



2003 - 2023

WE ARE FORTESCUE

THE POWER OF NOW

20 YEAR  
ANNIVERSARY

FY23  
CLIMATE  
CHANGE  
REPORT

# The driving force for our green future

## Our Values will never change

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

---

**Safety**

---

---

**Integrity**

---

---

**Family**

---

---

**Enthusiasm**

---

---

**Empowerment**

---

---

**Courage and  
determination**

---

---

**Frugality**

---

---

**Generating  
ideas**

---

---

**Stretch targets**

---

**Humility**

# CONTENTS

To view the full suite of reports

FY23 Annual Report



FY23 Sustainability Report



FY23 Corporate Governance Statement



Scan the QR code for more information:



01	Overview	10
02	Our targets	19
03	Our strategy	20
04	Managing risk	28
05	Governance	33
06	Industry and research partners	35

## Important note

This report should be read in its entirety, together with the Forward Looking Statement Disclaimer at the back of this report.

## Acknowledgement of Country

Fortescue acknowledges the First Nations people 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 people. We pay our respects to the culture and people, their Elders and leaders, past, present and emerging.



*The Fortescue journey* by artist Bobbi Lockyer.

The Kariyarra, Ngarluma, Nyul Nyul and Yawuru artist and designer created a vibrant painting that reflects our journey.

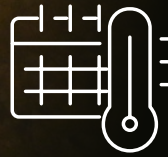
The colours used throughout the report are inspired by this painting.

# GLOBAL WARMING

**2023: a turning point in climate history**



**HIGHEST GLOBAL  
OCEAN TEMPERATURE  
ON RECORD**



**HOTTEST MONTH  
ON RECORD  
(JULY 2023)**



**WORST WILDFIRE  
SEASON IN  
CANADA'S HISTORY**



**LOWEST ANTARCTIC  
SEA ICE LEVELS  
ON RECORD**

**It has been over 3 million years since  
the world has warmed 2-3°C**



# WHERE IS THE WORLD HEADING?

2%

chance  
of staying  
below 1.5°C

34

billion tonnes  
CO<sub>2</sub> emitted  
per year in 2100  
(roughly same as today)

3.2°C

warming (2.2-3.5C)  
by 2100  
(IPCC, 2023)

(The above numbers are estimations only)

Source: <https://www.nature.com/articles/s43247-021-00097-8>

[https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC\\_AR6\\_SYR\\_LongerReport.pdf](https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf)

## Most tipping points are not only possible – they are likely



Source: <https://www.science.org/doi/10.1126/science.abn7950>

**“Stabilising at or below... 1.5°C warming avoids the most severe climate impacts on humans and other species.”**

*Professor Johan Rockström (Nature, 2023)*

Source: <https://www.nature.com/articles/s41586-023-06083-8>

# WE ARE FORTESCUE

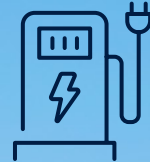
The number 1 integrated green technology,  
energy and metals company



One of the world's lowest  
cost iron ore company's  
working to develop green  
iron technologies



A leading green  
energy company



Building technologies  
to decarbonise  
heavy industry



Delivered more than  
**\$A32.6**bn  
in dividends to our  
shareholders to date



Safely delivering  
our projects and  
sharing the benefits  
with all communities  
where we operate





# OUR FY23 EMISSIONS

---

Fortescue emits more than

**2.5** mt of CO<sub>2</sub>-eq

into the atmosphere every year from our Australian iron ore operations and Fortescue marine vessels, which consist of eight very large ore carriers (VLOCs) and nine tugboats that operate under Fortescue's operational control in Port Hedland.

---

Customers of our iron ore – primarily steel mills located in Asia – emit a further

**261.5** mt CO<sub>2</sub>-eq annually.

---

Scope 1 emissions were

**2.2** mt of CO<sub>2</sub>-eq

Scope 2 emissions from power purchases were

**0.35** mt of CO<sub>2</sub>-eq

---

Our Scope 3 emissions in FY23

**5% higher**

than in FY22.

This increase in Scope 3 emissions was caused primarily by a rise in the amount of iron ore shipped, from 189 million tonnes in FY22 to 192 million tonnes in FY23.

An aerial photograph of a lush green mangrove forest bordering a calm river. The scene is captured during the golden hour of sunset, with a warm, orange glow over the water and trees. In the distance, a bridge spans across the river. The foreground is dominated by the dense canopy of the mangrove trees, reflecting in the water.

**WE CONTINUE TO LEAD:**

**Real zero 2030**

**No voluntary carbon offsets**  
(for Scope 1 and 2)

**Providing the world  
with green alternatives  
to fossil fuels**



The background of the page features a clear blue sky with several white wind turbines. One turbine is prominently visible on the right side, while others are partially visible on the left and in the distance. The foreground consists of a field of tall, dry, golden-brown grasses with some green shrubs scattered throughout.

## REAL ZERO

**Real Zero refers to no fossil fuels and no offsets.**

We have a costed plan to decarbonise our Australian terrestrial iron ore operations in the Pilbara by 2030. At the time of this report, Fortescue has identified the solutions it plans to adopt to eliminate approximately 90% of terrestrial Scope 1 and 2 emissions from its Australian iron ore operations. We are actively working to identify solutions for the final approximately 10%.

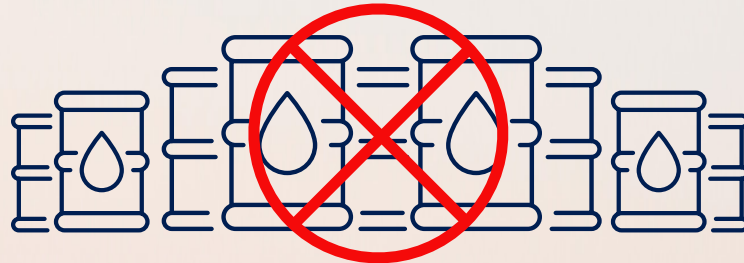
We are also finalising our plan for how to eliminate Fortescue's remaining Scope 1 and 2 emissions from across our operations, including Fortescue Energy.

From FY24 onwards, Fortescue will no longer buy voluntary carbon offsets unless required by law, as offsets have been shown to be troubled by extensive concerns about quality, lack of additionality and an inability to deliver real reductions in emissions.

Through Fortescue Energy, we are also going to give the world an alternative to fossil fuels.

# OUR BOARD APPROVED US\$6.2BN PLAN TO DECARBONISE FORTESCUE PROFITABLY

By 2030



We will save 2.29 billion litres of diesel and 31 million gigajoules of natural gas

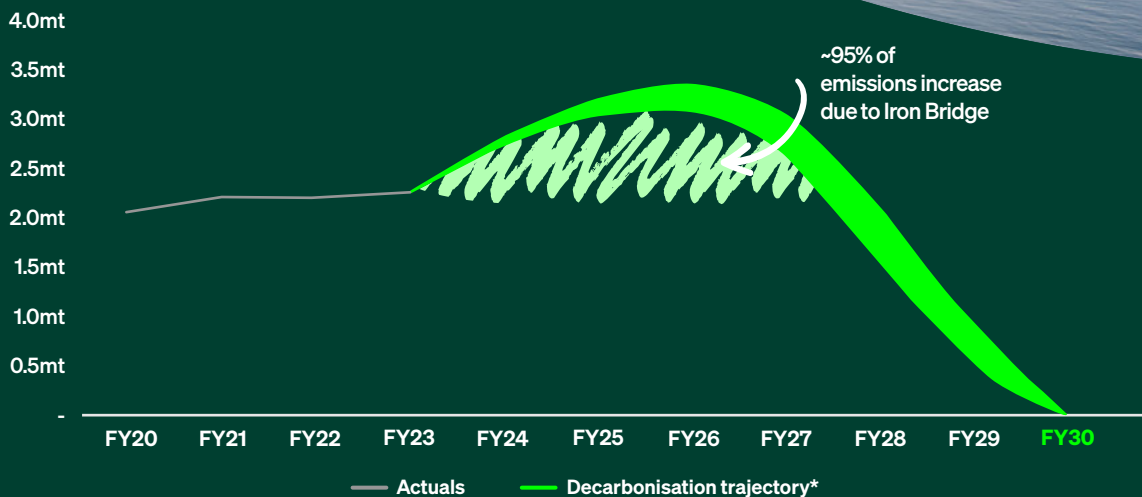
From FY26 we will save more than 700 million litres of diesel per year forever

Decarbonisation is a financial investment. In FY23, gas and diesel cost Fortescue over \$560 million



## FORTESCUE'S PROJECTED EMISSIONS PATHWAY TO REAL ZERO FOR AUSTRALIAN IRON ORE OPERATIONS (SCOPE 1 AND 2 TERRESTRIAL EMISSIONS)

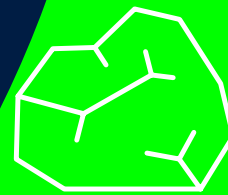
Scope 1 & 2 terrestrial carbon emissions (million tonnes CO<sub>2</sub>-eq)



\*Our emissions are forecast to fall within the shaded range based on our current decarbonisation plan and modelling. It is subject to various factors beyond our control, including those set out in this report and our FY23 Annual Report.

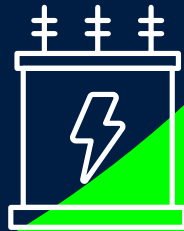
# ENERGY

## The power of now



### GREEN IRON

In FY23, we developed a pilot installation capable of converting iron ore to green iron without coal, with several patent applications filed. The process uses low-temperature electrolysis, which can be powered using renewable electricity and offers a potential pathway to enable the full spectrum of Fortescue's iron ore products to be converted into green iron.



### GREEN HYDROGEN

In March FY23, we completed construction of the Gladstone Electrolyser Manufacturing Centre, Fortescue Energy's electrolyser manufacturing facility. Commissioning and fit-out is now underway.



### BATTERIES

Announced two new UK manufacturing facilities and USA expansion.

Developing a global battery business.

1,000 UK jobs to date.

Infinity Train, zero-emission haul trucks and other green hydrogen-based technologies that we plan to commercialise.



Fortescue's first prototype battery electric truck, Roadrunner, on site in the Pilbara



# OVERVIEW

## OUR EMISSIONS

**This year, we are putting our Company's emissions at the outset of this report, in an effort to be completely transparent about the greenhouse gases we emit. The remainder of this report will outline how we plan to reduce our emissions**

Fortescue emits more than 2.5 million tonnes of carbon dioxide equivalent (CO<sub>2</sub>-eq) into the atmosphere every year. Customers of our iron ore – primarily steel mills located in Asia – emit a further 261.5 million tonnes of CO<sub>2</sub>-eq annually.

This report outlines our Board approved US\$6.2 billion plan to achieve Real Zero, which means the elimination of Scope 1 and 2 emissions by 2030 by eliminating the use of fossil fuels from our Australian terrestrial iron ore operations. We are dedicated to doing this without using voluntary carbon offsets from FY24 onwards for Scope 1 and 2 emissions. At the time of this report, Fortescue has identified the solutions it plans to adopt to eliminate approximately 90% of terrestrial Scope 1 and 2 emissions from its Australian iron ore operations. We are actively working to identify solutions for the final approximately 10%.

We also have separate targets to eliminate emissions from our marine vessels by 2030 and achieve Net Zero Scope 3 emissions by 2040. We are presently developing our plans to meet these targets.

Scope 1 emissions are direct emissions from sources owned or controlled by an entity. Scope 2 refers to emissions associated with the production of electricity, heat, or steam purchased by an entity. Scope 3 refers to all other indirect emissions associated with activities or facilities not owned or controlled by the entity.<sup>1,2</sup>



In general, when we refer to emissions, we refer to all greenhouse emissions, reported in the unit of tonnes of CO<sub>2</sub>-eq. This is defined as the amount of CO<sub>2</sub> that would cause the same temperature rise, over a given time period, as an emitted amount of greenhouse gas or mixture of greenhouse gases.<sup>3</sup>

Stepping beyond fossil fuels and voluntary carbon offsets helps reduce our exposure to regulatory and supply chain risk, while potentially generating significant operating cost savings.

In FY23, gas and diesel cost Fortescue over US\$560 million, while voluntary offsets cost US\$6.2 million.

Eliminating our emissions could also bring greater value to our shareholders, enabling us to enter the growing market for zero-emissions power systems, commercialise our green technologies and enable access to sustainable finances.

### Scope 1 and 2 emissions

In FY23, total gross Scope 1 and 2 emissions from our Australian iron ore operations and Fortescue marine vessels, which consist of eight VLOCs and nine tugboats that operate under Fortescue's operational control in Port Hedland, were 2.55 million tonnes CO<sub>2</sub>-eq.

Our Scope 1 emissions consisted of 2.2 million tonnes of CO<sub>2</sub>-eq in FY23, while our Scope 2 emissions from power purchases were lower, at 0.35 million tonnes of CO<sub>2</sub>-eq.

Of our FY23 Scope 1 mining operations emissions:

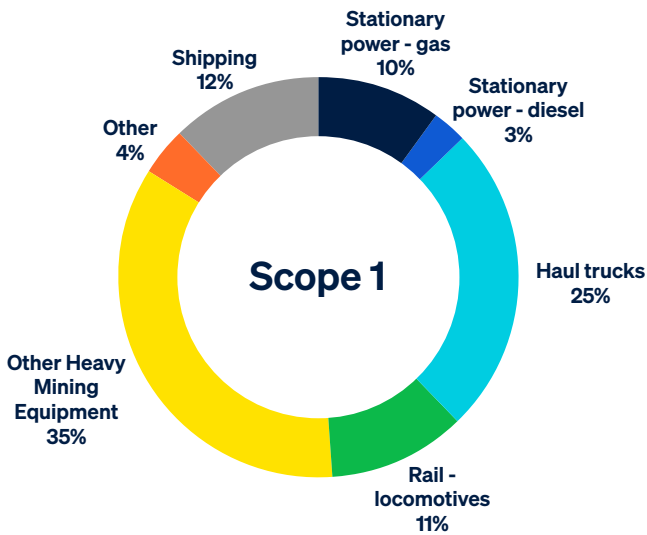
- 35% came from other Heavy Mobile Equipment (HME) (diesel)
- 25% originated from our mining haul trucks (diesel)
- 13% came from stationary power (gas, diesel)
- 12% originated from marine vessels under our exclusive control (heavy marine fuel oil)
- 11% came from our rail operations (diesel)
- 4% came from other sources.

<sup>1</sup> [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_annex-i.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-i.pdf)

<sup>2</sup> Under the Greenhouse Gas Protocol Accounting standards, we use the 'Operational Control' boundary method.

<sup>3</sup> [https://www.ipcc.ch/sr15/chapter/glossary/#:~:text=CO2%20equivalent%20\(CO2,or%20a%20mixture%20of%20GHGs.](https://www.ipcc.ch/sr15/chapter/glossary/#:~:text=CO2%20equivalent%20(CO2,or%20a%20mixture%20of%20GHGs.)

**FY23 Scope 1 iron ore emissions**

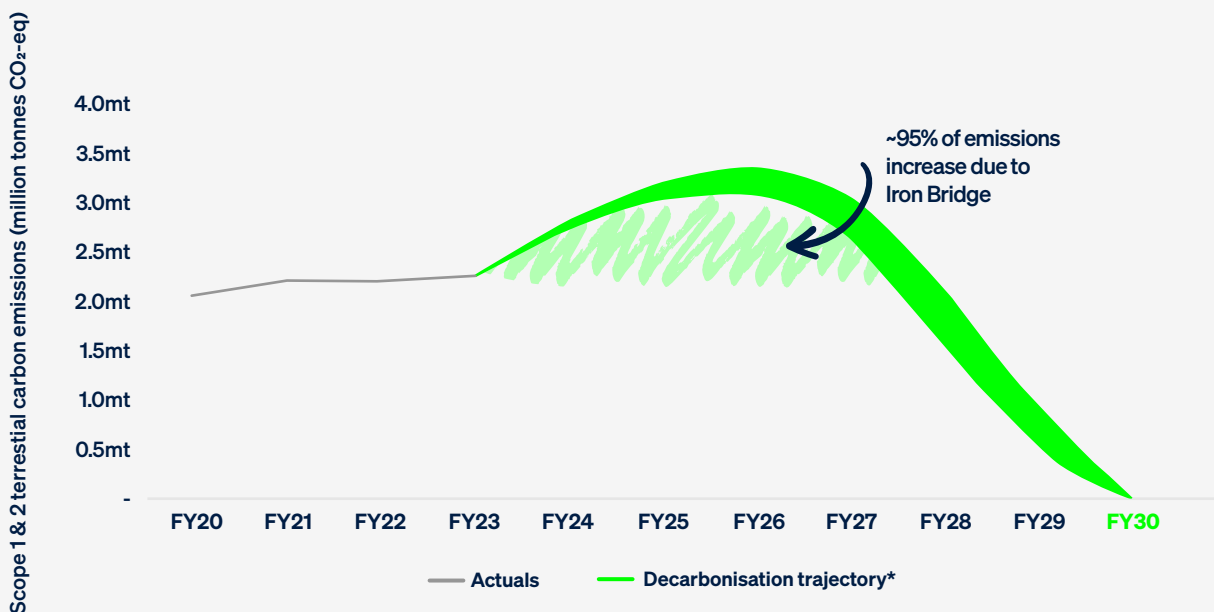


In working towards eliminating our emissions, we are developing and evaluating the following solutions:

- Stationary power: wind and solar, grid scale batteries, demand response and reserve power provided by a green fuel such as green ammonia
- Ore carriers: green ammonia or green methanol
- Tugs: battery-hybrid vessels using green ammonia and/or green hydrogen
- Rail: battery electric, including our Infinity Train solution and/or green ammonia
- Haul trucks and other Heavy Mobile Equipment: powered by batteries, trailing cables from the power grid or green hydrogen fuel cells.

As part of our plan to achieve Real Zero terrestrial emissions across our Australian iron ore operations by 2030, we forecast that our Scope 1 and 2 emissions in the Pilbara will initially rise out to FY26 before they begin to fall. This initial rise will occur due to production at Iron Bridge scaling up to reach nameplate capacity.

**Fortescue’s projected emissions pathway to Real Zero for Australian iron ore operations (Scope 1 and 2 terrestrial emissions)**



\*Our emissions are forecast to fall within the shaded range based on our current decarbonisation plan and modelling. It is subject to various factors beyond our control, including those set out in this report and our FY23 Annual Report.

Emissions are forecast to fall from FY26 onwards as renewable power capacity substantially increases and we begin to deploy a zero-emission mobile fleet across our Pilbara operations.

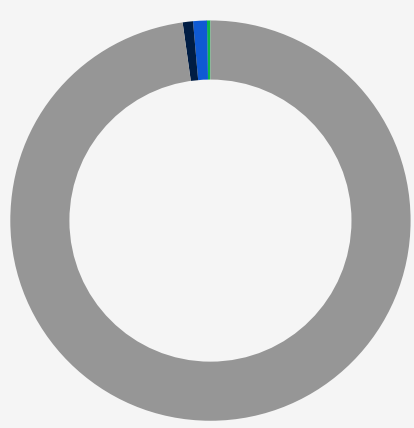
At the time of this report, Fortescue has identified the solutions it plans to adopt to eliminate approximately 90% of terrestrial Scope 1 and 2 emissions from its Australian iron ore operations. We are actively working to identify solutions for the final approximately 10%.

Fortescue’s use of renewable energy in the Pilbara continues to rise:

- Since FY19, renewable energy use has risen from less than 1 gigawatt hour (GWh) to 145.7GWh in FY23
- Since FY22, renewable energy consumption has risen 58GWh
- Today, renewable energy comprises 20% of the electricity we purchase for our Pilbara iron ore operations

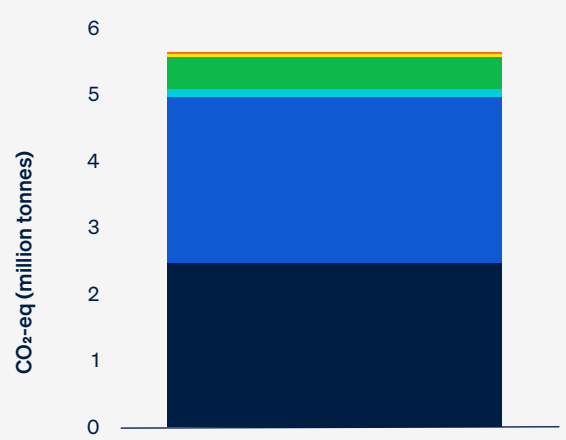
In FY23 we also surrendered 336,833 tonnes in CO<sub>2</sub>-eq of offsets to meet our previous commitment to a 3% year-on-year net reduction in our emissions. As stated earlier, in FY24 we will no longer purchase voluntary carbon offsets for Scope 1 and 2 emissions, instead focusing our efforts on actual emission elimination. We will replace our 3% target by committing interim financial spend to deliver our decarbonisation pathway to Real Zero.

Total Scope 3 emissions



- Business travel
- Employee commuting
- Fuel and energy refining and transport
- Purchased goods and services
- Capital goods
- Chartered cargo ship
- Crude steel manufacturing

Scope 3 emissions excluding crude steel manufacturing



- Business travel
- Employee commuting
- Fuel and energy refining and transport
- Capital goods
- Purchased goods and services
- Chartered cargo ship

### Scope 3

Our Scope 3 emissions in FY23 (267,61 million tonnes of CO<sub>2</sub>-eq) were 5% higher than in FY22. This increase in Scope 3 emissions was caused primarily by a rise in the amount of iron ore shipped, from 189 million tonnes in FY22 to 192 million tonnes in FY23.

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.<sup>4</sup>

By far the largest source of Fortescue's Scope 3 emissions is the steelmaking process, which accounts for 98% of our Scope 3 emissions or 261.5 million tonnes CO<sub>2</sub>-eq. Steelmaking generates significant emissions due to its current reliance on coking and thermal coal, however new approaches that use renewable electricity and green hydrogen to produce green steel are under development by Fortescue and other businesses.

The next largest sources of Scope 3 emissions in FY23 were chartered cargo shipping (2.78 million tonnes CO<sub>2</sub>-eq) and purchased goods and services (2.5 million tonnes CO<sub>2</sub>-eq).

Key drivers for the change in Scope 3 emissions between FY23 and FY22 were:

- Changes in estimation methodologies for purchased goods and services, capital goods, and shipping (see Section 13 for detail)
- Greater production of iron ore
- Changes in our product mix and destination markets

<sup>4</sup> 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.

## GHG emissions data from FY20 – FY23

GHG EMISSIONS DATA	FY23	FY22	FY21	FY20
<b>Scope 1 and Scope 2 emissions (million tonnes CO<sub>2</sub>-e)</b>				
Total Gross Scope 1 and 2 emissions	2.55	2.55	2.56	2.43
Total Gross Scope 1 emissions	2.2	2.21	2.40	2.27
Gross Scope 1 shipping emissions	0.26	0.31	0.32	0.34
Gross Scope 1 emissions (excl shipping)	1.94	1.91	2.08	1.93
Gross Scope 2 emissions	0.35	0.33	0.16	0.16
Total Net Scope 1 and 2 emissions	2.21	2.28	2.36	2.43
Emission reduction through offsets	0.34	0.26	0.20	-
Emissions intensity in electricity generation (CO <sub>2</sub> /mt ore processed)	3.31	3.32	3.50	3.49
<b>Energy consumed</b>				
Diesel consumption (million litres)	633	634	700	641
Natural gas consumption (PJ)	4.1	3.4	3.6	3.6
Other (PJ)	0.4	0.6	0.5	0.4
Non-renewable electricity purchased (GWh)	567	494	260	260
Renewable electricity purchased (GWh)	145.7	87.7	0.7	0.4
Total net energy consumed (PJ)	31.5	30.6	32.0	29.7
<b>Scope 3 emissions (million tonnes CO<sub>2</sub>-e)</b>				
Crude steel manufacturing	261.46	250.37	242.83	-
Chartered cargo shipping	2.86**	3.16*	2.96*	-
Purchased good and services	2.50	2.07	1.84	-
Capital goods	0.12	0.27	0.52	-
Fuel and energy refining and transport	0.50	0.12	0.12	-
Employee commuting	0.03	0.10	0.06	-
Business travel	0.03	0.03	0.02	-
Upstream leased assets	0.11	-	-	-
Total gross Scope 3 emissions	267.61	256.14*	248.34*	

A dash (-) indicates where data has not been reported in previous years.

\*Restated numbers, reasoning detailed in section Shipping Emissions Methodology Changes

\*\*FY23 value of 2.86mt includes less than 0.08mt of non-chartered cargo vessel upstream transportation and distribution emissions in addition to the chartered cargo shipping emissions of 2.78mt



# EXECUTIVE CHAIRMAN'S MESSAGE

In recent months, we have witnessed extreme events on every continent. The hottest global daily temperatures on record, the worst wildfires on record, the largest evacuation in Greece's history, the longest heatwaves, the lowest sea ice levels in Antarctica, the warmest oceans



**Forty years ago, Professor James Hansen at NASA wrote that policy wouldn't change "until convincing observations of the global warming are in hand."**

ANDREW FORREST

July 2023 was the hottest month on record, over 1.5°C warmer on average than in pre-industrial times.<sup>5</sup>

The climate is changing faster than we are. Until we flip that, it means humanity and any business that thinks it's too big to fail is the loser. We literally cannot act fast enough. The only answer is to step beyond fossil fuels, step beyond offsets and go all in on green energy.

Fortescue knows it's possible, because we are already right on track to doing it.

In FY23, our consumption of renewable energy increased 66% relative to FY22. Renewables already provide up to 100% of Christmas Creek's and Cloudbreak's daytime stationary energy needs. Overall, our Chichester Solar Gas Hybrid Project displaces over 100 million litres of diesel every year.

There is an initial cost to decarbonising, however, as this report shows, it's an investment – unlike the US\$560 million we spent on diesel and gas in FY23 or the US\$6.2 million we spent in FY23 on voluntary offsets.

Offsets are a fiction: as a result, you get a nice, linear decline in your emissions that is both pleasing on the eye and incredibly deceptive. As you will see in this report, we are doing things differently.

We are actually eliminating fossil fuels – and from now on, we are also eliminating voluntary carbon offsets. We will not buy offsets unless legally required to do so. The science is clear: planting trees is great for the environment, but it won't hold off the planetary scale meltdown we are experiencing.

We are developing zero-emission mining technologies, powered by a vast new renewable grid in the Pilbara. We are designing new processes that could help the steel industry decarbonise. We are developing green hydrogen projects all over the world.

The only thing worse than global warming is global inaction.

When the world looks back on the 2020s – the last chance humanity had to prevent warming of 1.5 to 2°C – we will be able to say we did our best to protect our shareholders and our children from the unacceptable risk posed by climate change.

I hope you are proud of your little Company – now leading the world where it must now go.

<sup>5</sup> <https://climate.copernicus.eu/copernicus-and-wmo-july-2023-track-be-hottest-month-record>

# ABOUT FORTESCUE

**Fortescue is both a proud West Australian company and the number 1 integrated green technology, energy and metals company**

Since our founding twenty years ago, Fortescue has become one of the world's largest producers of iron ore – globally recognised for its world leading approach to building low-cost, large-scale infrastructure. We are the number 1 integrated green technology, energy and metals company.

Since Fortescue's first commercial shipment of 180,000 tonnes of iron ore departed from Port Hedland, Western Australia to China in May 2008, Fortescue has remained a major, integral supplier of iron ore to the Chinese steel industry. Fortescue is now shipping at an annual rate of over 190 million tonnes with more than 1.9 billion tonnes of iron ore delivered to its customers since 2008.

Our iron ore operations include three hematite mining hubs in the Pilbara and our Iron Bridge magnetite mine. Our three hubs are connected by 760 kilometres of rail to Herb Elliott Port and the Judith Street Harbour towage infrastructure in Port Hedland. We have also just delivered first ore to ship for our high grade magnetite project, Iron Bridge. Fortescue operates eight purpose-built 260,000 tonne capacity ore carriers.

Fortescue is unique within the heavy industry: we are committed to reducing our emissions to Real Zero by 2030 across our Australian terrestrial mining operations – eliminating fossil fuels by developing local renewable power and replacing our existing equipment with battery electric and green hydrogen models.

We also have a net zero Scope 3 emissions target by 2040. Around 98 per cent of those emissions arise from crude steel manufacturing. We are supporting the development



of technologies that will help enable our customers to make green steel, without coal, from the full spectrum of Fortescue's iron ore products.

For our size and scale, there is no other mining company in the world that is taking the action we are to eliminate emissions.

The Fortescue group is a top 10 ASX listed company. Fortescue has two divisions – Metals and Energy. They work together for Fortescue as a whole, to ensure allocation of resources is prioritised across the divisions. Our Metals team focuses on our Australian and global iron ore deposits, exploration into new fields and the development of green iron technologies for future use.

Fortescue Energy comprises Fortescue Future Industries (FFI), Fortescue Hydrogen Systems and Fortescue WAE, focuses on meeting urgent global demand for green energy, aviation fuels, green fertilisers and green shipping fuels. In 2023, the energy business focused on bringing projects to Final Investment Decision.

Fortescue always strives to empower the communities we operate in and deliver positive social and economic change through training, employment and business development opportunities.

This is evident through initiatives such as our Billion Opportunities program which has awarded more than A\$4.6 billion in contracts to First Nations businesses since it was established in 2011.



# ABOUT THIS REPORT

Fortescue takes an industry-leading position on reducing emissions by working to decarbonise our operations and deliver renewable energy and products to the world



Our FY23 Climate Change Report has been prepared for Fortescue's stakeholders and details our commitment to reducing Fortescue's exposure to climate change risk while driving growth in our business and creating value for our shareholders where possible. It is aligned with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD), which has guided our climate-related reporting since FY18.

This report is part of Fortescue's annual reporting suite, which also includes the FY23 Annual Report, FY23 Sustainability Report and FY23 Corporate Governance Statement, all of which are available on our website at [www.fortescue.com](http://www.fortescue.com)

The focus of this report is the emissions associated with the Australian iron ore operations of Fortescue Metals, which currently accounts for 99.9% of our total emissions. We expect to report in future years on our growing global portfolio as those emissions become material to our carbon footprint.

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 2023 unless otherwise stated.

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

## Assurance

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

## Feedback

We value all feedback. Please forward any comments on this report or requests for additional information to [sustainability@fortescue.com](mailto:sustainability@fortescue.com)



# SIGNIFICANT MILESTONES IN FY23

“We are seeing the hottest months in history right now. If you are on a board you cannot ignore this - now is the time for Boards and executives to demonstrate that we are capable of leading.”

*Dr Andrew Forrest AO, Founder and Executive Chairman*

Fortescue is unlike any other heavy industry player, with a costed plan to decarbonise its Scope 1 and 2 emissions across its terrestrial Australian iron ore operations, while developing projects and technology to help scale green energy and green hydrogen globally

## FY23 achievements

- In June 2023, our first battery electric haul truck prototype, Roadrunner, arrived at Christmas Creek. Roadrunner is the only surface mining truck capable of fast-charging in 30 minutes and storing regenerated power as it drives downhill
- In FY23, we delivered a Fortescue-developed dual-fuel ammonia-powered locomotive prototype to Solomon to undergo field tests and mainline trials and continued to develop a prototype dual-fuel four-stroke diesel ship engine to run on ammonia. Later this year, it will undergo its first sea trials onboard the 75-metre Green Pioneer
- Established an MoU with China Baowu, Fortescue's largest customer and the largest steelmaker in the world, to explore developing and accelerating green steel technologies
- Committed to have our emissions reduction targets verified through the Science Based Targets Initiative (SBTi)
- Committed to eliminating voluntary carbon offsets for Scope 1 and 2 emissions from FY24 onwards in order to focus on solutions that reduce fossil fuel use
- In September 2022, Fortescue announced its decarbonisation plan at the invitation of US President Biden's First Movers Coalition and the United Nations (UN) Global Compact, with the Secretary General of the UN, during the UN General Assembly week
- Fortescue played an active role through consultations in two major, positive policy developments, the USA's Inflation Reduction Act and Australia's Hydrogen Headstart government package
- Continued to support the Sustainable Markets Initiative, a CEO-led global forum launched by King Charles III in 2020, and actively participated at the World Economic Forum and COP27 in Egypt
- Delivered Iron Bridge's first magnetite product, with nameplate capacity of 22 million tonnes per annum. The use of high-grade magnetite concentrate, to produce pellets for use in direct reduction furnaces, enables shipping a higher concentration of ore
- In July 2023, our green ammonia project in Holmaneset, Norway was shortlisted for potential grant funding from the European Commission clean technology fund.





# OUR TARGETS

## Scope 1 and 2 Emissions by 2030

**Real Zero Scope 1 and 2 emissions across our Australian iron ore operations by 2030, with a commitment to have our targets verified in FY24 by the Science Based Targets Initiative.**

Real Zero refers to no fossil fuels and no offsets.

We have a costed plan to decarbonise our Australian terrestrial iron ore operations in the Pilbara by 2030. At the time of this report, Fortescue has identified the solutions it plans to adopt to eliminate approximately 90% of terrestrial Scope 1 and 2 emissions from its Australian iron ore operations. We are actively working to identify solutions for the final approximately 10%.

We are also finalising our plan for how to eliminate Fortescue's remaining Scope 1 and 2 emissions from across our operations, including Fortescue Energy.

From FY24 onwards, Fortescue will no longer buy offsets unless required by law, as offsets have been shown to be troubled by extensive concerns about quality, lack of additionality and an inability to deliver real reductions in emissions.

Through Fortescue Energy, we are also going to give the world an alternative to fossil fuels.



## Scope 3 Emissions by 2040

**Work to provide technology solutions to decarbonise the steelmaking process, shipping and upstream emissions.**

Our approach to reducing our Scope 3 emissions – those emissions generated by steel mills, shipping, upstream construction and other aspects of our global supply chain – is to develop innovative low emission iron reduction technologies and processes inhouse and via partnerships and to scale supply of green hydrogen and green solutions from Fortescue Energy.

We have set the following Scope 3 targets:

- By 2030, enable a reduction in emissions intensity from steelmaking by Fortescue's customers of 7.5%, from FY21 levels
- By 2030, enable a reduction in emissions intensity levels from the shipping of our iron ore by 50%, from FY21 levels

Fortescue is working hard to decarbonise its fleet of eight ore carriers (Scope 1) via green ammonia and engaging with the shipping industry to reduce, and eventually eliminate, emissions from shipping (Scope 3).

## OUR STRATEGY

Fortescue recognises the urgent, global need for innovation at scale, both to enable heavy industry to decarbonise and to drive large-scale generation of green energy and green hydrogen

Through inhouse scientific teams and with collaborations and engagement with other companies and academic institutions, we are developing and implementing decarbonisation solutions that can help address our Scope 1, 2 and 3 emissions.

Our climate change strategy focuses on:

- Decarbonisation of our iron ore operations
- Decarbonisation of our value chains
- Fortescue Energy

### Decarbonisation of iron ore operations

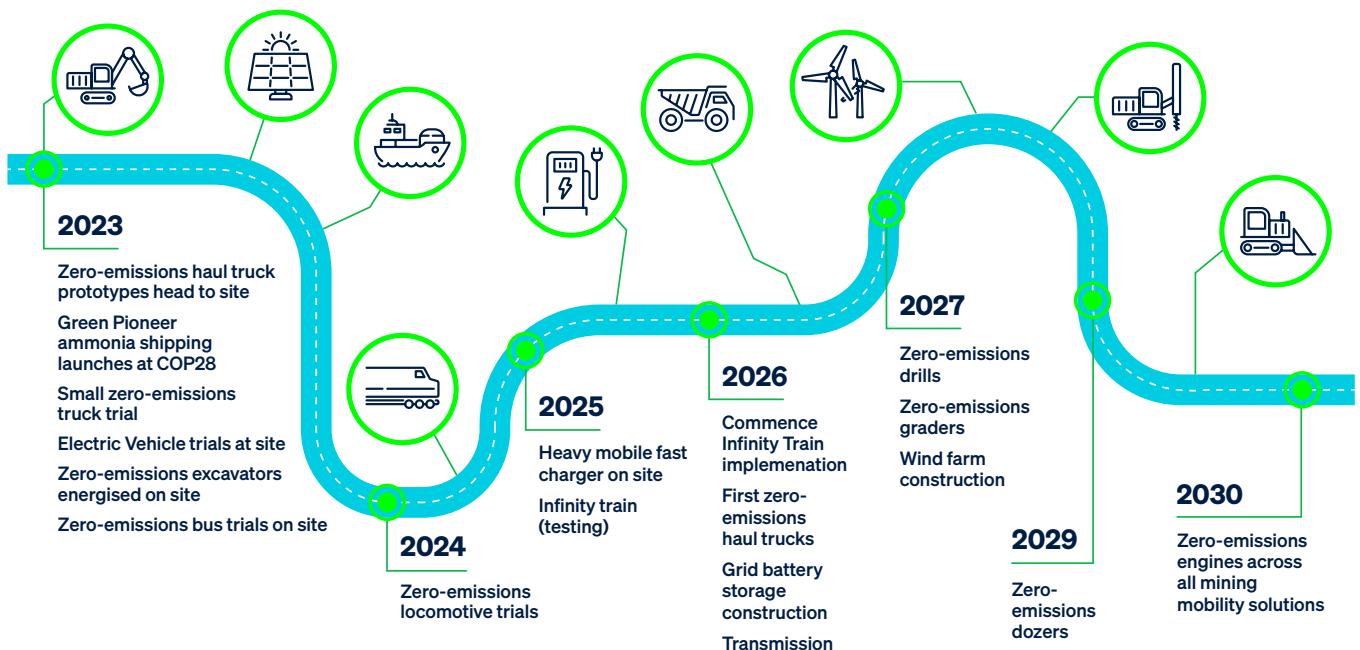
#### Our Pilbara operations

As part of our strategy to decarbonise our Pilbara Scope 1 and 2 emissions, we are focusing on:

- Zero-emission mobility
- Zero-emission shipping
- Green solutions supplied by Fortescue Energy

### Our Pilbara decarbonisation roadmap

#### Scope 1 and 2 terrestrial iron ore emissions



**Please note:**

This timeline is indicative only and assumes the complete, successful and timely implementation of Fortescue's current decarbonisation plan. It is subject to various factors beyond Fortescue's control, including those set out in further detail in this report and our FY23 Annual Report. All references to emissions are CO<sub>2</sub>-eq emissions.

## Zero-emission mobility

This workstream focuses on developing zero-emissions solutions to Fortescue's fossil fuel burning, terrestrial-based mine, port and rail equipment.

In FY23, the team continued to design solution pathways consisting of both "off-the-shelf" products and new technologies via collaborations and partnerships with world-leading Original Equipment Manufacturers (OEMs), including Liebherr and Fortescue WAE.

The focus of this workstream also includes the design and construction of the on-site electrical infrastructure required to power and charge our new fleet.

The Green Mobility group is also identifying solutions to diesel generators, light vehicles, support mining equipment and working with on-site contracting partners to align on a pathway to successfully transition their fleets. A suite of trials for validating battery electric light vehicles, support mining equipment and electrical infrastructure will be completed in FY24.

The team is pursuing opportunities with OEMs across the complex supply chain and have committed to purchase three electric 400 tonne excavators and two battery electric locomotives.

Fortescue has started designing and constructing the on-site electrical reticulation infrastructure that will take the energy from the Pilbara Energy Connect transmission to where it is needed on site. The project aims to integrate Fortescue's Pilbara iron ore mining and port operations into one common 220kV network.

This program of works will continue through FY24 to FY28 to enable our sites to have the electrical infrastructure ready to power the electrical equipment, as it becomes operational.

Other FY23 milestones:

- In June, our first prototype battery electric haul truck, Roadrunner, arrived at Christmas Creek. Roadrunner brings several surface mining firsts, including the ability to fast-charge in 30 minutes and capacity to store regenerated power as it drives downhill
- A prototype hydrogen fuel cell electric truck will be delivered to Christmas Creek later in 2023
- A prototype Offboard Power Unit, which can power the Liebherr Electric Excavator previously delivered to site, and a 3MW prototype fast charger (to charge the prototype battery electric haul truck) were transported to Christmas Creek to continue commissioning and site-based testing
- In May, a dual-fuelled prototype ammonia-powered locomotive arrived at Solomon to undergo field tests. Commissioning is underway in readiness for mainline trials in FY24

- We are exploring the development of a world-first Infinity Train which would use gravitational energy to recharge its battery electric systems without any additional charging requirements. Studies into the Infinity Train are ongoing.

## Zero-emission shipping

In FY23, the shipping of our products from Western Australia to Fortescue's customers accounted for approximately 3.04 million tonnes of CO<sub>2</sub>-eq, of which 0.26 million tonnes were Scope 1 emissions from our large ore carriers (VLOCs) under Fortescue's operational control in Port Hedland. These emissions are the focus of this workstream.

The remaining 2.78 million tonnes CO<sub>2</sub>-eq were from chartered vessels (Scope 3).

In FY23, we completed a dry dock maintenance cycle for our eight VLOCs, which included installing variable frequency drives and propeller caps, among other measures. These energy saving devices have delivered initial reductions of between 5-10% of Scope 1 shipping emissions.

In FY23, we delivered a Fortescue-developed dual-fuel ammonia-powered locomotive prototype to Solomon to undergo field tests and mainline trials and continued to develop a prototype dual-fuel four-stroke diesel ship engine to run on ammonia. Later this year, it will undergo its first sea trials onboard the 75-metre Green Pioneer.

In FY24, the zero-emission shipping workstream will also evaluate the option to convert our eight VLOCs to run on green ammonia. We hope that by developing this technology for our own fleet, it will encourage its adoption in our Scope 3 shipping fleet.

We continue to support the International Maritime Organisation's (IMO) targets and engage with industry to support the Australian Government's representation on the IMO Marine Environment Protection Committee.



CASE STUDY

**FORTESCUE**  
**WAE**



In January 2023, Fortescue's decarbonisation progress took a major step forward, with Fortescue WAE completing and delivering to Australia the largest battery of its kind, ready to be installed in a prototype battery electric mining haul truck.

The 1.4MWh prototype power system sets the pace for ground-breaking innovation in heavy industry and is a bespoke design intended for integration into a 240-tonne mining haul truck. In June 2023, the prototype truck, Roadrunner, arrived on site in the Pilbara for field testing.

Battery systems will be integral to Fortescue's decarbonisation plan, which includes replacing its existing diesel-fuelled fleet with zero emission haul trucks.

The battery will be integral to Fortescue's decarbonisation plan to help eliminate fossil fuels from its terrestrial Australian iron ore operations, which includes replacing its existing diesel-fuelled fleet with battery electric and green hydrogen powered haul trucks.

It was a massive achievement that was completed in record time and marks several firsts for an electric mining haul truck battery, with the ability to fast-charge in 30 minutes and capacity to regenerate power as it drives downhill.

**"For me, the highlight was working collaboratively with our global team, especially the Battery Technicians. Being surrounded by competent, like-minded individuals like those in the battery build workshop, and returning as one of Fortescue Energy's first Battery Technicians, was one of the most rewarding experiences of my life."** –

**Alex Schubach, Electrical Supervisor – Compliance**

**"Our goal was to gain the knowledge and skills to construct, commission and maintain the battery subpacks at Hazelmere and Christmas Creek. I can confidently say we achieved these goals, assisting with the completion of the eight subpacks for Project Roadrunner, and being signed off as a competent Battery Technician. I'm honoured to have represented Fortescue overseas and I'm excited for what's to come."** – **Jayden Prosser, HME Electrician Experienced.**



## Renewable energy

In FY23, Fortescue completed construction of the transmission lines for the Pilbara Energy Connect project, connecting Solomon to Iron Bridge and Port Hedland. In addition, the Board approved an investment of US\$373 million to connect Eliwana, Cloudbreak and Christmas Creek, which is forecast to be complete by FY25/26.

Construction progressed on Fortescue's 100MW solar farm at North Star Junction, located near Iron Bridge, which is expected to be operational by early FY25. Once commissioned, North Star's renewable energy will provide up to 30% of our Pilbara daytime stationary energy needs.

North Star will complement the 60MW solar farm commissioned in 2021 as part of the Chichester Solar Gas Hybrid Project, which provides up to 100% of Christmas Creek's and Cloudbreak's daytime energy needs and displaces around 100 million litres of diesel every year.

In FY23, Fortescue developed and refined energy modelling software to understand how to optimise our Pilbara iron ore operations when powered by renewable energy rather than fossil fuels. This model will continue to inform our understanding of Fortescue's needs for renewable energy infrastructure and battery storage. We also investigated various technology options to provide optimal long-duration renewable energy storage solutions.

As a result of this modelling work, Fortescue anticipates we will need 2-3GW of renewable energy and battery storage as part of our plan to eliminate fossil fuels from our Australian iron ore operations. Feasibility studies are underway for proposed wind and solar generation sites. In FY23, we continued to work with community stakeholders for approval pathways for these projects and anticipate they will be ready for Final Investment Decision progressively over FY24, FY25 and FY26.

A priority in FY23 has been working to enable future digital control systems to be decarbonisation-ready. For example the ability to use forecast variability in upcoming weather data to optimise both short and long-term planning across our iron ore operations. In FY24, we anticipate seeing the designs finalised and the commencement of system upgrades across the whole iron ore value chain.

In FY23, Fortescue also upgraded the Solomon Power Station to provide 290MW of additional gas-powered capacity into the network. It will provide firming energy as we transition to a fully renewable energy network.

### CASE STUDY

## PEOPLE DEVELOPMENT



Fortescue's people are at the heart of our decarbonisation strategy. Our people are designing, building, constructing and operating towards our decarbonised future. Our people and their drive, skills and commitment to living the Values, will help us achieve our Real Zero plans by 2030.

In FY23 we undertook some high-level work to understand what our operational workforce of the future will look like, and what skills we will need to be successful. Our goal is for our workforce to have a smooth and well-timed transition to our decarbonised future. Key future skills identified included:

- Electrician skills
- Battery maintenance skills
- Electrical engineering skills
- Cable management skills

While the coal industry has had cabled, electrified mining equipment for some time, it is a new capability for Fortescue. Fortescue is due to receive its first three electric excavators in FY24 and is establishing cable management capabilities, now in preparation.

We are confident that with the right investment in professional, trade and training pathways, we will create many opportunities for up and cross-skilling of our existing workforce.

People who will be well primed for our workforce of 2030 are in high school, TAFE or university now. We are investing through our Next Gen program to help our future workforce to understand the choices they will have in our decarbonised future.

## Decarbonising our value chain

Reducing emissions in our value chain requires Fortescue to address downstream emissions from iron and steel customers and upstream emissions from our supply chain.

During FY23, 192 million tonnes of Fortescue's iron ore was shipped globally to our customers.

### Downstream emissions (our customers)

To meet our targets of Net Zero Scope 3 emissions by 2040 and a 7.5% reduction in steelmaking emissions intensity by 2030 relative to FY21 levels, Fortescue is conducting R&D both inhouse and in collaboration with steel mill businesses, global engineering companies and research institutions.

In FY23, Fortescue achieved the following milestones:

- We developed a pilot installation capable of converting iron ore to green iron without coal, with several patent applications filed. The process uses low-temperature electrolysis, which can be powered using renewable electricity and offers a potential pathway to enable the full spectrum of Fortescue's iron ore products to be converted into green iron.
- Signed a joint Memorandum of Understanding (MoU) with Primetals Technologies and Voestalpine to jointly study a new green ironmaking process using hydrogen and Fortescue's Pilbara ores.
- Signed an MoU with China Baowu, the world's biggest steelmaker, to explore development of new iron making technologies at one of China Baowu's operations, using Fortescue iron ore and green hydrogen.
- Delivered Iron Bridge's first magnetite product, with nameplate capacity of 22 million tonnes per annum. The use of high-grade magnetite concentrate, to produce pellets for use in direct reduction furnaces, enables shipping a higher concentration of ore.

In FY24, we are progressing a study on an investment to produce green iron at the Boodarie Strategic Industrial Area in Port Hedland.

### Upstream emissions (our supply chain)

In FY23, we established a dedicated team within Procurement and Logistics to identify and progress decarbonisation opportunities within our upstream supply chain. The Decarbonisation team is also responsible for integrating climate change requirements into Fortescue's source-to-contract process and building internal capability to support our decarbonisation program.

We delivered foundational training to 112 employees outlining climate change basics, emissions accounting, sustainability risks and practical application of decarbonisation of Procurement and Logistics, including Category Management and Procurement Services teams. Sustainable Procurement completed an assessment of the decarbonisation sourcing activity pipeline for sustainability risks. We introduced heightened due diligence requirements for renewables-related workstreams and delivered training to our Category Management teams.

We continued to develop greenhouse gas-specific contractual clauses and tender schedules whilst seeking feedback from key suppliers and our peers. In April 2023, representatives from Fortescue's senior leadership team hosted a Contractor Forum to present our decarbonisation program and supplier expectations to 21 key suppliers, including four Australian First Nations-owned businesses.

We commenced an emissions mapping case study in collaboration with a critical supplier to develop our emissions accounting through two-way supply chain transparency and applying life cycle assessment principles. With learnings from this project, the Decarbonisation team are working with our Sustainability team to evaluate technology solutions for collecting and managing supplier emissions data. We expect to release the outcome of this case study in our FY24 Sustainability report.

The Decarbonisation team will continue to embed sustainability requirements into existing procurement processes and will prioritise working with suppliers to improve emissions reporting accuracy.

## Fortescue Energy

Fortescue Energy's focus is on working to produce commercial scales of technology, renewable electricity and green hydrogen, including derivatives such as green ammonia, to accelerate global decarbonisation of heavy industry, aviation, shipping and fertilisers.

In FY23, Fortescue Energy has a target to bring up to five projects to Final Investment Decision.

Currently our focus is on five key regions:

- **USA.** Across the US, we are actively developing several potential green hydrogen projects including near Phoenix, Arizona
- **Australia.** A proposed 550MW green hydrogen facility, and with Incitec Pivot Limited, a proposed green ammonia facility. Both are currently in the front-end engineering design (FEED) stage at Gibson Island
- **Kenya.** A proposed, up to 300MW, geothermal steam-to-fertiliser facility in the Olkaria region is currently in the pre-feasibility stage. The project is aimed at the production of green ammonia for domestic use in Kenya, with the Government of Kenya as the sole off-taker
- **Norway.** A proposed 300MW green ammonia facility is currently in the pre-feasibility stage, with renewable energy secured via a long-term conditional Power Purchase Agreement with Statkraft to support our operational plans
- **Brazil.** A proposed green hydrogen and green ammonia facility at the Port of Pecem, Ceará is in the pre-feasibility stage

## Fortescue Energy's progress in FY23

In FY23, Fortescue Energy achieved a key milestone with the construction and handover of the Gladstone Electrolyser Manufacturing (GEM) Centre in March. Further fit out of the facility, including the automated production line and testing facilities, has now started.

Fortescue Energy also announced a partnership with the U.S. Department of Energy's National Renewable Energy Laboratory to advance green hydrogen production and technologies. The collaboration has the potential to create more than 350 research, engineering and management jobs. Combined with the impact of the Inflation Reduction Act (IRA), this investment is expected to catalyse a strong increase in manufacturing in the USA's renewable energy ecosystem.

In FY23, we completed our R&D Perth Technology Innovation Centre and opened the Colorado Technology Innovation Centre in the USA, which will tap into the US talent pool and innovation ecosystem.

With a consortium of partners, Fortescue Energy also commenced the development of an ammonia cracker prototype to extract green hydrogen from green ammonia at industrial scale. The system will be designed to deliver high-purity green hydrogen, suitable for Polymer Electrolyte Membrane fuel cell use, using the Metal Membrane Technology purification process, which was developed in partnership with the Commonwealth Scientific and Industrial Research Organisation.

In FY23, Fortescue WAE announced plans to expand its operations to two new facilities in the United Kingdom, one in Kidlington and the other in Banbury. The Kidlington facility will focus on prototype development of power systems for multiple green mobility applications. The Banbury facility will focus on manufacturing heavy industry, battery modules and fully assembled power systems.

CASE STUDY

## NORWEGIAN HYDROPOWER-TO HYDROGEN



In FY23, we secured renewable power for the proposed Holmaneset green energy project by entering into a long-term Power Purchase Agreement with Statkraft. The conditional agreement will see Statkraft supply renewable power to support our operational plans for a 300MW green hydrogen and green ammonia facility.

Norway has significant potential to lead the way for green hydrogen and green ammonia production, based on availability of renewable energy, proximity to the European market and access to a skilled workforce. In partnership with local Norwegian consultants, Fortescue has completed a Scoping Study to identify potential locations for production of green hydrogen and ammonia and is now in the pre-feasibility stage. Consideration has been given to a range of factors, such as existing grid and power capacity, proximity to existing infrastructure, land availability, water sources, topography and the local environment and surrounding communities.

The proposed Holmaneset Project seeks to utilise surplus renewable energy to power an integrated green hydrogen and green ammonia process plant, complete with transmission infrastructure and port facilities, for transport to the Norwegian and European markets. The proposed site is located on the coast of the Nordgulen fjord, approximately eight kilometres west of Svelgen in the Bremanger Municipality in western Norway.

Green industry development is a priority for Norway and Europe. The Norwegian Government's Hydrogen Strategy (2020) emphasises both the national and international importance for the kind of production that is planned at Holmaneset.

CASE STUDY

## DECARBONISING AND TRANSFORMING FOOD SECURITY IN KENYA

The Government of Kenya and Fortescue Energy are moving forward on a proposed development of a major green energy and fertiliser project, which will help Kenya to step beyond fossil fuels.

The proposed green ammonia and fertiliser facility is expected to have a capacity of up to 300MW and will be located in the Naivasha vicinity of the Olkaria geothermal field.

The scope of work also includes an intention to supply green electricity to Kenya's grid.

Most recently Fortescue and Kenya signed an Investment Support and Implementation Agreement, which builds on and accelerates the Framework Agreement signed during COP27.

It outlines a commercial framework for the project, including government support for critical resources, infrastructure and off-take.

Kenya has created significant momentum towards establishing itself as a world leader in the production of fertiliser made using green ammonia.

This project has the potential to provide Kenya with additional energy security that steps beyond the use of fossil fuels, and more importantly, could help reduce a reliance on Russian imported fertiliser.

This partnership sets Kenya on a path to industrial decarbonisation and will see Fortescue join Kenya on that journey.

## A just transition

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

Our social investment programs focus on providing opportunities to vulnerable and indigenous communities and empowering women and children. We also commit to supporting 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 aim to engage with and support these communities. As part of this transition, new jobs will be created and others will evolve.

We have developed a green energy workforce forecasting tool and skills database and have mapped the shortest training pathways to create local green energy jobs and training to help enable a just transition.

We are using this information to work with governments, academia, community, and other industry to develop curriculum. Fortescue recognises that pathways to employment and training are most effective when they are introduced at the primary and secondary school level. We have developed a Green Energy Education program, designed to engage school students in the call for action on climate change and stimulate interest in green jobs.

In Kenya, Fortescue is working with academic institutions to help ensure benefits of the just transition accrue via:

- Local workforce development and training
- Use of local goods and services
- Industrial development, capacity, and competency building.

Fortescue has established a partnership with Strathmore University (Kenya), to support the development of Africa's first Post Graduate Diploma in Green Energy Operations in conjunction with Curtin University (Australia). Fortescue conducts these activities within the context of ensuring respect for human rights and eradicating modern slavery.



Kenya

# 04

## MANAGING RISK



**“The stakes we are playing for are immense.”**  
*Professor Nicolas Stern, 2022*

Risk management at Fortescue is underpinned by our Values and culture. It 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.

Our approach to climate-related risks and opportunities is developed in response to the Taskforce on Climate-related Disclosures (TCFD) and the Taskforce on Nature-related Disclosures (TNFD)’s three focus areas:

- **Transition risk** – risk arising from the need to decarbonise the global economy
- **Physical risk** – risk arising from the physical impacts of climate change
- **Nature risk** – risk arising from humanity’s impacts on biodiversity and ecosystem function and our reliance on natural systems to survive.

Some of the key components of our risk management framework are:

- Applying a structured approach to risk management
- Using outcomes of risk assessments to drive actions that mitigate risks
- 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
- Holding our CEOs accountable to the Board for ensuring risk is appropriately managed, including risks related to climate change.





The following steps are taken when considering climate change risk:

- **Risk identification:** The Sustainability team engages with relevant stakeholders to identify risks related to climate change across the business value chain in the short, medium, and long-term. In FY23 we also engaged specialist climate scientists to assist with risk identification.
- **Risk assessment:** Each risk is analysed against criteria for consequence and likelihood. We review relevant climate models and in FY23 used qualitative assessments to understand the transition, physical and nature impacts to Fortescue.
- **Response:** 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.
- **Monitoring:** The ARMSC and the Board receive updates on progress managing High and Extreme risks. Fortescue's CFO chairs the Decarbonisation Strategy Committee, which meets at least five times each year and reviews progress.

## Transition risks

To improve our understanding of the impact of climate change on Fortescue we have stress tested the resilience of our business strategy under different emissions scenarios.

Last year, we reported on the Intergovernmental Panel on Climate Change's (IPCC's) "Unified Global Action" scenario, the "Two-speed Transition" scenario and the "Stall and Shock" scenario. See FY22 Climate Change Report.

In FY23, we also examined three further IPCC low-emission Shared Socio-economic Pathways (SSPs) in 2030 and in 2040. For the analysis of climate-related risks and opportunities relating to the transition to a low-carbon economy, we looked at risks and opportunities that could arise from:

- Demand fluctuation for products
- Technical viability of decarbonisation
- Policy and Regulatory change
- Reputational damage.

**SSP1/RCP\*1.9:** A very low emission scenario, assuming rapid decarbonisation and strong mitigation efforts with strong global cooperation

**SSP2/RCP\*2.6:** A relatively low emission scenario, assuming moderate population growth, a mix of environmental policies and medium levels of economic development with levels proceeding unevenly across countries

**SSP5/RCP\*2.6:** A relatively low emission scenario, associated with continued demand growth for metals, high energy demand and high economic growth. It assumes fragmented governance structures and limited environmental regulations.

## Demand for our commodities

Our scenario analysis concentrates on risks and opportunities arising from changes in demand of iron ore and hydrogen. This analysis specifically focused on three key export regions: China, the EU28<sup>8</sup> and the United States.

Under these scenarios we see the potential demand for iron ore and hydrogen fluctuate, but we consider that our early diversification puts us in a reasonable position in all these scenarios as an early mover on decarbonising our iron ore operations and the establishment of Fortescue Energy.

In FY24, we will undertake further work to improve the relevance of the scenario analysis to our business model.

## Technical viability of decarbonisation

We accept that there are, and will be in the future, technical challenges related to decarbonisation. As part of addressing these challenges, existing technology will need to be adapted and applied in new ways, and entirely new technology will also need to be developed. Technology availability (including supply chain availability of relevant goods and services) and technology maturity are therefore key issues. This is all part of our challenge as first movers. We aim to address some of this risk as detailed in the section "Our Strategy".

We consider that early diversification via Fortescue Energy will be advantageous as our pipeline of green hydrogen and ammonia projects; battery manufacture; electrolyser production; and zero emissions fleet and shipping innovation; all align to identified gaps in the International Energy Agency Net Zero Emissions 2050 (NZE2050) technology pathways.

<sup>8</sup> EU28 refers to all the member states of the European Union from the accession of Croatia in 2013 to the withdrawal of the United Kingdom in 2020

\* RCP = Representative concentration pathways

## Regulatory and policy risk

We consider these low emissions scenarios are important in transition planning as they require us to assume that companies and governments must decarbonise quickly and therefore takes into account the increased risk of market and policy change as a result of moving rapidly.

Regulatory change is a material risk for Fortescue. Abrupt changes in policy settings and uncertainty about policy settings can lower the value of assets and businesses, leaving some economically unviable or “stranded.”

Fortescue closely monitors regulatory developments globally as interest in and understanding of climate change across governments and regulatory bodies increases.

Our resilience to policy changes is also expected to improve in certain areas. For example, the need to purchase mandatory credits under Australia’s Safeguard Mechanism is expected to decrease as we work to decarbonise our operations. Similarly, our financial obligations in relation to carbon border taxes such as the EU Carbon Border Adjustment Mechanism (CBAM) are expected to decrease as the carbon emissions associated with our commodities decrease.

In FY23 there was significant climate regulatory change across the world, including the introduction of economic incentives such as the USA’s IRA and Australia’s Hydrogen Headstart government package, which is earmarked for green (not fossil fuel) hydrogen production. Fortescue Energy has accordingly focussed on identifying projects to develop where these global economic incentives are emerging.

## Reputational risks

According to the TCFD, reputation is one of the key climate related risks. Failure to decarbonise carries significant reputational risks and there are also growing expectations for responsible conduct from stakeholders, including investors, lenders and consumers. Decarbonisation also represents an opportunity to enhance reputation and brand value.

Investor interest in sustainability, including climate change, continues to grow. We value opportunities to better understand the interests and concerns of our investors and are committed to ongoing engagement.

This year there was particular focus on our industry-leading decarbonisation plan, emission reduction targets, Fortescue Energy projects and our Sustainability Financing Framework. Fortescue remains committed to sustainability in all aspects of our business. Core to our capital structure is our Sustainable Financing Framework, enabling the issuance of Green Bonds or Loans. This Framework was used in our inaugural Green Bond in April 2022 and we continue to allocate eligible projects under this Framework. FY23 Projects included the Pilbara Energy Connect Project (solar generation and a portion of transmission), the Green Fleet Energy Hub and spend on battery electric locomotives (disclosed page 46 of our FY23 Annual Report). Total allocated in FY23 was US\$109m. Further reporting is disclosed within the Group’s annual report.

## Physical risks

Physical risk reflects 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.

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.

Physical impacts from climate change are inevitable however, the extent of those impacts and the rate at which they occur will depend on how quickly the world decarbonises.

Results of our qualitative work on scenario modelling demonstrate that, under climate change, Fortescue’s Pilbara operations will be directly impacted by an increase in the intensity of extreme heat, rain, drought and water scarcity.

Extreme heat can lead to heat stress and exposure to dangerous heat-humidity levels, while reduced aquifer recharge and water availability could impact ore beneficiation and dust suppression. Additionally, cyclones, flooding events, sea level rise and storm surge events could affect Fortescue’s value chain. These events could also damage ports, make critical transport routes inaccessible and cause power outages. Fortescue is building its capabilities to respond to the rapid climate change extremes that are emerging as global temperatures rise.

The risks identified in our FY22 Climate Change report remain:

- **Acute:** Increased severity of extreme weather event
- **Acute:** Increased frequency of extreme heat
- **Chronic:** Rising sea level and storm surge inundation
- **Chronic:** Changes in precipitation patterns

In FY23 we examined those climate change risks through the geographical lens of material climate hazards and impacts on our business and value chain. We are currently considering how the outputs of this work will inform the next phase of our physical climate risk assessments.

Along with key stakeholders, we considered climate exposure by 2030 and 2050 for our main operations in Australia, as well as key export countries. We examined a low, moderate and high emission scenario, corresponding to temperature increases of 1.5°C, 2°C to 3°C, and over 4°C by 2100. Physical and transition risks were treated differently in order to understand the extremes when we design our infrastructure.



A summary of the physical hazards and impacts assessed is found in the table below.

## Climate change physical hazards and impacts

HAZARD	IMPACT ASSESSMENT
<p><b>Acute: Extreme heat</b></p>	<p><b>We assess the frequency of hot days over 35°C and the hottest annual temperature.</b> Rising temperatures are associated with increased heatwaves and risk of wildfire events.</p> <p>Prolonged exposure to hotter temperatures can have a significant impact on the health and safety of workers. The addition of humidity exacerbates heat stress for outdoor workers. Shift schedules may have to be adjusted to maintain safe working conditions and labour productivity may be impacted during heatwaves.</p> <p>Extreme heat also impacts infrastructure. Equipment, including energy infrastructure, is susceptible to overheating leading to reduced power generation capacity. Heatwaves can also impact train networks through rail buckling. Finally, increased energy demand for air conditioning can increase operational costs.</p>
<p><b>Acute: Severe Weather</b></p>	<p><b>We assess the frequency and intensity of severe weather events.</b> These events include tropical cyclones, hurricanes and typhoons. Climate change is likely to change the severity of these weather systems.</p> <p>Risks associated with extreme wind events include damage to mine sites and connecting infrastructure. This often leads to port closures and evacuation of ships, disrupting freight schedules. Severe weather can also drive up capital costs through asset repair costs and higher insurance premiums.</p> <p>Additionally, power outages are regularly caused by wind storms when the energy grid is connected by overhead power lines which are prone to being blown over.</p> <p>Extreme events can damage ecosystems, leading to restrictions to operate within affected habitats and limitations on project expansions. This in turn can lead to project delays and reduced production rates.</p>
<p><b>Acute: Extreme Rain</b></p>	<p><b>We assess extreme rain intensity and frequency.</b> The link between climate change and extreme rain is complex and not linear. Nonetheless, as a rule, a warmer atmosphere holds more moisture which increases the risk of heavy rainfall events that may result in flooding.</p> <p>Extreme rainfall events can lead to extensive damage, for example through flash floods impacting facilities and equipment. They can also result in overtopping of water storages and disrupt critical transportation between Fortescue's sites. Extreme rain events increase the risk of landslides and erosion and may increase insurance premiums in high risk areas.</p> <p>Flooding events can lead to operational disruptions and delays to projects due to unsafe working conditions and temporary site closures. Finally, stagnant water following floods may also lead to a rise in vector-borne diseases.</p>

HAZARD	IMPACT ASSESSMENT
<p><b>Chronic: Long term Precipitation</b></p>	<p><b>We assess total annual rainfall and dry spells.</b> Changes in rainfall patterns, along with chronic temperature rise and extreme heat, contribute to vegetation curing as landscapes dry out in the absence of rainfall, which in turn affects water availability and heightened dust risk.</p> <p>Droughts contribute to ecosystem decline and diminished aquifer recharge. Gaining approvals and licenses for current projects and future expansions may become more difficult as a result, leading to project delays and reduced revenue.</p> <p>The iron ore and hydrogen supply chains require substantial amounts of water for ore beneficiation and dust suppression. Reduced availability of water would impact these operations.</p> <p>Water stress can also lead to a tension in the relationship with community stakeholders and increased water costs.</p>
<p><b>Chronic: Sea Level Rise</b></p>	<p><b>We assess future sea level rise and frequency of storm surge events.</b> Rising temperatures contribute to sea level rise through melting of ice and thermal expansion of seawater. Gradual sea level rise is the primary driver of projected changes in extreme sea levels and associated coastal inundation risk.</p> <p>Extreme storm surge events can lead to damage to port infrastructure and vessels, cause temporary site closures and lead to operational disruptions, delay freight schedules and cause broader value chain disruptions.</p> <p>Extreme storm surge events can also result in a loss of product or reduce product quality and value. Finally, these events can drive up impact insurance costs, or make certain assets, products or services uninsurable.</p>

Our next step is to conduct a quantitative climate risk assessment to understand specific vulnerabilities of our assets (railways, tailings storage facilities, power grids, groundwater abstraction infrastructure, port operations) to key climatic variables and the constraints on our current methods of management. This exercise will integrate finer-scale climate data with Fortescue's own data to produce business-specific insights and recommendations for the Fortescue Risk Management Framework. This process will continue to inform how we engineer our future designs in the Pilbara and will inform how we design our global designs for climate resilience.

High and extreme climate risks will be reported to the Audit, Risk Management and Sustainability Committee (ARMSC) and the Board.

## Nature

In FY23, we commenced the first stage of the TNFD in mapping our key interfaces and dependencies on nature to understand the material nature-related risks and opportunities to our core businesses. We have commenced three TNFD pilot studies that consider our existing operations in the Pilbara and two other sites from our future mining and energy portfolios. The outcome of the pilot studies will inform our disclosures and our risk-related response to identify focus areas for climate and ecosystem resilience. We will update our pilot studies in the FY24 report and commit to full TNFD reporting in FY25.



# GOVERNANCE



## Good corporate governance is critical to the long-term, sustainable success of Fortescue

Our Board is responsible for the oversight of all sustainability matters, including climate change, receiving regular updates through the ARMSC.

Good governance is the collective responsibility of the Board of Directors (the Board) and across all levels of management. Fortescue seeks to adopt leading practice and contemporary governance standards and apply these in a manner consistent with our culture and Values.

Fortescue supports the intent of the 4<sup>th</sup> Edition of the Australian Securities Exchange (ASX) Corporate Governance Council's Corporate Governance Principles and Recommendations (Principles and Recommendations). Unless otherwise disclosed, Fortescue has reported against the requirements of the Principles and Recommendations.

The cornerstones of our corporate governance are:

### Transparency

Being clear and unambiguous about our structure, operations and performance, both externally and internally, and maintaining a genuine dialogue with, and providing insight to, stakeholders and the market generally.

### Integrity

Developing and maintaining a corporate culture committed to ethical behaviour and compliance with the law.

### Empowerment

Everyone at Fortescue is empowered to make decisions that support our objectives and are in the best interests of stakeholders. Management and employees are encouraged to be innovative and strategic in making decisions that align with our risk appetite and are undertaken in a manner consistent with corporate expectations and standards.

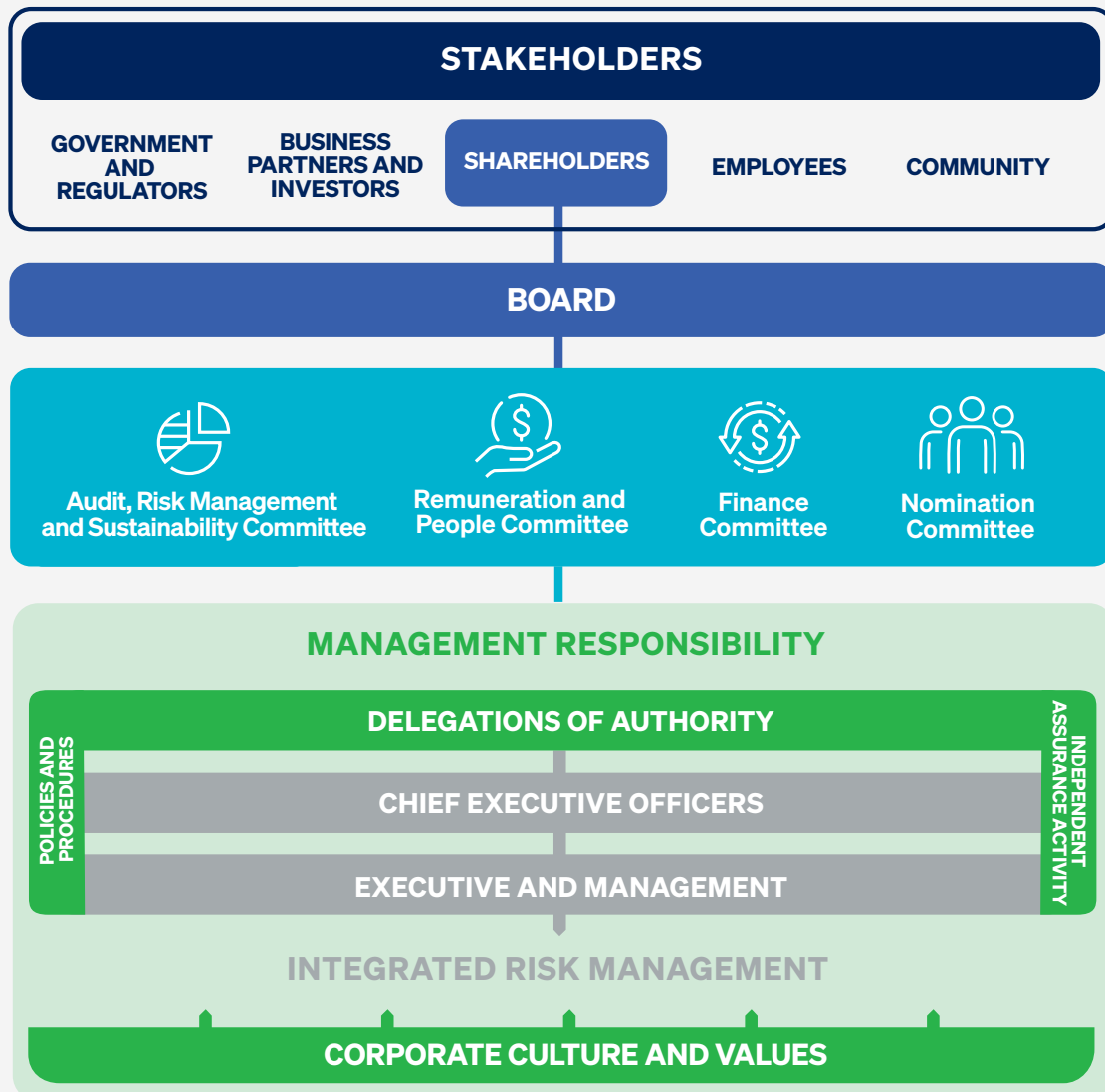
### Corporate accountability

Ensuring that there is clarity of decision making, with processes in place to authorise the right people to make effective and efficient decisions with appropriate consequences when these processes are not followed.

### Stewardship

Developing and maintaining a company wide recognition that Fortescue is managed for the benefit of its shareholders, taking into account the interests of other stakeholders.

## GOVERNANCE FRAMEWORK



# INDUSTRY AND RESEARCH PARTNERS

## Industry associations

We are members of a broad range of industry groups and associations, allowing us to contribute in a coordinated way to the development of effective policy frameworks, share best practice and access information and insights on material topics.

Associations and organisations are assessed against specific criteria before membership is recommended. All memberships must be approved by the relevant CEO or an approved delegate.

Criteria considered in the selection and approval of memberships includes:

### SELECTION AND APPROVAL CRITERIA

<b>Value proposition</b>	Benefits of joining and value to Fortescue.
<b>Policies and public positions</b>	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, employment of First Nations peoples and community engagement.
<b>Conditions of joining and ongoing obligations</b>	Internal commitment needed to meet conditions of memberships and ongoing obligations or standards.
<b>Members</b>	Existing members of the association, reputation and potential risks.
<b>Governance</b>	Strong governance demonstrating the association's competency, diversity, skills and experience.
<b>Management</b>	Internal dedicated Executive to manage relationship and obligations.

This year, we participated in over 70 industry groups and associations, contributing A\$2 million in fees. Our most significant memberships of FY23 include:

- Chamber of Minerals and Energy Western Australia – A\$571,627
- Port Hedland Industries Council – A\$380,000
- Australian Resources and Energy Employer Association – A\$129,000
- Business Council of Australia – A\$90,000
- Amira Global – A\$70,000.

Several memberships were discontinued in FY23, though none as a result of policy misalignment. One membership remains under investigation for potential misalignment with our policies and public positions moving into FY24.

Our FY23 Industry Association Report is available at [www.fortescue.com](http://www.fortescue.com)

CASE STUDY



**INDUSTRY COLLABORATION  
BETWEEN SIEMENS ENERGY,  
SIEMENS ENERGY VENTURES,  
FORTESCUE ENERGY, GEOPURA,  
AND INNOVATE UK**

In FY23, Fortescue announced a industry collaboration partnership with Siemens Energy, Siemens Energy Ventures, GeoPura, and Innovate UK. The partners came together to produce an ammonia cracker prototype to produce green hydrogen at scale.

Siemens Energy and Fortescue are providing engineering expertise and innovative technical solutions.

GeoPura will provide on site management and as the off taker, will be taking the hydrogen product from the prototype ammonia cracker system for use in their innovative fuel cell power generation technology.

GeoPura plans to use this hydrogen to supply Hydrogen Power Units (HPUs). HPUs are used as a replacement

for heavy polluting diesel generators as an ‘off-grid’ solution to provide zero emission power to a wide range of industries including TV production, such Netflix and BBC’s Winterwatch and construction projects, including HS2, Britain’s new high speed rail line.

*“The research and development of technology like this is key to the success of green hydrogen globally. There is an overwhelming demand for the supply of green hydrogen, particularly in Europe, and transport is central to ensuring that supply. We know that green hydrogen can be transported long distances as green ammonia, and if successful, ammonia cracking coupled with Metal Membrane Technology means that you can convert it as you need to, at the point of use.”*




**Fortescue Energy CEO Mark Hutchinson**

## Research organisations and partnerships




We are actively collaborating for commercialisation of the technologies required to decarbonise our operations, and create green hydrogen and green ammonia. We are applying these solutions across hard-to-abate sectors such as shipping and iron and steel production.






Given the considerable challenge in achieving our targets, we have initiated a range of partnerships with research organisations, not for profit organisations and consortiums to accelerate this work. We also fund research for other key areas of interest, including biodiversity and environmental stewardship. A selection of our partnerships during FY23 is provided below.

In FY23, we contributed over A\$10.5 million to science and technology research and over A\$4.6 million to biodiversity and conservation research. The below table documents these partnerships for FY23. We consider all our research organisations and partnerships for FY23 to be generally aligned with our Values and commitments.

-  Generally aligned with our Values and commitments
-  Partially aligned with our Values and commitments
-  Misaligned with our Values and commitments

## Agreements and partnerships with a focus on climate change

ORGANISATION	JURISDICTION	PURPOSE	ENGAGEMENT
<b>Selection of agreements and partnerships (focus: climate and human rights action)</b>			
	Arctic Circle Foundation Inc Iceland, International	Icelandic non-profit. The 2023 Arctic Circle Assembly will take place in October 2023, with 2,000 participants from 60 countries. Attendance will provide key networks for Fortescue to develop Nordic projects, with Fortescue having attended in 2022.	We are a global partner, contributing for the purposes of convening the annual Arctic Circle Assembly in Reykjavik, Iceland and other Forums held globally.
	CFO Principles on Integrated SDG Investments and Finance International	Four principles that supplement the UN Global Compact's 10 Principles and provide guidance to companies as they transition towards sustainable development and seek to mobilise corporate finance and investments to achieving the SDGs.	Fortescue is a signatory.
	Cooperative Research Centre for Transformations in Mining Economies (CRC TiME) Australia	Focused on mine closure to achieve successful land use transition, CRC TiME brings together over 70 partners across all stakeholder groups who are contributing their networks, time and knowledge to enable change.	Fortescue is a major participant in CRC TiME. In FY23, we participated in and co-sponsored a number of projects, including research into: increasing bio-available plant nutrients in mineral waste; improved prediction, remediation and closure of acid and neutral metalliferous drainage sites by examination of mine waste behaviour at the meso-scale; practices, techniques and procedures employed to quantify mine closure costs and benefits and associated mine closure risk; and water management associated with open pit mines.



ORGANISATION	JURISDICTION	PURPOSE	ENGAGEMENT
 Green Hydrogen Catapult	International	Global initiative whose goal is to drive a massive green hydrogen scale-up by 2026. Launched in 2020 with the convening support of the UN's High Level Climate Action Champions.	We are one of ten members.
 Green Hydrogen Organisation (GH2)	International	Promotes the sustainable production and use of green hydrogen.	Fortescue provides an annual donation. Our Chairman is a founding member and sits on the GH2 Board.
 Green Hydrogen Taskforce	Australia and Germany	Australian-German business coalition formed in 2022 to move on green energy through serious investment and working with government to achieve goals together. The Taskforce is a collaborative effort between Fortescue and leading German energy, industrial, and technology companies including, Covestro, E.ON, Linde, Luthardt, SAP, Schaeffler, thyssenkrupp Nucera, and thyssenkrupp Uhde.	Fortescue is a partner in this coalition.
 H2Global Stiftung	Germany (International)	<p>Double auction mechanism which promotes the European import of Green Hydrogen and its derivatives – e.g. green methanol and green ammonia – from extra-EEA countries. H2Global is now aiming at becoming the “extra-EU import arm” of the European Hydrogen Bank and is having strong political back-up from Germany. This is proved by the growing fund that this mechanism will be managing. After a first auction worth €900 million held at the beginning of 2023, a next tender is being prepared (ideally by the end of 2023) in excess of €3.5 billion.</p> <p>An additional and parallel function is also supporting the transfer of knowledge through research coordination, Foundation events, and policy advocacy.</p>	FFI was one of the first donors to enter the mechanism. Our engagement is constituted mainly of two streams: (a) advocacy effort and (b) off takers engagement. In the first stream, FFI is trying amongst other things to lose the strict pre-qualification criteria made to facilitate grey hydrogen incumbents. In the second stream, FFI is taking the opportunity of plenary meetings to keep the contact, discuss and aim at signed terms sheet with willing off takers (e.g. Covestro, E.ON, SEFE), as well as to lead the collaboration in joint advocacy efforts (e.g. Covestro, E.ON, Gasunie, RWE, Vopak).
 Human Rights Resources and Energy Collaborative	Australia	Provides a mechanism for mining, energy and resource organisations to share learnings and define best practice.	We are a founding member of the collaborative (formerly - Western Australia Modern Slavery Collaborative). We have representatives on the Shipping, Supply and Remedy work streams.










ORGANISATION	JURISDICTION	PURPOSE	ENGAGEMENT
● Qlimate	United States	Using quantum computing to develop and scale end-to-end climate technologies. Qlimate is building partnerships with governments, non-profits and the private sector to drive innovation and make progress towards achieving net-zero.	FFI was a partner of the program up to May 2023.
● Science Based Targets initiative (SBTi)	International	Partnership between CDP, the United Nations Global Compact, World Resources Institute and the World Wide Fund for Nature. The SBTi call to action is one of the We Mean Business Coalition commitments.	Fortescue is committed to the Net-Zero Standard and Business Ambition for 1.5°C.
● Sparc Hydrogen (University of Adelaide)	Australia (South Australia)	Seeks to accelerate net zero emission supply chains through research and development of technologies to produce hydrogen from renewable energy.	Joint Venture Partnership.
● United Nations Global Compact	International	World's largest corporate sustainability initiative. Provides support and guidance to corporations on responsible and sustainable business practices.	Fortescue is a signatory to the UNGC. We are also an active participant in the Global Compact Network Australia (GCNA) and a member of GCNA's Modern Slavery Community of Practice.
● TCFD Supporter	International	Helps companies integrate climate-related risks and opportunities into financial reporting and decision-making.	Fortescue is a supporter.
● World Economic Forum (WEF)	International	International Organization for Public-Private Cooperation. The Forum engages the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas. Forum Partners are leading global companies developing solutions to the world's greatest challenges. They are the driving force behind the Forum's programs.	Fortescue is a partner. Fortescue is also a member of WEF's First Mover Coalition. The WEF Annual Meeting 2023 was attended by our Chairman.

#### Selection of biodiversity and conservation contributions

● Harry Butler Institute, Murdoch University (HBI) taxonomic research	Australia (Western Australia)	The HBI in collaboration with psbrands GmbH, Fürth (Germany) ( <a href="http://www.psbrands.de">www.psbrands.de</a> ) is developing the Fauna Portal ( <a href="http://www.fauportal.org">www.fauportal.org</a> ), an online identification platform that aims to provide a nomenclaturally stable, parataxonomic framework and tools for the identification of undescribed species in Australia, largely invertebrates.	Fortescue provides funding.
● The Western Australian Biodiversity Science Institute (WABSI)	Australia (Western Australia)	Support for subterranean fauna research.	During FY23, Fortescue continued funding including for the Conservation Systematics of Western Australians Subterranean Fauna: Taxonomy of Subterranean Pseudoscorpions Project 2023-2025. Also co-investment in the Western Australian Biodiversity Science Institute with funding for WABSI to implement research priorities.

ORGANISATION	JURISDICTION	PURPOSE	ENGAGEMENT
 WA Parks Foundation	Australia (Western Australia)	Partnership for biodiversity and connection with nature.	Fortescue is a sponsor.
 Frontier SI	Australia (Western Australia)	Remote sensing for groundwater-dependant vegetation.	Fortescue provides contributions as part of the Frontier SI Collaborative Research Project that identifies and monitors groundwater-dependent vegetation in the Pilbara region via earth observation data.

**Selection of science and technology development contributions**

 Australian National University	Australia (ACT)	Seeks to accelerate net zero emission supply chains through research and development of green hydrogen technologies.	Collaborative research and development.
 Commonwealth Scientific and Industrial Research Organisation	Australia	Australia's national science agency and innovation catalyst. Seeks to accelerate net zero emission supply chains through research and development of hydrogen technologies, and to accelerate opportunities for low carbon iron ore production through research and development activities.	Collaborative research and development.
 Curtin University	Australia (Western Australia)	Seeks to accelerate net zero emission supply chains through research and development of hydrogen technologies. Also seeks to accelerate opportunities for low carbon iron ore production through research and development activities.	Collaborative research and development.
 Deakin University	Australia (Victoria)	Seeks to accelerate opportunities for low carbon iron ore production through research and development activities.	Collaborative research and development.
 Jupiter Ionics (Monash University)	Australia (Victoria)	Seeks to accelerate net zero emission supply chains through research and development of ammonia technologies.	Collaborative research and development as project partner in Australian Government's Cooperative Research Centres – Project scheme.
 National Renewable Energy Laboratory	USA	Seeks to accelerate opportunities for low carbon iron ore production through research and development activities.	Collaborative research and development.
 University of Western Australia	Australia (Western Australia)	Seeks to accelerate net zero emission supply chains through research and development of hydrogen technologies. Also seeks to accelerate opportunities for low carbon iron ore production through research and development activities.	Collaborative research and development.

# APPENDIX

## Navigational index

This navigational index references the location of TCFD-aligned disclosures within our FY23 Climate Change Report.

TCFD RECOMMENDATION	DISCLOSURE	LOCATION
<b>Governance – Disclose the organisation’s governance around climate change-related risks and opportunities.</b>		
a) Describe the board’s oversight of climate-related risks and opportunities.	Governance	Page 33
b) Describe management’s role in assessing and managing climate-related risks and opportunities.	Managing Risk	Page 28
<b>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.</b>		
a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long-term.	Physical climate risks	Pages 31 – 32
b) Describe the impact of climate-related risks and opportunities on the organisation’s businesses, strategy, and financial planning.	Physical climate risks	Pages 31 – 32
c) Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Managing risk	Pages 29 – 32
<b>Risk management - Disclose how the organisation identifies, assesses, and manages climate-related risks.</b>		
a) Describe the organisation’s processes for identifying and assessing climate-related risks.	Managing risk	Page 28
b) Describe the organisation’s processes for managing climate-related risks.	Managing risk	Pages 28 – 32
c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation’s overall risk management.	Managing risk	Pages 28 – 32
<b>Metrics and targets - Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</b>		
a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Managing risk	Pages 28 – 32
b) Disclose Scope 1, Scope 2 and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Our emissions	Page 11
c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Our targets	Page 19

## Navigational index

This navigational index references the location of TCFD-aligned disclosures within our FY23 Climate Change Report.

DISCLOSURE INDICATORS		DISCLOSURE	LOCATION
<b>1. Net Zero GHG Emissions by 2050 (or sooner) ambition</b>			
1.1	The company has set an ambition to achieve net-zero GHG emissions by 2050 or sooner.	Our targets	Page 19
<b>2. Long-term (2036-2050) GHG reduction target(s)</b>			
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 19
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 19
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 degrees Celsius.	Our targets	Page 19
<b>3. Medium-term (2026 to 2035) GHG reduction target(s)</b>			
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 19
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 19
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 degrees Celsius.	Our targets	Page 19
<b>4. Short-term (up to 2025) GHG reduction target(s)</b>			
4.1	The company has set a target for reducing its GHG emissions up to 2025 on a clearly defined scope of emissions.	Our Pilbara roadmap	Page 20
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 Pilbara roadmap	Page 20
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 degrees Celsius.	Our Pilbara roadmap	Page 20
<b>5. Decarbonisation strategy</b>			
5.1	The company has a decarbonisation strategy to meet its long and medium term GHG reduction targets	Our strategy	Pages 20 – 27
5.2	The company's decarbonisation strategy includes a commitment to 'green revenues' from low carbon products and services.	Decarbonising our value chain	Pages 24
<b>6. Capital allocation alignment</b>			
6.1	The company is working to decarbonise its future capital expenditures.	Decarbonising our value chain	Page 24

DISCLOSURE INDICATORS		DISCLOSURE	LOCATION
<b>6. Disclosure Indicators</b>			
6.2	The company discloses the methodology used to determine the Paris alignment of its future capital expenditures.	Our Targets	Page 19
<b>7. Climate policy alignment</b>			
7.1	The company has a Paris Agreement-aligned climate lobbying position and all of its direct lobbying activities are aligned with this.	Industry and research FY23 Industry Association Report	Pages 35 – 40
7.2	The company has Paris Agreement-aligned lobbying expectations for its trade associations and it discloses its trade association memberships.	Industry and research FY23 Industry Association Report	Pages 35 – 40
7.3	The company has a process to ensure its trade associations lobby in accordance with the Paris Agreement.	Industry and research FY23 Industry Association Report	Pages 35 – 40
<b>8. Climate governance</b>			
8.1	The company's Board has clear oversight of climate change.	Governance	Page 33
8.2	The company's executive remuneration scheme incorporates climate change performance elements.	Governance FY23 Annual Report	Page 33
8.3	The Board has sufficient capabilities/competencies to assess and manage climate related risks and opportunities.	Governance FY23 Corporate Governance Statement	Page 33
<b>9. Just transition</b>			
9.1	The company has made a formal statement recognising the social impacts of its climate change strategy.	A just transition	Page 27
9.2	The company has committed to Just Transition practices.	A just transition	Page 27
9.3	The company engages with its stakeholders on Just Transition.	A just transition	Page 27
<b>10. TCFD disclosure</b>			
10.1	The company has committed to implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).	About this report	Page 17
10.2	The company employs climate-scenario planning to test its strategic and operational resilience.	Managing risk	Pages 28 – 32

## Glossary

TERM	DEFINITION
CO <sub>2</sub> equivalent (CO <sub>2</sub> -eq)	The universal unit of measurement to indicate the aggregate carbon dioxide equivalent emissions of carbon dioxide (CO <sub>2</sub> ), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.
HME	Heavy Mobile Equipment, such as diggers, excavators and drilling units
Green Ammonia	Ammonia is widely used to make fertiliser, but most ammonia today is made from fossil fuels. Green ammonia, in contrast, is 100% renewable. One way to make green ammonia is via the Haber Bosch process. Green hydrogen and nitrogen that has been extracted from the air are reacted together during a process powered by renewable electricity to produce green ammonia, or NH <sub>3</sub> .
Green Hydrogen	Green hydrogen is hydrogen produced via electrolysis of water in a process powered by renewable electricity. Electrolysis splits the water molecule into its constituents, hydrogen and oxygen.
Green Iron	Iron ore that has been converted into iron (a) without the use of coal or any other fossil fuel and (b) using renewable electricity and, in some cases, green hydrogen.
Green Metals	Metals that have been extracted from the ground without the use of fossil fuels during the extraction process. Specifically, this means using haul trucks, drills, excavators and other equipment that runs on battery-electric (charged by renewable electricity) or green hydrogen- based technologies.
Green Shipping Fuels	Fuels used for shipping which are made without using fossil fuels. These include green ammonia.
Green Steel	Steel made using green iron, powered by 100% renewable energy.
GW	Giga watt, or 1,000,000,000 watts
GWh	Giga watt hours
MW	Mega watt, or 1,000,000 watts
SBTi	Science Based Targets Initiative
Scope 1 emissions	Scope 1 emissions are direct emissions that are from sources owned or controlled by an entity.
Scope 2 emissions	Scope 2 refers to emissions associated with the production of electricity, heat, or steam purchased by an entity.
Scope 3 emissions	Scope 3 refers to all other indirect emissions associated with activities or facilities not owned or controlled by the entity.
Sustainable Aviation Fuels (SAFs)	A wide range of aviation fuels including biofuels (e.g. waste cooking oil), hydrogen and synthetic hydrocarbons. Not all SAFs are sustainable or zero-emission fuels.
TCFD	The Taskforce 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.
Zero emissions	When used in relation to vehicles, means no greenhouse gas emissions are emitted from the vehicle's exhaust when in operation. When used in relation to fuels, means no greenhouse gas emissions are emitted when the fuel is combusted.

# SHIPPING EMISSIONS METHODOLOGY CHANGE

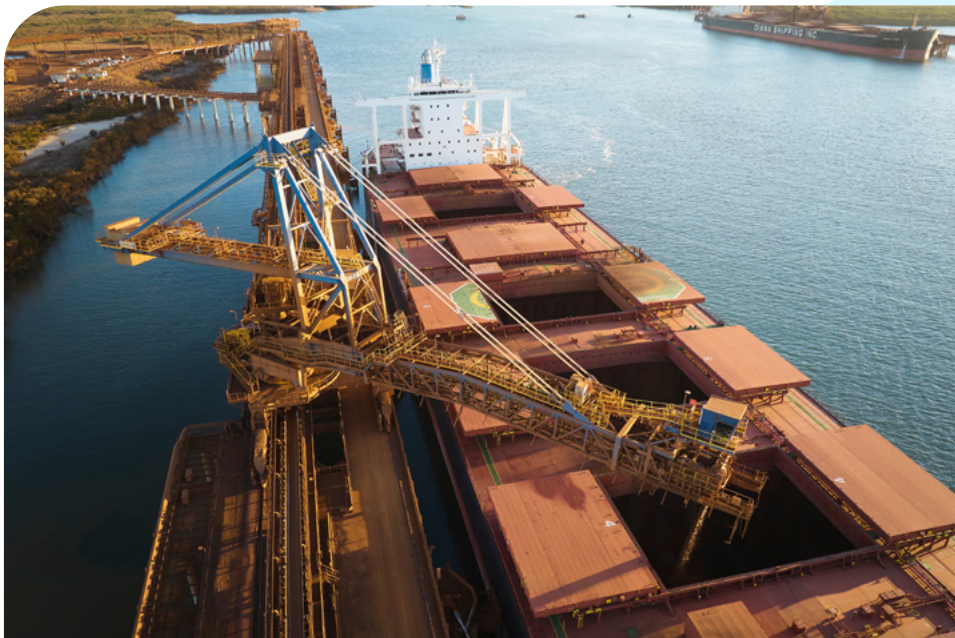
In FY23, we revised the methodologies used to estimate shipping to provide more accurate data on our shipping emissions. To do this, we made two important changes.

First, we used our actual fuel data in FY23 in our fuel calculations for shipping. In previous years, we had used industry benchmarks for fuel calculations. We also used our actual fuel data to revise and restate our FY22 and FY21 shipping emission calculations.

Second, we committed to have our emission reduction targets verified through the SBTi. We adopted SBTi methodologies for our FY23 calculations and revised our FY22 and FY21 calculations in line with these methodologies.

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

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



# DISCLAIMER

Our report contains certain statements which may constitute “forward-looking statements”. Words that may indicate a forward-looking statement include words such as “intend”, “aim”, “ambition”, “commitment”, “aspiration”, “project”, “anticipate”, “likely”, “estimate”, “plan”, “believes”, “expects”, “may”, “should”, “could”, “will”, “forecast”, “target”, “set to” or similar expressions.

Examples of forward-looking statements include: our projected and expected production and performance levels; our plans for major projects including investment decisions; our expectations regarding future demand for certain commodities; the assumptions and conclusions in our climate change related statements and strategies; and our plan to achieve Real Zero as described in this report.

Any forward-looking statements in this report reflect the expectations held at the date of this document. Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual decisions, results, values, achievements or performance to differ materially from those expressed or implied in any forward-looking statement. Forward-looking statements are based on assumptions regarding Fortescue’s present and future business strategies and the future conditions in which Fortescue expects to operate. Forward-looking statements are also based on management’s current expectations and reflect judgments, assumptions and information available as at the date of this report. Actual and future events may vary materially from the forward-looking statements made (and the conclusions and assumptions on which the forward-looking statements were based) because events and actual circumstances frequently do not occur as forecast and future results are subject to known and unknown risks such as changes in market conditions and regulations.

Some of the various factors that could cause Fortescue’s actual results, achievements or performance to differ from those in forward-looking statements include: geopolitical and political uncertainty; trade tensions between major economies; the impacts of climate change; supply chain availability and shortages; the impacts of technological advancements including but not limited to the viability, availability, scalability and cost-effectiveness of technologies

that can be used to decarbonise our business; our ability to profitably produce and transport minerals and/or metals extracted to applicable markets; the availability of skilled personnel to help us decarbonise and grow our businesses; new ore resource levels, including the results of exploration programmes and/or acquisitions; inadequate estimates of ore resources and reserves; our ability to successfully execute and/or realise value from acquisitions and divestments; our ability to raise sufficient funds for capital investment; disruption to strategic partnerships; damage to Fortescue’s relationships with communities and governments; labour unrest; our ability to attract and retain requisite skilled people; declines in commodity prices; adverse exchange rate movements; delays or overruns in projects; change in tax and other regulations; cybersecurity breaches; the impacts of water scarcity; natural disasters; the ongoing impacts of the COVID-19 pandemic; safety incidents and major hazard events; and increasing societal and investor expectations, including those regarding environmental, social and governance considerations.

Accordingly, forward-looking statements must be considered in light of the above factors, and others, and Fortescue cautions against undue reliance on such statements. Recipients should rely on their own independent enquiries, investigations and advice regarding information contained in this report. Fortescue makes no representation, guarantee, warranty or assurance, express or implied, as to the accuracy or likelihood of the forward-looking statements or any outcomes expressed or implied in any forward-looking statements contained in this report being achieved or proved to be correct.

Except as required by applicable regulations or by law, Fortescue disclaims any obligation or undertaking to publicly update or review any forward-looking statements, whether as a result of new information or future events. Past performance cannot be relied on as a guide to future performance.

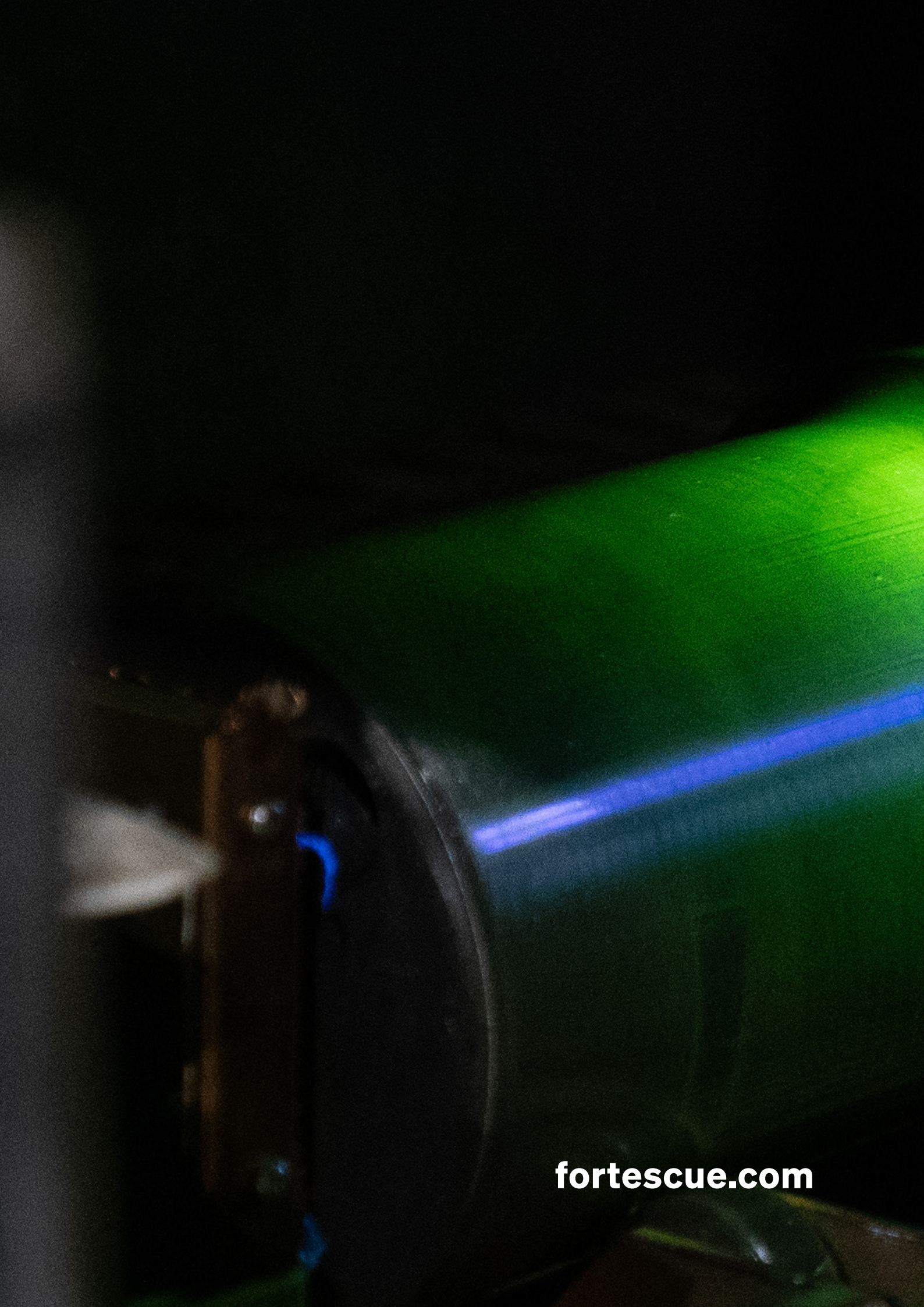




# Celebrating 20 years of Fortescue

Over our short history, Fortescue has gone from a start-up to being one of the world's largest producers of iron ore. As we look ahead to the next 20 years in our journey to become the number 1 integrated green technology, energy and metals company, we acknowledge our West Australian roots and thank those who have contributed, and continue to contribute, to Fortescue's success.

[fortescue.com](https://www.fortescue.com)



[fortescue.com](http://fortescue.com)