



FY22

CLIMATE CHANGE REPORT

ABN 57 002 594 872

We are Fortescue



OUR VALUES

SAFETY

FAMILY

EMPOWERMENT

FRUGALITY

STRETCH TARGETS

INTEGRITY

ENTHUSIASM

**COURAGE AND
DETERMINATION**

GENERATING IDEAS

HUMILITY

Fortescue's unique Values
drive our performance
in a way that sets us apart
from others

Culture

Fortescue is a values-based business with a strong, differentiated culture. We believe that by leveraging the unique culture of our greatest asset, our people, we will achieve our stretch targets



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FY22 HIGHLIGHTS

OUR TARGETS



Carbon neutrality
across our operations
by 2030



Net zero emissions
across our value chain
by 2040



BUILDING CAPACITY

Acquired:

- Williams Advanced Engineering
 - 60% of High yield Energy Technologies Group
 - Commercial assets of Xergy to form Ionix
 - 20% of Sparc Hydrogen
-



DECARBONISATION SOLUTIONS

Development of:

- Zero emissions Infinity Train
- Zero emissions haul trucks in partnership with Liebherr
- Ammonia powered shipping vessel
- Partnership with Airbus and Universal Hydrogen to decarbonise aviation
- Green Energy Manufacturing (GEM) centre



01

OVERVIEW



CHIEF EXECUTIVE OFFICER'S MESSAGE

We are building a better tomorrow for future generations



“FORTESCUE HAS
ACCELERATED ITS TRANSITION
TO A VERTICALLY
INTEGRATED GREEN ENERGY AND
RESOURCES COMPANY”

Elizabeth Gaines

There is no doubt that globally, climate change is society's greatest challenge. We as industry must not make the climate crisis worse, by making poor decisions now which will impact future generations. Rather, industry is the solution.

At Fortescue, we are taking clear action to address the risks and impacts of climate change and meet the targets established through the Paris Agreement. Our own targets to achieve carbon neutrality for Scope 1 and 2 emissions by 2030 and net zero Scope 3 emissions by 2040 are industry leading, and work towards achieving them is well underway.

All industry must change their business models from producing emissions, to reducing and eliminating emissions. That is what Fortescue is doing, and we will share what we learn with industry across the world so they can follow our lead.

We are rapidly diversifying our business to become an integrated, global green energy and resources company and our green energy, technology and development company, Fortescue Future Industries (FFI), will be a key enabler of delivering on these targets.

In March, we completed the acquisition of UK-based Williams Advanced Engineering (WAE). Its critical technology and expertise in high performance battery systems and technology are integral to developing battery electric solutions for our green fleet. In June, we announced a partnership with Liebherr for the development and supply of green mining haul trucks, for integration with the zero emission power system technologies being developed by FFI and WAE.

Through FFI we are establishing the building blocks across technology ownership, manufacturing capability, green energy generation and distribution, to deliver across the entire value chain.

I would like to thank the entire Fortescue family whose courage and determination is integral to driving sustainable change and transforming Fortescue into Australia's leading green energy and resources company.

ABOUT THIS REPORT

Fortescue is committed to transparent, open and continuous communication with its stakeholders

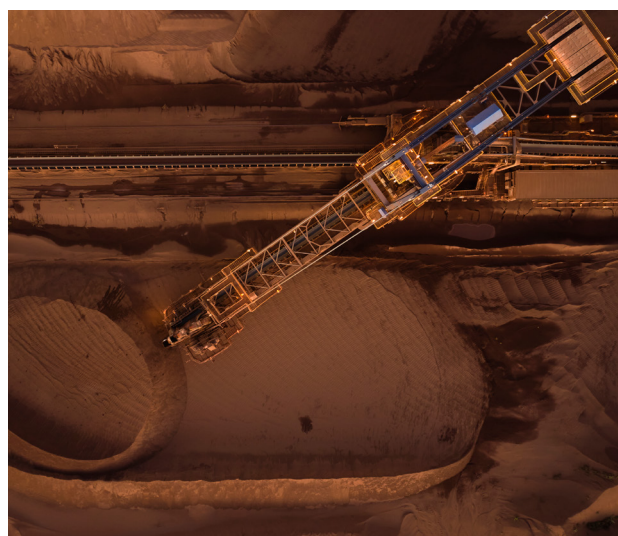
Our FY22 Climate Change Report has been prepared for Fortescue's stakeholders and details our progress in managing climate-related matters including risks and opportunities. It is aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which has guided our climate-related reporting since FY18.

The report is part of Fortescue's annual reporting suite which also includes the FY22 Annual Report, FY22 Sustainability Report and FY22 Corporate Governance Statement, all of which are available on our website at **www.fortescue.com**

It also captures activities within our operations, including exploration and development as well as those operated through subsidiaries and joint ventures where Fortescue has management control or acts as operator, including the work of Fortescue Future Industries (FFI), a wholly owned subsidiary of Fortescue.

All references to our, we, us, the Group, the Company and Fortescue refer to Fortescue Metals Group Ltd (ABN 57 002 594 872) and its subsidiaries. All references to a year are to the financial year ended 30 June 2022 unless otherwise stated.

This report has been approved for release by Fortescue's Board of Directors.



Assurance

Scope 1, 2 and 3 greenhouse gas emissions data included in this report is subject to independent assurance by KPMG.

Feedback

We value all feedback. Please forward any comments on this report or requests for additional information to **sustainability@fmg.com.au**

Fortescue acknowledges the First Nations peoples of the lands upon which we live and work. We acknowledge their rich cultures and their continuing connection to land, waters and community. We are proud to work, partner and engage with First Nations peoples. We pay our respects to the culture and people, their Elders and leaders, past, present and emerging.

ABOUT FORTESCUE

Transitioning to a global green energy and resources company

Established in 2003, Fortescue is a proud West Australian company, recognised for our culture, Values, innovation and industry leading development of infrastructure and mining assets. As one of the world's lowest cost iron ore producers, Fortescue is now shipping at an annual rate of over 180 million tonnes with more than 1.7 billion tonnes of iron ore delivered to our customers since 2008.

Through our green energy and technology company FFI, we are rapidly diversifying our business to become an integrated, global green energy and resources company. Key to this transition are our industry leading targets to achieve carbon neutrality for Scope 1 and 2 emissions by 2030 and net zero Scope 3 emissions by 2040. For our size and scale, there is no other mining company in the world that is taking the action we are to eliminate emissions.

Our operations include three mining hubs in the Pilbara, Western Australia which are connected to our five berth Herb Elliott Port and the Judith Street Harbour towage infrastructure in Port Hedland by 760 kilometres of the fastest heavy haul railway in the world. Our iron ore value chain extends to our innovative tug fleet and eight purpose-built 260,000 tonne capacity Fortescue Ore Carriers, which have been designed to complement the efficiency of our port and maximise the safety and productivity of Fortescue's operations.

Since the outset, Fortescue has been at the forefront of innovation in the mining industry. The Fortescue Hive, our integrated operations centre in Perth, brings together our entire value chain to deliver enhanced safety, productivity, efficiency and commercial benefits, and will strengthen our future use of technology, including artificial intelligence and robotics.

As a low cost supplier of seaborne iron ore to China, Fortescue maintains strong relationships with all our Chinese stakeholders, underpinned by a multifaceted approach spanning our key business pillars of iron ore supply, procurement, financing, investment and social engagement. Additionally, we have expanded into other markets including Japan and South Korea.

As a values-based business which celebrates diversity and inclusiveness, globally we are empowering thriving communities and delivering positive social and economic benefits through training, employment and business development opportunities, including for our First Nations peoples employees and partners. By empowering our people and communities, we will continue to challenge the status quo to sustain operational excellence, achieve our stretch targets, drive future success and deliver strong returns to our shareholders.



OUR APPROACH

Fortescue takes an industry leading position on reducing emissions by decarbonising our operations and working to deliver low carbon solutions and green energy products to the world

Climate change is the greatest challenge facing the global community. It also presents a once in a lifetime opportunity for economic growth and value creation.

Climate change has the potential to lead to catastrophic social and economic outcomes, the costs of which far exceed those associated with transitioning to a low carbon world. The Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report (AR6) found that without deep reductions in greenhouse gas emissions over the coming decades, global warming will exceed 2°C in the 21st century.

Without immediate action to reduce global emissions, the impacts of climate change, which are already being felt, will continue to worsen.

Swift action from industry and strong policy frameworks from governments is required, where risk taking is incentivised and rewarded and the rights of our communities are protected.

Fortescue is transitioning to a vertically integrated green energy and resources company. Through our green energy and technology company, FFI, we are developing, commercialising and manufacturing the innovative low carbon solutions that will make it possible for us to decarbonise our own operations, and supply green energy solutions to others.

Fortescue's strong action to address climate change is embedded throughout the business and is led by our Founder and Executive Chairman, Dr Andrew Forrest AO and our Board of Directors (the Board).

Iron ore is an essential component in the energy transition, and as consumers and customers look to reduce their own carbon footprint, the demand for green iron ore and steel will increase.

To minimise risks and maximise opportunities, we are also diversifying, targeting other commodities, including copper and lithium to support low carbon economies.

Significant climate-related milestones achieved in FY22:

- Set an industry leading target to achieve net zero Scope 3 emissions by 2040.
- Acquired Williams Advanced Engineering (WAE), providing Fortescue with critical technology and expertise in high performance battery systems and electrification.
- Commenced the construction of FFI's Green Energy Manufacturing (GEM) Centre in Gladstone, Queensland.
- Commenced the development of the Infinity Train, the world's first regenerating battery electric iron ore train.
- Completed a US\$1,500 million Senior Notes offering, which included our inaugural US\$800 million Green Use of Proceeds Notes that will be applied to decarbonisation initiatives.
- Implemented a new Climate Change Policy.
- Became a signatory for The Climate Pledge, a member of the UN Race to Zero, and a founding member of the First Movers Coalition.
- Partnered with Liebherr to develop and supply zero emissions haul trucks to our Pilbara mining operations.

We are on a march to achieve net zero by 2030, strengthening the economics of our business and ensuring our company prospers in a net zero future. Every day that our Fortescue and FFI family take forward the technology, hard work and willpower of going green, the world's mining industry takes one step closer to being the first industry to go fully green.

Dr Andrew Forrest AO, Founder and Executive Chairman

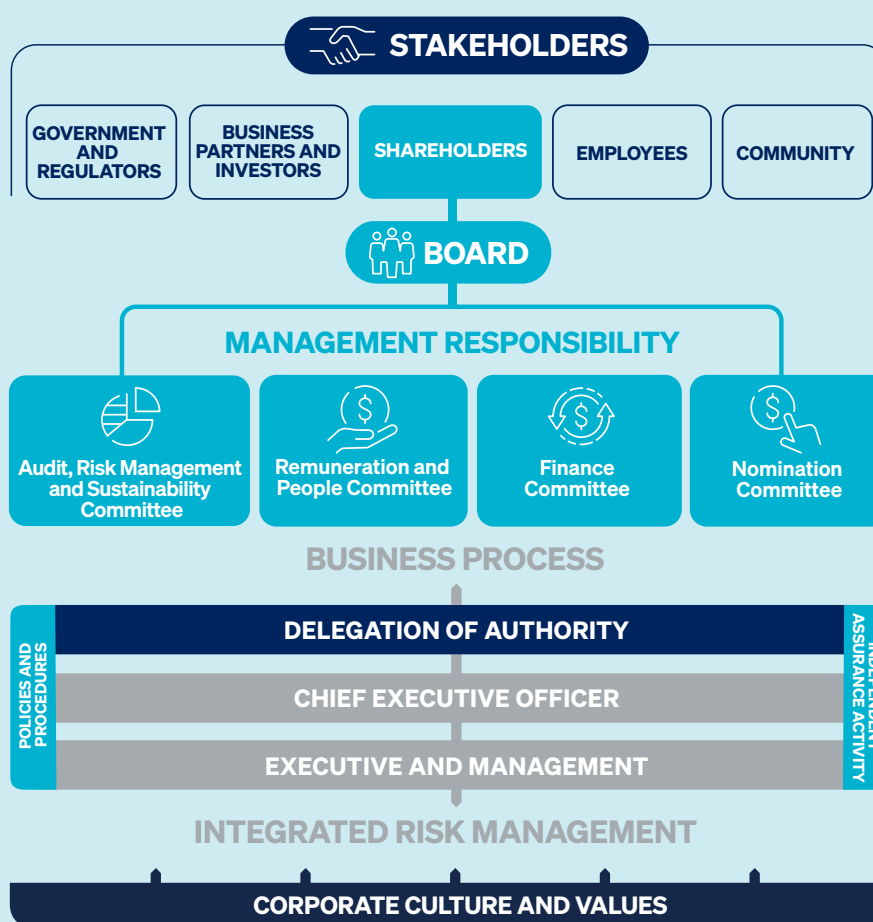
GOVERNANCE

Good corporate governance is critical to the long-term, sustainable success of Fortescue and is the collective responsibility of the Board and all levels of management

We seek to adopt leading practice and contemporary governance standards and apply these in a manner consistent with our culture and Values.

Our overall approach to corporate governance is detailed in our FY22 Corporate Governance Statement, available on our website at www.fortescue.com

GOVERNANCE FRAMEWORK



The Board of Directors

The Board has ultimate responsibility for the oversight and approval of all strategic, risk management and financial investment decisions, including climate-related matters. The Board meets quarterly and receives updates on climate-related matters, and their impact on our business, at each meeting.

Collectively, the Directors have a diverse and relevant range of skills, backgrounds, knowledge and experience to ensure effective governance of the business. The Board has been assessed against the following criteria and found to have the competencies, expertise and aptitude to effectively manage climate risks and opportunities:

- **Low carbon transition:** Involved in designing and implementing our decarbonisation pathway and building FFI as a developer, manufacturer, and commercial supplier of innovative low carbon products and a global supplier of green hydrogen and ammonia.
- **Finance and capital management:** Experienced at building long-term investment cases, designing equity and debt funding strategies and raising capital and debt using a variety of structures including Green and Social debt under a Sustainable Financing Framework.
- **Governance:** Commitment to ensuring effective governance within complex organisations and multi-jurisdictional compliance environments.
- **Strategy:** Experience in developing and providing oversight over the implementation of strategic objectives.
- **Risk management:** Maintaining effective risk management oversight, including physical and transitional climate risks.
- **Procurement and partnerships:** Experienced in strategic sourcing, procurement, engaging with vendors and establishing partnerships to collaborate on low carbon solutions and address embedded GHG emissions and sustainability issues across the supply chain.

To the extent that any skills are not directly represented on the Board, additional advice is requested from management and external advisors.

Capital investment

Achieving carbon neutrality in our operations by 2030 and net zero Scope 3 emissions by 2040 requires significant investment.

The Board provides oversight of all investment decisions including those related to carbon neutrality. This ensures that capital investment in decarbonisation is aligned with strategic decisions, such as fleet renewal and our commitments and targets.

Our approach to climate-related capital allocation includes committing 10 per cent of net profit after tax (NPAT) to fund renewable energy growth through FFI. An additional 10 per cent of NPAT is allocated to other growth opportunities, including within the iron ore business and other commodities.

Linking funding to NPAT provides a sound financial basis for capital allocation and will result in a varying amount made available from year to year. During FY22, Fortescue delivered a US\$6.2 billion NPAT, with an associated allocation to FFI of US\$620 million.

Committees

The Board has established committees to assist in the execution of its duties and to ensure important and complex issues are given the detailed consideration they require.

Audit, Risk Management and Sustainability Committee

The Audit, Risk Management and Sustainability Committee (ARMSC) is a Board committee responsible for overseeing our response to climate change and provides advice and guidance at each quarterly Board meeting on matters, including:

- Implementation of our Climate Change Strategy
- Climate change risk analysis and mitigation strategies
- Emissions reduction targets and related metrics
- Climate-related disclosures
- Results of any audits or reviews related to climate change and emissions reporting.

Remuneration and People Committee

Climate-related metrics and targets are formally incorporated into our Executive and Senior Staff Incentive Plan (ESSIP) and Long-term Incentive Plan (LTIP). This includes our Chief Executive Officer (CEO), Executives and other senior leaders, including those working on our decarbonisation program.

In FY22, the Remuneration and People Committee approved targets intended to drive the delivery of our energy strategy and emissions reduction programs. These targets support our industry leading objective to achieve carbon neutrality by 2030, including:

- In FY22, reduce emissions by at least 3 per cent from our FY21 emissions.
- Develop a pathway for the introduction of green iron into Fortescue's product mix.
- Identify a pathway to decarbonise stationary power using renewables for existing operations.
- Identify a pathway to decarbonise the mobile fleet.

Decarbonisation Steering Committee

At the executive level, the Decarbonisation Steering Committee (DSC) is responsible for overseeing the development of our decarbonisation strategy, and sits above a number of specific workgroups.

The Chief Financial Officer (CFO) chairs the DSC which comprises the CEO, Chief Operating Officer Iron Ore (COO) and other senior leaders from across the business including Environment, FFI, Finance, Investor Relations, Risk Management, Strategic Planning and Sustainability.

The DSC met five times in FY22 and provided updates and advice to the ARMSC at its quarterly meetings on a range of issues, including implementation of our decarbonisation strategy and allocating capital for decarbonisation projects.

Day-to-day management

The management of climate-related matters is integrated across the business, with specific responsibilities in the following key areas:

- FFI – decarbonising our mining operations and pursuing renewable, green hydrogen and green ammonia opportunities globally.
- Sustainability – monitoring global climate change policy, driving continuous improvement, managing climate change disclosure and contributing to environmental, social and governance (ESG) assessments.
- Environment – National Greenhouse and Energy Reporting (NGER) compliance.
- Investor Relations – engaging with shareholders, financial organisations and ratings agencies.
- Risk Management – considering climate scenarios and their implications for our risks and opportunities.

OUR TARGETS

INDUSTRY LEADING EMISSIONS REDUCTION TARGETS



CARBON NEUTRALITY WITHIN OUR OPERATIONS BY 2030

This target addresses the Scope 1 emissions generated from the activities and operations we directly control. This includes the emissions from our mining fleet and electricity generating facilities, as well as the emissions generated by third parties who supply electricity to us (Scope 2).

We recognise the urgency to reduce emissions and despite our continued growth and expansion, we have committed to reducing net operational emissions from our FY20 baseline by at least three per cent annually. This target includes the facilities operating during FY20 and extends to all future operations and acquisitions.

This target aligns with a 1.5°C trajectory as we achieve carbon neutrality two decades prior to 2050.



NET ZERO SCOPE 3 EMISSIONS BY 2040

Scope 3 emissions are those that fall within our value chain but are outside our operational control, including those generated during the shipping of our products in non-Fortescue vessels and iron and steel production.

We have also set the following medium term targets:

- Enable a reduction in emissions intensity levels from the shipping of our iron ore by 50 per cent by 2030 from FY21 levels.
- Enable a reduction in emissions intensity from steel making by Fortescue's customers of 7.5 per cent by 2030 from FY21 levels.

This target aligns with a 1.5°C trajectory as we achieve net zero one decade prior to 2050.

OUR STRATEGY

OUR CLIMATE CHANGE STRATEGY FOCUSES ON FOUR ELEMENTS

Decarbonise

our operations and value chain

Maximise opportunities

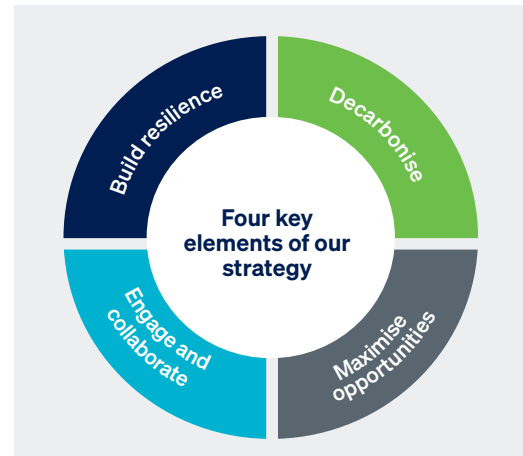
in a post carbon world

Engage and collaborate

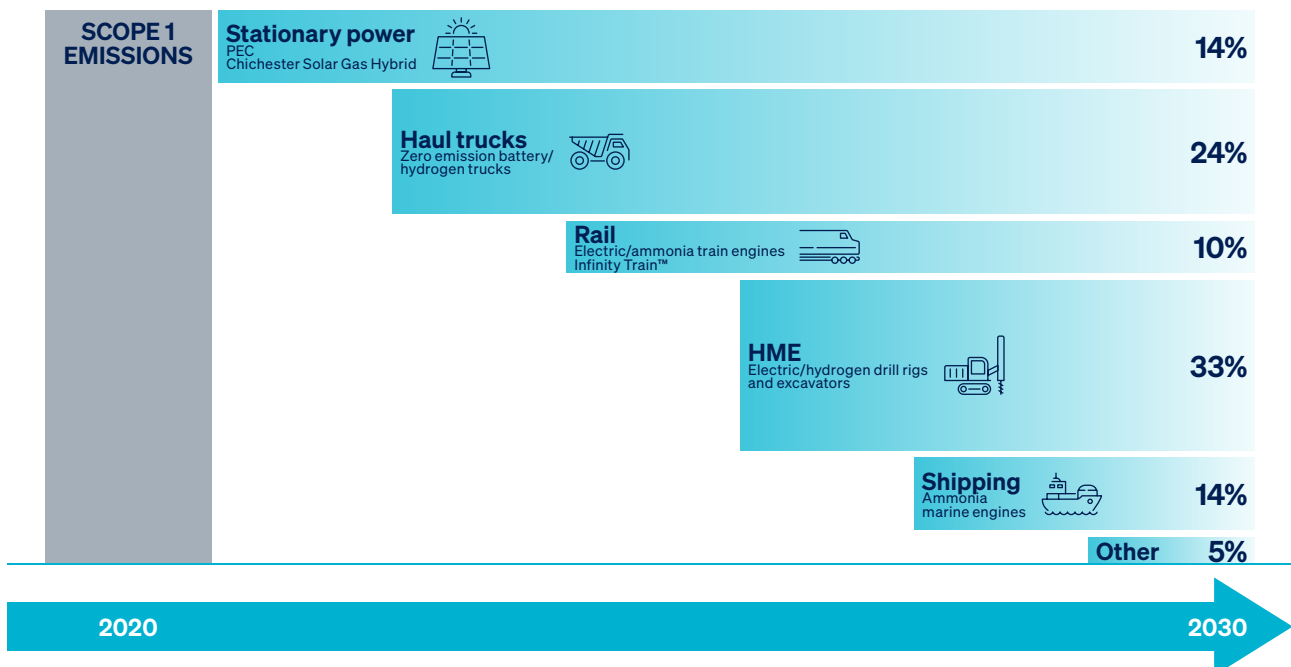
to develop and deploy low carbon solutions

Build resilience

across our operations, assets, business model and communities



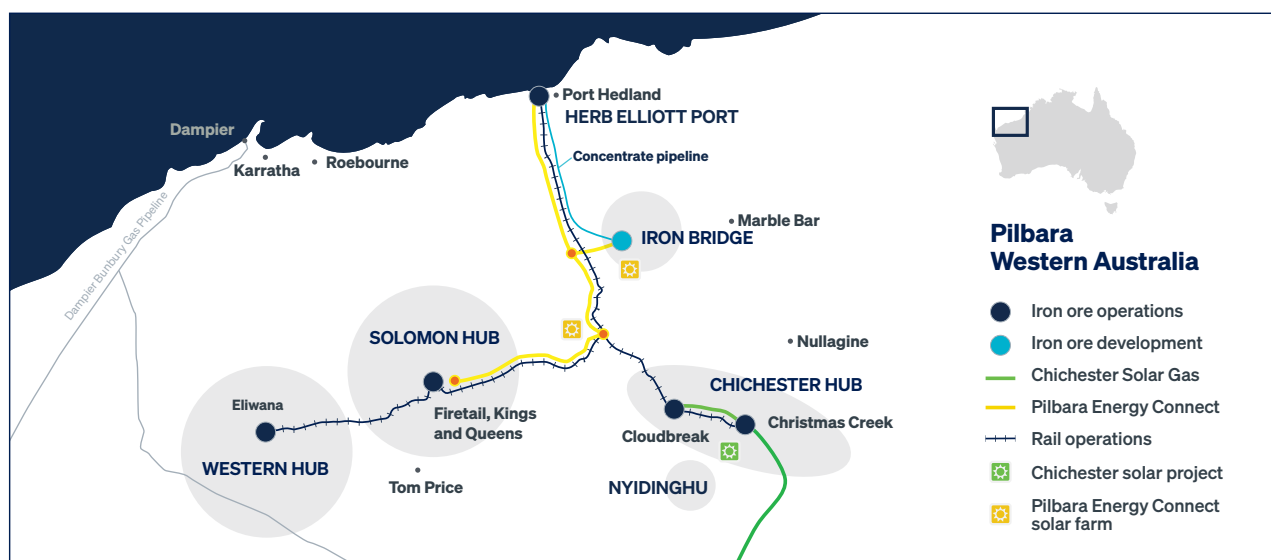
DECARBONISATION PATHWAY



Decarbonisation

Enhancing technology is key to addressing climate change and we are investing in renewable energy to power our sites and new decarbonisation technologies to transform our mining assets to run on green energy.

Our path to decarbonisation is focused on our largest sources of emissions: stationary power generation and diesel use in our mining fleet and emissions generated from shipping iron ore and the production of steel within our value chain.



Stationary power

We are making significant investments in renewable power, battery storage, and transmission links to displace stationary diesel and gas-fired power generation at our sites.

During FY22, stationary power generation accounted for approximately 14 per cent of our Scope 1 emissions, or 303,000 tonnes of CO₂-e emissions, of which 42 per cent was generated from diesel and 58 per cent from gas.

We are delivering our US\$700 million Pilbara Energy Connect (PEC) project that will integrate the stationary energy facilities across our remote sites in the Pilbara into an efficient, secure and resilient network, enabling us to reduce emissions and incorporate the additional renewable generation necessary to decarbonise our operations. This includes:

- The 223km high voltage transmission line linking our Solomon Hub with Iron Bridge, effectively eliminating the need for diesel-fired power generation at Iron Bridge.
- Installing a 16MW battery at our Solomon Power Station and a 26MW battery at Iron Bridge to provide network support and power stability.
- Connecting the Herb Elliott Port to the PEC to operate on renewable power, reducing almost all of our Scope 2 emissions once implemented.
- Receiving renewable power from Alinta Energy via the Chichester Solar Gas Hybrid project. During FY22, this reduced diesel usage by approximately 80 million litres. Our diesel use is expected to fall by 95 million litres in FY23, following a full year of operation.
- Referring the Uaroo Renewable Energy Hub proposal to the Western Australian Environmental Protection Authority, which incorporates 5.4GW of wind and solar generation facilities.

As we progress with the decarbonisation of our operations, we are working to address the risk of modern slavery in the supply chain of solar panels. To account for these risks we have enhanced our procurement and due diligence processes.

Haul trucks

We are developing and trialling battery electric and green hydrogen powered haul trucks to remove our reliance on diesel fuel.

The haul trucks at our mine sites currently account for approximately 24 per cent of our Scope 1 emissions or 545,000 tonnes of CO₂-e emissions.

There are currently no large scale economic or technologically viable vehicles available for our haulage operations. We have partnered with Liebherr to develop the technology to integrate the WAE zero emissions power system into some of their haul trucks, for deployment in our Pilbara mining operations from 2025. This commitment represents approximately 45 per cent of our current haul truck fleet and could include both battery electric and fuel cell electric configurations.

Our ability to progress this initiative has been significantly enhanced by our acquisition of WAE which was finalised this year. WAE provides critical technology and expertise in high performance battery systems and electrification which will increase our operational efficiency, lower maintenance costs and accelerate the decarbonisation of our mining operations.

We also use relocatable conveyors with semi-mobile crushing stations that feed directly into our ore processing facilities, to reduce diesel use, and in turn emissions.

CASE STUDY



WILLIAMS ADVANCED ENGINEERING

As part of our transition to an integrated green energy and resources company, we acquired WAE to expand our capacity to undertake research and develop and commercialise innovative low carbon solutions. WAE is an offshoot of the Williams F1 team and a world-leading technology and engineering business renowned for its ground breaking projects in high performance battery systems and electrification.

WAE's race bred critical capabilities and battery technology will help us decarbonise our operations, and deliver low carbon technologies to the global market.

Drawing on WAE's unique proprietary technology and expertise in high-performance battery systems, we are already progressing:

- Zero emissions power systems for deployment in the haul trucks being developed as part of our partnership with Liebherr.
- The Infinity Train project – a world first iron ore train that will capture enough energy on the loaded, downhill journey to port that it will not require additional charging for the return trip.

Fortescue CEO Elizabeth Gaines said, "Fortescue and WAE share strong cultural alignment with a focus on technology and innovation to support carbon neutrality, both companies being leaders in their respective industries.

"We have been working with WAE since early 2021, with WAE designing and building a battery system to power an electric mining haul truck: an important first step in the decarbonisation of Fortescue's mining haul fleet. WAE's expertise in battery systems and electrification further complements FFI's green hydrogen projects for haul trucks and mobile fleet to further underpin our technical leadership."

CASE STUDY



LIEBHERR

In June 2022, we announced a partnership with equipment manufacturer Liebherr to develop and supply zero emissions haul trucks for use across our Pilbara mining operations.

Our companies have commenced a three year development period to progress and integrate Fortescue's proprietary owned power system into Liebherr's proprietary owned base truck.

The first production truck will be operational at our mine sites by 2025 and their phased delivery will be scheduled to align with our fleet replacement and sustaining capital expenditure forecast.

This development is the first of many committed production programs based on our significant investment in research and development in the technologies required to decarbonise our mining fleet.

Rail

We are developing the zero emission Infinity Train that will use gravitational energy to recharge its battery electric systems as well as assessing the potential for ammonia powered engines.

Transporting ore from our mines to our port in Port Hedland via rail during FY22 consumed 85.6 million litres of diesel, resulting in 233,000 tonnes of CO₂-e emissions or approximately 10 per cent of our Scope 1 emissions.

As the existing rail fleet comes to the end of its life, we will replace it with 28 modernised locomotives during FY23. In addition to better fuel efficiency and improved traction, these locomotives can be converted from diesel-powered to battery electric.

While the Infinity Train is under development, we have purchased two new battery electric locomotives from Progress Rail to transport our iron ore. We expect to take delivery of our first battery powered locomotive in 2023. These locomotives will reduce our emissions and fuel costs, as well as our overall operational expenses through lower maintenance costs.

We continue to develop ammonia powered train engines and plan to begin testing them in our Pilbara rail system during 2023.

The acquisition of WAE significantly enhances our ability to develop these technologies.

Other heavy mining equipment

We are looking to replace diesel engines with electric motors and trial hydrogen fuel cells and batteries to power other heavy mining equipment (HME).

Other HME, such as drill rigs and excavators, account for approximately 33 per cent of our Scope 1 emissions, or 723,000 tonnes of CO₂-e emissions in FY22.

We are working to integrate electric motors, batteries and hydrogen fuel cells into this equipment and explore options for refuelling them within our mine pits.

We have repurposed a drill rig and excavator so they can operate using hydrogen and a battery and plan to begin testing at a mining site during 2023.

We are expanding the capacity of our renewable hydrogen refuelling facility under construction at our Christmas Creek mine site to supply green hydrogen to this equipment.

Shipping

We are developing ammonia powered marine engines and working to supply green ammonia to the market.

In FY22, the shipping of our products from the Pilbara in Western Australia to our customers around the world accounted for approximately 2.06 million tonnes of CO₂-e emissions, of which 307,000 tonnes were from our vessels and are considered Scope 1, while 1.75 million tonnes were from chartered vessels and are classed as Scope 3.

We have identified shipping as a focus for our Scope 3 emissions target and have set an interim target to enable a reduction in emissions intensity levels from the shipping of Fortescue's ores by 50 per cent by 2030, from FY21 levels.

We are progressing the following key initiatives to reduce emissions within shipping:

- Developing an ammonia powered marine engine for use in our own fleet of ore carriers with potential for adoption in new vessels.
- Converting a 75m offshore supply vessel to operate with ammonia in its fuel mix.
- Commencing a dry dock maintenance cycle for our eight ore carriers, which includes upgrading the hull coating paint and installing variable frequency drives and propeller caps. These energy saving devices are expected to reduce fuel consumption and CO₂ emissions by an estimated five to 10 per cent.
- Working with our chartered vessel owners and operations to improve data collection and reduce emissions.

The International Maritime Organisation (IMO) is responsible for developing regulations applicable to the shipping industry and has adopted a strategy to reduce greenhouse gas emissions consistent with the Paris Agreement. The IMO Greenhouse Gas Strategy envisages reducing carbon intensity across international shipping from 2008 levels by at least 40 per cent by 2030 and is pursuing efforts towards a 70 per cent reduction by 2050.

We support the IMO targets and are working closely with our shipping partners and industry participants to collect accurate information on emissions and develop and implement strategies that will deliver on the IMO's targets. We will also continue to engage with industry to support the Australian Government's representation on the IMO Marine Environment Protection Committee.

CASE STUDY



INFINITY TRAIN

Fortescue is developing a world first, zero emission Infinity Train. The regenerating battery electric train will use gravitational energy to recharge its battery electric systems without any additional charging requirements on the mainline for the return trip.

The Infinity Train will not only accelerate Fortescue's race to reach net zero emissions by 2030, but also lower our operating costs, create maintenance efficiencies and productivity improvements.

This technology will enable emission reductions in the hard to abate heavy industry sector with opportunities for this technology to be commercialised on a global basis.

Iron and steel production

During FY22, we transported 189 million tonnes of iron ore to customers for the production of crude steel. Our main customers are in China, Japan and South Korea and we also supply iron ore to India, the Netherlands, Vietnam, Indonesia and Malaysia.

The production of steel from our iron ore in FY22 was estimated to generate 250 million tonnes of CO₂-e emissions, accounting for 98 per cent of our Scope 3 emissions.

Our approach to reducing emissions from iron and steel making includes active engagement and collaboration with customers, global engineering companies, universities, and research and development organisations to enhance the performance of our iron ore products and promote new iron and steel production technologies.

Enhancing Fortescue's iron ore products

We are promoting options to reduce emissions from iron and steel making through enhanced sintering of iron ore fines and bringing a higher iron content magnetite concentrate to the market from FY23.

Deep-bed sintering

Sintering is the fusing of iron ore fines and fluxes under high temperatures into a solid mass that can be introduced into the blast furnace. Deep-bed sintering refers to increasing the depth of sinter from 750mm to 1,000mm or more with no or minimal additional fuel, increasing productivity and lowering emissions intensity.

Fortescue's unique coarse iron ore products are suitable for deep bed sintering as they enhance permeability, making it easier to liberate oxygen from iron in a blast furnace.

Magnetite concentrate product

Making iron and steel made from magnetite ore reduces the emissions intensity:

- The sintering of magnetite ore produces heat which reduces the need for carbon-based fuel.
- The higher iron grade of magnetite ore and lower impurity content means less ore is required to produce the equivalent mass of sinter.
- Our Iron Bridge magnetite concentrate can be used to produce pellets, which has a lower emissions intensity than sintering and can be used in direct reduction furnaces that are significantly less emissions intensive than blast furnaces.

Developing new processes

We are conducting research into how we can adapt existing iron and steel making technologies to produce much less or even zero emissions, by using alternative fuels, reductants and renewable energy sources.

This includes using:

- Green hydrogen to generate heat and liberate oxygen from the iron oxide in a direct reduction iron (DRI) process to produce hot briquetted iron.
- Renewable electricity to liberate oxygen from iron oxide in an electrochemical process.

FFI aims to be a significant contributor to the decarbonisation of the global iron and steel sector by providing both green

iron and steel making technologies, as well as green energy such as green power and green hydrogen, to be used in these technologies.

Financial drivers

Our transition to an integrated green energy and resources company includes using shadow carbon pricing, offsets and the use of sustainable finance to align our investments decisions with our emissions reduction targets.

Carbon pricing

A shadow carbon price is a hypothetical estimate of the cost of GHG emissions that is used as a planning tool to help identify revenue opportunities and risks. It is an additional incentive to drive energy efficiencies and emissions reductions, and guide capital investment decisions.

As the true cost of emitting one tonne of CO₂-e emissions can be difficult to define, we apply a range of shadow carbon prices that consider the life of the asset or initiative being considered:

- US\$50/tCO₂-e over the short term, less than five years
- US\$100/tCO₂-e over the medium term of five to ten years
- US\$160/tCO₂-e over the long term of more than ten years.

We use carbon pricing to assign a monetary value to emissions under a range of scenarios in the evaluation of projects and throughout the investment decision making process. This provides insights into the climate related risks and opportunities and incentivises projects which use low or negative emission technologies.

We will continue to review the appropriateness of our carbon pricing and update as required, taking into account changing external policy and regulatory environments.

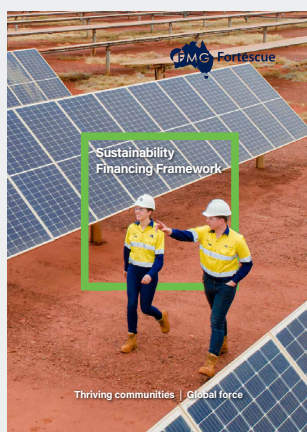
Carbon offset strategy

We follow the mitigation hierarchy and actively work to avoid and reduce emissions before considering offsets. We will only use offsets to abate residual emissions where economically viable decarbonisation opportunities and technologies are unavailable at the scale or within the timeframes required.

Fortescue was founded on the belief that communities should benefit from our success. We give preference to offsets that provide biodiversity, social and economic benefits to the communities where we operate.

During FY22, we expanded our due diligence criteria beyond environmental integrity to only procure offsets from projects that align with our Human Rights Policy. We will adhere to rigorous offset selection criteria to ensure only offsets that meet a high standard are sourced.

CASE STUDY

SUSTAINABLE
FINANCE

In November 2021, we launched our Sustainability Financing Framework, enabling the future issuance of debt instruments to access growing pools of sustainable capital to support investments in eligible green and social projects.

The Framework seeks to mobilise investors and capital to contribute to the realisation of the United Nations Sustainable Development Goals. Eligible projects will include investments in renewable energy, green hydrogen and ammonia, energy storage, clean transportation and pollution control, as well as projects that focus on employment opportunities, educational and vocational training and socio economic empowerment.

In April 2022, we successfully completed a US\$1,500 million Senior Notes offering, which included our inaugural US\$800 million 10-year Green Use of Proceeds Notes, which will be applied to eligible green projects. The Climate Bonds Initiative has included this capital raising on its green bond database.

The proceeds from the Green Senior Notes will be applied to a number of decarbonisation initiatives, including the 150MW solar generation component of the PEC Project, the acquisition of WAE and the hydrogen mobility project at our Christmas Creek mine site.

Maximising opportunities

We are working to maximise the opportunities of a low carbon future by transitioning into a vertically integrated green energy and resources company and pursuing options to produce mineral commodities essential to the energy transition.

FFI will chase three big revenue opportunities.

1. Provide green energy globally.
2. Develop and commercialise decarbonisation services, including its energy and technology products.
3. Develop, manufacture at scale, and sell new, innovative low carbon technology and equipment.

Green energy

FFI is becoming a global supplier of renewable electricity, green hydrogen and green ammonia. This will enable the decarbonisation of entire economies, including hard to abate sectors such as iron and steel production, fertilizer production, marine transport, and aviation.

FFI has entered into Memorandum of Understandings (MoUs) to supply green hydrogen with:

- Major European energy utility **E.ON** – to deliver up to five million tonnes per annum of green, renewable hydrogen to Europe by 2030.
- **Universal Hydrogen** – to negotiate an offtake arrangement to supply green hydrogen to power regional and other aviation sectors until 2035.
- UK construction giant **JC Bamford Excavators (JCB)** and **Ryze Hydrogen** – to purchase 10 per cent of FFI's global green hydrogen production.
- German high-tech polymer materials supplier **Covestro** – to formalise supplying the equivalent of up to 100,000 tonnes of green hydrogen per year.

FFI is also working with Australia's largest fertiliser supplier Incitec Pivot Limited to convert the existing Gibson Island ammonia production facility in Queensland to run on green hydrogen rather than natural gas. Initial studies found that using hydrogen was technically feasible and we have proceeded to the Front End Engineering and Design (FEED) phase.

These agreements allow FFI to develop a portfolio of green energy projects in several jurisdictions. Symbolic of the transition to green energy, FFI is looking to repurpose existing emissions intensive facilities, including coal fired power stations in the Hunter Valley in Australia and an oil refinery in New Zealand.

Our internal demand for green energy will accelerate at scale production which in turn reduces costs. This will benefit external customers and stimulate further demand.

Research and development

We have established a research and development facility at Hazelmeade in Perth that is focused on developing battery, hydrogen and ammonia powered haul trucks, other HME, trains, and marine vessels. We are expanding our capacity to develop innovative solutions to produce green energy through:

- Fortescue's acquisition of WAE
- FFI's acquisition of a 60 per cent equity in Dutch-based High yield Energy Technologies (HyET) Group.
- FFI's acquisition of Xergy's commercial assets to form Ionix.
- FFI's acquisition of a 20 per cent interest in Sparc Hydrogen, which is researching a technology that could use only sunlight and water to produce green hydrogen without the need for electrolysis.
- Joining forces with Airbus and Universal Hydrogen to enable the aviation industry to decarbonise through zero-emissions green hydrogen.

Manufacturing

FFI's GEM Centre in Gladstone, Queensland is under construction and will initially produce electrolyser stacks. Several growth stages have been planned, which could include manufacturing green technologies such as cables, batteries, wind turbines, solar photovoltaic cells, modules and arrays, and associated renewable energy infrastructure. The GEM Centre will be the first step in a series of projects that will continue to transform regional Australia through green industry manufacturing and energy production centres.

CASE STUDY

GREEN HYDROGEN STANDARD

The Green Hydrogen Organisation (GH2) launched the Green Hydrogen Standard (the Standard) in May 2022 at the Green Hydrogen Global Assembly in Barcelona. The Standard defines green hydrogen as hydrogen produced through the electrolysis of water with 100 per cent or near 100 per cent renewable energy with close to zero greenhouse gas emissions.

Green hydrogen projects that meet the Standard will be licensed by the GH2 to use the label 'GH2 Green Hydrogen' and will be eligible to obtain and trade GH2 certificates of origin for green hydrogen and derivatives such as green ammonia.

The Standard is based on a project-level certification and accreditation that must comply with six steps.

Fortescue worked in collaboration with the GH2 to develop the standard.

Green hydrogen is the only hydrogen production option strictly aligned with a 1.5 degree celsius pathway. The Standard builds trust and confidence between investors, producers, customers and consumers.

The Standard is available from www.gh2.org



CASE STUDY



DECARBONISING AVIATION

Fortescue's vision is to enable and accelerate the decarbonisation of hard to abate sectors within and beyond its own value chain. FFI has joined forces with world leading aeronautics manufacturer Airbus and US-based start-up Universal Hydrogen to develop green hydrogen fuelled aircraft by 2035.

The partnership with Airbus works to overcome the regulatory, infrastructure and supply chain challenges from producing green hydrogen to delivering it to airports and transferring it onto aircraft.

FFI and Universal Hydrogen will seek to develop green hydrogen production and logistics hubs, promote green hydrogen adoption and uptake, and negotiate a global green hydrogen offtake arrangement.

Diversification of mineral commodities

Our diversification strategy targets mineral commodities that support decarbonisation, including high iron content magnetite, copper and lithium. Activities undertaken to deliver on this strategy include global exploration programs and business development options through joint venture arrangements and acquisitions.

Fortescue has signed a MoU with Sinosteel to complete a rapid project assessment of its Midwest Magnetite Project in Western Australia that includes a rail and port development at Oakajee. Magnetite concentrate is well suited for low carbon processes such as direct reduction iron (DRI) using hydrogen to provide heat and act as a reductant.

Australian exploration activities have primarily been focused on early-stage target generation for copper-gold in the Paterson, Rudall and Goldfields regions in Western Australia. Additional exploration activity is underway in New South Wales and South Australia, including through the farm-in and joint venture agreement with Tasman Resources.

International exploration is focused on copper and other transitional metals, including lithium. Work in South America continues with drilling in Argentina while early stage target generation is being progressed in Peru, Chile and Brazil. Drilling at copper targets is being progressed in Kazakhstan. Exploration work in Portugal focuses on lithium.

Collaboration and engagement

Collaboration and engagement with our stakeholders is critical if we are to succeed in accelerating our transition to an integrated, renewable energy and green products company.

We regularly engage and collaborate with a wide range of stakeholders as early as possible and ensure engagement is regular, open, transparent and inclusive.

Throughout the year, we communicate with stakeholders through a range of channels including via our Annual General Meeting (AGM), media statements, Climate Change Policy, company publications, conferences, investor briefings and website.

Customers

We engage and collaborate with iron and steel making customers to reduce emissions by improving existing processes over the short to medium term. This assists with the development of new processes and supplying green energy solutions over the medium to longer term. Further details are provided under Iron and steel production page 15.

Suppliers

We have a long history of developing and building strong relationships across our supply chain. We engage and collaborate with suppliers to develop low emissions stationary energy, such as the solar-gas Power Purchase Agreement with Alinta Energy, and mobility solutions, such as our zero-emissions haul truck partnership with Liebherr.

We are developing standardised sustainability questions and criteria to include in our tendering processes. These have been trialled with selected suppliers to improve our systems and processes before they are rolled out across our procurement arrangements.

These measures will enable us to:

- Improve our understanding of upstream emissions and reduce them over time.
- Identify suppliers who meet our expectations on emissions reductions.
- Pursue options to collaborate with suppliers to develop new low emissions solutions.

Communities

Our transition to an integrated, renewable energy and green products company will create jobs and power the economy. We will work with governments, industry and the community to ensure a just transition.

As we progress with feasibility studies around the world, FFI has established numerous investment contracts with governments. These agreements place human rights ahead of environmental and economic considerations and include commitments by governments to:

- Respect human rights
- Ensure equality of education outcomes for girls and boys
- Eradicate modern slavery
- Prohibit forced and child marriage.

We are committed to ensuring the communities in which we operate benefit from our success and we will provide training, employment and business opportunities for local people.

Our social investment programs will focus on providing opportunities to vulnerable and indigenous communities and empower women and children. We also support these communities to become resilient to the physical impacts of climate change.

These programs, guided by our existing Social Investment Framework, ensure investment is aligned with our business objectives, our Sustainability Strategy and the United Nations Sustainable Development Goals.

As we transition to a low carbon world there will be challenges for some communities and we will engage with and support these communities. As part of this transition, new jobs will be created and others will evolve.

Governments

We value and invest in building positive longstanding relationships with governments around the world. In recent years we have actively supported and encouraged policy frameworks that incentivise innovation and technology development directed at reducing emissions and support opportunities to develop a range of clean energy and mineral projects.

This year, we welcomed the European Commission REPowerEU plan to rapidly reduce dependence on Russian fossil fuels and tackle the climate crisis. We worked directly with the EU and bilaterally with EU nations to promote market based incentives such as carbon contracts for difference schemes.

We also welcomed the bi-partisan commitment to Net Zero by 2050 in Australia and support a new era where the Commonwealth Government focuses on reducing emissions and establishing new industrial opportunities.

CASE STUDY



GEM CENTRE

Construction of a US\$83 million electrolyser factory, the first stage of the GEM Centre in Gladstone, Queensland, commenced in February 2022. The facility will have an initial capacity of 2GW per annum, which more than doubles current global production and will be enough to produce more than 200,000 tonnes of green hydrogen each year. The production of electrolyser stacks is due to start in 2023.

Construction of the GEM centre will create more than 100 jobs and once operational there will be up to 50

permanent jobs and several hundred indirect jobs that will support the local supply chain.

Additional stages of the GEM Centre will depend on FFI and its customers' requirements, but could include the manufacture of wind turbines, high-voltage electric cabling, solar photovoltaic cells, modules and arrays, and associated renewable energy infrastructure.

The GEM Centre will be the first step in a series of projects that will continue to transform regional Australia through green industry manufacturing and energy production centres.

FFI has also agreed with AGL to undertake a feasibility study to repurpose infrastructure at the Hunter Valley's Liddell and Bayswater coal-fired power stations to generate green hydrogen from water using renewable energy.

Pending feasibility study outcomes, initial renewable electricity production through new wind and solar could be 250MW, generating 30,000 tonnes of green hydrogen per year.

These projects reinforce Australia's potential to become a global green hydrogen superpower and in the process create thousands of local direct and indirect jobs and strengthen economies in regional Australia.

Investors

We engage regularly with the investment community through quarterly briefings, AGM, our annual reports, media statements and presentations.

Investor interest in sustainability, including climate change, continues to grow. During FY22, there was particular focus on our emission reduction targets, progress on decarbonisation, FFI green projects and technology developments, and the establishment of our Sustainability Financing Framework.

We value opportunities to better understand the interests and concerns of our investors and are committed to ongoing engagement.

Industry associations and research organisations

We are members of a broad range of industry groups and associations, allowing us to contribute to in a coordinated way to the development of effective policy frameworks. Memberships also facilitate the sharing of best practice, allowing us to access information and insights on material issues including climate change.

Associations and organisations are assessed against specific criteria before membership is recommended. All memberships require CEO approval.

Criteria considered in the selection and approval of memberships:

Value proposition	Benefits of joining and value to Fortescue
Policies and public positions	Alignment of the association's policies and public positions with our Values, objectives and policy framework, particularly regarding climate change, environmental stewardship, sustainability, diversity, human rights, First Nations peoples employment and community engagement
Conditions of joining and ongoing obligations	Internal commitment needed to meet conditions of memberships and ongoing obligations or standards
Members	Existing members of the association, reputation and potential risks
Governance	Strong governance demonstrating the association's competency, diversity, skills and experience
Management	Internal dedicated Executive to manage relationship and obligations

This year we participated in over 50 industry groups and associations, contributing A\$1.7 million in fees. Our most significant memberships of FY22 include:

- Chamber of Minerals and Energy Western Australia (CME) – A\$560,419
- Port Hedland Industries Council (PHIC) – A\$380,000
- Australian Resources and Energy Employer Association (AREEA) – A\$120,000
- Business Council of Australia (BCA) – A\$85,000

- Amira Global - A\$70,000.

Our previous memberships with DomGas Alliance and the New South Wales Minerals Council were discontinued in FY22, as we determined that these organisations were no longer aligned with our policies and public positions.

Our FY22 Industry Association Report will be released on 1 October 2022 and will be available at www.fortescue.com

Building resilience

Climate change has the potential to impact our entire value chain, including our operations, assets, supply chain, the communities in which we operate and the markets we serve.

To improve our understanding of the impact of climate change on Fortescue we have stress tested the resilience of our business strategy under three distinct scenarios. These insights enable us to adjust our business strategy to address risks and maximise opportunities.

Scenario 1: Unified Global Action

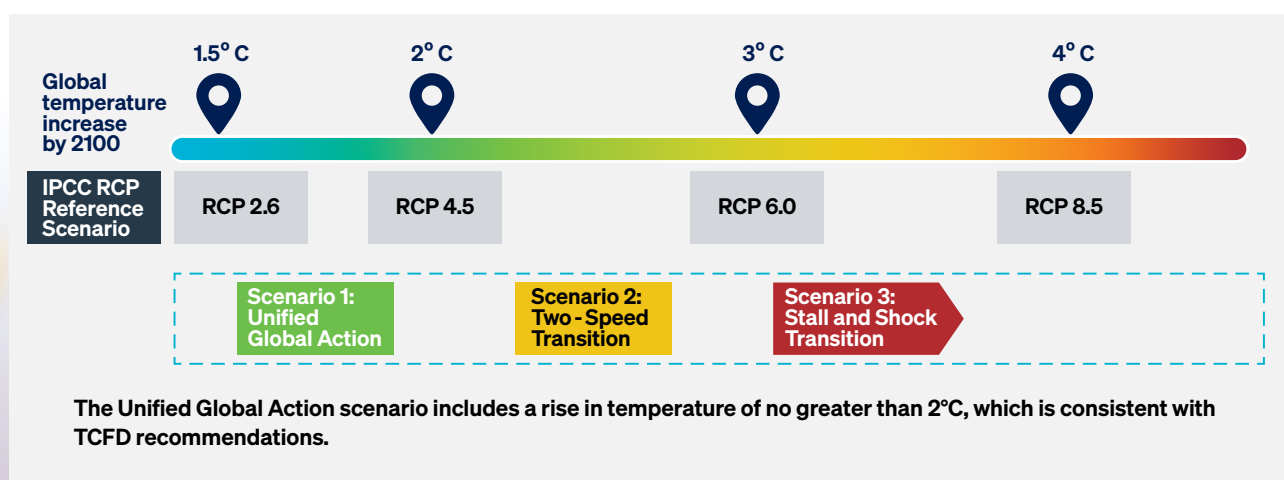
Coordinated global policy and behaviour shifts investment and consumption patterns, resulting in rapid decarbonisation. Global action limits the average global temperature increase to 1.5°C to 2°C by 2100.

Scenario 2: Two-speed Transition

'Greener' leading countries move quickly towards decarbonisation while 'lagging' countries decarbonise when it becomes economical. This results in an average global temperature increase of 2°C to 3°C by 2100.

Scenario 3: Stall and Shock Transition

Following a period of ineffective climate policy and slow decarbonisation, a climate shock results in a global economic contraction. The average global temperature rises to above 3°C by 2100.



Unified Global Action

Under this scenario, coordinated global emissions reduction policy and stakeholder activism shifts investment and consumption patterns beyond the decarbonisation of electricity to the deployment of low carbon solutions in hard-to-abate sectors, including heavy transport, shipping and steel production.

Following a short period of global economic instability, there is strong demand for the commodities required to support low emission and negative emission technologies. Government policy, incentives and private sector investment drive a hydrogen and electrification revolution.

Investors demand increased focus on the reduction of Scope 3 emissions. The decarbonisation of steel-making is led by an increase in the use of recycled steel scrap and increased investment in hydrogen-based green-steel technology and carbon capture, use and storage (CCUS).

Strong climate action results in significant transitional impacts. Those that are slow to respond are most impacted. High-emission businesses without clear adaptive strategies lose their licence to operate and find it increasingly difficult to secure capital.

The more severe physical impacts, and related economic and social disruptions, are likely averted.

IMPLICATIONS FOR FORTESCUE

Our business model prospers in the Unified Global Action scenario.

Demand for iron ore

- Demand for iron ore remains stable with higher market prices achieved for ore that yields lower CO₂ emissions, including magnetite from Fortescue's Iron Bridge operation.
- Effective blending and beneficiation increases processing costs but these costs are recouped through higher market prices.
- We are shielded from the transitional risks of policy changes that limit emissions and increase costs by our aggressive targets and decarbonisation strategy.

Demand for green hydrogen

- Demand for green hydrogen and green ammonia grows significantly.

Demand for transitional commodities

- Demand for commodities needed in a low carbon world, such as lithium and copper increases significantly.

Assets and access to capital

- Any physical impacts of climate change are minimised through appropriately designed and constructed assets.
- Funding markets for decarbonisation and 'green' growth projects become more liquid and lower cost.

Two-speed Transition

Under this scenario, global climate action occurs at two different speeds:

- 'Greener' leading countries move quickly to decarbonise and compete for dominance in low emissions technology.
- 'Lagging' countries transition passively and decarbonise only when it becomes economical.

Diverging levels of climate action leads to both transitional and physical climate impacts.

Organisations that decarbonise early and offer low carbon products and services, enhance their resilience to transitional risks.

There is a weakened economic outlook with emerging demand for commodities required to support low emissions and negative emission technologies. Greener, leading countries form distinct trading alliances based on climate policy.

Despite an increase in significant climate-related physical impacts, there is no coordinated, aggressive global action to reduce emissions.

IMPLICATIONS FOR FORTESCUE

Our business model remains robust in the Two-speed Transition scenario.

Demand for iron ore

- Demand for iron ore in greener countries remains stable, with increased demand in lagging countries.
- Greener countries pay a higher market price for ore that yields lower CO₂ emissions.
- We are shielded from the transitional risks of emissions reduction policy changes, including increased production costs by our aggressive targets and decarbonisation strategy.

Demand for green hydrogen

- Demand for green hydrogen increases in greener countries.
- The cost to develop and deploy low carbon technologies decreases slowly, limiting large-scale global implementation.

Demand for transitional commodities

- Demand for commodities needed in a low carbon world, such as lithium and copper increases in greener countries.

Assets and access to capital

- Investors divest from high emission iron ore producers, those that are not addressing Scope 3 emissions, and the cost of capital increases for those that do not decarbonise.
- The physical impacts of climate change, including increased intense rainfall events, water shortages and increased temperatures, increase the risks to assets and production rates. Additional expenditure is required to minimise impacts.
- Funding markets for decarbonisation and 'green' growth projects become more liquid and lower cost.

Stall and Shock Transition

Continued global economic growth, ineffectual climate policy and limited decarbonisation lead to significant increases in emissions. There is minimal investment in low carbon technology and innovation is limited.

The frequency and severity of physical impacts increases and irreversible tipping points are exceeded. A climate shock eventuates in the late 2020s to early 2030s, which sees a significant global economic contraction and prompts sudden, disruptive and costly climate action. This imposes uncertain and challenging conditions across the world.

Pre-shock there is minimal change to access to capital. Post-shock, access to capital becomes more difficult and capital comes at a premium. Investment in commercialising proven technology, such as CCUS, becomes more cost effective due to strong policy action. Investors demand a greater focus on the reduction of Scope 3 emissions.

Once tipping points are exceeded and the physical impacts of climate change are significant, resulting in additional social and economic disruptions.

IMPLICATIONS FOR FORTESCUE

This scenario represents the greatest challenge to our company and to the global community.

Demand for iron ore

- **Pre-shock**
 - The demand for steel and iron ore increases with global economic growth. There is no significant advantage to producing lower emissions products or green steel.
 - With no material changes to emissions reduction policy, the cost of production remains steady.
- **Post-shock**
 - The demand for higher grade iron ore products and green steel increases rapidly. Additional beneficiation of iron ore is required to meet demand, which increases production costs.

- As a result of early decarbonisation, we do not experience significant increases to the cost of production.
- We are shielded from significant post-shock transitional risks by our aggressive targets and decarbonisation strategy.

Demand for green hydrogen

- **Pre-shock**
 - Investment and innovation in decarbonisation solutions for hard-to-abate sectors are low. The cost to develop and deploy low carbon technologies remains high, slowing large-scale implementation.
 - With limited global climate action, demand for green hydrogen and green ammonia is low, and initial investment in FFI projects is constrained by factors such as access to capital and diminished returns on investment.
- **Post-shock**
 - Demand for green hydrogen and green ammonia increases significantly.

Demand for transitional commodities

- Demand for commodities needed in a low carbon world, such as lithium and copper only increase post-shock.

Assets and access to capital

- **Pre-shock**
 - The physical impacts of climate change, including extreme weather events, increase and additional expenditure is required to minimise impacts to assets and production.
- **Post-shock**
 - Investors divest from high emission iron ore producers, those that are not addressing Scope 3 emissions, and the cost of capital increases for those that do not decarbonise.
 - Funding markets for decarbonisation and 'green' growth projects become liquid and very low cost.
 - Operations are impacted by the physical impacts of climate change, including intense rainfall events, water shortages and increased temperatures.
 - Extreme physical impacts cause disruptions to upstream and downstream value chains.

Signposts

We monitor trends and developments to identify any emerging risks and opportunities, consider their impact on current risks and opportunities and form insight into how our scenarios might evolve over time.

These signpost events include:

- Climatic trends and the frequency and severity of extreme weather events.
- Climate policy development.
- Technological trends, such as those that foster the development of green hydrogen and green steel.
- Major events such as the war in Ukraine.

RISK MANAGEMENT

We apply a company wide approach to the management of climate-related risks to ensure a consistent approach to the recognition, measurement and evaluation of risks



Approach to risk management

Our approach to risk management is underpinned by our Values and culture. This emphasises the collective responsibility of management, employees and contractors to be aware of the risks related to their activities and to be accountable for ensuring those risks are effectively managed and transparently reported.

Critical elements of the Fortescue's Risk Management Framework (FRMF) include:

- Embedding risk management into critical business activities, processes and decisions.
- Understanding the threats and opportunities to achieve our objectives.
- Applying a structured approach to risk management.
- Using outcomes of risk assessments to drive actions that mitigate risks consistent with Fortescue's risk appetite.
- Maintaining a strong focus on the resilience of our business through a reliance on effective recovery plans for material adverse events.
- Reporting regularly to the Executive team and the Board on the outcomes of risk management activities.

Our CEO is accountable to the Board for ensuring risk is appropriately managed, including those related to climate change.

We have a dedicated Risk Management team who reinforces our risk culture by ensuring risk transparency and fostering open discussion and challenge of the Group's risk taking and risk management processes.

Our FRMF is aligned to the international risk management standard ISO 31000:2018 as outlined below:

- **Risk identification:** The Risk and Assurance team engages with relevant stakeholders across the organisation to update and provide clarity around developments in known and emerging risks across the business' value chain in the short, medium and long-term horizon.
- **Risk assessment:** Each risk is analysed against criteria for consequence and likelihood.
- **Respond:** Options for managing each risk include accepting the risk, avoiding the risk, transferring the risk or mitigating the risk. When reviewing controls for mitigating risks, their effectiveness is evaluated in the light of Fortescue's risk appetite.
- **Monitor:** Progress in managing High and Extreme risks is reported to the ARMSC and the Board, which meet quarterly. Fortescue's CFO chairs the DSC, which meets at least five times each year and reviews progress on managing climate-related risks.

Identified risks

Climate change presents both risks and opportunities to our business and during FY22 we undertook a climate change focused risk assessment, the outcomes of which are summarised on pages 24 to 26. The risks are classified as transitional or physical risks.

FFI is currently exploring options to pursue renewable and green hydrogen projects in over 50 countries. The evaluation of potential projects will include an assessment of climate-related risks.

Transitional climate risks

Transitional risks are those associated with the transition to a low carbon economy, which may be due to changes in policies, technologies and markets.

As we shift to a low carbon world, transitional risks will emerge that can impact and change investment and consumption patterns.

Through our Decarbonisation Strategy and emissions reduction targets we look to minimise our transitional risks and create opportunities by supplying green hydrogen and ammonia, developing innovative green solutions and manufacturing critical components for the energy transition, including electrolyzers.

RISK	RISK DETAIL	MITIGATION AND OPPORTUNITIES
Policy and regulatory changes	Evolving policy and regulatory changes, including those that cap emissions, may increase expenditure required to meet emissions caps.	<p>We are focused on reducing our emissions and have a voluntary target to achieve carbon neutrality across our operations by 2030. This is expected to exceed any future regulatory requirements within Australia including any reduction to the Safeguard Mechanism baselines covering our facilities.</p> <p>We will continue to work with industry bodies, peers, governments, and communities to ensure an effective regulatory framework.</p>
Technical viability of decarbonisation strategy	<p>Technical challenges may impact our ability to achieve carbon neutrality.</p> <p>The technology required for the solutions to be delivered by 2030 has not been proven at scale in a mining environment.</p>	<p>We are investing in renewable energy to power our operations and are making significant investments to research, develop and trial technical solutions to decarbonise our haul trucks, rail locomotives, bulk cargo ship engines and drill rigs including:</p> <ul style="list-style-type: none"> • Acquiring WAE, a world-leading technology and engineering business • Developing the zero emissions Infinity Train • Partnering with Liebherr to develop the technology to integrate our zero emissions power system technologies into haul trucks • Purchasing two battery electric locomotives • Continuing to develop partnerships with key suppliers and industry experts including the CSIRO and our OEMs
Reduced demand for products	Downstream market developments, including the introduction of a carbon tax, carbon border adjustment, and/or emissions caps impacting the Chinese steel manufacturing sector may reduce the demand for our iron ore products.	<p>We will continue to engage and collaborate with our customers as they reduce their emissions, including the beneficiation of our iron ore products. We will also produce a higher grade magnetite concentrate through the Iron Bridge project.</p> <p>As emissions reduction frameworks evolve, we will ensure the environmental performance of our products meets customer requirements.</p> <p>We continue to assess and pursue diversification opportunities in:</p> <ul style="list-style-type: none"> • Global supply of green hydrogen/ammonia • Production of green iron ore • Manufacturing of critical components such as electrolyzers • Developing and supplying low carbon solutions on a commercial basis, such as zero emissions haul trucks and ammonia powered train and marine engines • Expanding our commodity base, including copper and lithium
Reputation damage	<p>Technical solutions to meet our decarbonisation targets may not be commercially viable exposing us to reputational damage. This may impact our:</p> <ul style="list-style-type: none"> • Social licence to operate • Product demand • Financing • Investment opportunities. 	<p>We are taking a leadership position on climate change.</p> <p>We have set a target to achieve carbon neutrality across our operations by 2030 and are implementing an aggressive decarbonisation strategy that includes significant investment in renewable energy and low emission fuels for our stationary power and mobile fleet assets.</p> <p>We are continuing to invest in FFI to become a global supplier of renewable energy and green hydrogen to assist in decarbonising hard-to-abate sectors.</p> <p>During FY22, we raised US\$1.5 billion of debt facilities through a Senior Notes issue, of which US\$800 million was through our Sustainable Financing Framework, aligning our funding policy with our sustainability strategy and climate change objectives.</p> <p>We ensure regular and transparent engagement with our stakeholders on our climate strategy and progress on achieving our objectives through direct consultation, quarterly briefings, AGM, annual reports, media statements and presentations. We have voluntarily aligned our climate change reporting with TCFD recommendations since 2018.</p>

Fortescue is committed to being a global leader in addressing climate change, giving us an advantage in a world transitioning from fossil fuels to green energy.



Physical climate risks

Physical risks reflect how changes to the frequency and intensity of extreme and ongoing weather can impact, disrupt and damage business operations, assets and supply chains, as well as lead to broader impacts such as environmental stress, food and water security and trends in migration.

Physical impacts from climate change are inevitable. The rate and extent of change will depend on global decarbonisation efforts. The IPCC AR6 Report found that every additional 0.5 degrees celcius increase in temperature causes clearly discernible increases in the intensity and frequency of hot extremes and heavy precipitation, as well as agricultural and ecological droughts.

The TCFD distinguishes between the following physical climate risks:

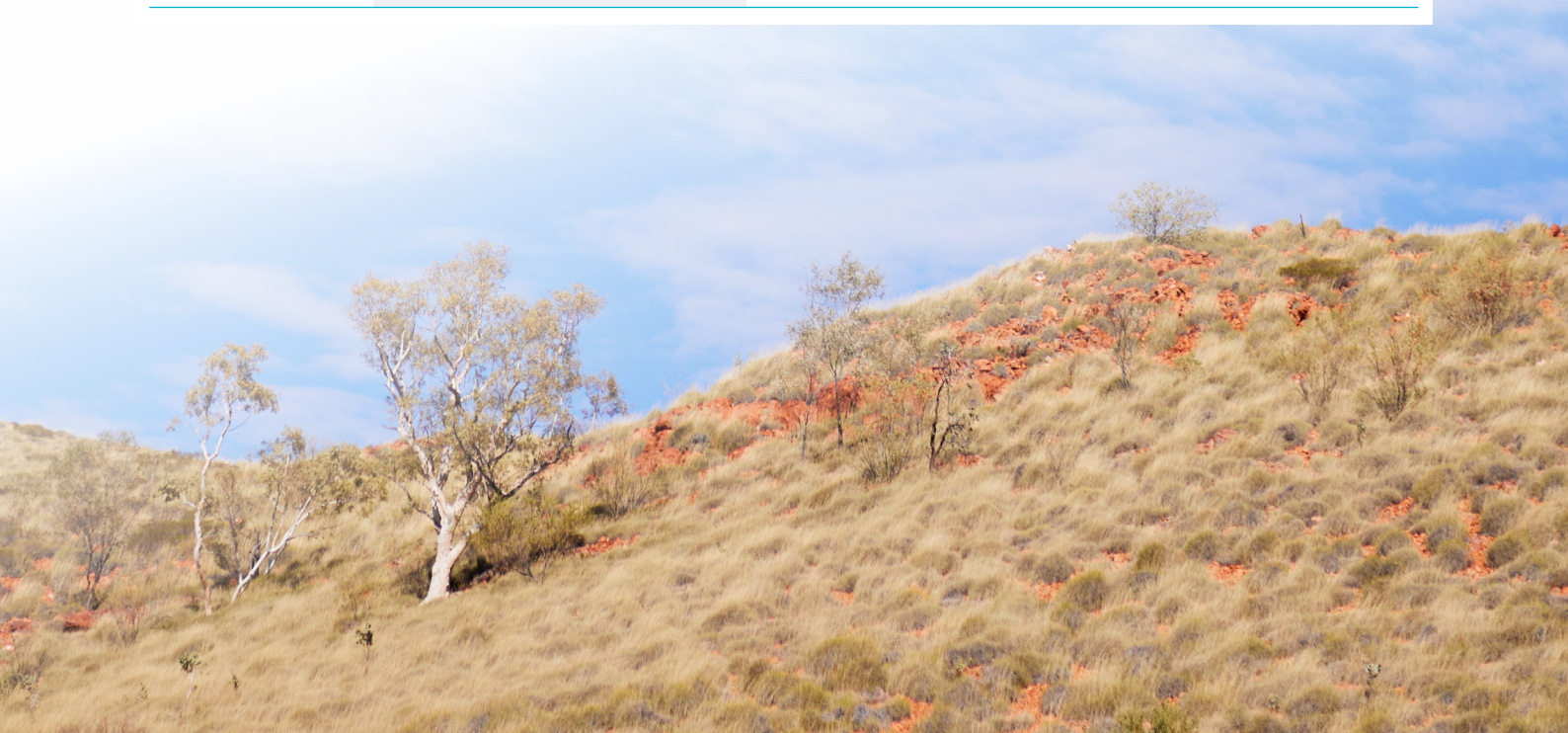
- **Acute risks** - A change in the frequency and/or intensity of extreme weather events, for example cyclones or floods.
- **Chronic risks** - Longer-term shifts in climate patterns, for example sustained higher temperatures, lower rainfall and a rise in sea level.

RISK	RISK DETAIL	MITIGATION AND OPPORTUNITIES
ACUTE PHYSICAL RISKS		
Increased severity of extreme weather events	<p>The increased severity of cyclones and flooding from climate change may cause material damage to assets, leading to operational disruptions, impacts to production rates and increased costs associated with asset repair.</p> <p>This risk may also impact our value chain over the long-term.</p>	<p>Our climate change strategy focuses on building resilience into operations to protect assets and minimise operational downtime from extreme weather events.</p> <p>We have constructed our port, rail and mine infrastructure to meet engineering specifications, accounting for the future risk of extreme weather events by taking account of:</p> <ul style="list-style-type: none"> • Current industry standards, including the Australian Rainfall and Runoff Guidelines and the Standard Engineering Specification for Drainage and Flood Protection • The economic lives of the assets • The Bureau of Meteorology and CSIRO climate projections. <p>We review the design of our assets and infrastructure as new information becomes available, including emerging patterns associated with extreme weather events. These factors are analysed and appropriate actions identified and implemented.</p> <p>All new projects assess and develop management plans to address the potential physical impacts of climate change.</p> <p>We continue to work closely with the Pilbara Ports Authority and other operators to minimise impacts to ship movements during extreme weather events in Port Hedland.</p> <p>We conduct annual risk assessments that consider the future physical impacts of climate change.</p> <p>We are investigating new approaches to assess the exposure of our rail assets to flood hazards under climate change scenarios.</p>

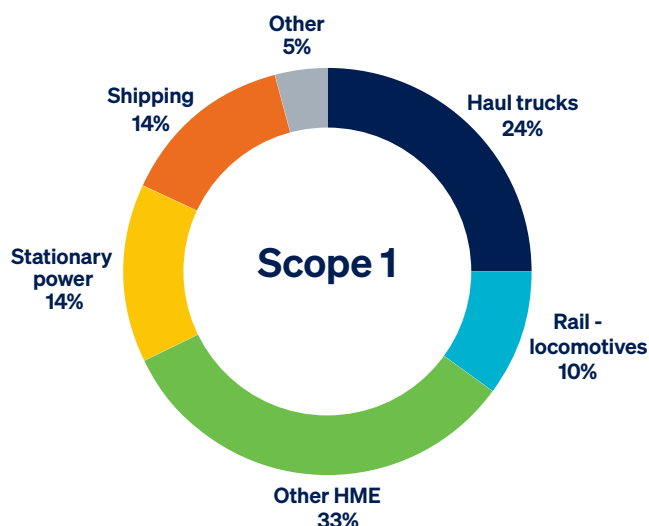
RISK	RISK DETAIL	MITIGATION AND OPPORTUNITIES
Increased frequency of extreme heat	<p>Climate change may lead to an increase in the severity or frequency of bushfires which have the potential to cause material damage and/or production delays to our mining and rail operations.</p> <p>Increased heat stress can put employee safety at risk and disrupt operations.</p>	<p>We are focused on building resilience into our operations to ensure assets are protected and operational downtime from bushfires is minimised.</p> <p>We implement a Bushfire Risk Management program across all our sites which focuses on the protection of people and key assets/infrastructure, including fire buffer zones for each asset.</p> <p>The program incorporates the use of prescribed burning to reduce fuel loads and minimise the frequency, intensity and duration of bushfires.</p> <p>Engagement with Traditional Custodians is an important component of our Bushfire Risk Management program.</p> <p>We also implement a Heat Management Procedure that details how to conduct a thermal risk assessment and to inform heat management controls.</p>

CHRONIC PHYSICAL RISKS

Rising sea levels and storm surge inundation	<p>Global sea level rises coupled with storm surge has the potential to cause material damage to port infrastructure through inundation. Sea levels may rise due to expanding ocean volumes from temperature increases and from melting glaciers and ice sheets.</p>	<p>Our climate change strategy focuses on building resilience into our operations to protect assets and minimise operational downtime, this includes adjusting shipping schedules and tonnage as required during extreme sea level changes.</p> <p>Our port infrastructure has been constructed to meet engineering specifications, accounting for the risk of extreme weather events, rising sea levels and potential physical impacts of climate change.</p> <p>Our port infrastructure has been designed to an Australian Height Datum (AHD) of 6.8m. This takes account of current independent modelling on storm surge levels and potential sea level rises.</p> <p>All new projects assess and develop management and mitigation mechanisms to address the potential physical impacts of climate change.</p>
Changes in precipitation patterns	<p>The potential for prolonged drought events or changes to precipitation patterns in the Pilbara may place increasing stress on the availability of water resources to the business. This may delay approvals, lead to more stringent controls and impact relationships with local stakeholders.</p>	<p>Our water strategy is focused on reducing water usage across our operations. This includes adopting technological solutions and using metrics and internal performance standards to proactively manage water scarcity risks.</p> <p>We assess the extent to which prolonged droughts may place additional stress on mine water supplies and may increase the risk of non-compliance with environmental approvals.</p>



FY22 EMISSIONS PROFILE



Scope 1 and 2 emissions

Our FY22 Scope 1 emissions, including shipping, were 2.21 million tonnes of CO₂-e, and our Scope 2 emissions from electricity purchases were 0.33 million tonnes of CO₂-e, yielding gross emissions from our operations of 2.55 million tonnes of CO₂-e.

Scope 1 and 2 emissions are consistent with those emitted in FY21 despite an increase in operations at our Eliwana mine site which was not part of our FY20 baseline. Other variations to the emissions profile from FY21 include:

- A decrease in Scope 1 emissions from our Cloudbreak and Christmas Creek mine sites as the Chichester solar-gas hybrid facility commenced operation.
- A decrease in Scope 1 emissions from our own cargo vessels as the number of voyages decreased while our vessels underwent their five-year maintenance program.
- An increase in Scope 2 emissions from 0.16 million to 0.33 million as Alinta Energy started supplying power to the Chichester Hub using a mix of solar and gas-fired generation.

Our increased use of renewable electricity from Alinta Energy's Chichester solar-gas project has led to our emissions intensity of electricity falling from 3.50 to 3.32.

In line with our commitment to reduce net emissions annually from our FY20 baseline, we have procured and surrendered high quality offsets to reduce our net emissions to 2.28 million tonnes of CO₂-e, which is a three per cent year on year reduction from our FY20 operational emissions baseline.

Adjustments to baselines

During FY22, we adjusted the FY20 baselines for our operational emissions reduction targets to account for the reclassification of emissions from our eight cargo vessels from Scope 3 to Scope 1. The emissions from our cargo vessels were calculated from actual fuel usage. The adjustment increased our FY20 baseline from 2.09 million tonnes of CO₂-e to 2.43 million tonnes of CO₂-e, while the FY21 baseline for the Scope 3 emissions reduction target has decreased to 247 million tonnes of CO₂-e.

The adjusted calculations are consistent with the international Greenhouse Gas Protocol's (GHG Protocol) Corporate Value Chain (Scope 3) Accounting and Reporting Standard and have been independently assured by KPMG.

Offsets

During FY22, we acquitted offsets to reduce our net emissions by 0.26 million tonnes of CO₂-e. These included Australian Carbon Credit Units (ACCUs) from a range of Human Induced Regeneration projects and Verified Carbon Units from the Caribbean Guatemala Conservation Coast project and wind power projects.

Some of the ACCUs surrendered were from the Curraweena Regeneration Project in New South Wales. This project established permanent native forests on land that had previously been cleared and regrowth suppressed for at least 10 years.

Regeneration was encouraged by altering traditional farming land management practices. The project is located next to a regional National Park and increases the habitat for native flora and fauna.

Scope 3 emissions

Scope 3 emissions are those emissions that fall within a company's value chain but are outside its operational control. Our Scope 3 estimates are informed by the international GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. In accordance with this guidance, estimates for quantified Scope 3 emissions that were determined to be material are provided in the data tables.

During FY22 we revised the methodologies used to estimate emissions from manufacturing crude steel and for chartered shipping from the previous approach that drew on industry level benchmarks.

To enable more accurate calculations, we commissioned global company CRU to provide emissions factors for transforming Fortescue's iron ore products into crude steel within our destination markets. This captures the impact of changes in our product mix and iron and steel production process on associated emissions.

Our Scope 3 emissions in FY22 were 255 million tonnes of CO₂-e, which is 3.1 per cent higher than our Scope 3 emissions in FY21 of 247 million tonnes of CO₂-e. This increase is due to our greater production of iron ore and some changes in our product mix and destination markets.

We expect that Scope 3 emissions from our customer steel mills will continue to trend downwards over time as we increase our focus on modifying the processing of our ores to maximise metallurgical performance and support our customers in adopting innovative lower emissions processes and technologies.

Details related to engagement with our supply chain and customers, including information on the opportunities being pursued to reduce our Scope 3 emissions in steel manufacturing, are detailed under Iron and steel production page 15.

Details of the methodology used to estimate Scope 3 emissions can be found on our website at www.fortescue.com

CORPORATE DIRECTORY

Data tables

EMISSIONS DATA	FY22	FY21	FY20	FY19
Scope 1 and Scope 2 emissions (million tonnes CO₂-e)				
Total Net Scope 1 and 2 emissions	2.28	2.36*	2.43*	1.86
Gross Scope 1 emissions (excl. shipping)	1.91	2.08	1.93	1.70
Gross Scope 1 shipping emissions	0.31	0.32	0.34	n/a
Gross Scope 2 emissions	0.33	0.16	0.16	0.16
Total Gross Scope 1 and 2 emissions	2.55	2.56*	2.43*	1.86
Emission reduction through offsets	0.26	0.20	-	-
Emissions intensity in electricity generation (CO ₂ /Mt ore processed)	3.32	3.50	3.49	3.61
Energy consumed				
Diesel consumption (million litres)	634	700	641	558
Natural gas consumption (PJ)	3.4	3.6	3.6	3.5
Other (PJ)	0.6	0.5	0.4	0.3
Non-renewable electricity purchased (GWh)	494	260	260	245
Renewable electricity purchased (GWh)	87.7	0.7	0.4	0.3
Total net energy consumed (PJ)	30.6	32.0	29.7	26.2
Scope 3 emissions (million tonnes CO₂-e)				
Crude steel manufacturing	250.37	242.83	244.12	N/A
Chartered cargo shipping	1.75	1.68	1.67	N/A
Purchased good and services	2.07	1.84	1.82	N/A
Capital goods	0.27	0.52	1.57	N/A
Fuel and energy refining and transport	0.12	0.12	0.11	N/A
Employee commuting	0.10	0.06	0.04	N/A
Business travel	0.03	0.02	0.03	N/A
Total Gross Scope 3 emissions	254.73	247.06	249.36	N/A

*Restated to include emissions from Fortescue's cargo vessels.

Navigational index

This navigational index references the location of TCFD-aligned disclosures within our FY22 Climate Change Report.

TCFD RECOMMENDATION	DISCLOSURE	LOCATION
Governance – Disclose the organisation’s governance around climate change-related risks and opportunities.		
a) Describe the Board’s oversight of climate-related risks and opportunities.	Governance	pages 8-9
b) Describe management’s role in assessing and managing climate-related risks and opportunities.	Governance	pages 8-9
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.		
a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long-term.	Risk management	pages 23-26
b) Describe the impact of climate-related risks and opportunities on the organisation’s businesses, strategy and financial planning.	Risk management	pages 23-26
c) Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Scenario analysis	pages 20-22
Risk management – Disclose how the organisation identifies, assesses and manages climate-related risks.		
a) Describe the organisation’s processes for identifying and assessing climate-related risks.	Risk management	pages 23-26
b) Describe the organisation’s processes for managing climate-related risks.	Risk management	pages 23-26
c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation’s overall risk management.	Risk management	pages 23-26
Metrics and targets – Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.		
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 targets FY22 emissions profile	page 10 pages 27-29
b) Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	FY22 emissions profile	pages 27-29
c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Our targets FY22 emissions profile	page 10 pages 27-29

Navigational index

This navigational index references the location of Climate Action 100+ aligned disclosures within our FY22 Climate Change Report.

DISCLOSURE INDICATORS		DISCLOSURE	LOCATION
1 Net zero GHG emissions by 2050 (or sooner) ambition			
1.1	The company has set an ambition to achieve net-zero GHG emissions by 2050 or sooner.	Our targets	page 10
2 Long-term (2036-2050) GHG reduction target(s)			
2.1	The company has set a target for reducing its GHG emissions by between 2036 and 2050 on a clearly defined scope of emissions.	Our targets	page 10
2.2	The long-term (2036 to 2050) GHG reduction target covers at least 95% of Scope 1 & 2 emissions and the most relevant Scope 3 emissions (where applicable).	Our targets	page 10
2.3	The target (or, in the absence of a target, the company's latest disclosed GHG emissions intensity) is aligned with the goal of limiting global warming to 1.5°C.	Our targets	page 10
3 Medium-term (2026 to 2035) GHG reduction target(s)			
3.1	The company has set a target for reducing its GHG emissions by between 2026 and 2035 on a clearly defined scope of emissions.	Our targets	page 10
3.2	The medium-term (2026 to 2035) GHG reduction target covers at least 95% of Scope 1 & 2 emissions and the most relevant scope 3 emissions (where applicable).	Our targets	page 10
3.3	The target (or, in the absence of a target, the company's latest disclosed GHG emissions intensity) is aligned with the goal of limiting global warming to 1.5°C.	Our targets	page 10
4 Short-term (up to 2025) GHG reduction target(s)			
4.1	The company has set a target for reducing its GHG emissions up to 2025 on a clearly defined scope of emissions.	Our targets	page 10
4.2	The short-term (up to 2025) GHG reduction target covers at least 95% of Scope 1 & 2 emissions and the most relevant Scope 3 emissions (where applicable).	Our targets	page 10
4.3	The target (or, in the absence of a target, the company's latest disclosed GHG emissions intensity) is aligned with the goal of limiting global warming to 1.5°C.	N/A	N/A
5 Decarbonisation strategy			
5.1	The company has a decarbonisation strategy to meet its long and medium-term GHG reduction targets.	Decarbonisation	pages 11-15
5.2	The company's decarbonisation strategy includes a commitment to 'green revenues' from low carbon products and services.	Maximising opportunities	pages 16-18
6 Capital allocation alignment			
6.1	The company is working to decarbonise its future capital expenditures.	Governance Financial drivers	pages 8-9 page 15
6.2	The company discloses the methodology used to determine the Paris alignment of its future capital expenditures.	Our targets	page 10

DISCLOSURE INDICATORS		DISCLOSURE	LOCATION
7 Climate policy engagement			
7.1	The company has a Paris Agreement-aligned climate lobbying position and all of its direct lobbying activities are aligned with this.	Industry associations and research organisations	page 19
7.2	The company has Paris Agreement-aligned lobbying expectations for its trade associations, and it discloses its trade association memberships.	Industry associations and research organisations	page 19
7.3	The company has a process to ensure its trade associations lobby in accordance with the Paris Agreement.	Industry associations and research organisations	page 19
8 Climate governance			
8.1	The company's board has clear oversight of climate change.	Governance	page 8-9
8.2	The company's executive remuneration scheme incorporates climate change performance elements.	Governance	page 8-9
8.3	The board has sufficient capabilities/competencies to assess and manage climate related risks and opportunities.	Governance	page 8-9
9 Just transition			
9.1	The company has made a formal statement recognising the social impacts of its climate change strategy	Communities	page 18
9.2	The company has committed to Just Transition principles	Communities	page 18
9.3	The company engages with its stakeholders on Just Transition	Communities	page 18
10 TCFD disclosure			
10.1	The company has committed to implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).	About this report Collaboration and engagement	page 5 page 18-19
10.2	The company employs climate-scenario planning to test its strategic and operational resilience.	Building resilience	pages 20-22

GLOSSARY

TERM	DEFINITION
ACCUs	Australian Carbon Credit Units
ARMSC	The Audit, Risk Management and Sustainability Committee
CO ₂ equivalent (CO ₂ -e)	The universal unit of measurement to indicate the aggregate carbon dioxide equivalent emissions of carbon dioxide (CO ₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.
Existing operations operational in FY21	Refers to the Solomon, Cloudbreak and Christmas Creek mine sites, the railway connecting the mines with Herb Elliott Port.
FFI	Fortescue Future Industries, a wholly owned subsidiary of Fortescue established in FY21 to become a global supplier of green hydrogen, green technology and renewable energy manufacturing.
GW	Gigawatt or 1 billion watts
HME	Heavy mining equipment, such as diggers, excavators and drilling units.
IPCC	Intergovernmental Panel on Climate Change
MW	Megawatt or 1 million watts
PEC	Pilbara Energy Connect
PJ	Petajoule or a million gigajoules
Scope 1 emissions	Emissions from activities and operations Fortescue directly controls, such as those from its mining fleet and electricity generating facilities.
Scope 2 emissions	The indirect emissions a third party produced to supply Fortescue with energy, most typically electricity.
Scope 3 emissions	Indirect emissions within Fortescue's value chain (excluding Scope 2), including upstream and downstream emissions.
TCFD	The Task Force on Climate-related Financial Disclosures which the Financial Stability Board established to develop recommendations for more effective climate-related disclosures that enable a better understanding of carbon-related assets and exposures to climate-related risks.
VCUs	Verified Carbon Units, a certification standard for voluntary offsets that Verra administers.
WAE	Williams Advanced Engineering



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