainable manner, aligned to our Purpose.

The main elements of the remuneration package are basic salary, annual bonus and Long Term Incentive Plan (LTIP).

Sustainable Mining Plan

One of the ways we are bringing our Purpose to life is through FutureSmart Mining™, our innovation-led approach to sustainable mining. Technologies and digitalisation will fundamentally change how we mine, process, move and market our products.

Integral to FutureSmart Mining™, our Sustainable Mining Plan is designed to tackle the most pressing environmental, social and governance challenges. It comprises mutually reinforcing elements that are positively transforming how our stakeholders experience our business, both locally and globally, and ultimately leave a much-reduced physical footprint.

Our Global Sustainability Pillars

Environment	Social	Governance
Healthy Environment	Thriving Communities	Trusted Corporate Leader

Pillars and goals

Healthy Environment
Goals:
- Biodiversity
- Climate change
- Water

Thriving Communities
Goals:
- Education
- Health and well-being
- Livelihoods

Trusted Corporate Leader
Goals:
- Accountability
- Ethical value chains
- Policy advocacy

Collaborative Regional Development

- Regional spatial analysis
- Planning and implementation in partnership

Partnership and engagement

Partnership and engagement

Critical foundations

Leadership and culture	Zero harm	Human rights	Inclusion and diversity	Group standards and processes	Compliance with legal requirements

Our five-year Group Function and site plans

We have tailored five-year local plans for each of our sites and Group functions to address the unique challenges across our operations. Each one is aligned to our Global Sustainability Pillars and stretch goals.

Towards a low carbon future

At Anglo American, our commitment to being part of the solution to climate change is embedded across the business. We continue to align our portfolio with the needs of a low carbon world; we are restructuring our operations towards carbon neutrality; we are pushing for decarbonisation along our value chains; and we are considering carefully the social and wider environmental inter-relationships associated with our decarbonisation journey.

We are ambitious about reducing greenhouse gas (GHG) emissions

- Our 2020 target was a 22% reduction in emissions against projected business as usual (BAU) – we achieved a 29% reduction by 2019
- We are now aiming for a 30% reduction in emissions by 2030 on a 2016 baseline, and carbon neutrality across our operations for Scopes 1 and 2 by 2040
- We are aiming for a 50% reduction in Scope 3 emissions by 2040 against a 2020 baseline. Emissions from the steel value chain make up the significant majority of our Scope 3 emissions and we are, therefore, dependent to a large extent on the pace of decarbonisation in that sector. We are working with partners towards increasing that pace.

For more information on the Net Zero Company Benchmark, see www.climateaction100.org/progress/net-zero-company-benchmark/

Our strategy is aligned with providing future enabling metals and minerals and our business is set up to succeed in a low carbon world

The exit from the last of our thermal coal operations, the commissioning of the Quellaveco copper project in Peru (expected in 2022), and the development of our recently acquired Crop Nutrients business represent the latest stage in the evolution of our portfolio towards future enabling products. In addition:

- Increase in proportion of 'green revenues' generated from future enabling products
- A capital allocation framework with sustainability in general, and climate change in particular, embedded within it
- A portfolio providing the metals and minerals for a cleaner, greener, more sustainable world, that is also financially resilient in a low carbon world.

Decarbonisation for our operations and value chains

Our GHG emission reduction ambitions are built on:

- **Scope 1:** Deployment of FutureSmart Mining™ is central to reducing energy demand and delivering the step-change innovation required for avoiding emissions, including the capture and use of fugitive methane
- **Scope 2:** The procurement and rapid roll-out of renewable power supply, including through embedded generation where necessary
- **Scope 3:** Direct and indirect actions across our areas of influence, and working with like-minded partners across value chains.

Our climate ambitions at a glance

Scopes 1 and 2

8
Eight of our assets carbon neutral by 2030

30%
By 2030, we aim to achieve a 30% improvement in energy efficiency and an absolute 30% reduction in greenhouse gases against a 2016 baseline

2040
We aim to be carbon neutral across all our operations by 2040

Scope 3

50%
By 2040, to reduce our Scope 3 footprint by 50% against a 2020 baseline

Driving industry-wide decarbonisation
Forming upstream and downstream partnerships with like-minded players to enable change

Sustainable freight transport
Carbon neutrality in controlled ocean freight by 2040

Climate change thinking is embedded across Anglo American through robust governance, led by the Board, ensuring consistent climate policy and transparent disclosures

We apply a principled and consistent approach throughout our climate change governance and management systems. We embed our climate change principles in all aspects of our business to ensure alignment with our commitments and ambitions:

- We are a formal supporter of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) and continue to produce our climate-related disclosures in line with that framework
- In 2020, the Board agreed that climate change and the Group's carbon footprint would be a priority area in Board discussions going forward
- Appointment of Elisabeth Brinton and Hilary Maxson to the Anglo American Board in 2021 brought additional experience of climate mitigation strategies
- 8% of 2021 Long Term Incentive Plan (LTIP) linked to achievement of GHG emission reductions
- Industry association audit carried out to ensure no misalignment of advocacy on climate change.

For more information on the industry association audit, see www.angloamerican.com/industry-association-audit

Aligned with our Purpose of *re-imagining mining to improve people's lives*, we recognise that the company's resilience to climate change is not enough. We have a role in supporting our host communities to thrive in the transition to a low carbon world

We are continuing to explore what mining can do to help work towards a Just Transition, which supports workers and communities impacted by the global transition to net zero emissions:

- Bringing our experience of transition from our mine closure planning
- Applying the principles of Collaborative Regional Development – central to our Sustainable Mining Plan goal of catalysing self-sustaining economic activity in the regions around our operations – to the question of the Just Transition
- Working with the Council for Inclusive Capitalism and others to provide practical examples of what business can do to enable a Just Transition.

Our ambition

2020

8% ✓
energy reduction

22% ✓
saving in GHG emissions against projected BAU

2030

30%
improvement in energy efficiency

8 sites
carbon neutral

30%
absolute reduction in Scopes 1 and 2

2040

Carbon neutrality across our operations and in controlled ocean freight

50% reduction in Scope 3 emissions footprint

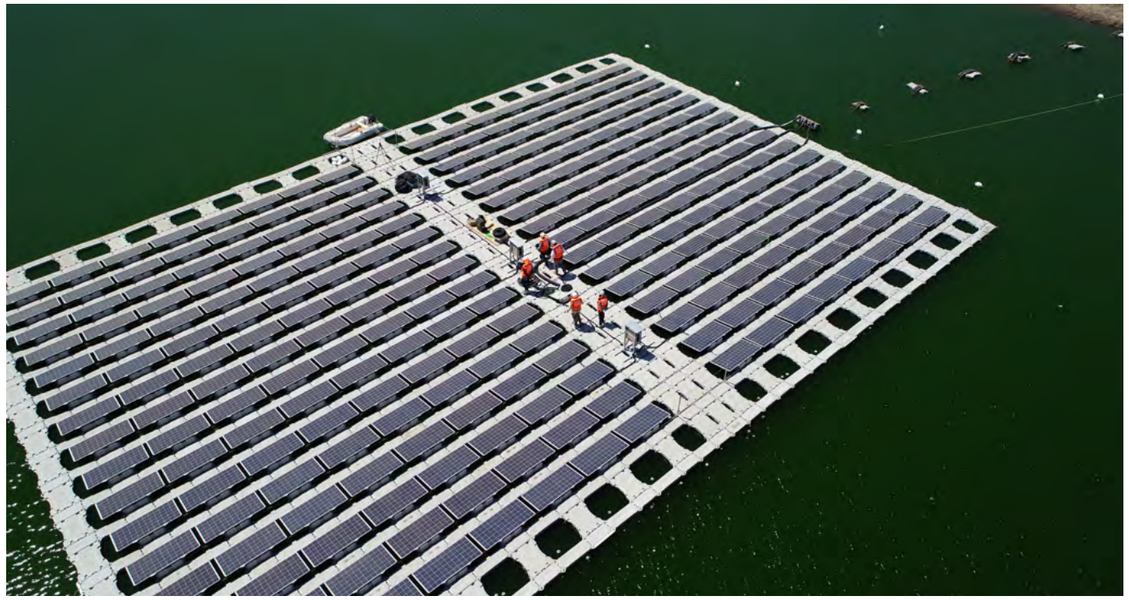
Decarbonisation pathways

Improve efficiency	Invest in innovation	Switch to renewables	Transition the portfolio	Balance residual emissions
– Operating Model – P101 – FutureSmart Mining™ technologies	– Further roll-out of FutureSmart Mining™ technologies – Hydrogen fuel-cell powered haul truck	– Chile: 2021 – Brazil: 2022 – Peru: From 2022 – Africa operations' phased shift to renewable electricity, commencing 2023 with 100 MW at Mogalakwena	– Investment in metals and minerals fundamental to decarbonisation – Development of Woodsmith polyhalite project – Responsible transition away from thermal coal	– Embedding of the hydrogen economy – Development of nature- and mineral-based carbon negative projects

Targets key

✓ Target met

Delivering on our commitments



In 2019, at our Los Bronces copper operation in Chile, we launched a pilot photovoltaic plant that has been built over the Las Tórtolas tailings pond – the first of its kind in the world.

Our Purpose – *re-imagining mining to improve people's lives* – has been the constant against which we have considered the defining challenges of our era, such as climate change. It is how we have started to answer the questions of what our contribution could (or should) be in the transition to a low carbon world.

In re-imagining mining, we recognise that the industry must do things differently if we are to transform the footprint of mining. We need to be more targeted and innovative, use less water and energy and, crucially, generate fewer or no GHG emissions.

Awareness is growing of the critical role that mining has to play in providing the metals and minerals needed for a low carbon world. The International Energy Agency's flagship report in May 2021, *The Role of Critical Minerals in Clean Energy Transitions*, underlined how essential minerals are for the growth of many technologies – from wind turbines and electricity networks to battery electric and fuel cell vehicles. The *Minerals for Climate Action* report, produced in 2020 by the World Bank's Climate Smart Mining Initiative, of which Anglo American is a sponsor, shares a similar analysis but also highlights the importance of the sustainable development of those minerals, especially in resource-rich developing countries.

"In re-imagining mining, we recognise that the industry must do things differently if we are to transform the footprint of mining."

Re-imagining mining and, within that, transitioning to carbon neutrality, is a multi-decade process. While we have much more to do, as the rest of this report lays out, we have made significant strides to understand and reduce our carbon footprint; understand and test the resilience of our operations to climate risk; evolve our portfolio towards future-enabling products; embed climate-related considerations in decision-making across the business; and develop our engagement with interested stakeholders, especially shareholders, through continually improving climate-related disclosure.

Understanding our footprint and increasing our ambition

Our Energy and CO_2 Management (ECO_2MAN) programme has been a central part of the way we have understood and then driven reductions in our operational (Scopes 1 and 2) GHG emissions since 2011. The programme has enabled us to analyse our activities and identify operational levers for reducing energy consumption and GHG emissions. Through this understanding, in 2015, we set our first emission reduction targets: to reduce our GHG emissions by 22% against projected BAU consumption by 2020.

In developing our Sustainable Mining Plan, we recognised that we would need more ambitious targets in order to play our part in maintaining global temperature rise to well below 2°C as called for by the Paris Agreement. This led us, in 2018, to set our goal in the Sustainable Mining Plan of a 30% absolute reduction in GHG emissions against a 2016 baseline by 2030. The capabilities and ambition of our host countries, as detailed in their nationally determined contributions submitted under the framework of the Paris Agreement, provided important context when setting these goals.

Through the roll-out of our FutureSmart Mining™ approach to technology and digitalisation – and possessing a greater understanding of what was now possible – in 2020, we extended our ambition further. We now have an ambition of carbon neutrality across our operations by 2040 and have set an intermediate goal to have eight of our sites carbon neutral by 2030. This report lays out our strategy as to how we will achieve this.

Delivering on our ambition

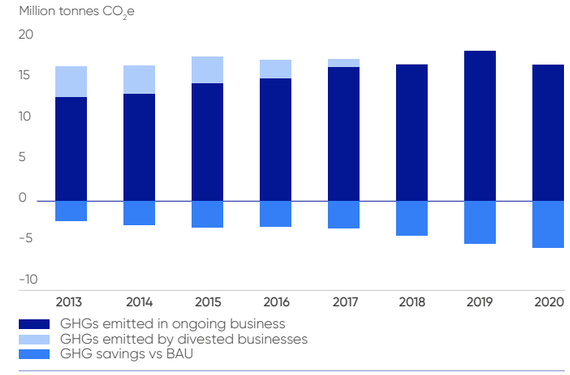
The ECO_2MAN programme has helped us to over-deliver on our 2020 target. By 2019, we had launched around 280 energy efficiency and business improvement projects across the Group under the programme. These initiatives decreased our GHG emissions by a total of 7.5 million tonnes of carbon dioxide equivalent (CO_2e), which equated to a 29% reduction against BAU one year ahead of the 2020 deadline.

Examples of ECO_2MAN projects include 5 million tonnes of CO_2e avoided through the capture and use of mine methane in our underground metallurgical coal mines in Australia. This methane has been used to generate more than 140 MW of electricity for the mine and grid supply. In South Africa, our Kumba Iron Ore subsidiary has achieved significant energy savings through a range of initiatives across its haulage fleet. These include improving payload management systems, expanding the implementation of its diesel energy efficiency management programme, optimising the loading of haul trucks and adjusting haul truck engines.

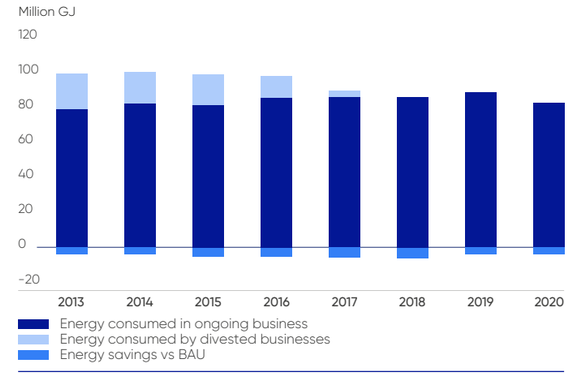
Our ongoing programme for operational emissions reductions is built around four levers:

- **Renewable electricity**: Sourcing 100% clean power for our operations through the procurement or development of renewable energy supply
- **Low carbon power sources**: Developing integrated green hydrogen production and enabling fuel switching at major opencast mines, together with the electrification or alternative low carbon fuels for other major diesel use applications
- **Methane capture**: Improved methane drainage and the introduction of oxidation technology to substantially abate ventilation air methane (VAM) and enhance the safety of our operations
- **Energy efficiency**: Through the ongoing roll-out of business improvements and our step-change FutureSmart Mining™ technologies such as bulk ore sorting, coarse particle recovery and digitalisation projects.

Total GHG emissions against BAU 2013-2020



Total energy consumed against BAU 2013–2020



In 2020, approximately 18% of Anglo American's total energy needs were met by renewable energy sources. However, from 2021, our Chilean managed assets are switching to electricity sourced exclusively from renewable sources. We have also signed contracts in both Peru and Brazil that will allow all of our managed South American operations to run on renewable electricity from 2022. In the case of Peru, this means that Quellaveco will be powered by renewables from the date of commissioning.

We provide more detail on how we envisage our decarbonisation journey from now until we achieve carbon neutrality on pages 22-25 of this report.

We have also developed a detailed understanding of our value chain emissions (Scope 3) through the full inventory of those emissions that we published in 2019. This detailed understanding has allowed us to begin to build a portfolio of action to help find ways to drive down those emissions. We provide a full outline of our plans for decarbonising our value chains on pages 26-30 of this report.

↑ Guided by our recently updated Mining Closure Toolbox, employees at our Dawson metallurgical coal mine in Australia are participating in our Growing Together initiative, which will see more than 9,000 trees planted as we continue to rehabilitate land at the former mining site.

Mitigating the impact of physical climate risk

We use two key processes to guide how we manage physical climate change risks: the Operational Risk Management (ORM) programme for mining operations; and the Investment Development Model (IDM) for projects. The ORM guides operations on how to assess and integrate climate risk management at each level of activity. The IDM process and evaluation criteria ensure that physical and market-related climate change risks and opportunities are embedded in the investment design.

For more than 10 years, we have been working with our operations to ensure that they have the best available models to understand, assess and mitigate the physical risks of climate change in their locations. We have worked with experts from the UK Met Office and the South African Council for Scientific and Industrial Research (CSIR) to understand the vulnerability of our operations and host communities. These assessments used regional downscaled model scenarios to identify possible climate events, vulnerability and impacts.

Outside of our operations, the understanding drawn from climate modelling is also used as an input at the strategic planning stage for our new integrated management system which defines our approach to social performance, the Social Way 3.0, and when developing the geospatial analysis stage of our Collaborative Regional Development approach. By embedding a detailed understanding of physical climate risk in this way, we aim to provide resilience through the socio-economic development we support in our host communities.

Portfolio evolution

Our portfolio has evolved in recent years to having a greater focus on future enabling metals and minerals such as copper, platinum group metals (PGMs), nickel and premium-quality iron ore. These are critical products for renewable electricity generation and distribution, for the electrification of transportation (in all its forms) and for other innovative and emerging technologies such as smart grids and the hydrogen economy.

We have systematically reduced our thermal coal production footprint. In June 2021, we completed the demerger of our thermal coal operations in South Africa through the creation of Thungela Resources. In July 2021, we announced an agreement to sell our 33% stake in the Cerrejón coal operation in Colombia to one of the existing shareholders. This transaction is subject to competition authority and regulatory approvals; once concluded, it will see Anglo American complete its exit from thermal coal operations.

First production from our Quellaveco copper project, expected in 2022, as well as the introduction of low carbon, organic polyhalite fertiliser once the Woodsmith project in the UK is developed, will continue this trajectory towards metals and minerals that enable a cleaner, greener and more sustainable future.

Governance, disclosure and stakeholder engagement

While our governance of climate change issues is covered in full on pages 35-37, it is worth highlighting the evolution in recent years of a central team, the Climate Change Steering Committee, chaired by the Group head of strategy. This committee draws together all workstreams across the Group related to climate change and identifies synergies, areas for improvement or gaps. Its work supports the Group Management Committee, the Board's Sustainability Committee, and the Board itself in its discussions related to and decisions regarding climate change.

We have been evolving our climate-related disclosure for many years. The 'Aiming for A' resolution that was passed at our 2016 annual general meeting (AGM) provided the framework for recent disclosures. The last remaining element of the action required by that resolution was a quantitative assessment of scenario impacts on product demand, which we published ahead of the 2019 AGM and are updating in this report. Having completed that work and aligned our disclosures fully with the TCFD, we became a formal supporter of the TCFD in 2018.

In addition to our broad programme of investor engagement, we have built a structured process for specific engagement on climate change-related issues, including through our biannual Sustainability Performance Days. In addition, we now have a structured engagement process with the Climate Action 100+ group of investors, co-ordinated through the Climate Action 100+ leads for Anglo American, Federated Hermes and the Central Finance Board of the Methodist Church. This allows a regular detailed discussion on key topics related to climate change and our business.

Partnerships are crucial to addressing an issue as significant as climate change. We have multiple partnerships within the industry, with customers, investors, industry associations and academic institutions, covering everything from technology development and sharing expertise to understanding expectations. We participated in discussions convened by the London School of Economics Grantham Institute's Transition Pathway Initiative, which aim to develop a commonly agreed methodology for measuring Scope 3 emissions in the diversified mining sector. And we are proud to be a founding member of and to have contributed $1 million to the World Bank's Climate Smart Mining Initiative, which brings together governments, some mining companies and the World Bank to foster and share best practice in sustainable mining, especially in the resource-rich developing world.

Our approach to climate-related risk

At Anglo American, we recognise the reality of climate change, while acknowledging that the longer term impacts to the business remain uncertain. As a consequence, our risk management processes embed climate change in the understanding, identification and mitigation of risk. We have aligned ourselves with the TCFD recommendations for voluntary reporting on climate-related risks, as reflected in this report. In this section, we focus on climate-related aspects in our current risk reporting.

Understanding risk

At Anglo American, we categorise risks in three ways:

- **Emerging risk**: a risk that may become a principal risk in time, but is not expected to materialise in the next five years
- **Principal risk**: a risk or combination of risks that would threaten the business model, future performance, solvency or liquidity of Anglo American. Principal risks are considered over the next five years as a minimum, but we recognise that many of them will be relevant for a longer period
- **Other material risk**: a risk that we recognise as having potentially negative consequences but is not expected individually to threaten the business model, future performance, solvency or liquidity of Anglo American.

A full explanation of Anglo American's risk management processes and details of all the principal risks can be found on pages 52-57 of the Integrated Annual Report 2020.

Our understanding of how the climate is changing and the implications of those changes, physically and in terms of demand for our products, plays a vital role in how we consider climate change against these categories. There are multiple inputs to this understanding, including the scenario analyses we have undertaken at a global level considering the implications for our business of a low carbon world, and the local modelling we have completed to understand the implications of higher temperatures in our operating jurisdictions. These multi-decade analyses form the background against which the shorter term risks, as described above, are identified.

Assessing climate-related risks

We assess risks to support the achievement of our objectives. This assessment includes evaluating the severity of the consequences should the risk materialise and the likelihood of the risk materialising. We define risk appetite as 'the nature and extent of risk Anglo American is willing to accept in relation to the pursuit of its objectives'. We look at risk appetite from the context of severity of the consequences should the risk materialise, any relevant internal or external factors influencing the risk, and the status of management actions to mitigate or control the risk. If a risk exceeds our appetite, it will threaten the achievement of objectives and may require a change to strategy. Risks that are approaching the limit of the Group's risk appetite may require management actions to be accelerated or enhanced to ensure the risks remain within appetite levels. A scale is used to help determine the limit of appetite for each risk, recognising that risk appetite will change over time.

» Environmental consultants perform flow measurements at the Asana river, close to our Quellaveco copper project in Peru.

Identified risks

Anglo American considers climate change as a principal risk at a Group level and it is listed as such in the risk register as follows:

Climate change

Climate change is one of the defining challenges of our era and our commitment to being part of the global response presents both risks and opportunities.

Rationale: We are committed to the ongoing realignment of our portfolio in a responsible manner; however, different stakeholder expectations continue to evolve and are not always aligned. Long term demand for the metals and minerals produced and marketed by Anglo American may deviate from current assumptions. Changing weather patterns and an increase in extreme weather events may impact operational stability and our local communities. Our carbon emission reduction targets are partly reliant on new technologies that are at various stages of development.

Impact: Potential loss of stakeholder confidence leading to negative impact on value, cash flow and profitability. Operational disruption in the event of extreme weather events. Long term demand for metals and minerals mined and marketed by Anglo American may deviate from assumptions based on societal demands for climate change abatement. We may fail to achieve carbon reduction targets in the event that new technologies are not effective or embedded in our operations.

Mitigation: We have articulated our climate change plans, policies and progress and engage with key stakeholders to ensure they understand them. Our Sustainable Mining Plan includes operation-specific and Group targets for reductions in carbon emissions, power and water usage.

Risk movement: Increased since 2019.

Risk appetite: Operating within the limits of our appetite.

Pillars of value:

As climate change itself is a reality, we also consider its potential impact as a contributing factor to other principal risks on the register, including Water and Future demand.

We have assessed that, under our central reference case, risks related to water and future demand remain unchanged. As with all risks on our register, we continue to monitor developments that may impact those assessments in the future.

Complementing the Group-level risk management processes, each Anglo American asset maintains a five-year plan that incorporates risk management. These plans, in turn, are embedded into the life of asset plans.

The principal risk linked to climate change, which combines the Group level and asset level most clearly, is water, specifically in relation to drought and other extreme weather events. The implications of potential extreme weather events vary by geography and the mitigation strategies will be implemented at a local level. Nevertheless, as we believe that this is a risk for the majority of our operations, it is considered a principal risk.

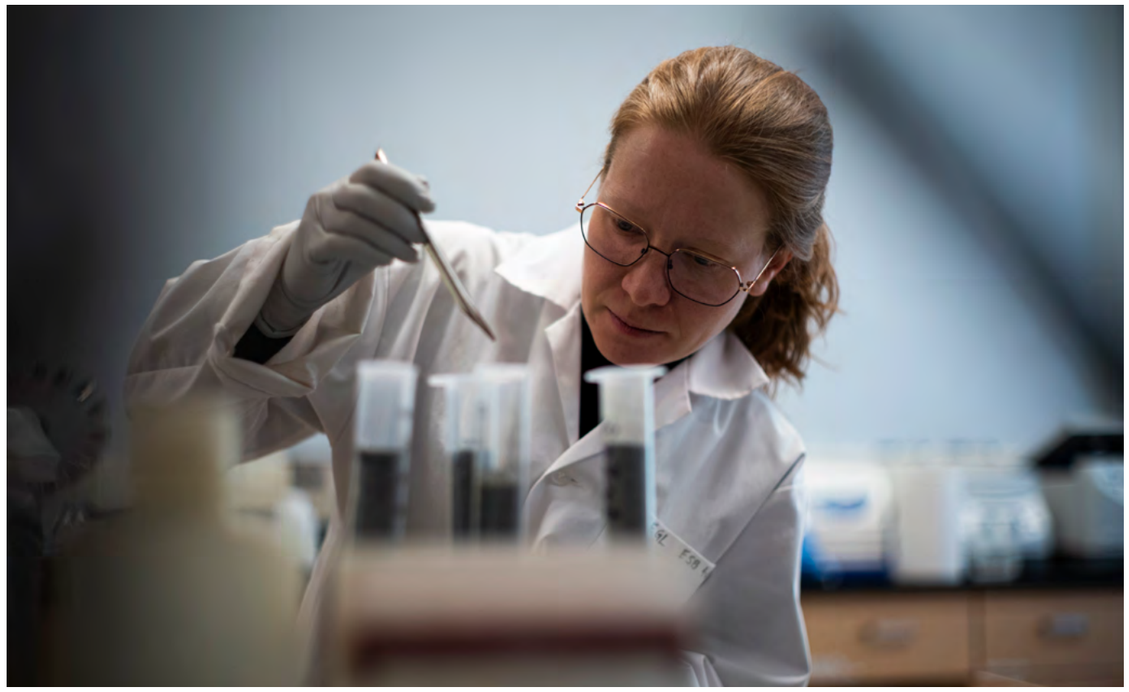
In addition to the principal risks of a strategic nature listed above, issues related to resilience to climate change for both our operations and our host communities, including in respect of extreme weather events, are embedded in our Group and asset level risk registers where appropriate. The geographically constrained nature of these risks means that they are not considered principal risks by Anglo American.

Managing climate-related risks

The nature of climate change means that climate-related risk cannot be managed independently of wider business strategy. This report explains how our business is responding to the challenges and opportunities we face as the climate changes, including ensuring we are strategically and physically resilient for the future.

Our aim is to reduce Anglo American's contribution to carbon emissions and, in so doing, play our part in mitigating climate change, while being prepared for the physical implications of a changing climate across our operating jurisdictions.

Resilience to a 1.5°C pathway



Associate Professor, Sasha Wilson of the University of Alberta, Canada, testing kimberlite in the Earth Sciences Building as part of ongoing work with De Beers.

Anglo American is committed to playing its part in the transition to a lower carbon economy. Many of the metals and minerals we produce are critical to enabling the technologies required for a green transition. In parallel, we also continue to evolve our sustainable mining practices, reducing our own GHG emissions associated with those products.

To further support our ongoing efforts in relation to climate change, we explore how the world might develop under a range of climate change pathways and try to understand the potential outcomes for the industry profit pool and for our business. While the exact future pathway is uncertain, we expect climate change to affect the mining industry through risks and opportunities in two broad areas:

- **Transition impacts**: The potential impact on demand for different products, given assumptions on regulatory, technological and behavioural changes in the transition to a low carbon economy
- **Physical impacts**: The potential impact on our operations and surrounding communities from both acute extreme weather events and chronic shifts in climate patterns.

To anticipate these potential impacts and formulate strategic responses, we developed a proprietary set of climate change scenarios that represented a broad range of potential outcomes. To build these scenarios, we drew on the UK Met Office and South African Council for Scientific and Industrial Research to understand physical climate change risks, and Wood Mackenzie's Energy Transition Service and the IPCC to understand low carbon transition pathways.

Our thinking is based on the following:

- **Sector transition pathways** based on global climate change scenarios for sectors relevant to the markets of our products
- **Sector implications for the markets of our products** based on the regulatory, technological and behavioural changes included in the scenario
- **Market implications for our portfolio** by updating our proprietary view of the outlook for our portfolio of products to quantify the financial impact on our business.

This work helps form the basis of our ongoing thinking on climate change and understanding of the potential impacts of climate change outcomes. We believe our business is resilient across these outcomes, driven by the quality of our endowments, expected life of assets and mix of products in our portfolio. While management's best estimates of climate change-related factors are applied as input assumptions for business planning and valuation purposes, these scenarios are risk management tools only, and no singular scenario should be taken as representative of management's best estimates.

Across these scenarios, we assessed Anglo American's resilience along key dimensions of financial strength and strategic robustness. Financially, we measured how our cash flow would evolve across scenarios, focusing on our existing assets and organic growth opportunities to ensure consistency. We then overlaid the strategic risks and opportunities with a consideration of the evolution of product profit pools against the life of our assets, as well as the quality and mix of our product portfolio.

Identifying a 1.5°C pathway

In 2019, we confirmed the resilience of our business to two climate change scenarios: the NPS+ (based on the International Energy Agency (IEA) New Policies, approximating to a ~3°C temperature rise) and the 2°C scenario (based on the IEA Sustainable Development Scenarios)[1]. Across these scenarios, we believe our business is financially and strategically resilient to the likely impact of climate change.

Since 2019, we have continued to test the resilience of our business against the latest developments in pathways aligned with the goals of the Paris Agreement. There has been increased focus on the impacts of global warming increases by 1.5°C above pre-industrial levels.

The IPCC *Special Report on Global Warming of 1.5°C*[2] details the importance of limiting global warming to 1.5°C, compared with 2°C, to meaningfully reduce potential future climate-related impacts to natural and human systems. This assessment has been refined and reinforced in the IPCC's *Sixth Assessment Report on the Physical Science Basis*, published in August 2021. In addition, the IEA *Net Zero by 2050 Roadmap*[3] recently highlighted the increased efforts that would be needed to limit global warming to 1.5°C to "avert the worst effects of climate change".

In this report, we expand our assessment of our strategic and financial resilience to climate-related scenarios to include a 1.5°C pathway. Recognising the uncertainty in the likely future pathways, we assess the resilience of our portfolio against a revised range of climate change scenarios that incorporate updated assumptions since our 2019 report. The first is a ~3°C scenario, based on the Wood Mackenzie Energy Transition Outlook[4]. We also reference the Wood Mackenzie Accelerated Energy Transition scenarios for a 2°C scenario and a 1.5°C scenario[5]. In addition, we also incorporate pathways for AFOLU[6] GHG emissions into the three scenarios, reflecting guidelines set by the IPCC *Special Report on Global Warming of 1.5°C* for methane and nitrous oxide (N_2O) emissions. In these assessments, we measure the resilience of our business against financial, strategic and physical risks and opportunities.

The 1.5°C challenge

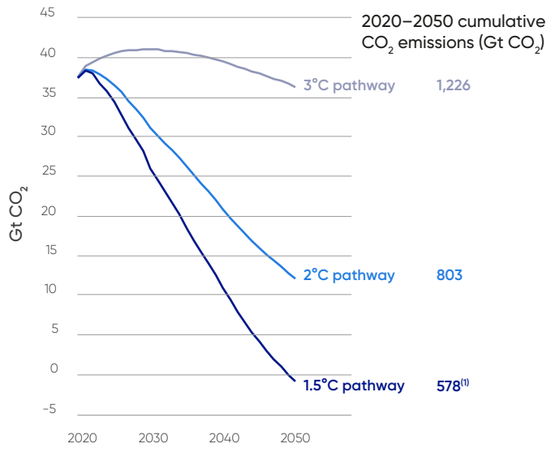
Limiting global warming to 1.5°C by 2100 represents a rapid acceleration of global climate change efforts. The IPCC reports that to constrain a global average surface temperature increase to 1.5°C by 2100, cumulative emissions must be limited to 580 Gt CO_2e from 2018. In addition, it will require reaching net zero annual global emissions by 2050.

The exact 1.5°C pathway is uncertain, depending on the expectation of technology advancement, behavioural changes and reliance on carbon avoidance versus carbon sequestration. However, in most cases, reaching net zero emissions by 2050 will require more than just the rapid deployment of available technologies across all sectors. The IEA notes that it will also necessitate rapid innovation, particularly in advanced batteries, hydrogen electrolysers, and direct air capture and storage. This will have profound implications on the intensity of materials used and, therefore, demand for primary materials.

Visions of a 1.5°C world

Below, we offer a glimpse of what a 1.5°C world might look like for various sectors and industries.

Global CO_2 emissions (Gt CO_2), including energy-related and AFOLU CO_2 emissions*



(1) Sustained net negative CO_2 emissions post-2050 bring cumulative emissions back within the budget set by the IPCC to restrict warming to 1.5°C.

All sectors must undergo significant changes to support a low carbon transition, but the pace and difficulty of transition will vary due to the existing emissions profile, abatement technology maturity, policy support and reliance on significant behaviour change.

The power sector represents the largest share of CO_2 emissions today, and thus must reduce by the greatest percentage; yet the transition is largely met by growth in wind and solar photovoltaic (PV) – technology that exists today. Similarly, the pathway for decarbonising the road transportation sector is centred around scaling up and improving upon existing electric drivetrains.

In contrast, some sectors face a greater challenge. For industrial sectors, switching away from fossil fuels to electricity or hydrogen is prohibitively expensive today. Stringent carbon policies in the form of carbon prices, financial support, or trade restrictions, and the deployment of new and yet unproven technology, is required to achieve a 1.5°C pathway. Agriculture must reduce GHG emissions more rapidly than other sectors, given the scale of methane and N_2O emissions. However, given limitations on existing technology, wide adoption of behavioural change is required, such as diet shifts away from meat.

The chart opposite is an illustration of the challenge and scale of GHG abatement across sectors.

(1) While the International Energy Agency (IEA) Scenarios forecast out to 2040, we used its baseline to develop a view out to 2050. https://www.iea.org/topics/climatechange/scenarios/

(2) The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. For more information about the report, see: https://www.ipcc.ch/sr15/.

(3) The IEA is a Paris-based autonomous intergovernmental organisation established in the framework of the Organisation for Economic Co-operation and Development (OECD). To read the full report, see: https://www.oecd.org/publications/net-zero-by-2050-c8328405-en.htm.

(4) https://www.woodmac.com/reports/power-markets-wood-mackenzie-energy-transition-outlook-2020-highlights-437167

(5) The Wood Mackenzie Accelerated Energy Transition 1.5°C scenario is predicated on the carbon budget set by the IPCC SR-1.5 for a 67% chance of limiting warming to 1.5°C through rapid reduction in annual emissions, reaching net negative energy-related CO_2 emissions by 2050, and sustained net negative emissions from 2050 onwards.

(6) Agriculture, forestry and other land use.

* Charts based on data from Wood Mackenzie Energy Transition Service and McKinsey & Company.

Climate change scenario parameters. Note: EVs include plug-in battery electric vehicles (PHEVs), battery electric vehicles (BEVs) and fuel cell electric vehicles (FCEVs).*

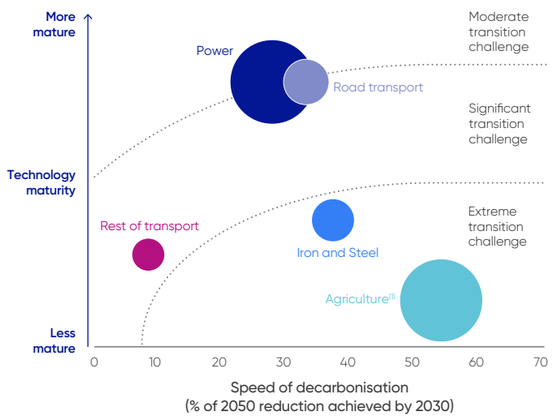
Dimension	Driver	Today(1) 2020	3°C 2050	2°C 2050	1.5°C 2050
Macro-economic	GDP growth 2020-2050 (% CAGR)	2.4%	2.4%	2.4%	2.4%
	Population growth 2020-2050 (% CAGR)	1.1%	0.7%	0.7%	0.7%
	Energy intensity of GDP 2020-2050 (% CAGR)(2)	(0.5)%	(1.8)%	(2.5)%	(2.8)%
Energy	Total primary energy demand growth 2020-2050 (% CAGR)	1.9%	0.5%	(0.1)%	(0.4)%
	Total final consumption in 2050 (EJ)	403	527	391	374
	Hydrogen final energy demand (EJ)	0	25	37	50
Power	Power demand growth 2020-2050 (% CAGR)	2.8%	1.7%	2.8%	2.8%
	Wind and solar share of electricity generation in 2050 (%)	10%	46%	66%	67%
Transport	EV share of passenger car sales in 2050 (%)	7%	57%	95%	99%
	Passenger car sales in 2050 (million units)	74	118	91	91
Steel	EAF share of crude steel production in 2050 (%)	27%	37%	68%	73%
	DRI demand increase by 2050 compared to today	–	1.5x	3.6x	5x
Agriculture	Afforestation (forestry sinks) in 2050 (Gt CO_2)	–	–	2.4	7
	Reduction in red meat consumption (beef and lamb) by 2050 compared to today (%)	–	–	–	(35)%
Carbon sequestration	CCUS in 2050 (Gt CO_2/y)	–	1	4	6
	Direct air capture in 2050 (Gt CO_2/y)	–	–	1	2

(1) 2020 figures or 2000-2020 growth.

(2) TPED per GDP.

Challenge and scale of emissions reduction across sectors*

Bubble size refers to 2020–2050 absolute emissions reduction



(1) Agriculture emissions include methane and N_2O.

Power generation

Overall energy efficiency must improve for a decarbonised world. Emissions from energy consumption must start decreasing in the early 2020s for the 2°C and 1.5°C pathways, rather than continuing to grow, even by 2050, in the 3°C pathway. However, at the same time, electrification across multiple sectors will lead to a rapid growth of power demand for the decarbonised pathways. By 2050, in a 1.5°C pathway, the vast majority of passenger cars on the road will be electric vehicles. Industrial processes will rapidly increase the use of electricity, either directly or through the expanded use of hydrogen-based technology, such as electric arc furnaces for producing steel. Buildings will experience significant electrification of heating through the use of heat pumps. As a result, electricity will represent almost half of final energy consumption by 2050, in the low carbon pathways.

While the demand for power increases, the power generation industry will need to undergo simultaneously a rapid decarbonisation. Wind, solar, nuclear, hydro and other renewables must contribute 75% of electricity generation by 2050 compared to only 60% expected for a 3°C pathway. Notably, a 1.5°C pathway must make the shift to renewables even faster than the 2°C pathway, reaching 50% renewable energy generation by 2030.

Low carbon hydrogen will play a significant role to replace fossil fuels in the chemicals, steel and heavy-duty transport sectors. By 2050, low carbon hydrogen demand in a 2°C pathway will be almost twice the demand in a 3°C pathway. To reach a 1.5°C pathway, low carbon hydrogen demand in 2050 is expected to be an additional 40% higher than the 2°C pathway.

Transport

The transport industry must rapidly switch to electric drivetrains for both passenger and commercial vehicles, coupled with a rapid shift to renewable electricity generation, to meet emissions abatement levels in both the 2°C and 1.5°C pathways. Electric vehicle (EV) sales will need to account for around 95% of new passenger vehicles by 2050 in a 2°C pathway, and 99% in a 1.5°C pathway. As EVs are only expected to reach ~50% of new passenger vehicle sales in a base 3°C pathway, this shift must be supported by policy changes and continued innovation of battery chemistry.

Battery electric vehicles (BEVs), plug-in battery electric vehicles (PHEVs) and hydrogen fuel cell electric vehicles (FCEVs) will all have a critical role in the shift to EVs. For passenger vehicles, we expect BEVs to dominate EV sales in the decarbonised pathways, supported by expected reductions in battery costs, rapid scale-up of charging infrastructure and regulation support. PHEVs will play a role, even in 2050, in emerging markets as a low carbon option where an electric infrastructure is not yet able to fully support a complete shift away from internal combustion engines (ICEs).

We also expect hydrogen FCEVs to play a larger role in the decarbonised pathways than under the 3°C pathway. FCEVs will capture only a portion of the passenger car market but will be a critical lever for decarbonisation of heavy-duty vehicles. For long-haul road transportation, FCEVs are expected to be the most cost-efficient electric drivetrain.

Steel
To support a 1.5°C pathway, the steel industry must greatly accelerate the shift in steelmaking from the traditional method using a blast furnace and basic oxygen furnace (BF-BOF) to less carbon-intensive approaches based on feeding electric arc furnaces (EAFs) with either direct reduced iron (DRI-EAF) or recycled steel (scrap-EAF).

As scrap-based EAF is one of the most economical low carbon steelmaking methods, scrap collection, recovery and usage rates must be maximised in both the 2°C and 1.5°C pathways.

Hydrogen-based DRI-EAF has the potential to be the lowest-carbon primary steelmaking method, especially with the use of green hydrogen. Hydrogen can also potentially be injected in the BF-BOF method to offset some of the use of coal and reduce emissions. Hydrogen-based steel production is expected to contribute almost 20% of crude steel production in a 2°C pathway and almost 30% in a 1.5°C pathway. However, there are still significant barriers to overcome before hydrogen-based DRI-EAF steelmaking can become viable, including the cost of hydrogen-based technology and challenge of rapidly scaling up DRI capacity and hydrogen infrastructure.

While new technologies are developed, widespread use of carbon capture must be applied to the existing BF-BOF fleet in the near term, especially in a 1.5°C pathway, to achieve early emissions reductions. Carbon capture, utilisation and storage (CCUS) use is expected to accelerate until the early 2040s, when new low carbon technologies start to gain a meaningful share of production. To meet the extreme levels of decarbonisation required for a 1.5°C pathway, almost four times as much CCUS must be deployed by 2030, as compared to the 2°C pathway.

Agriculture
Non-CO_2 emissions from livestock (methane) and crop soils (nitrous oxide) represent some of the most difficult to abate emissions. Finding a pathway to 1.5°C will require widespread changes in farming practices, including animal feed and land management, technological improvements and behavioural change.

The efficiency of nitrogen fertilisers will need to be improved to achieve the necessary reduction in nitrous oxide soil emissions. This will only be possible through a combination of approaches, including adjusted application rates to reduce excess fertilisation, slower-release forms, or by applying speciality crop nutrient additives.

Behavioural change plays a key role, accounting for ~30% of AFOLU emissions reduction by 2050. These changes include a sharp decrease of food waste and diet shifts away from animal-based protein. In a 1.5°C pathway, by 2050 the world may need to consume ~35% less red meat (beef and lamb) compared to a 3°C pathway.

In addition, afforestation – creating new forests on land currently without trees – will be required to absorb remaining global CO_2 emissions across all sectors. In a 1.5°C pathway, emissions captured by forestry sinks by 2050 must reach three times the amount in a 2°C pathway.

Implications for mining profit pools

To support the green transition, uptake of existing and new low carbon technologies will lead to an increase in demand for a range of mined products. As a result, we expect the overall extraction industry profit pool to be robust across the climate change scenarios.

In addition, the scenario analysis suggests that the profit pools in which Anglo American participates will remain broadly resilient under a 1.5°C pathway. We expect the profit pool for base metals, including copper and nickel, to grow in all scenarios, with additional upside in both the 2°C and 1.5°C pathways.

The seaborne metallurgical coal profit pool is expected to remain stable in the short term but reduce in the 2°C and 1.5°C pathways after 2030. Iron ore is also expected to remain stable in the short term and slightly reduce in the long term with increased use of scrap steel in the 2°C and 1.5°C pathways. As steel production shifts to low carbon DRI-EAF routes, demand for higher quality iron ore pellet feed will grow rapidly in decarbonised pathways. For PGMs, demand patterns will evolve as internal combustion engines make way for electric drivetrains, including hydrogen FCEVs and new battery technologies, that require PGMs. We expect little to no difference in the diamond profit pool outlook across the climate change scenarios. Polyhalite is a small profit pool today but we expect it to grow as supply increases, supported by growing crop demand. There is potential for further upside in a 1.5C scenario as diets shift away from beef and lamb consumption, reducing the availability of manure fertiliser and creating further demand for mineral fertilisers.

Our resilience across scenarios and our role in the green transition

We assess Anglo American's resilience in the climate change scenarios across financial strength and strategic robustness measures. For this assessment, we focus on our existing assets and organic growth opportunities, upon which we overlay key risks and opportunities across our portfolio for the scenarios.

Anglo American's business model and product portfolio are expected to remain resilient across all scenarios, given exposure to commodities that support a green transition (such as copper), high quality of assets, and strong organic growth optionality.

Financial resilience
Under the 3°C pathway, with our current asset footprint and organic growth options, we expect stable cash flows to 2035. We expect our cash flow to remain resilient under both a 2°C pathway and 1.5°C pathway, but with greater uncertainty given the broad range of potential pathways to achieve the low carbon outcomes. Based upon the 1.5°C pathway we describe in this report, our near term cash flow could be up to 30% higher relative to the 3°C pathway over the next decade. In the 2035 timeframe, our cash flow could be 20-25% lower in this 1.5°C pathway relative to the 3°C pathway. This range described falls within our risk tolerance. In addition, the optionality in our portfolio will allow us to further strengthen our resilience over this timeframe and offset any potential downside risks to our cash flow.

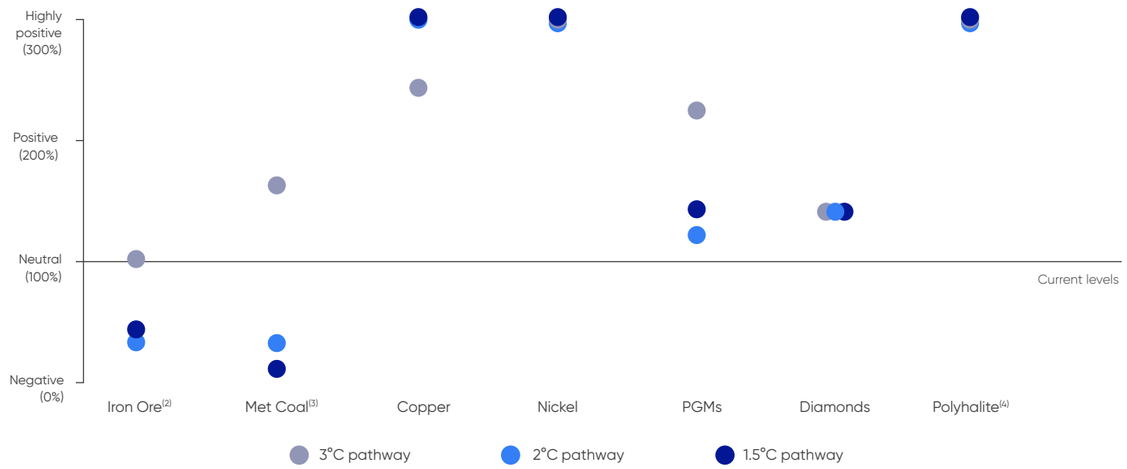
Risks and opportunities
Mining has a critical role to play in providing the metals and minerals needed for a low carbon world. Much of our growth is aligned to a low carbon transition, such as our position in base metals (including copper and nickel), PGMs and polyhalite.

To enable the electrification required in a 1.5°C pathway, primary copper demand grows by almost 50% in the next decade. Our Quellaveco project in Peru is currently one of the largest greenfield copper projects in the world and is expected to come on stream in 2022. We have further copper growth opportunities in our portfolio at Los Bronces and Collahuasi.

With the development of our Woodsmith polyhalite project in the UK, we have the opportunity to grow our Crop Nutrients business in line with the agriculture emissions abatement efforts required in a 1.5°C pathway. A 1.5°C pathway also provides additional demand for polyhalite as a non-GHG containing fertiliser. For example, long term use of polyhalite improves soil strength and structure, which can improve the soil's carbon sequestration capacity. In addition, Woodsmith's polyhalite has a low CO_2 emissions profile compared to many other fertiliser products.

Of all our products, metallurgical coal is most at risk in both a 2°C and 1.5°C pathway. However, the life of mine of our metallurgical coal assets is well aligned to the expected trajectory of demand as the steel industry decarbonises, even in a 1.5°C pathway.

Outlook for mining commodity profit pools (indexed 2050 vs current[1] profit pools)



[1] Current profit pool is the average for 2015-2019, except for Polyhalite which uses 2020 as the base year.
[2] Global iron ore market.
[3] Seaborne metallurgical coal market.
[4] Early view on nascent market.

Assessing our portfolio resilience to climate scenarios is an ongoing process; as clarity around the timing and shape of the emissions reduction trajectory, the reduction contribution potential of individual sectors and the technology pathways that will deliver these reductions emerges, we will continue to incorporate them into our assessment.

Physical risk
For more than 10 years we have worked to embed the consideration of physical climate risk into the thinking at our operations and also for our projects – detail of this work can be found on page 12. However, we are constantly looking to develop our approach and integrate physical climate risk consideration more fully across the business. This process draws on an assessment of the data we have generated through the work we have done over many years with external experts. This gives us confidence that our assessment of current physical climate risk is current and allows us, across the Group, to prioritise actions appropriately. We believe that this approach also aligns closely with the expectations of the TCFD's physical risk disclosure framework.

A key element of this work is to conduct time of emergence studies on a periodic basis to track progression of risks under the 'continuous assessment' pillar. In the coming year, we will update that work, together with the UK Met Office and its partners.

In 2021, we commissioned an independent desktop assessment of our approach to physical climate risk. This work validated our overall approach, while providing practical advice on how to continue to evolve and develop, in particular with respect to considering climate hazards, and how to manage them at each of our assets. We will be acting on this advice and will disclose details as appropriate.

A strategy to deliver a future enabling portfolio

Based on a clear strategic decision-making framework and capital allocation informed by a full assessment of climate-related challenges, Anglo American is well placed to support the transition to a low carbon economy, while remaining resilient to the economic and physical challenges climate change presents. We are harnessing the global scale and resources of Anglo American to identify and deliver projects that will have a net positive impact for our shareholders, the communities in which we operate and the planet.

A strategic fit

The evolution of the Anglo American portfolio has been directed by company strategy. Specific choices with respect to our portfolio are governed by a set of strategic principles. These principles also inform our capital allocation and investment appraisal processes, ensuring consistency of strategic decision-making across the Group, and embedding climate-related considerations at all stages.

The strategic principles guide our portfolio choices towards high quality assets that are resilient through the cycle:

- Low cost (of the cost curve) and long life assets
- Assets with resource optionality, meaning 30+ years' resource life
- Assets where we can generate differentiated returns by leveraging our internal capabilities.

To evaluate fully an opportunity using these principles requires us to consider long term trends, including, critically, the implications of climate change. We draw on multiple sources to judge the contribution individual assets would make to the portfolio under different climate scenarios.

In practical terms, this has resulted in more than 90% of growth capital expenditure being earmarked for projects in future enabling and consumer-facing metals and minerals, as well as our planned exit from thermal coal operations, a shift towards metals, especially battery metals, and the addition of polyhalite to the portfolio.

Consistency in capital allocation

The decisions we take with respect to the portfolio often have a multi-year timeframe. But the same strategic-fit principles govern all of our capital allocation decisions, to ensure that the investments in our portfolio are aligned with the transition to a low carbon economy.

In addition, the five-year business planning process, which every business unit and asset undertakes, involves the consideration of financial, technical and sustainability criteria. Although climate-related risks are considered explicitly under the sustainability pillar of the process, the interconnectedness of the approach ensures that climate considerations are not siloed, but are considered in the context of the financial and technical pillars, as well as the wider issues of sustainability.

From long term decision-making, to shorter term operational investments, the implications of climate change, and the opportunities that we have to be part of the solution to climate change, are integrated into our decision-making.

In Brazil, we are partnering with wind-energy specialist Casa dos Ventos to build the Rio do Vento wind farm. Our operations in South America are transitioning to renewable energy, for their future energy requirements.

Strategy: portfolio and capital allocation

A portfolio enabling the future

Our portfolio has evolved over the past decade and will continue to do so. The assets we have today are high quality, long life and low cost. Furthermore, the diversification of the portfolio, balanced across a range of metals and minerals, provides us with resilience and optionality.

A large majority of current production (~85%) is of products that support the transition to a more sustainable future and that cater to global consumer demand. That trend is set to continue in the coming years.

The role that each of these products plays is different, but crucial.

- Copper is critical to decarbonisation, in particular to the transition of the global energy system. Increased electrification and the shift from carbon intensive to renewable power generation is resulting in significant changes to energy grids and distribution systems. Other sectors are affected too, such as automotive with the shift from the internal combustion engine (ICE) to electric vehicles (EVs). We have significant optionality within the existing portfolio and we expect to commission Quellaveco in 2022, adding on average 300,000 tonnes per year of copper equivalent production (100% basis) into the portfolio in the first 10 years of operation.
- PGMs play a crucial role in reducing pollution from ICE vehicles, reducing air pollution and improving efficiency today. PGMs will also play a major role in the development of the hydrogen economy, as a key component within FCEVs, and supporting the process of hydrogen production via electrolysis through the polymer electrolyte membrane process. Our world class PGMs operations, with their long lives and significant optionality, position us well.
- Anglo American produces two categories of nickel. Our Barro Alto operation produces ferronickel, the majority of which is used in the production of high quality stainless and heat resistant steels. Our PGMs operations produce nickel sulphate as a by-product. Nickel sulphate is a critical input in lithium ion batteries used in multiple carbon abatement technologies, including BEVs.
- Steel is a critical foundational material for almost all infrastructure and will provide the backbone of the low carbon economy and wider, long term socio-economic development. Steelmaking is currently carbon intensive, but our high quality iron ore and metallurgical coal products support efficient steelmaking now and are well positioned to support the transition of the sector to lower carbon methods.
  - Iron ore: we are growing our share of high quality pellet feed and premium lump ore, which is suitable for lower carbon, direct reduction processes of iron in steelmaking, resulting in materially lower emissions.
  - Metallurgical coal is the source of the majority of carbon emissions from steelmaking. Our product is high quality, with a high calorific content and low impurities, supporting carbon efficient steelmaking today and through the transition period as steelmaking moves to less carbon intensive production. The remaining lives of our metallurgical coal assets of 15–20 years align well with the period over which we expect other forms of steelmaking to take a greater share of production.
- The addition of polyhalite from the Woodsmith project – the world's largest known deposit of high grade polyhalite – adds greater diversity to the portfolio and additional support to the low carbon world due to the minimal processing required compared to the vast majority of other fertilisers. Certified for organic use, our product maximises crop yields, supporting increased food needs, while strengthening and supporting soil structure. The degradation of soil and the resultant carbon emissions are a major challenge for the agriculture sector today.
- Although diamonds have a less direct role in the transition to a low carbon economy, our mined diamond production is highly aligned with a low carbon future. De Beers has a longstanding commitment to sustainability and is targeting carbon neutrality across its operations by 2030.

Anglo American is well positioned today to play its part in responding to the challenges of climate change. Our strategy enables us to maintain and enhance a world class portfolio of assets that will provide many of the critical materials required for the complex transition to a low carbon economy.

A clear pathway to operational carbon neutrality

We have identified clear abatement pathways to achieve our ambition of becoming carbon neutral across our operations by 2040. We are radically reducing energy consumption, switching to low carbon energy sourcing and significantly increasing the role of renewables in our energy mix. We will also implement nature-based solutions on land we manage.

Our pathway to operational carbon neutrality by 2040

Achieving our ambition of carbon neutrality across our operations is a complex, multi-dimensional challenge. It begins from a clear and detailed understanding of current emissions sources (see figure on page 27). This understanding allows us to take decisions on the best means of abatement. The target of a 30% reduction in GHG emissions by 2030, with eight sites carbon neutral, is an interim target on our journey to carbon neutrality.

Scope 1 abatement
Our ongoing deployment of our FutureSmart Mining™ programme across the portfolio will see a step-change in low and zero emissions technologies, significantly reducing our Scope 1 emissions. This includes the capture of methane from our mines, which is our largest single source of Scope 1 emissions, as well as innovative means of displacing diesel at the mines, including the development of the world's first hydrogen fuel cell powered haul truck (see page 25).

We are also working on new applications for our metals and minerals that will enable lower emissions, both at our operations and globally. One such example is green hydrogen-powered fuel cell transport using PGMs.

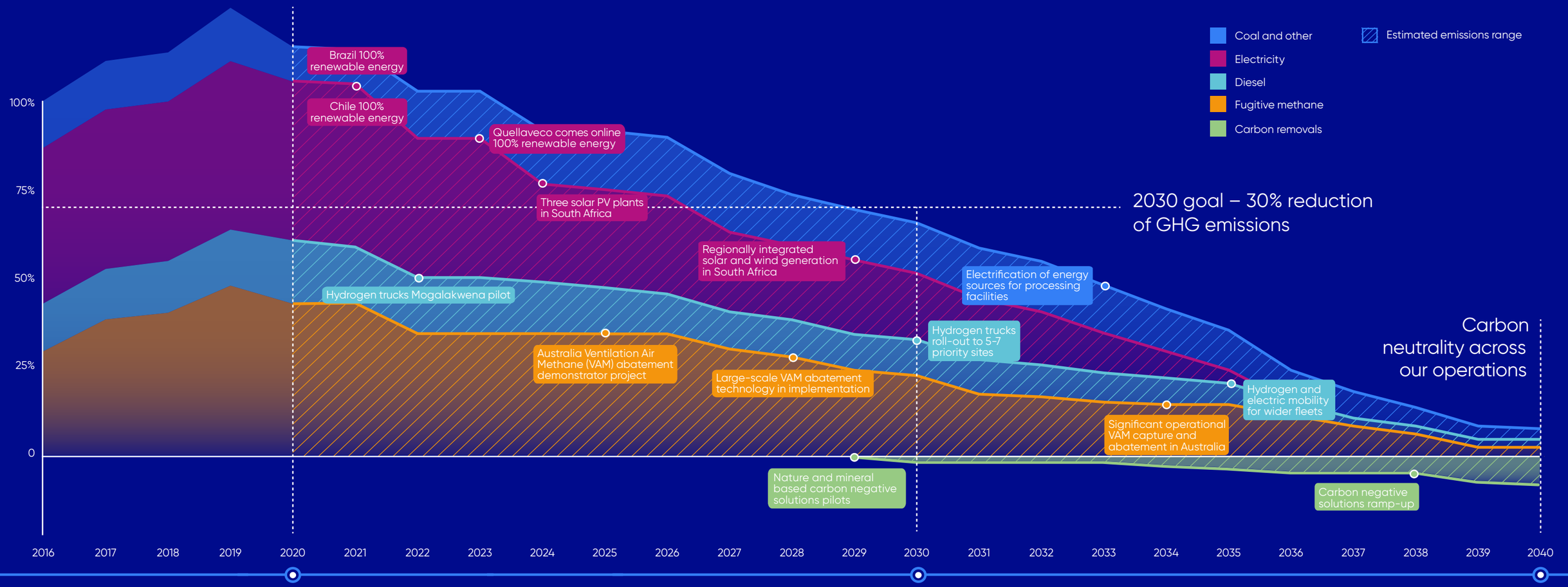
Scope 2 abatement
We are following two separate tracks to reduce our Scope 2 emissions. First, we are working to consume less energy through the application of FutureSmart Mining™ technologies. For example, we are deploying energy reduction applications in ore processing, which is the most energy intensive part of mining. Other ways that we are reducing our energy consumption and intensity include the application of P101 performance improvements – our transformational asset productivity programme that builds on the stability provided by our Operating Model – as well as new technologies and digitalisation.

Secondly, we are increasing the proportion of renewable energy in our mix. We will be sourcing 100% renewable power in Chile from 2021, as well as in Brazil from 2022, and Peru in 2023. We are also examining the potential for a renewable power network in South Africa that we expect to cover 100% of our requirements by 2030 (see text box on page 25).

Reducing emissions at the source

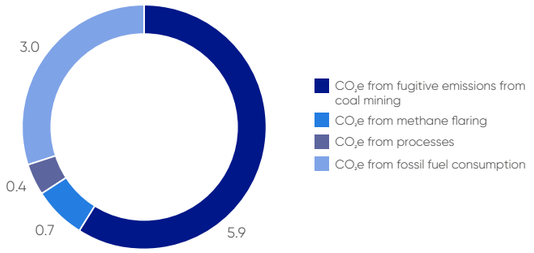
The ECO_2MAN programme (described in detail on page 11) has provided understanding, experience and progress towards the decarbonisation of our operations since 2011. FutureSmart Mining™, our innovation-led approach to sustainable mining, seeks to fundamentally change our operations, from how we evaluate the ore body to how we mine, sort and process the ore. Extending beyond business improvement and operational productivity, it represents a fundamental rethinking of the methodology underpinning resource extraction and processing.

Operation emissions (Scopes 1 and 2) – A roadmap to carbon neutrality

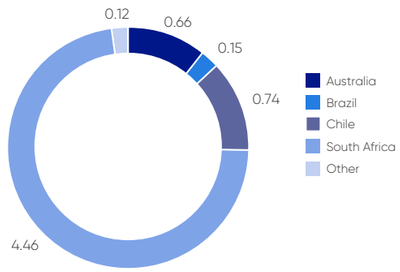


Anglo American GHG emissions 2020

Scope 1 (Mt CO_2e)



Scope 2 (Mt CO_2e)



FutureSmart Mining™ brings together technology and digitalisation in service of sustainability to find step-change innovations that will transform the nature of mining. Re-imagining how we source, mine, process, move and market our products is driving safer, more efficient and precise mining, with a smaller physical footprint. This is how we are discovering the game-changing decarbonisation and energy reduction solutions needed to drive our operations towards carbon neutrality. The FutureSmart Mining™ approach is the basis on which we are increasing energy efficiency, reducing our Scope 2 emissions, and developing technologies that tackle directly our Scope 1 emissions.

Examples of the work to increase energy efficiency include changes to processes and equipment. The greatest energy consumer in mineral processing is comminution: the grinding and crushing of rock. By itself, our bulk ore sorting technology can reduce the energy intensity of an operation by roughly 10%. Combined with the other new comminution technologies that we are developing, such as coarse particle recovery, we expect to fragment particles using 30% less energy than has conventionally been the case.

We are also using microwave technology to pre-condition rock. This significantly reduces the energy needed to weaken or break down the natural rock face at the earliest stage, before mechanical crushing or milling. It also generates smaller ore particles, which makes it possible to recover more of the valuable mineral. We are combining this innovation with other FutureSmart Mining™ solutions to reduce our footprint by fundamentally transforming the way we mine.

Ventilation air methane

Methane emissions represent the largest component of our Scope 1 emissions. We have two predominant sources of methane emissions: rich gas, which we capture and use for power generation (as described on page 11); and ventilation air methane (VAM). The low concentrations of VAM make it more difficult to capture and use safely than rich gas. Through pre-drainage, we shift VAM into rich gas for use, but this is not always possible with existing technology in a way which aligns with our commitment to safety. As we mine deeper, we are producing more gas, including both rich gas and VAM.

We are working with our industry partners to improve the technology for capturing dilute VAM to deliver effective methane abatement without compromising operational safety. We are exploring different technologies, as well as risk and data analytics tools, that will enable us to map our emissions and understand the flow of methane in our mining complexes. Our goal is to develop industry-accepted approaches to reduce VAM at the source, abate collected VAM, and feed collected methane into a power generation solution.

There have been several investigations into applying these technologies at operating underground coal mines.

In Australia, industry bodies such as the Australian Coal Association Research Program (ACARP) and Low Emissions Technology Australia (LET Australia) are actively researching methods for the abatement of dilute VAM. Much of this research is focused on the safety features that would be necessary in the duct work connecting the abatement technology to an operating mine.

We support this and other research through our contribution to LET Australia, which invests in the development of technologies relating to carbon capture, geological storage and methane emissions abatement at underground coal mines.

Switching to low carbon and renewable energy sourcing

We currently source approximately 36% of our electricity from renewable sources and are committed to increasing that proportion through a combination of power purchase agreements and our own embedded generation.

By 2023, all of our South American operations will be powered by 100% renewable electricity. We have secured renewable energy to meet all the power requirements for our copper operations in Chile from 2021, for our iron ore and nickel operations in Brazil from 2022, as well as for our copper operation in Peru by 2023. Our partnership in Brazil with Casa dos Ventos will see the construction of additional wind farms, adding to Brazil's renewable energy capacity.

Our embedded generation involves innovative pilot projects, such as a floating PV plant on the Las Tórtolas copper tailings facility in Chile. The plant combines the generation of solar electricity with reducing evaporation from the tailings facility. Given the importance of water management in that area of central Chile, this is particularly valuable. We are also implementing projects at our PGMs operations, including, in South Africa, installing large-scale solar PV panels at Mogalakwena, to enable the production of green hydrogen for hydrogen powered haul trucks, and generating electricity from waste heat recovered from the converting process at the Waterval smelter.

A key focus of our efforts in tackling Scope 2 emissions is the renewable power ecosystem that we are studying in South Africa (see box at top of page 25). This programme would not only enable us to ensure our operations have clean, affordable and reliable energy supplies, but will also complement and support South Africa's decarbonisation efforts.

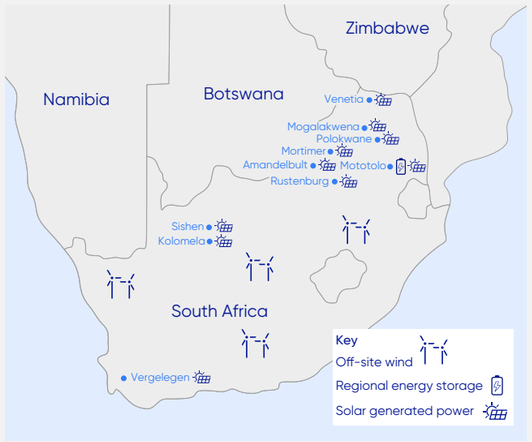
A regional renewable energy ecosystem in South Africa

The context for achieving carbon neutrality is set by each operating jurisdiction. In some, the availability of renewable energy is plentiful. In South Africa, while there is an abundance of renewable energy, there is no renewables infrastructure to harness it. As a result, Anglo American plans to partner with the government and communities in South Africa in the development of a regional renewable energy ecosystem. This concept provides an integrated approach to building out renewables across the country.

The initiative draws on the huge natural renewable potential of South Africa and would require the construction of a network of on-site and off-site solar and wind farms. Our modelling suggests that it would be possible to deliver 24/7 renewable power with this distributed generation, but we are considering the inclusion of pumped hydro storage to bring additional resilience to the system. Our current intention is that the full programme is completed and operational by 2030. The ultimate goal would be a regional renewable energy ecosystem that would not only meet the full demand of Anglo American's operations in the region, but would also support the resilience of the local electricity supply systems and the wider decarbonisation of energy systems in South Africa.

The ecosystem would not only help us reduce our Scope 2 emissions, but would also provide the foundation for green hydrogen production, facilitating the roll-out of our hydrogen powered haul trucks across South Africa.

Beyond supporting the delivery of our ambition of carbon neutrality by 2040 by tackling the largest element of the Group's Scope 2 emissions, the ecosystem is expected to bring a host of other benefits. It could increase the grid capacity by 2.7–4.4 GW of green energy and enhance grid stability. It could support and enhance the decarbonisation initiatives of our host governments and power companies, including through stimulating the development of localised production and supply chains.



We also believe that the provision of new sources of clean, reliable and affordable energy could provide a stimulus for wider socio-economic benefits for businesses and communities across South Africa. Specifically, we expect that hydrogen and electrification will displace diesel and petrol for vehicles and other machinery. The economic development associated with these changes could provide the backbone for the creation of a hydrogen economy in the region. We foresee that this could help to catalyse entirely new hubs of industry and other economic activity, embracing circular and low-waste principles. See how we are supporting the development of a hydrogen valley on page 33.

We are in the process of engaging with a wide range of interested parties to enable this ecosystem approach to deliver benefits not only for Anglo American, but for host communities and South Africa as a whole.

Hydrogen haul truck

Eliminating the use of diesel at our mine sites is fundamental to decarbonising our operations around the world. Anglo American will soon begin testing a mine haul truck design using a system that drives a fuel cell with hydrogen produced by renewables. Currently, diesel powered haul trucks account for around 80% of total diesel consumption at our mines. If the test deployment of the hydrogen truck and accompanying hydrogen infrastructure at the Mogalakwena mine is successful, we plan to deploy the technology at seven other mines by 2030.

Haul trucks at our mines operate in a challenging environment, including uneven roadways, high temperatures and physical obstacles, among other factors. Therefore, they require a robust and proven technology for storing hydrogen safely on the truck. The vehicles are also heavy, weighing over 200 tonnes when fully unladen. Developing the hydrogen haul truck has involved designing, building and testing a 1.1 MWh battery pack for this application. The haul truck system uses multiple fuel cell modules in parallel that deliver up to 800 kW of power. Working with our suppliers, we have designed and implemented a software solution to safely manage power and energy between the fuel cells, batteries and vehicle drivetrain.

Platinum Group Metals (PGMs) are playing a critical part in the emerging hydrogen economy, including their specific application in fuel cell electric vehicles (FCEVs).

Alongside re-equipping the truck with a hydrogen system, we have also built a hydrogen production, storage and refuelling complex at Mogalakwena that incorporates the largest electrolyser in Africa and a solar PV field to support the 24 hour operation of the haul truck. Once operational, the full-sized system is expected to generate 140 MW. Beyond eliminating GHG emissions from diesel, the hydrogen complexes for haul trucks at our sites have the potential to serve as local and regional hubs for the emerging hydrogen economy.

Our commitment to decarbonising our value chains

We are committed to playing our part to mitigate the impact of our value chain emissions, while recognising that the nature of Scope 3 emissions is that much of them are outside our direct control. We have enhanced our understanding both of the levers we can pull and the influence each of those levers can have over our overall Scope 3 emissions. Informed by our assumptions on the speed of decarbonisation in the steel value chain, we aim to reduce our Scope 3 emissions by 50% by 2040 and we will continue working to deliver that ambition.

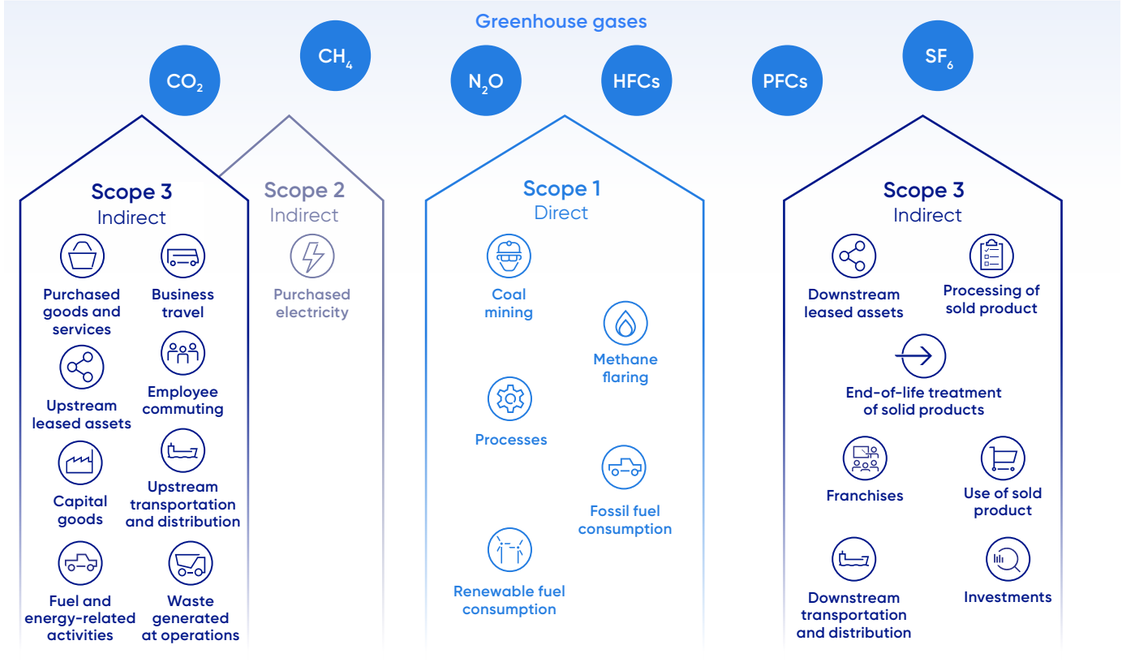
Our commitment

The emissions in our value chain (Scope 3) are always the emissions of another enterprise. As a consequence, most of our Scope 3 emissions are outside our direct control. However, we recognise the importance of advocating for and influencing change to drive down emissions to help limit global temperature rise to 1.5°C.

Our actions are focused first on understanding the sources of our Scope 3 emissions, then identifying how we can most effectively reduce them. This work concludes that our ability to significantly reduce our Scope 3 emissions is dependent both on steelmakers setting and delivering on a clear decarbonisation pathway, and the existence of a consistent and supportive global policy environment. With the right policy framework, we believe steelmakers will be able to accelerate towards less carbon intensive methods of production, which would translate into a reduction of our Scope 3 emissions by at least 50% by 2040, against a 2020 baseline.

Achieving this reduction will mean going beyond how we market our products and commercialise our solutions. It will also be dependent on our success in collaborating effectively with customers, other industry participants and industry bodies to actively channel society's increasing demand for essential metals and minerals into more transparent, ethical and sustainable value chains.

We believe that this approach will translate into mutually beneficial relationships that redefine the way the steel industry operates, helping the sector to meet its sustainability targets and the evolving expectations of consumers and society more broadly.



Scope 3 categories as defined by the GHG Protocol

1. Purchased goods and services
2. Capital goods
3. Fuel and energy-related activities (not included in Scope 1 or 2)
4. Upstream transportation and distribution
5. Waste generated in operations
6. Business travel
7. Employee commuting
8. Upstream leased assets
9. Downstream transportation and distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Downstream leased assets
14. Franchises
15. Investments

Setting the baseline

Anglo American published its first detailed Scope 3 emissions assessment in 2019. Recognising growing stakeholder interest and a lack of consistency in how Scope 3 is assessed across companies, industries and geographies, we published the full methodology we used at that time.

Since then, as the thinking on value chain emissions has matured, so we have continued to develop our knowledge and understanding of Scope 3. Building on our preliminary methodology, we have identified the areas in which we could be more specific in our assessment of our emissions, reducing, where practical, double counting and reflecting the contribution that our specific activities make to Scope 3 emissions. The aim of our physical and market validation work was to build a more granular inventory, to support our ambition for emissions reduction and to allow us to track progress against this in future.

The evolution of the understanding of Scope 3 has uncovered complexity and diversity. This stems from the fact that the Greenhouse Gas Protocol was conceived as a means for businesses to understand the carbon intensity of their value chains and identify means to reduce that intensity. Consequently, each company has evolved its own approach aligned with the characteristics of its own business. This diversity renders comparisons between companies difficult.

Throughout the process we have engaged our key stakeholders and worked with The Carbon Trust to test our thinking and alight on a methodology which we believe provides us with the most complete, transparent and granular assessment of our Scope 3, allowing us to have confidence in the basis on which we are setting our ambition. We also sought and received an additional external review from IBIS (see page 36 for more detail). Under our updated methodology, our Scope 3 emissions are 114.8 Mt CO_2e. The 15 categories that make up our Scope 3 emissions are detailed in the chart at the bottom of the page.

The majority of our Scope 3 emissions sit in categories 10 and 11: the processing and end-use of our products. More specifically, they relate mostly to our iron ore and metallurgical coal sales into the steel value chain.

Our full methodology is published on our website **www.angloamerican.com/scope-3-methodology-report**

The four main areas in which we have evolved our approach are:

- Increased specificity of emissions, replacing industry average emission factors with factors relevant to our customers' emissions
- An enhanced approach to convergent value chains in the steel industry to apportion the emissions between iron ore and metallurgical coal appropriately and reduce double counting of those emissions
- An adjustment of the boundary for inclusion, removing those emissions attributed to the first use after production in recognition of the lack of influence we have further down the value chain
- A revised approach to inclusion of the emissions of products we market on behalf of others. We include a share of the emissions equivalent to the economic value we derive from those products, reducing double counting and reflecting the limited role we play in the value chain for those products.

We expect that the understanding of Scope 3 will continue to evolve and we will engage fully in discussions and adapt accordingly.

Irrespective of methodological choices and their evolution, our focus will remain on taking steps to reduce the emissions in our value chain.

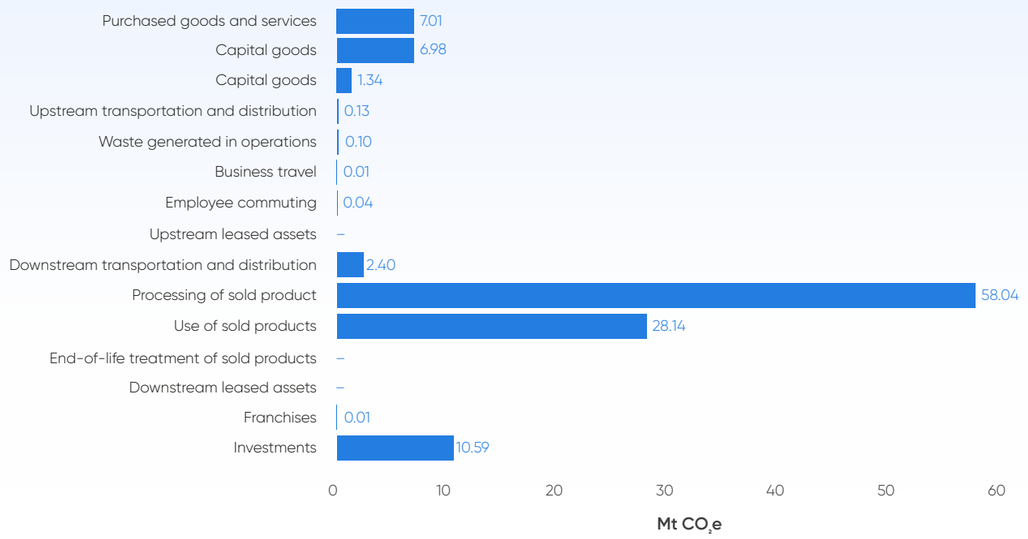
Pathway to 50% reduction by 2040

Our global approach to reducing Scope 3 emissions is predicated on four levers: our portfolio composition – the quality/profile of the products we supply, particularly to the steel sector; logistics; the investments we are making; and the partnerships we are forming to support our customers' efforts to decarbonise.

To pull those levers, and to meet our decarbonisation ambition across our value chain – upstream and downstream – depends on direct and indirect action spanning four key areas:

- Driving emissions reduction within our sphere of influence and control
- Collaborating with others to drive meaningful change
- Joining forces with like-minded players committed to shaping a collective path towards a low carbon future
- Taking a leadership role to enable industry-wide decarbonisation.

2020 Scope 3 emissions



Our initial focus is on the categories which make up the majority of our Scope 3 emissions. Given the importance of the steel sector in our value chain, understanding the likely pace of decarbonisation of that sector is key. Our base case assumption is that the 2020s will be a decade of transition and steel production will outpace technologically driven reductions in GHG emissions until 2030. Against this backdrop – and given the profile of production at our assets and our expectations for the sourcing of third-party product for our customers – we expect our Scope 3 emissions to increase to 2030, before reducing rapidly once investments in steel value chain decarbonisation begin to take effect.

If the steel sector decarbonises more quickly than our base case assumptions, our scope 3 emissions could also reduce more quickly. Our estimate is that if the steel industry transitioned to a 1.5°C pathway, our Scope 3 emissions would reduce by ~80% by 2040 against a 2020 baseline.

In defining the context, it is important to position Anglo American's contribution to the steel sector. Our iron ore and metallurgical coal sales accounted for approximately 3% and 2%, respectively, of inputs into the steel industry in 2020. As a consequence, while we have some influence, we must partner with others in order to deliver change at scale.

Our efforts across all areas have a particular focus on unlocking the hydrogen value chain to enable a swift transition to a more sustainable energy mix, to facilitate green steelmaking and to develop new markets for PGMs, which have a key role to play in enabling the hydrogen economy. Our actions in this area can be articulated following the framework below:

Research and development
We screen, select and fund opportunities, as well as bridge the gap between R&D and product commercialisation, facilitating future investment.

Venturing
We are pursuing new projects that have the potential to be transformed into commercially viable technologies and businesses, in areas that will impact positively on our Scope 3 emissions, investing in innovation that addresses today's global challenge.

Collaboration
We partner with customers and industry peers across programmes intended to reduce our Scope 3 emissions, and influence and fund industry bodies, providing the opportunity for us to shape decarbonisation strategies to the fullest extent possible.

Advocacy
Through our participation in key groups, we continue to expand on our geographic and issue-based policy advocacy, initiating and facilitating industry collaboration, influencing legal and regulatory frameworks, and informing and shaping debate around key areas of interest.

Education and awareness
Strategic and targeted communications programmes are key in shaping both regulatory and industry perception around decarbonising commodity value chains, and the industrial sectors that depend on our products, helping to build support for the adoption of specific technology.

Driving emissions reduction within our sphere of influence and control

High quality products
Focusing on providing high quality products that can feed into more efficient and less carbon-intensive processes is vital to support the steel industry's decarbonisation efforts and to achieving our Scope 3 reduction ambition. Iron ore from our Minas-Rio operation in Brazil, for example, presents the opportunity to produce direct reduced iron (DRI) grade pellet feed. While this currently accounts for ~5% of global steel production, by 2040 we expect it to account for at least 10%, and potentially much higher. The DRI production method generates approximately 30% lower emissions than the integrated steelmaking route using blast furnaces and basic oxygen furnaces. By 2040, we believe DRI will be even more efficient, including through the greater use of renewable power and hydrogen as a reductant.

The quality of the metallurgical coal we produce is such that, while the use of one tonne of coal produces a constant level of greenhouse gas emissions, it facilitates more efficient operation of the blast furnaces; therefore, the steel produced has a lower overall carbon intensity.

The IEA forecasts that substantial quantities of metallurgical coal will be needed in steel production for several decades to come, certainly beyond the current life of our metallurgical coal assets. The high quality metallurgical coal we produce is therefore a vital component of the steel industry's transition period.

When it comes to potential supply constraints, the ability to leverage our third-party sourcing and origination capabilities enables us to provide high quality resources that complement our own production and ensure that customers in the steel value chain are supported in the transition.

Recycling initiatives
Demand for scrap metal is rising at a faster rate than that for primary material, driven by society's evolving expectations. The scrap share of total steel production is expected to rise from approximately 32% today to more than 40% over the next 10 years.

With a mindset of providing materials solutions to our customers, Anglo American has a role to play in this growing market. Our Marketing business has developed in-depth knowledge of metal recycling segments and identified potential opportunities to apply the expertise and core competencies within the business to contribute to the circular economy, which would support a reduction in the overall carbon intensity of the steel value chain.

Sustainable freight transport
We are targeting carbon neutrality in our controlled ocean freight by 2040 and, as with our Scope 1 and 2 targets, are aiming for a 30% reduction by 2030. We are making progress towards achieving this goal, actively working to contribute to the long term sustainability of the shipping sector (see box 2).

Shaping an effective transition for the maritime industry requires a comprehensive framework of complementary solutions, from adopting a standard reporting framework to measure and align our emissions, to developing sustainable, alternative marine fuels and investing in technology innovation. As a member of the Global Maritime Forum, we are taking a thorough approach to accelerate the shift to decarbonising the transport of our products, from accurately measuring and assessing our emissions according to industry accepted standards, to exploring the use of more environmentally friendly alternatives to conventional marine fuels, such as liquefied natural gas (LNG), biofuels and hydrogen.

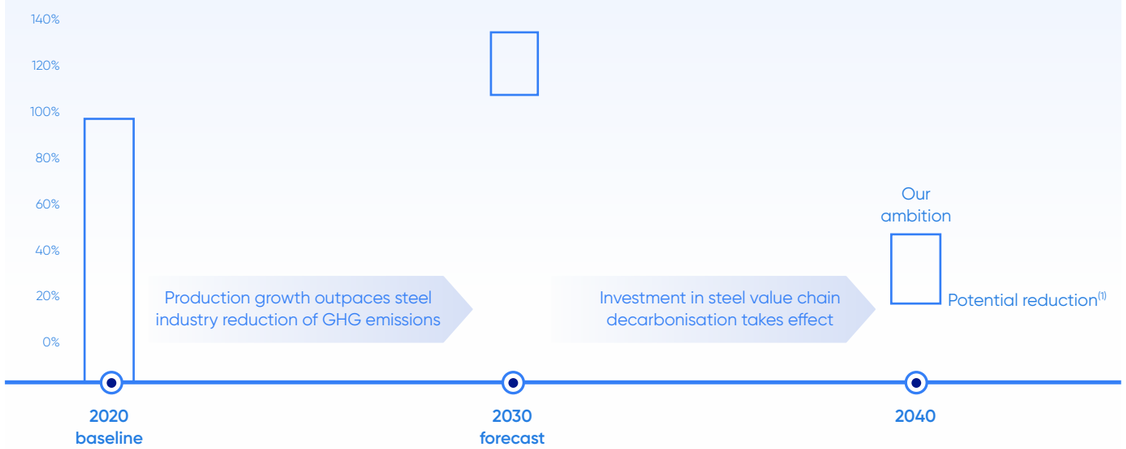
Collaborating across industry to drive meaningful change

Industry-wide engagement and co-operation that spans our customers and other stakeholder groups – and includes our leadership of, and participation in, industry associations – is fundamental to our efforts to facilitate a sustainable energy transition.

We believe we are playing a meaningful role by forging wide-ranging and long term collaborations, connecting the resources in the ground to the people who need and value them, while working together to accelerate society's transition to a carbon neutral future. Our focus is on expanding these partnerships with those who share a comparable approach to sustainability and have a similar set of values, building on – as well as strengthening – existing commercial relationships and sustainability strategies.

Our focus has been on collaborating to accelerate the use of hydrogen and high quality products in steelmaking, as well as carbon capture, utilisation and storage (CCUS) technologies. We also work with trade associations, suppliers and customers to identify and support technologies and projects which can reduce our products' downstream carbon footprint. By doing this, we will accelerate society's shift to a carbon neutral future (see box 1 opposite).

Scope 3 – towards our 50% ambition



(1) Potential reduction if steel industry transitions to 1.5°C pathway.

LNG-fuelled fleet

In 2020, we awarded contracts to build new LNG-fuelled Capesize+ vessels, which will operate during their 10-year charter in our fleet with approximately 35% lower emissions than existing vessels. As well as this reduction in CO_2 emissions compared with standard marine fuel, the new technology adopted in the switch to LNG eliminates the release of unburnt methane ('methane slip'). We see LNG as a readily available, commercially viable, lower emission solution; a sustainable transition fuel to help us achieve significant decarbonisation improvements.

Green ammonia

In June 2021, we joined an industry group led by Japan's Itochu to study the adoption of green ammonia to fuel ships. The objectives of the study include to identify challenges for ammonia marine fuel and understand the development of ammonia-fuelled ships, as well as the worldwide supply chain of the fuel.

Biofuel trial

In June 2021, we successfully trialled the use of sustainable biofuel to power a chartered Capesize ship during a voyage from Singapore to South Africa. The biodiesel blend, produced by converting waste cooking oil from Singapore's food and beverage industry, reduces CO_2 emissions by approximately 5% compared with using 100% conventional marine fuel.

The conversion of waste cooking oil into fuel for transportation aligns with the principles of the circular economy, providing a fresh and environmentally beneficial use for what would otherwise be disposed.

Partnership with Hydrogenious

We have joined forces with Hydrogenious Maritime AS, a joint venture between Hydrogenious LOHC Technologies and Johannes Østensjø dy AS, to explore the use of emission-free liquid organic hydrogen carrier (LOHC)-based applications on our chartered fleet. LOHC technologies guarantee safe operations, as they require no storage of molecular hydrogen on board; are cost-effective to store using existing fuel tanks; and have efficient fuelling procedures in parallel with other cargo operations. Hydrogenious LOHC is a portfolio company of AP Ventures, an independent venture capital firm with a focus on developing new technologies for the hydrogen value chain. Anglo American is an investor in AP Ventures.

Joining forces with like-minded players devoted to shaping a path towards a low carbon future, and taking a leadership role to enable industry-wide decarbonisation

Our participation in industry forums, whereby we work indirectly with our customers and other stakeholders at a value chain level, is crucial in enabling systemic change. In the steelmaking field, we are a member of Responsible Steel, the steel industry's first global multi-stakeholder standard and certification initiative, which has the objective to enhance the responsible sourcing, production, use and recycling of steel. Initiatives such as this one provide a platform to engage with other like-minded players on low carbon technological innovation, share knowledge and find greater co-operation opportunities. They also allow us to advocate through a common voice to enhance global policy and industry response to climate change.

Anglo American is one of the founding signatories of the Sea Cargo Charter. It was formed by some of the world's largest energy, agriculture, mining and commodity trading companies with the aim of establishing a standard methodology and reporting framework to allow charterers to measure and align their emissions from ocean transportation activities. In September 2019, we also joined the Global Maritime Forum's 'Getting to Zero' coalition – an alliance committed to getting commercially viable deep sea zero emission vessels, powered by zero emission fuels, into operation by 2030 – as well as being a partner of the Global Maritime Forum.

Beyond these areas, we believe that there are further opportunities for us to create 'ecosystems' for emissions reductions. For example, we are researching ways to support low carbon technologies in our host communities, including hydrogen (see above for hydrogen opportunities) and direct air capture.

Our ability to reduce our Scope 3 emissions in line with our ambition within a given timeframe is dependent on the speed at which the associated levers can be deployed. This is not always within our influence or control, and the materiality of the emissions reduction that could result can be difficult to determine. However, we are making important progress in evaluating and progressing opportunities to drive change, supporting the world's economic development while taking steps towards decarbonisation across our operations, our value chains and the industrial sectors in which we participate more broadly.

Pathways to decarbonising the steel industry

In July 2021, we signed an agreement with German steelmaker Salzgitter Flachstahl to collaborate on the decarbonisation of the steelmaking industry. Together, we will research efficient feed materials suitable for use in direct reduced iron (DRI) steelmaking, including iron ore pellets and lump iron ores. DRI steelmaking is a technically proven production method estimated to be almost 30% less carbon intensive than the traditional blast furnace integrated steelmaking process.

In August 2021, we signed a three-year agreement with Bahrain Steel, a longstanding Anglo American customer, to explore new ways of bringing our product to market more efficiently. Under this agreement, Bahrain Steel will convert ('toll treat') up to 2 million tonnes of pellet feed annually from our Minas-Rio mine in Brazil into high quality iron ore pellets. This processed product, which Anglo American will supply to steelmakers worldwide, is a significant addition to our high quality product portfolio.

Scope 3 Open Forum

In early 2021, together with Accenture, we hosted an Open Forum on the topic of Scope 3 emissions. The forum brought together a broad range of 30+ companies and organisations from a wide range of sectors, with a variety of knowledge about, and experience of, working on Scope 3. The total Scope 3 emissions of the organisations present is approximately 3GT of CO_2e.

The forum was convened to build a broader understanding of the complexities of Scope 3, to look at how different companies and sectors are addressing the challenge and to stimulate cross-sector innovation.

There was a great sense of commitment to collective action to tackle Scope 3 emissions reductions. In most cases, the focus was on how a company could directly and indirectly influence activities in its downstream value chain. In addition, all the participating companies felt that data remained a real challenge, affecting methodological approaches, data sharing and transparency. Following the Forum, several of the participants are now working together on issues including: the use of Blockchain in Scope 3 data sharing; technology partnerships within the downstream and upstream value chains; and accounting methodologies to better measure the trajectories of Scope 3 emissions.

Supporting our communities through a 'Just Transition'

In South Africa, in the local area surrounding our Mogalakwena PGMs operation, we run the Mapela Water Project that helps supply water to local communities.

Through Anglo American's transition to a lower carbon business model we continue to explore the role of mining in a 'Just Transition', which considers the impacts of that transition on workers and communities. Together with our partners, we aim to be part of creating environmentally and socially sustainable jobs, sectors and economies needed to help address climate change.

What is a 'Just Transition'?

The concept of a Just Transition, where those workers and communities impacted by the transition to a net zero world are supported, presents a complex challenge, which no one entity, public or private, can tackle alone. Socio-economic transitions of any kind inevitably entail systemic change. The nature of mining, involving the stewardship of finite resources, means that transitions are an integral part of our work, especially with respect to mine closure. The sector has developed significant knowledge of how to best work through such transitions, including learning lessons from poor experiences, especially at a local level.

The transition to a low carbon world requires significant change. It presents major opportunities for many and risks for others. The opportunities and risks will mostly likely be felt acutely at the local level, especially for those employed in sectors that will need to transform how, or whether, they do business. New sectors will develop where others will need to diminish. Such change will require adaptation. The degree to which people are able to adapt will depend, in part, on the levels of support they receive. The transition to a low carbon world is happening at the same time as, and is in part being facilitated by, a series of accelerated and transformational technological advances, frequently referred to as the Fourth Industrial Revolution (4IR), or Future of Work. The two combined increase the need for adaptability and resilience so that individuals, communities and societies can prosper.

The transformation that our societies will need to undergo to address climate change will involve actions and decisions by private companies, governments, communities and individuals. The process by which opportunities are maximised and risks mitigated will therefore be complex and involve different stakeholders working closely together. Anglo American is committed to developing a partnership approach to the Just Transition: not only to explore what it means and how different stakeholders will be able to play their part, but also to identify the right programmes that will form part of the response.

At a strategic level, we have joined the Council for Inclusive Capitalism in its work on developing a shared, company-focused framework to promote industry adoption of pragmatic commitments and actions in addressing the need for a Just Transition. That work has led to a definition of the Just Transition, to which we subscribe:

"The transformation of the global energy sector from fossil-based to zero-carbon in a way that is underpinned by attention to the issues of equity and justice."

The aim of the Council's work is to provide a platform on which companies can share their experiences and learn from others' experience and good practice, recognising the huge diversity of the impacts of the transition that will be felt.

The Council for Inclusive Capitalism is also working closely with the Prince of Wales's Sustainable Markets Initiative, the World Benchmarking Alliance, Climate Action 100+, and others, with the aim of producing guidelines for companies that are consistent and fit well into the structures of expected disclosure requirements. At a country level, we have also contributed to the National Business Initiative (NBI's) Just Energy Transition Pathways project in South Africa. This work has aimed to find practical ways in which the private and public sectors can work together on delivering a Just Energy Transition for South Africa.

A framework for company action

We believe that the four pillars in the Council for Inclusive Capitalism's Just Energy Transition framework provide a strong foundation for companies to think about their individual actions.

The four pillars are:

- **Universal net zero energy** – how to support access to energy and a net zero emissions world
- **Workforce evolution** – how to ensure the journey is a just one for the company's workers
- **Community resilience** – how to ensure the journey is a just one for communities affected directly and indirectly by the company's transition
- **Collaboration and transparency** – how to bring everyone on the journey and support the Just Transition of other organisations.

Underpinning the four pillars are building blocks that any individual company can apply to its specific circumstances and sector. These provide a practical and flexible framework to help guide action.

Our approach

Transition is an inherent part of mining, as the resources we manage are, by their very nature, finite and tied to a specific geography. The lessons we have learnt as a global miner can, we believe, provide useful insight for all companies regarding their roles in the Just Transition.

General worker Heinrich Strong conducting assessments at the Sishen iron ore mine rehabilitation nursery in South Africa that has been established to cultivate indigenous tree seedlings for planting in rehabilitated mine areas.

Community members Gloria Mabula, Noayinile Mzingelwa and Rosie Maluleke tending to crops at a community agricultural project managed by our Amandelbult PGMs operation in South Africa.

Mine closure planning

The Anglo American Mine Closure Toolbox was updated and re-issued in 2019 and is publicly available. It is based on the concept of a 'cradle-to-cradle' approach to mine closure and rehabilitation, with initial thoughts on closure developed while still conducting exploration. Central to our thinking is how to ensure that sustainable value is created that will endure after mine closure and what can, and should, be done through the life of the mine to ensure sustainability after the working mine has been closed.

To put this thinking into practice, a process of stakeholder identification and engagement is a required part of all mine closure planning from the very beginning of the process. Mine closure is also embedded in our overall Life of Asset Plans.

The Toolbox includes specific guidance that an operation should follow with respect to closure at different stages of the mine's life, beginning with 25 years before closure. 'Social Transition' is a central element of this, broken down between the mine's 'employees and dependants', 'interested and affected parties', and 'authorities'.

Our overarching aim is to create sustainable value that makes a real difference to the lives of our employees and members of local communities.

PGMs are playing a critical part in the emerging hydrogen economy, including their application in fuel cell electric vehicles (FCEVs), such as this FCEV, owned by Anglo American, which is being used regularly on UK roads. On a far bigger scale, we soon expect to pilot the first hydrogen fuel cell electric mine haul truck of a planned haul truck fleet at our Mogalakwena PGMs mine in South Africa.

The Hydrogen Valley

The Hydrogen Valley initiative illustrates the opportunities presented by the Just Transition to a low carbon world and offers an example of what the future of work might look like.

The project was announced in March 2021, when Anglo American signed a collaboration agreement with its partners in the initiative to complete a feasibility study for the construction of hydrogen hubs stretching c.835 km from our Mogalakwena PGMs mine in the Bushveld complex in the north of South Africa, along the industrial and commercial corridor to Johannesburg and on to Durban, the country's major Indian Ocean port. It is being spearheaded by South Africa's Department of Science and Innovation (DSI). The collaboration agreement also includes energy and services company ENGIE, the South African National Development Institute (SANEDI) and clean energy solutions provider Bambili Energy.

By working with our partners to develop cleaner technologies, we can create new industries and employment. This collaboration follows the launch in 2020 of the South African Hydrogen Society Roadmap. The roadmap is aimed at integrating hydrogen into the economy by capitalising on the country's PGMs resources and renewable energy potential to revitalise and decarbonise key industrial sectors. The results of the feasibility study, released on 8 October 2021, identified three possible hubs – Johannesburg, extending to Rustenburg and Pretoria; Durban, encompassing the city itself and Richards Bay; and Limpopo province centred around Anglo American's Mogalakwena PGMs mine – with a fundamental role to play in integrating hydrogen into South Africa's economy. Nine key pilot projects have also been identified across these hubs and are recommended to be prioritised by developers. They span the transport, industrial and construction sectors.

Collaborative Regional Development

Collaborative Regional Development (CRD), our model for bringing long term sustainable development opportunities to regions around our operations, is at the heart of our Sustainable Mining Plan. It is a model that brings socio-economic resilience to communities and regions and has partnership at its core. The model itself and the learnings that we have taken from its application are, we believe, useful for companies looking to make practical contributions to a Just Transition.

The CRD approach recognises that safe, responsible and productive mines need to operate in areas that are thriving. The changing nature of mining requires longer term, sustainable, regional development that can bring prosperity beyond the employment and supply chain opportunities that mining provides. In short, we want our communities to benefit from our operations, but not become dependent upon them, helping them to thrive long after the mine itself has closed.

This innovative approach starts by identifying socio-economic development opportunities with the greatest potential in a region via spatial analysis and planning. This creates a basis on which partnerships can be built, bringing together businesses, local and national governments, community representatives, faith groups, academics, NGOs and others to build a common and shared vision for the future.

The partnerships that are built diversify and therefore strengthen the regional economy as a whole and create tailored, coherent, integrated strategies based on government and private sector collaboration.

In the Limpopo and Northern Cape provinces in South Africa, the CRD concept is being implemented by the Impact Catalyst, formed by Anglo American and our partner organisations. We are also developing the same methodology, adapted for each locality, across all of our other major operating countries.

Our responsible transition from thermal coal

The demerging of our thermal coal operations in South Africa, through the creation of Thungela Resources, and the announcement of our agreement to sell our minority stake in Cerrejón, completes a transition away from thermal coal operations that we began many years ago. Through that process, we worked hard to ensure that the transition would be a responsible one for all stakeholders. This thinking aligns well with the Council for Inclusive Capitalism's Framework, which encourages companies to have a 'responsible divestment/asset sale' strategy.

The demerger that led to the formation of Thungela Resources lived up to our promise of balancing the needs and expectations of all stakeholders. It recognises that the operations provide a wide range of economic and social benefits for host communities and for South Africa, including employment, tax revenues, export earnings and the provision of many essential community services. We worked hard to bring employees, shareholders, host communities, governments and customers with us and created a company that would be responsible stewards of South Africa's valuable resources.

Thungela was formed with a strong balance sheet, including with respect to closure liabilities, and a commitment to high Environmental, Social and Governance (ESG) standards. In addition, 10% of the equity was split between employees and a community partnership plan.

On completion of regulatory and competition authority approvals, the sale of our 33.3% stake in Cerrejón will finalise our responsible transition from thermal coal operations. The sale will see control pass to a large, listed, diversified mining company which, as an existing shareholder, knows the operation well.

An evolving context – the future of work

When we think about the transition to a low carbon world, we recognise that it is not happening in isolation. Our world is also undergoing accelerated change in technological advancements and shifting societal attitudes and expectations. This is shaping a change in the nature of work and the workforce, presenting opportunities and challenges for us all. The initiatives we take forward in respect of the Just Transition need to be informed by and reflect this wider context.

At Anglo American, we are embracing the evolution of the future of work, including through the deployment of step-change technologies across our operations. These technologies and digitalisation will also mean that the nature of work in the future will be different than it is today. We recognise that change can trigger concerns, especially when it comes to fears about developing new ways of doing things, new skills or changes in job profiles. We are already working with our colleagues, trade unions, communities, host governments and other stakeholders, primarily in South Africa, Chile and Peru, to establish the partnerships that guide how this transition will be managed and how people and communities will be supported throughout. As part of our work, we need to think carefully about how current skills map against future requirements. This will help to facilitate our planning as new technologies and systems are introduced across our mines.

Our approach is grounded in the five principles of listening, partnership, investing in the future, transparency and being true to our Purpose.

It is based on a framework of activities that will:

- Optimise our operations to become safer, cleaner and more efficient
- Accelerate the development and adoption of new tools and technologies
- Continuously improve our skills to step up to this change
- Evolve our workplaces and ways of working
- Develop new and stronger relationships with society.

Embedded through rigorous governance

Anglo American applies a principled and consistent approach throughout our climate change governance and management systems. We embed our climate change principles in all aspects of our business to ensure that they remain aligned with our commitments and ambitions.

Policy approach

At Anglo American, we have worked on climate change matters for more than 20 years. Our approach is based on five key policy principles:

- Building internal agility and ensuring resilience to climate change
- Driving energy and carbon savings throughout our business
- Understanding and responding to the carbon lifecycle risks and opportunities of our products
- Developing and implementing collaborative solutions with our stakeholders
- Contributing our skills and knowledge to the development of responsible public policy.

Against this backdrop, in 2015, we demonstrated our commitment to the Paris Agreement through our signature of the Paris Pledge for Action. That pledge demonstrates our willingness to work to support efforts in meeting and exceeding the ambition of governments to keep the world on a trajectory that limits the global warming temperature rise to well below 2°C.

To give greater definition to our approach, we detailed the public policy positions in respect of the following climate-related issues:

1. Adaptation infrastructure
2. Carbon capture, use and storage (CCUS)
3. Climate science
4. Emissions reduction targets
5. The energy trilemma
6. Paris Agreement
7. Carbon pricing
8. Restricting global warming to 1.5°C
9. Technology neutral, free-market energy mix
10. Supply chain.

More details of each can be found in our report on Industry Associations launched in early 2021.

Any climate-related advocacy that we undertake or that is undertaken on our behalf through a third party, such as an industry association, should be in line with the letter and the spirit of these policy positions, and supportive of the goals of the Paris Agreement. We have implemented a model of governance over our advocacy based on transparency, high standards and clear accountability, to ensure that such advocacy is conducted in line with our intentions.

To this end, we publish on our website (**www.angloamerican.com/sustainability/our-sustainable-mining-plan/political-transparency**) the details of every industry association of which we are a member. We expect similar standards of behaviour from third parties as from our own workforce. We have clear guidance and escalation procedures in relation to any perceived or reported divergences from this approach, as well as what actions should be taken. In addition, we are committed to disclosing publicly a review of our industry associations every two years to test independently our own internal governance.

The latest independent assessment and our detailed response can be found at:
www.angloamerican.com/industry-association-audit

Disclosure and investor dialogue

We are a formal supporter of the TCFD and continue to produce our climate-related disclosures in line with that framework. Our Integrated Annual Report, and our Sustainability Report, cover the key aspects of the disclosure each year. This report is aligned with the expectations of the TCFD and a TCFD-linked index is provided on page 38. We believe the moves to make TCFD disclosure mandatory in the United Kingdom and in other jurisdictions will bring greater quality and comparability to such disclosure.

We recognise the evolving interests and expectations of investors in understanding our thinking on climate change. We have had a regular and constructive dialogue with the Climate Action 100+ group of investors for several years and value its perspectives. In 2020 and 2021, we worked with Climate Action 100+ to support the development of the Climate Action 100+ Net Zero Company Benchmark and its application to the diversified mining sector. We are working to align our disclosures with that benchmark (see our Climate Action 100+ summary on pages 39-40 of this report for more details).

We will continue to monitor and engage with the evolving standards, for example the International Sustainability Standards Board, for climate-related disclosure, including in adjacent, but relevant, areas, including the Taskforce for Nature Related Financial Disclosure (TNFD). Anglo American's Head of environment is a member of the Taskforce.

Governance and management systems

At Anglo American, the Board's Sustainability Committee is responsible for addressing climate change related topics. The committee oversees, on behalf of the Board, material policies, processes and strategies designed to manage climate-related risks and opportunities.

Matters relating to climate change are included in quarterly reports to the committee, and as stand-alone items on the agenda where necessary. The chair of the Sustainability Committee provides a summary of the committee's discussions at the Board, which addresses the most material issues raised by the committee.

Following the 2019 Board and committee effectiveness review, the Board agreed that climate change issues and the Group's carbon footprint would be a priority area of focus for the Board for 2020. Building on this, and taking into account discussions held by the Board and the Sustainability Committee in 2020, the Board agreed to direct its climate change focus in 2021 to the workstreams that underpin our carbon neutrality targets and devote more time to circular economy trends and the consequences for the Group's strategy.

The Sustainability Committee considers the Group's principal risks that fall within its oversight responsibility. In addition to the discussions at the Sustainability Committee, the Audit Committee reviews the Group's material risks, including those related to climate change, twice a year.

Further, the chief executive's performance scorecard and report to the Board includes performance indicators on energy and GHG emissions. The full Board also holds regular strategic discussions on climate-related activities and energy efficiency targets. Details of Board and Board Committee discussions focused on climate change since the beginning of 2020 are listed opposite, including those related to considering and approving the contents of this report.

Assurance

As a member of the International Council on Mining & Metals (ICMM), Anglo American is committed to obtaining assurance over specified assertions related to its Sustainability Report, including data related to GHG emissions and energy use, in accordance with the ICMM's Sustainable Development (SD) Framework: Assurance Procedure and the ICMM's position statement on climate change (updated in October 2021).

IBIS ESG Consulting Africa (Pty) Ltd (IBIS) was commissioned by Anglo American to conduct an independent third-party assurance engagement in relation to the sustainability information in its Sustainability Report for the financial year that ended 31 December 2020. Some of this data has been reproduced in this Climate Change Report.

IBIS was commissioned separately by Anglo American to conduct an independent third-party assurance engagement in relation to the revised Scope 3 methodology and data in the Report.

IBIS is an independent licensed provider of sustainability assurance services. The assurance team was led by Petrus Gildenhuys with support from a multi-disciplinary team of health, safety, social, environmental and assurance specialists with extensive experience in sustainability reporting. Petrus is a Lead Certified Sustainability Assurance Practitioner with more than 25 years' experience in sustainability performance measurement involving both advisory and assurance work.

Assurance standard applied

Both assurance engagements were performed in accordance with AccountAbility's AA1000AS v3 (2020) ('AA1000AS') and were conducted to meet the AA1000AS Type II Moderate and High level requirements respectively as indicated below.

Respective responsibilities and IBIS' independence

Anglo American is responsible for preparing its Climate Change Report and for the collection and presentation of data within the Report. IBIS' responsibility is to the management of Anglo American alone and in accordance with the terms of reference agreed with Anglo American.

IBIS applies a strict independence policy and confirms its impartiality to Anglo American in delivering the assurance engagement. This assurance engagement is the first assurance engagement conducted for Anglo American by IBIS.

Engagement limitations

IBIS planned and performed the work to obtain all the information and explanations believed necessary to provide a basis for the assurance conclusions for High and Moderate levels of assurance respectively in accordance with AA1000AS v3.

The procedures performed at a Moderate assurance level vary in nature from and are less extensive than for High assurance in relation to risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks. As a result, the level of assurance obtained for a Moderate assurance engagement is lower than for High assurance as per AA1000AS v3.

Due to the global Covid-19 pandemic related travel restrictions and risks, all assurance work was desktop based. Evidence to support information reported for the sampled sites was obtained electronically for review and assessment as a basis for our assurance conclusion. Readers of the Report are cautioned to understand this inherent limitation.

Conversion factors used to derive emissions and energy used from fuel and electricity consumed, are based upon information and factors derived by independent third parties. The assurance work did not include an examination of the derivation of those factors and other third-party information.

Board discussions related to climate change in 2020-21

2020

Sustainability Committee:

February – Climate change programme: Scope 3 emissions and emerging perspectives on Anglo American's overall climate change approach

Board:

July, September and October – Strategy discussions: long term strategic context and megatrends, including the impact of climate change and move to a low carbon future on the Group's portfolio, hydrogen economy and low carbon solutions

October – Approved a 10-year charter contract for low emission Capesize+ vessels to join the Group's global shipping operations

2021

Sustainability Committee:

February – Energy and decarbonisation strategy and roadmap; Carbon emissions: development of the Group's Scope 3 reduction strategy

September – Climate change report; Scope 3 reduction strategy; update on operational carbon neutrality goal

Board:

February – Carbon emissions: Scope 3 reduction strategy

April – Approval of the Group's intention to hold a non-binding resolution on climate change at 2022 AGM

May – Discussion of Scope 3 reporting methodology

July – Update on carbon neutrality Scope 1 and Scope 2 emissions strategy; discussion of Scope 3

September – Approval of Climate Change Report

Assurance conclusion

Moderate assurance opinion

In our opinion, based on the work undertaken for Moderate assurance as described, we conclude that the subject matters, including total Scope 1 emissions and total Scope 2 emission (measured in Mt CO_2e) and total energy consumption (measured in GJ (million)), in the scope for Moderate assurance are supported by the evidence obtained.

Scope 3 Independent Review

Anglo American plc worked with the Carbon Trust as advisers on our approach, methodology and calculation of Scope 3 emissions, with IBIS commissioned to perform a subsequent independent review.

The IBIS review of Anglo American's Scope 3 emissions was performed against the selected methodology, calculations and reporting boundary. IBIS concluded that the methods and approaches were deemed to be reasonably in line with the GHG Protocol across 15 categories of disclosure. The opinion from IBIS states that the disclosure did not include any material misstatements or omissions and the quality of the inventory was generally considered to be very high and in exceedance of best practice within the sector.

See pages 96-98 of the Anglo American plc Sustainability Report, 2020 for more detail on the assurance of the sustainability information published within that report.

Board climate change capability

All directors have complete and timely access to the information required to discharge their responsibilities fully and effectively. In addition to the advice and service they receive from the Group's executives and external advisers, they may take independent professional advice in the furtherance of their duties, at the company's expense.

Following appointment and as required, directors receive training appropriate to their level of experience and knowledge. This includes the provision of a comprehensive, tailored induction programme and individual briefings with members of the Group Management Committee (GMC) and their teams. The Board has held briefing sessions with key external and internal subject-matter experts on climate change to provide additional perspective and to challenge their thinking.

The Board's Nomination Committee oversees the succession process for directors. In 2020, the committee updated the Board's skills, experience and diversity matrix, to include climate change and new energy strategies. During the year, as part of its ongoing Board refreshment programme, the committee led a formal search for two new non-executive directors, to ensure that the Board maintains an appropriate combination of skills, experience, knowledge and diversity. This process led to the appointment of Elisabeth Brinton, who has significant experience related to clean energy and climate change mitigation strategies, and Hilary Maxson, a senior executive at a company with a strong track record in climate action.

Management structure

Climate change is a key strategic issue that falls under the management responsibility of our technical director, Tony O'Neill. He is a member of our Board, where he serves on the Sustainability Committee, as well as on our GMC. He is supported by a leadership team that covers, amongst other areas, sustainable development, environment, technology development and carbon neutrality.

Our director of corporate relations and sustainable impact, Anik Michaud, is also a member of the GMC. She is responsible for the public policy, social performance and engagement aspects of climate change.

Our director of strategy and business development, Duncan Wanblad, also serves on the GMC. In this role, he ensures that climate change informs Anglo American's strategic discussions and decision-making.

The GMC is supported by a Climate Change Steering Committee, which is chaired by the head of strategy and includes the head of carbon neutrality, the head of sustainable development, the head of international, government and sustainability relations, the executive head of PGMs marketing, and the head of the chief executive's office. The Steering Committee is responsible for driving the multiple workstreams of Anglo American's climate change work and reports regularly to the GMC.

Executive remuneration

We hold our executive team accountable for aligning our business practices with our climate change commitments and ambitions. In total, 8% of the value of the Long Term Incentive Plan (LTIP) awards agreed by the Remuneration Committee for 2021 is linked directly to the reduction of operational GHG emissions.

The LTIP is awarded to all senior managers across Anglo American, totalling around 430 people.

In addition, the annual bonus scheme outcomes for all eligible employees are now determined by team-based goals, such as safety, health and environment measures, critical strategic measures and financial metrics, all of which could include climate-related goals.

Disclosures related to the recommendations of the TCFD

Governance

Disclose the organisation's governance around climate-related risks and opportunities.

Recommended disclosures	References
a) Describe the board's oversight of climate-related risks and opportunities	*Embedded through rigorous governance,* pages 35-37. *Climate Change, Integrated Annual Report 2020,* pages 37 and 55.
b) Describe management's role in assessing and managing climate-related risks and opportunities	*Embedded through rigorous governance,* pages 35-37. *Our material matters, Integrated Annual Report 2020,* pages 14-15 and pages 52-55.

Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning where such information is material.

Recommended disclosures	References
a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	*Our approach to climate-related risk,* pages 13-14. *CDP Climate Response 2020,* question CC2 Risks and opportunities.
b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	*Our approach to climate-related risk,* pages 13-14. *CDP Climate Response 2020,* question CC2 Risks and opportunities Sustainability Report 2020, pages 41-42.
c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	*Resilience to a 1.5°C pathway,* pages 15-19.

Risk management

Disclose how the organisation identifies, assesses, and manages climate-related risks.

Recommended disclosures	References
a) Describe the organisation's processes for identifying and assessing climate-related risks.	*Our approach to climate-related risk,* pages 13-14. *CDP Climate Response 2020,* question CC2.2, processes for identifying and assessing climate-related risks.
b) Describe the organisation's processes for managing climate-related risks.	*Our approach to climate-related risk,* pages 13-14. *CDP Climate Response 2020,* questions CC2.1, CC2.2 and CC2.3.
c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management.	*Our approach to climate-related risk,* pages 13-14. *CDP Climate Response 2020,* questions CC2.1, CC2.2 and CC2.3.

Metrics and targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended disclosures	References
a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	*Our approach to climate-related risk,* pages 13-14. *A strategy to deliver a future enabling portfolio,* pages 20-21. *CDP Climate Response 2020,* questions CC2.2a, CC2.3a, CC2.4a and CC11.3a.
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3, greenhouse gas (GHG) emissions and the related risks.	*Towards a low carbon future,* page 8. *A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30. *Sustainability Report 2020,* page 44 and data table page 103. *Integrated Annual Report 2020,* pages 37, 52-55 and 256.
c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	*Towards a low carbon future,* page 8. *A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30. *Integrated Annual Report 2020,* page 37.

Climate Action 100+ Net Zero Benchmark[1]

Indicators and sub-indicators	References
1. Net-zero GHG emissions by 2050 (or sooner)	
1.1 The company has set an ambition to achieve net zero GHG emissions by 2050 or sooner	*A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30.
2. Long-term (2036-2050) GHG reduction target(s)	
2.1 The company has set long-term (2036-2050) targets or goals for reducing its GHG emissions	*A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains* pages 26-30.
2.2 The long-term (2036-2050) GHG reduction target or goal covers more than 95% of Scope 1 and 2 emissions, and relevant Scope 3 emissions (where applicable)	*A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30.
2.3 The target or goal is aligned with the goal of limiting global warming to 1.5°C	*A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30.
3. Medium-term (2026-2035) GHG reduction target(s)	
3.1 The company has set a medium-term (2026-2035) target for reducing its GHG emissions	*Delivering on our commitments,* pages 10-12. *A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30.
3.2 The medium-term (2026-2035) GHG reduction target covers more than 95% of Scope 1 and 2 emissions, and relevant Scope 3 emissions (where applicable)	*Delivering on our commitments,* pages 10-12. *A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30.
3.3 The target is aligned with the goal of limiting global warming to 1.5°C	*Delivering on our commitments,* pages 10-12. *A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30.
4. Short-term (up to 2025) GHG reduction target(s)	
4.1 The company has set a short-term (2020–2025) targets for reducing its GHG emissions	*Delivering on our commitments,* pages 10-12. *Embedded through rigorous governance,* pages 35-36.
4.2 The short-term (2020 to 2025) GHG reduction target covers more than 95% of Scope 1 and 2 emissions, and relevant Scope 3 emissions (where applicable)	*Delivering on our commitments,* pages 10-12. *Embedded through rigorous governance,* pages 35-36.
4.3 The target or objective is aligned with the goal of limiting global warming to 1.5°C	No reference
5. Decarbonisation strategy	
A robust plan to achieve GHG targets lays out which decarbonisation levers will be used	
5.1 The company has a decarbonisation strategy to meet its long-, medium- and short-term GHG reduction targets	*Delivering on our commitments,* pages 10-12. *A strategy to deliver a future enabling portfolio,* pages 20-21. *A clear pathway to operational carbon neutrality,* pages 22-25. *Our commitment to decarbonising our value chains,* pages 26-30.
5.2 The company's decarbonisation strategy includes a commitment to 'green revenue' from low carbon products and services	*A strategy to deliver a future enabling portfolio,* pages 20-21.

[1] Climate Action 100+ provides its own view of Anglo American's progress on the 10 key indicators outlined here, based on an analysis of company disclosure documents: www.climateaction100.org/company/anglo-american

Indicators and sub-indicators		References
6.	**Capital stock alignment** An assessment of the extent to which continued investment in carbon-intensive activities is consistent with the Paris Agreement Goals	
6.1	The company is working to decarbonise its capital stock	*Delivering on our commitments,* pages 10-12. *A strategy to deliver a future enabling portfolio,* pages 20-21.
6.2	The company discloses the methodology used to determine the Paris Agreement alignment of its future capital expenditures	*A strategy to deliver a future enabling portfolio,* pages 20-21.
7.	**Climate policy engagement** A clear commitment and set of disclosures clarifying intent to support climate policy and a demonstration of how direct and indirect lobbying is consistent with this position	
7.1	Comprehensive description of the position the company has taken on all relevant climate-related policies, the activities undertaken during policy engagement and a detailed explanation of how this process is governed, including, but not limited to, a series of defined criteria	*Embedded through rigorous governance,* pages 35-36. See www.angloamerican.com/sustainability/environment/climate-change See www.angloamerican.com/sustainability/our-sustainable-mining-plan/political-transparency
7.2	Disclosure of indirect climate policy engagement positions, activities and governance processes	*Embedded through rigorous governance,* pages 35-36. See www.angloamerican.com/sustainability/environment/climate-change See www.angloamerican.com/sustainability/our-sustainable-mining-plan/political-transparency
8.	**Climate governance** Clear board oversight of and remuneration for delivery of GHG targets	
8.1	Board oversight of climate change	*Embedded through rigorous governance,* pages 35-36.
8.2	The company's executive remuneration scheme incorporates climate change performance elements	*Embedded through rigorous governance,* pages 35-36.
8.3	The board has sufficient capabilities to assess and manage climate-related risks and opportunities	*Embedded through rigorous governance,* pages 35-36.
9.	**Just Transition**	
9.1	The company discloses its considerations of the impacts from transitioning to a lower-carbon business model on its workers and communities	*Supporting our communities through a 'Just Transition',* pages 31-34.
10.	**TCFD disclosure**	
10.1	The company has committed to implement the TCFD recommendations	*Delivering on our commitments,* pages 10-12. *Disclosures related to the recommendations of the TCFD,* page 38.
10.2	The company employs climate scenario planning to test its strategic and operational resilience	*Our approach to climate-related risk,* pages 13-14. *Resilience to a 1.5°C pathway,* pages 15-19.

Glossary

Ambition
Refers to an objective we are aiming to achieve, for which we have not yet developed a pathway to delivery.

Business as usual (BAU)
The projected impact under a baseline scenario in which no additional mitigation policies or measures are implemented beyond those that are already in force, legislated or planned to be adopted.

Carbon
'Carbon' is used in this report as shorthand for greenhouse gases.

Carbon dioxide equivalent (CO_2e)
The standard metric measure used by the UN's Intergovernmental Panel on Climate Change to compare the emissions from various greenhouse gases on the basis of their global warming potential against a common basis.

Carbon neutral(ity)
Carbon neutral(ity) is a condition in which during a specified period there has been no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject during the same period.

Decarbonisation
Reducing the carbon emissions associated with electricity, industry and transport.

Direct emissions
Emissions from sources that the reporting company owns or controls.

Downstream emissions
Indirect emissions from goods and services that are sold or distributed without receiving payment.

Fugitive emissions
Emissions that are not produced intentionally and are not physically controlled.

Future-enabling
Products, technologies and strategies that support the transition to a low carbon economy and that meet growing consumer-driven demands.

Goal
Refers to an objective we are aiming to achieve, for which we have developed a pathway or a series of possible pathways to delivery.

Greenhouse gas (GHG) emissions
For our reporting purposes, GHG emissions are the combined anthropogenic emissions of carbon dioxide (CO_2), hydrofluorocarbons (HFCs), methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). They are measured in carbon dioxide equivalent (CO_2e).

Greenhouse Gas (GHG) Protocol
The GHG Protocol Corporate Accounting and Reporting Standard provides requirements and guidance for companies and other organisations preparing a corporate-level GHG emissions inventory.

Indirect emissions
Emissions that result from the reporting company's activities but occur at sources that another party owns or controls.

Liquefied natural gas (LNG)
A natural gas mostly composed of methane that has been cooled to a liquid state for the safety of non-pressurised storage or transport.

Low carbon
'Low carbon' is used in the report as shorthand for low levels of greenhouse gas emissions.

Net zero
Net zero emissions is reached when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period.

Paris Agreement
A legally binding international treaty on climate change that aims to limit global warming to well below 2°C, preferably to 1.5°C, compared with pre-industrial levels.

Target
Refers to an objective we are aiming for, for which we have developed a plan for delivery.

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