

# Climate Action Report

September 2024



# Our Purpose

We create and inspire smart solutions in steel, to strengthen our communities for the future.

## Our Bond

### Our Customers are our partners

Our success depends on our customers and suppliers choosing us. Our strength lies in working closely with them to create value and trust, together with superior products, service and ideas.

### Our People are our strength

Our success comes from our people. We work in a safe and satisfying environment. We choose to treat each other with trust and respect and maintain a healthy balance between work and family life. Our experience, teamwork and ability to deliver steel inspired solutions are our most valued and rewarded strengths.

### Our Shareholders are our foundations

Our success is made possible by the shareholders and lenders who choose to invest in us. In return, we commit to continuing profitability and growth in value, which together make us all stronger.

### Our Local Communities are our homes

Our success relies on communities supporting our business and products. In turn, we care for the environment, create wealth, respect local values, and encourage involvement. Our strength is in choosing to do what is right.

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Climate Action Report as at 16 September 2024

Cover Image: Penguin Parade Visitor Centre, Phillip Island, designed by Terroir features a large roof made from COLORBOND® Ultra steel in the colour Cosmic® in Metallic finish, designed for severe marine environments to withstand weather conditions on the Bass Strait coastline.

# About this Report

This second Climate Action Report (“Report”) outlines the strategic direction and progress made by the consolidated entity (‘BlueScope’ or ‘the Group’), consisting of BlueScope Steel Limited (‘the Company’) and its controlled entities on climate action since BlueScope’s first Climate Action Report published in September 2021. It provides an update on our strategic approach to managing climate-related risks, and on developments made in our plan to achieve our decarbonisation pathway. In this Report, the terms ‘BlueScope’, ‘Group’, ‘our operations’, ‘organisation’, ‘we’, ‘us’, ‘our’ and ‘ourselves’ refer to BlueScope Steel Limited and its controlled entities. All financial information is reported in Australian Dollars unless otherwise stated.

Since our first Climate Action Report released in 2021, we have disclosed climate-related content in our annual Sustainability Reports, which are available on our website. This Report should be read in conjunction with our FY2024 Sustainability Report, Data Supplement and Annual Report, also available on our website. The FY2024 Sustainability Data Supplement includes definitions and the data collection and reporting processes that accompany the GHG performance metrics included in this Report.

This Report provides details about BlueScope’s climate-related governance, strategy, risk management, metrics and targets. We have been guided by emerging disclosure requirements, such as the International Sustainability Standard Board’s International Financial Reporting Standards (IFRS) and the associated Australian Sustainability Reporting Standards (ASRS), where appropriate. We will continue to review climate disclosures

(where relevant) in response to these emerging requirements in the context of our business and local legislative requirements. The climate-related reporting metrics are prepared with reference to the Global Reporting Initiative (GRI) Standards and the Sustainability Accounting Standards Board (SASB) Industry Standard for Iron and Steel Producers.

BlueScope endeavours to ensure that the data in this Report is as accurate and up to date as possible to enable readers to understand our performance and compare it to prior periods. This Report reflects our views as of September 2024. Unless otherwise stated, all data is reported using the equity share approach of the Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard, 30 June year end. Where appropriate, historical data has been restated to present data on a consistent and comparable basis and an explanation is provided. The total Greenhouse Gas (GHG) emissions (Scope 1 and 2) for FY2024 and the GHG emissions intensity for steelmaking in FY2024 in this Report have undergone independent limited assurance procedures. The Limited Assurance Statement can be found in the FY2024 Sustainability Data Supplement.

BlueScope has interests in a number of joint ventures (JVs). The most substantial are in partnerships across ASEAN and the west coast of North America with Nippon Steel Corporation (NS BlueScope Coated Products) and in India with Tata Steel (Tata BlueScope Steel). Consistent with our reporting approach, the GHG emission data for these joint ventures are reported on an equity share basis.

## Forward-looking statements

This Report contains forward-looking statements and metrics which are not, and should not be considered to be guarantees, predictions or forecasts of future climate-related outcomes, financial performance or share prices. These statements are subject to change, known and unknown risks, uncertainties and other factors, many of which are beyond the BlueScope Group’s control. Readers of this Report should not place undue reliance on forward-looking statements in light of the significant uncertainty in the data and other information, including climate metrics and modelling, that limit the extent to which they are useful for decision-making, and the many underlying risks and assumptions that may cause actual outcomes to differ materially.

This important information should be read together with the forward-looking statements on the inside back cover. Please consider these important disclaimers when reading the forward-looking statements in this Report.

# Message from Managing Director & CEO and Chief Executive Climate Change & Sustainability



**Mark Vassella**  
Managing Director & CEO



**Gretta Stephens**  
Chief Executive Climate Change & Sustainability

We are delighted to introduce our second Climate Action Report that shows BlueScope's progress against its climate strategy and decarbonisation pathway outlined in our first Climate Action Report published in 2021.

Since that time, we have accelerated our efforts to drive GHG reductions across our operations, working across the value chain to play our part in iron and steelmaking transformation. Exciting decarbonisation projects underway at BlueScope include the Electric Arc Furnace under construction at New Zealand Steel, an industry-leading partnership with Australia's largest iron ore miners combining our expertise in Electric Smelting Furnace technology with their knowledge of Pilbara ores from Western Australia, and technology collaboration agreements with global steelmakers.

Our medium-term 2030 targets and 2050 net zero goal remain at the core of our climate strategy, underpinned by five enablers critical to our success: technology evolution, raw materials supply, access to firm renewable energy, natural gas enabling

the transition to competitively priced green hydrogen, and supportive and consistent public policies. We have refined some aspects of these enablers to reflect major developments over the past three years, most notably advancements in low emissions iron and steelmaking technologies.

In this Report, we introduce indicative individual decarbonisation pathways for each of our steelmaking operations; at Port Kembla in Australia, Glenbrook in New Zealand and North Star in the US. The three pathways reflect the local operating context and status of the enablers in those jurisdictions that are now shaping the projects that help us deliver on our 2030 steelmaking target and 2050 net zero goal. Also, for the first time we show an indicative decarbonisation pathway for BlueScope's non-steelmaking sites to reduce emission intensity by 30 per cent by 2030.

This year we achieved a 12.0 per cent reduction in aggregated steelmaking emissions intensity against the FY2018 baseline, which is in line with our 2030 target level. This was primarily driven by the ramp-up of the North Star expansion, which contributed to an increased proportion of production volumes coming from its low emissions process. Further incremental operating and process efficiencies at New Zealand Steel and Port Kembla Steelworks also contributed. GHG emissions intensity across our midstream non-steelmaking activities has reduced by 8.4 per cent since FY2018. While midstream sites have implemented a range of projects to reduce emissions, FY2024 performance has been affected by lower production and despatch volumes compared to FY2018.

The refreshed climate scenario analysis published in this Report helps us ensure our business strategy and portfolio remain resilient against the impacts of climate change. We remain confident that steel will continue to play a critical role in underpinning sustainable development and the global transition to a lower carbon, circular economy, and continue to explore all possible options for lower emissions iron and steelmaking.

The achievements we have made on our journey to date are thanks to the expertise and commitment of our people, and the cooperation of our communities, customers, suppliers and partners.

A handwritten signature in dark ink, appearing to read 'M Vassella', written in a cursive style.

**Mark Vassella**  
Managing Director & CEO

A handwritten signature in dark ink, appearing to read 'G Stephens', written in a cursive style.

**Gretta Stephens**  
Chief Executive Climate Change  
& Sustainability

# Our position statement on climate change

## We acknowledge:

- » the scientific consensus on climate change including the work of the Intergovernmental Panel on Climate Change (IPCC) related to the warming of the climate system; and
- » the objectives of the Paris Agreement, specifically in limiting global temperature rise this century to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C.

## We believe:

- » that steel will continue to play a critical role in underpinning sustainable development and the transition to a lower carbon, circular economy;
- » the steel industry is a material contributor to GHG emissions globally and we must work to improve the efficiency of our operations and reduce our emissions;
- » the steel industry is a hard-to-abate sector due to its capital intensity, long-lived assets, limited commercial alternatives to current greenhouse intensive production technologies, and exposure to international trade. However, this is not a reason for inaction;
- » that decarbonising the steel industry will require sustained and cooperative action by the entire global steel and energy value chains, investors, governments and civil society;
- » that under all credible scenarios, a mix of mature and emerging technologies will be needed to meet climate goals and expected steel demand by 2050 and beyond;
- » that government policies must enable industry to transition and must not lead to carbon leakage, by which production in one country is replaced by equal or higher emissions-intensive production in another country;
- » that the availability of competitively priced and reliable renewable and low emissions electricity and energy sources will be essential to underpin the transition of the steel industry to net zero emissions; and
- » that it is important to future-proof our operations and the communities in which we operate against climate impacts.

## We will:

- » play a meaningful role in transitioning our own operations to a lower carbon footprint. In doing this, we:
  - have adopted a 2050 goal to pursue net zero emissions across our all of our operations<sup>1</sup>. We acknowledge that achieving this goal is highly dependent on several enablers, including the development and diffusion of ironmaking technologies to viable and commercial scale; access to appropriate quality and sufficient quantities of economic raw materials; access to internationally cost-competitive, firm large-scale renewable energy; availability of competitively priced green hydrogen, with natural gas enabling the transition to green hydrogen; and supportive and consistent policies across all of these enablers to underpin decarbonisation;
  - continue to focus on our steelmaking target to reduce our emission intensity across our steelmaking activities by an aggregate 12 per cent by 2030<sup>2</sup> and as we better understand the timing of regional iron and steelmaking transformation and its enablers, consider the appropriate timing and composition of BlueScope's potential future emission reduction targets; and
  - pursue our non-steelmaking target of 30 per cent emission intensity reduction across our non-steelmaking activities by 2030<sup>3</sup>.
- » listen to, and collaborate with our customers to create and inspire smart steel products and solutions that support circular and climate-resilient building, infrastructure and transport systems, while also reducing the embodied emissions of our products;
- » continue to participate in industry research and, where feasible, partner with others to develop commercially viable low emissions solutions;
- » encourage governments to adopt appropriate policies and plans to support the transition in line with our advocacy approach, including policies that support investment by steelmakers in low and zero emissions technologies;
- » consider the impacts on our people, communities and other stakeholders, for a just and equitable transition when developing and executing our decarbonisation pathway; and
- » investigate ways in which we can lead and support emissions reduction initiatives across our value chain.

1. Refer to Our decarbonisation pathway section for more information.

2. Applies to our Scope 1 and 2 emissions, relative to a FY2018 baseline, across our steelmaking activities. Refer to Our climate strategy section for more information.

3. Applies to our Scope 1 and 2 emissions, relative to a FY2018 baseline, across our midstream non-steelmaking activities. Refer to Our climate strategy section for more information.

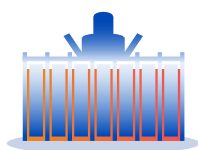
# Our Report at a glance

This Report, our second on climate action, provides an update on our progress towards the climate goals and decarbonisation pathway outlined in our inaugural 2021 Report. It also outlines our strategic approach to managing climate-related matters over the short, medium and long term.

## EXECUTING OUR CLIMATE STRATEGY

And decarbonisation pathway and goals

### AUSTRALIA



Partnering with Rio Tinto and BHP to investigate developing Australia's first ironmaking Electric Smelting Furnace (ESF) pilot plant.



Launched **Australian Direct Reduced Iron (DRI) Options Study** to identify decarbonisation opportunities for Port Kembla Steelworks.

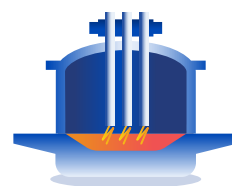


Completed a concept study with Rio Tinto exploring **DRI for ESFs** using Australia's Pilbara ores.



Working with global steelmakers (**thyssenkrupp Steel Europe, Tata Steel Europe and POSCO**) on low emissions technology.

### NEW ZEALAND



Installing an **Electric Arc Furnace (EAF)** at Glenbrook expected to reduce Scope 1 and 2 GHG emissions by **~55%<sup>1</sup>**.

### UNITED STATES

Growing our proportion of low emissions EAF steelmaking.

## GHG PERFORMANCE

Including historical performance by site for the first time.

**12.0%**

Reduction in steelmaking emissions intensity since 2018.

**8.4%**

Reduction in non-steelmaking emissions intensity since 2018<sup>2</sup>.

**54%**

Of BlueScope's FY2024 GHG emissions footprint is from Scope 3 GHG emissions.

## REFRESHED OUR CLIMATE SCENARIO ANALYSIS

### WHAT WE DID



**4 climate scenarios**, including 1.5°C and 2°C global temperature aligned scenarios.

### WHAT WE FOUND



Our current strategy is broadly resilient across all of the refreshed climate scenarios tested.

## REFRESHED OUR PHYSICAL CLIMATE RISK ASSESSMENT

### WHAT WE DID

**71**

Sites assessed for exposure to climate-related hazards.

### WHAT WE FOUND



**Our risk exposure to climate-related hazards does not increase significantly** in the short to medium term; however this exposure will increase towards 2050 and the second half of this century under the 'high climate' scenario.

<sup>1</sup> Subject to securing additional renewable energy power purchase agreements and recycling more domestic scrap steel in New Zealand.

<sup>2</sup> The non-steelmaking target applies to our midstream activities that include our cold rolled, metal coating and painting lines and long products. It excludes our downstream activities.

## INDICATIVE DECARBONISATION PATHWAY

For each of our three steelmaking sites and for our non-steelmaking sites to achieve our decarbonisation commitments and show the opportunities and challenges to 2050.

### REFINED OUR KEY ENABLERS

Since FY2021 key developments include:



**Increased focus on DRI with natural gas as a transitional step** before green hydrogen.



**Advancements in low emissions iron and steelmaking technologies.**

Effective **public policy support** is critical to unlocking progress across all enablers.

Although largely out of our control, we actively monitor and guide (where possible) development of these enablers.

#### Some enablers are in place in the US and New Zealand:

- North Star benefits from technology and raw materials through EAF steelmaking, abundance of scrap, clean energy, and policy supporting domestic steelmaking capability.
- The EAF being built at Glenbrook will benefit from local scrap supply and renewable energy from New Zealand's grid.

#### The greatest challenge is at Port Kembla Steelworks:

- Effective policies are crucial for securing cost-competitive renewable electricity and natural gas, and developing a green hydrogen supply chain.
- A DRI facility using natural gas would need 40 times the current gas consumption and 1.7-2.6TWh of electricity per year (double its current use).
- The Illawarra region currently lacks the necessary transmission and electricity capacity for low emissions steelmaking.



#### Low carbon energy at non-steelmaking operations<sup>1</sup>:

Over 50% of GHG emissions are from electricity with access to renewable energy being essential in the long term. Sites are switching to renewables, where feasible.

## OUR CAPITAL SPEND

To support decarbonisation initiatives



Initial allocation of up to \$150M over five years from 2021, with a total estimated capital investment of \$300M to \$400M to 2030.

**> 40%**

Of initial investment allocation spent since FY2021; continuing to invest both capital and operating spend.

## DEVELOPED LONG TERM SCOPE 3 GHG EMISSIONS PLAN



Defined **vision and decarbonisation approach**.



Launched new **supplier engagement program**.

**34%**

Of our Scope 3 GHG footprint comes from purchased iron and steel, the largest individual contributor<sup>2</sup>.

## OTHER KEY SECTIONS



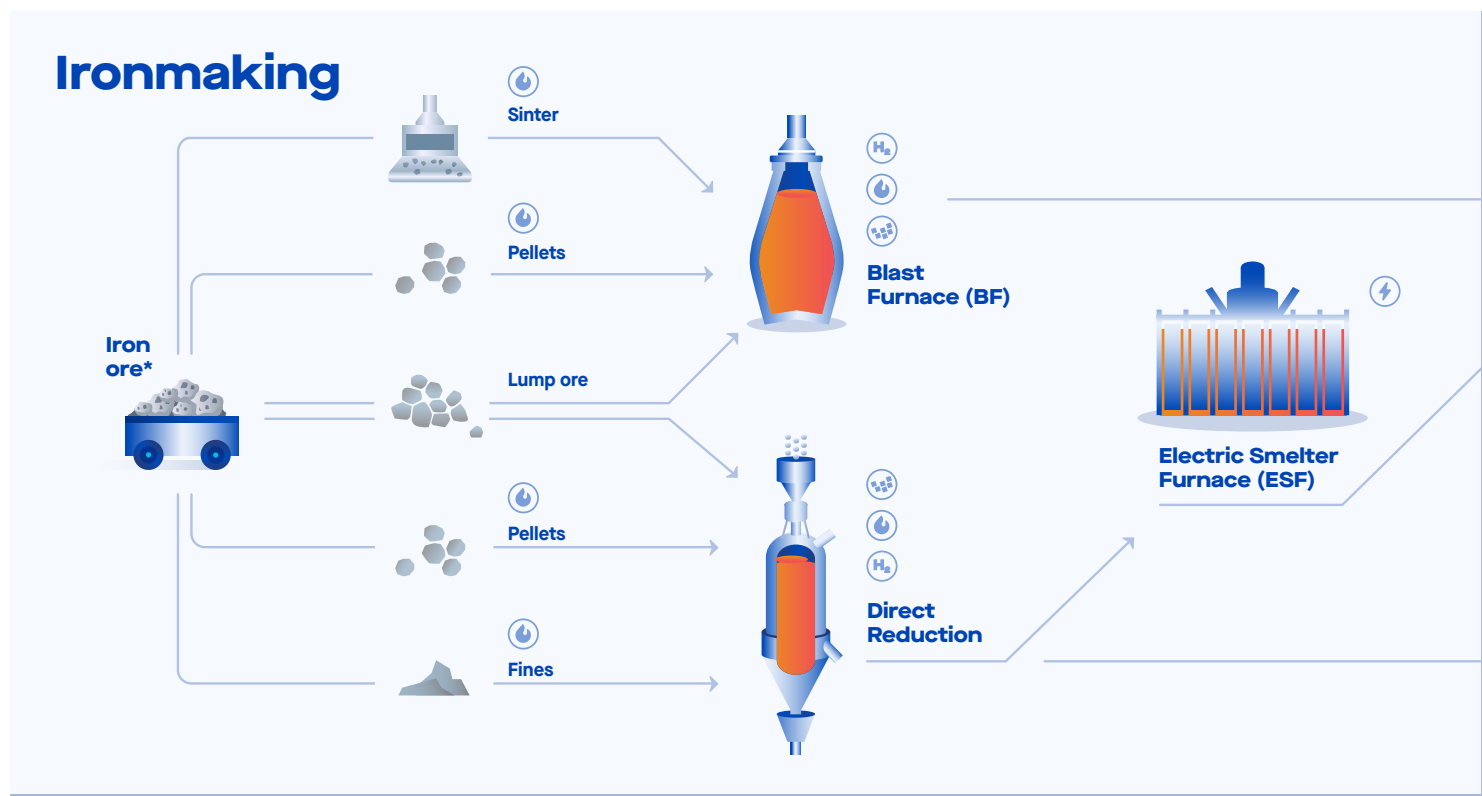
The remaining sections of this Report include how we are **engaging with key stakeholders** and our approach to **climate-related governance and risks**.

<sup>1</sup> Non-steelmaking in the above context refers to midstream activities that include our cold rolled, metal coating and painting lines and long products. It excludes our downstream activities.

<sup>2</sup> Refers to purchases of steel (in regions where we do not manufacture steel within our own operations) and iron (such as pig iron or hot briquetted iron largely at our North Star facility) based on our FY2024 Scope 3 GHG emissions performance.

# Overview of ironmaking and steelmaking processes

The key elements of the iron and steelmaking processes referred to throughout this Report are shown below. We have updated the diagram published in our first Climate Action Report to demonstrate the role of an Electric Smelter Furnace (ESF) in lower emissions iron and steelmaking.



⚡ Electricity    H<sub>2</sub> Hydrogen    🔥 Gaseous fuels and/or reductants    🏭 Metallurgical coal/coke

\* BlueScope's Glenbrook site utilises locally sourced ironsand that is processed through a unique process route.

## Blast Furnace (BF)

A blast furnace is a large vessel in which raw materials are smelted to produce iron. Raw materials, including coke (processed from metallurgical coal), iron ore and sinter and fluxes (such as limestone) are fed into the top of the furnace, while a hot blast of air is continuously blown into the bottom of the furnace via pipes called tuyeres.

Pulverised coal can also be injected through the tuyeres to improve productivity and reduce operating costs. The injection of biocarbon, syngas or pure hydrogen as a partial pulverised coal replacement is being trialled by other international steelmakers. The basic chemical reaction which occurs is where the carbon extracts iron from the ore, producing molten iron, slag and blast furnace gas. Blast furnace gas is typically reused in an integrated steelworks to provide heat, steam and electricity. In order to be converted into steel, molten iron from a blast furnace is typically further processed in a Basic Oxygen Furnace (BOF).

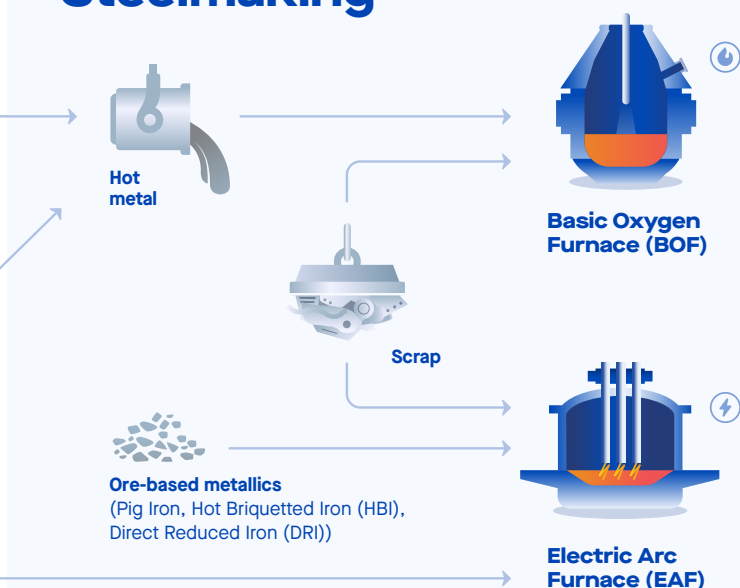
## Direct Reduction

Direct Reduced Iron (DRI) is the term given to a group of processes for making iron from ore (in the form of pellets, fines or lump) using natural gas or coal. Most of the DRI manufactured today is via shaft furnaces using natural gas.

To be converted into steel, DRI is typically processed in an EAF. DRI produced using natural gas provides a significant step reduction in emissions compared to a BF (up to 60 per cent), providing a pathway to lower emissions iron as hydrogen can then replace the natural gas.

DRI plants have the potential to be supplemented with Carbon Capture and Storage (CCS), or biocarbon, which can provide a transition pathway to lower emissions ironmaking.

## Steelmaking



### CASTING AND FINISHED PRODUCTS

#### Continuous caster

#### Rolling

#### Value added steel products

Flat products  
(Plate, hot-rolled coil)

Long products  
(rebar, wire)

Value added  
steel products

### Electric Smelting Furnace (ESF)

Electric Smelting Furnace (ESF) technology is mostly used in industries such as ferro-alloy and non-ferrous industries, however it is adaptable to large-scale ironmaking, but is yet to be tested on many traded iron ores, including Pilbara iron ores.

In an ironmaking context, an ESF consists of a large furnace, in which DRI products (and potentially other iron sources) are heated and smelted to produce molten iron suitable for further refining in either a BOF or EAF to produce liquid steel. DRI materials along with fluxes and sources of carbon are fed into the top of the furnace, while electrical energy is applied as heat via electrodes. Through thermo-chemical reactions, the ESF processes DRI feed and separates impurities to produce a liquid pig iron product and a recyclable slag.

BlueScope operates the only ironmaking ESFs (using iron ore) in the world at its steelmaking site in Glenbrook, New Zealand.

### Basic Oxygen Furnace (BOF)

Basic Oxygen Furnace (BOF) steelmaking is the predominant steelmaking technology that follows the blast furnace process. A mix of molten iron and scrap are added to the furnace, and oxygen is blown through a top lance, lowering the carbon content of the molten bath and converting it into steel. The process is referred to as basic because fluxes of burnt lime and dolomite, which are chemical bases, are added to promote the removal of impurities such as silicon and phosphorous.

### Electric Arc Furnace (EAF)

An Electric Arc Furnace (EAF) is a steelmaking furnace, in which steel scrap or other iron sources are heated and melted by heat from electric arcs. The proliferation of EAFs is influenced by several factors, including access to adequate quantities of quality steel scrap, and the cost, reliability and emissions intensity of local electricity supply.

# Our climate strategy

Climate action remains a core theme of our Group's strategy, guiding our decarbonisation commitment through six key focus areas. Highlighted below is our progress across these focus areas since our first Climate Action Report released in September 2021. We will continue to track our progress against these actions into the future.

	Key focus area	Key progress since our first Climate Action Report
	<b>Reduce our GHG emissions in response to evolving climate science, technology availability and key investment decisions</b>	<ul style="list-style-type: none"> <li>Achieved a 12.0 per cent reduction in aggregated steelmaking emissions intensity against its FY2018 baseline, in line with our 2030 target</li> <li>Constructing an EAF at New Zealand Steel that is expected to reduce the site's Scope 1 and 2 GHG emissions by ~55 per cent<sup>1</sup></li> <li>Undertaking Australian DRI Options Study - a comprehensive analysis of DRI supply chain options to decarbonise Port Kembla's operations</li> <li>Collaborating with Rio Tinto and BHP to investigate the joint development of an Australian ironmaking ESF pilot plant</li> </ul>
	<b>Creating carbon efficient and climate-resilient solutions for our customers</b>	<ul style="list-style-type: none"> <li>ResponsibleSteel™ site certification awarded to Port Kembla, Western Port (Australia) and Phu My (Vietnam)</li> <li>Coated products in New Zealand now incorporate BlueScope's proprietary Activate™ (aluminium/zinc/magnesium alloy coating) technology which improves corrosion resistance and extends product life</li> <li>Third party sustainability-related accreditation achieved for products in China, Australia, New Zealand and Indonesia</li> </ul>
	<b>Increase our use of affordable and reliable renewable energy</b>	<ul style="list-style-type: none"> <li>Entered into an innovative offtake agreement for renewable energy in New Zealand to support the EAF project which will more than halve Glenbrook's Scope 1 and 2 GHG emissions</li> <li>Several midstream sites in Asia now source a portion of their energy from renewable solar power, with more projects in the pipeline</li> </ul>
	<b>Use quality and cost-effective carbon offsets, only where direct abatement is not feasible</b>	<ul style="list-style-type: none"> <li>Developed a group-wide carbon offsets strategy and internal governance framework that apply to both compliance and voluntary offsets use</li> <li>Investigating opportunities to procure carbon offsets to meet potential lower carbon product demands from customers</li> </ul>
	<b>Making the case for local, sustainable steel in our communities</b>	<ul style="list-style-type: none"> <li>Port Kembla Steelworks' plate mill upgrade to meet increased demand for renewable energy infrastructure, construction and defence</li> <li>Upgrade of Orrcon Steel Unanderra and Northgate facilities to manufacture solar energy components</li> </ul>
	<b>Monitor, manage and engage</b>	<ul style="list-style-type: none"> <li>Ongoing engagement with government at all levels, membership of industry associations, investors and community stakeholders</li> <li>Reporting under various investor surveys and frameworks. Engagement with international climate and sustainability initiatives such as ResponsibleSteel™</li> </ul>

<sup>1</sup> Subject to securing additional renewable energy power purchase agreements and recycling more domestic scrap steel in New Zealand.

## Our climate targets and goals

BlueScope's 2050 net zero goal and mid-term 2030 targets for steelmaking and non-steelmaking drive our decarbonisation activities and projects, which are underpinned by our Capital Allocation Framework.

### OUR 2050 NET ZERO GOAL

## NET ZERO

Scope 1 and 2 GHG Emissions



All global operations (steelmaking and non-steelmaking)

Our goal is to pursue net zero Scope 1 and 2 GHG emissions across our business by 2050 and is contingent on five key enablers:



#### Technology evolution

Development and diffusion of ironmaking technologies to viable and commercial scale



#### Raw materials supply

Access to appropriate quality and sufficient quantities of economic raw materials



#### Firmed, affordable renewables

Access to internationally cost-competitive, firmed large-scale renewable energy



#### Hydrogen and natural gas availability

Availability of competitively priced green hydrogen, with natural gas enabling the transition to green hydrogen



#### Public policy

supportive and consistent policies across all of these enablers to underpin decarbonisation

Noting the complexity and uncertainty of transitioning the hard-to-abate steelmaking industry, we will continue to assess the appropriateness of our 2050 net zero goal, including its scope and timing, against developments across these enablers.

Our priority is direct abatement through initiatives to optimise existing assets, as well as pursuing new

technology pathways. While we do not intend to rely on offsets as a primary means of decarbonisation, we recognise the potential contribution of offsets to cover future liabilities beyond our ability to directly abate, residual emissions and to meet customer demand ahead of feasible decarbonisation.

### OUR 2030 TARGETS

In working towards our 2050 net zero goal, we have adopted interim emissions intensity reduction targets for steelmaking and non-steelmaking activities.

Together our 2030 targets cover around 99 per cent of BlueScope's Scope 1 and 2 GHG emissions. The baseline for the steelmaking 2030 target was FY2018.

This baseline was 9.5 per cent below industry average, as measured by worldsteel<sup>1</sup>, and 19 per cent lower than BlueScope's FY2005 emissions intensity<sup>2</sup>.

Refer to the Emissions Performance section for further information on our progress.

### 2030 STEELMAKING TARGET

12%

Emissions intensity reduction



Steelmaking sites (Port Kembla, Glenbrook and North Star)

### 2030 NON-STEELMAKING TARGET

30%

Emissions intensity reduction



Midstream sites that include painting and coating lines

<sup>1</sup> worldsteel CO2Data Report 2023 (2022 data year)

<sup>2</sup> BlueScope utilises the GHG Protocol Equity Share approach for accounting for GHG emissions. In 2005, BlueScope had a 50 per cent equity share of the North Star steelmaking facility with Cargill. In October 2015 BlueScope acquired the remaining 50 per cent of North Star.

# Emissions performance

## Overall Group FY2024 emissions performance

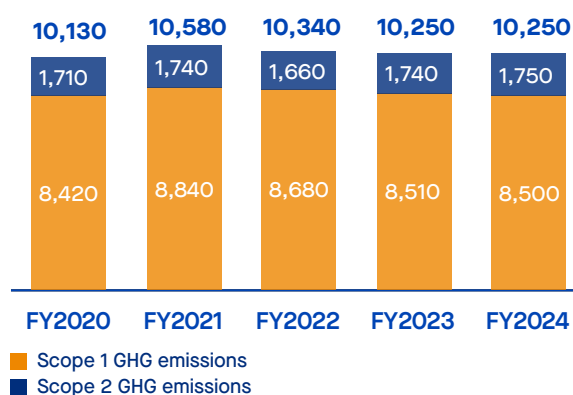
Measuring emissions performance is critical to understanding how our operations are tracking towards our 2050 net zero goal and 2030 targets.

Absolute GHG emissions performance illustrates progress towards our 2050 net zero goal, while emissions intensity is used for our 2030 steelmaking and non-steelmaking targets. Our GHG performance is influenced by several factors, including the time taken for decarbonisation projects to work through capital development to execution and ramp-up; availability and economics of raw materials and scrap, volumes of products despatched to customers and external factors, such as the rate at which electricity grids decarbonise across the regions where we operate.

Iron and steelmaking activities across our three steelmaking sites (Port Kembla, North Star and Glenbrook) account for 92 per cent of our total Scope 1 and 2 GHG emissions. Non-steelmaking (midstream and downstream activities) account for the remaining 8 per cent of our GHG emissions profile.

Our total global GHG emissions have remained on a fairly stable reduction path, however have increased slightly in FY2024. This is due to production growth resulting from the first full year of the North Star expansion ramp-up, and inclusion of BlueScope Coated Product assets for the first time.

### BLUESCOPE'S TOTAL GLOBAL SCOPE 1 AND 2 GHG EMISSIONS (ktCO<sub>2</sub>-e)



**1.2%**

Increase in absolute GHG emissions since 2020

## GHG performance – steelmaking sites

Our 2030 steelmaking target applies to the combined GHG emission intensity contributions of our three steelmaking sites and should not be considered to apply at an individual site level. However, for the first time, we are reporting historical GHG intensity by steelmaking site to highlight the opportunities and challenges at our different sites<sup>1</sup>.

BlueScope's three steelmaking operations use different iron and steelmaking technologies and raw materials. Both Port Kembla Steelworks and Glenbrook Steelworks are 'integrated' iron and steelmaking

operations, producing both iron and steel (referred to as 'primary' steelmaking, as the process starts by converting iron ore to iron); while North Star is a 'mini mill' steelmaking operation, mainly using scrap as the key raw material, which is then processed through an EAF (referred to as 'secondary' steelmaking). In all operations, the increased use of scrap is a powerful lever to improve emissions intensity as it is a very low emissions recycled material. Scrap will play a critical role in industry decarbonisation but there is not enough to meet global demand.

1. Data presented from FY2013, the first financial year with a single blast furnace at Port Kembla Steelworks, and therefore operationally relevant today. North Star data is shown at 100 per cent, and has been adjusted for the 50:50 ownership structure prior to it being fully acquired in 2015. The GHG emissions calculations approach has been revised from FY2018 to align with the recently updated National Greenhouse and Energy Reporting (NGER) and worldsteel requirements for estimating carbon content in ferrous feed.



## Port Kembla Steelworks

Port Kembla Steelworks is placed in the 'top 15% Blast Furnace-Basic Oxygen Furnace performers' (BF-BOF) for the emission intensity of blast furnace-based operations<sup>1</sup>. Since FY2013, the site's emission intensity has declined by 16 per cent to well below the global BF-BOF average of 2.22tCO<sub>2</sub>/tonne raw steel<sup>2</sup>. This is predominantly driven by a significant increase in scrap usage rates in the basic oxygen furnace, as well as higher operational volumes and improved process energy efficiencies.

The FY2020 increase in emission intensity reflected the impact of reduced production at the start of the COVID-19 pandemic. Since then, emissions have reduced through specific efficiency initiatives including reducing coke consumption through humidity control in the blast furnace and further increases in scrap utilisation rates. The latter is a result of a focused campaign on improving process optimisation and efficiency, which includes capital upgrades, automation and digitisation activities.



## Glenbrook

New Zealand Steel is the only steel producer in New Zealand. Its Glenbrook Steelworks has benefited from energy and production efficiency measures, such as increased scrap use, yield increases and process efficiency improvements, which have contributed to a 4 per cent reduction in emission intensity since FY2013. Emission intensity spiked in FY2016, largely driven by coal supply issues resulting in the need to import significant quantities of coal of varying quality combined with poor market conditions resulting in

lower steel volumes. FY2024 GHG intensity increased because of stockpiling of iron production<sup>3</sup> for future use and high use of supplementary natural gas for internal electricity generation due to high electricity prices. Performance was also affected by lower tonnes through the kilns and melter which resulted in higher coal utilisation per tonne of crude steel production. This increase was partially offset by greater efficiencies in the use of scrap.



1. worldsteel CO<sub>2</sub> Data Report 2023 (2022 data year) has the Port Kembla Steelworks site in the lowest 15th percentile for emission intensity of BF-BOF steel plants. Note that this data is limited to those iron and steelmakers who voluntarily report on emissions data with worldsteel (56 BF-BOF sites in 2022 representing 17 per cent of global BOF steel production and 53 per cent of global BOF steel production excluding China. No Chinese steel plants report CO<sub>2</sub> data to worldsteel).

2. Based on steelmakers who reported to worldsteel in 2023 (with 2022 data) where co-product production is applied to the BF-BOF routes considered.

3. Includes the emissions from producing iron but no despatched tonnes, leading to an increase in steel emission intensity.

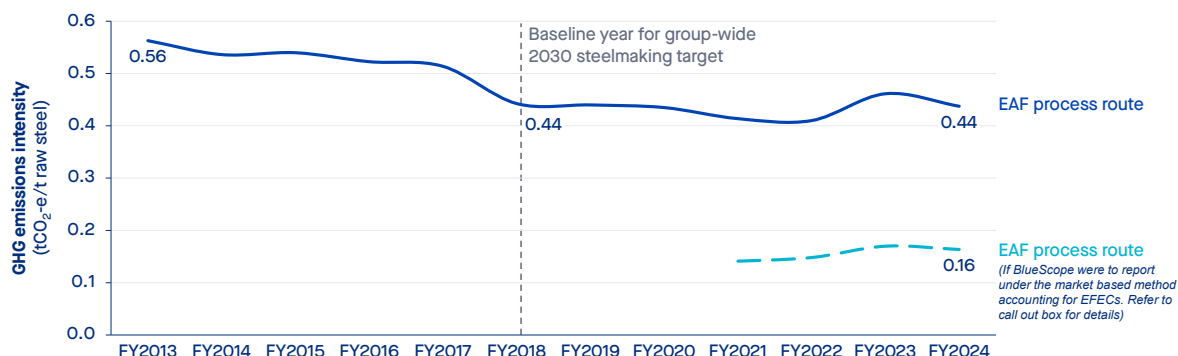


## North Star

Since its establishment in 1996, North Star has operated its EAF steelmaking operation in Delta, Ohio, by leveraging abundant local scrap, and access to low-cost and emissions-free energy (see call-out box below). Electricity is the primary energy input for EAF-based steelmaking. Since FY2013, emission intensity has decreased by 22 per cent, driven by the decarbonisation of the electricity energy grid<sup>1</sup> and continuous improvement projects that have increased tonnage and enhanced energy efficiency.

The construction of an additional EAF to expand production at the site by up to 850,000 tonnes

per annum is now complete. While the expansion to date has resulted in increased absolute emissions of approximately 373,000tCO<sub>2</sub>-e, the relative emission intensity of North Star's steelmaking method has considerably reduced BlueScope's overall Scope 1 and 2 steelmaking GHG emission intensity. GHG emissions intensity from the site temporarily increased in FY2023 as a normal part of the expansion ramp-up process. A production debottlenecking program is now underway to further increase production and operational efficiency which will then help reduce North Star's GHG emission intensity.



## Low emissions electricity sourcing at North Star

BlueScope uses the GHG Protocol's location-based method for reporting emissions associated with electricity consumption. This method applies a grid or regional-based emission factor for electricity consumption to estimate a site's Scope 2 emissions, as shown in the performance chart above.

North Star benefits from operating in a region with a high penetration of nuclear power as part of the local grid mix and the site has a power purchase agreement (PPA) with a local nuclear power provider for 'GHG emissions free electricity'. This PPA involves all of North Star's electricity consumption being matched with Emission Free Electricity Certificates (EFECs) from January 2020. Each EFEC represents 1MWh of electricity generated without producing CO<sub>2</sub> emissions. The certificates are independently verified by the electricity market operator PJM Environmental Information Services

through its Generation Attribute Tracking System.

North Star is currently working to recognise the lower CO<sub>2</sub> footprint credentials of its steel products via an updated Environmental Product Declaration (EPD), a third-party verified and registered document.

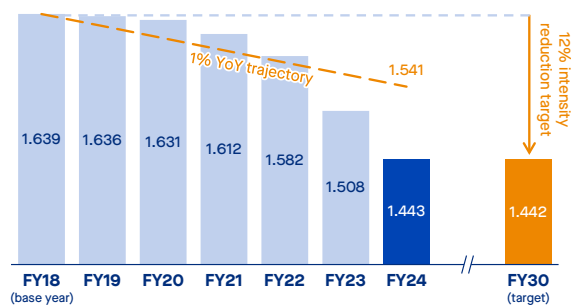


Slab exiting the caster going into the tunnel furnace at North Star.

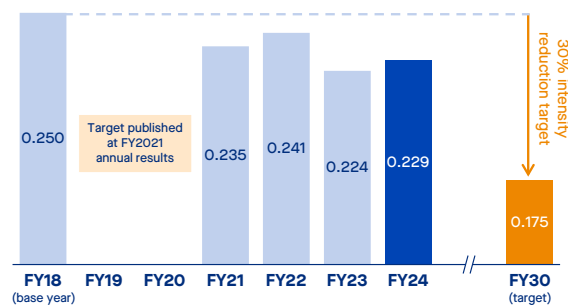
1. Using the GHG Protocol's location-based Scope 2 GHG emissions reporting method

## GHG performance against 2030 targets

**GHG EMISSION INTENSITY FOR STEELMAKING ACTIVITIES<sup>1,2</sup> (tCO<sub>2</sub>-e/raw steel tonnes)**



**GHG EMISSION INTENSITY FOR NON-STEELMAKING ACTIVITIES<sup>3,4</sup> (tCO<sub>2</sub>-e/despached tonnes)**



### Steelmaking

BlueScope achieved a 12.0 per cent reduction in aggregated steelmaking emissions intensity against its FY2018 baseline, in line with its 2030 target level. This was primarily driven by the ramp-up of the North Star expansion, which contributed to an increased proportion of BlueScope's production volumes coming from North Star's low emissions process. Further incremental operating and process efficiencies at Glenbrook and Port Kembla also contributed to this outcome.

Emissions intensity performance can fluctuate year-on-year due to a range of factors including production volumes, raw materials quality and mix. As FY2025 will be the first full year of expanded capacity at North Star, balanced against a challenging short term steel market outlook, we expect to maintain emissions intensity in line with our 2030 target.

Looking further ahead, the commissioning and ramp up of the EAF in New Zealand, together with debottlenecking at North Star will contribute to further improving our steelmaking emissions intensity performance. Port Kembla will continue to improve its process efficiencies.

As we better understand the timing of regional iron and steelmaking transformation and its enablers, we will consider the appropriate timing and composition of BlueScope's potential future emission reduction targets.

### Midstream non-steelmaking

FY2024 performance shows that gross Scope 1 and 2 GHG emission intensity across our midstream non-steelmaking activities has reduced by 8.4 per cent since FY2018. Midstream sites have implemented a range of projects to reduce emissions, including renewable energy projects across our Asian footprint, and process changes to optimise waste heat recovery, such as the Regenerative Thermal Oxidiser in Suzhou, China. However, the emissions intensity reductions achieved so far have been affected by lower production and despatch volumes compared to FY2018.



1. In FY2024, the GHG emissions calculation approach for steelmaking was updated to align with recently updated National Greenhouse and Energy Reporting Scheme (NGERS) and worldsteel requirements for estimating carbon content in ferrous feed. This has resulted in an update to the baseline and each subsequent reporting period.
2. FY2024 steelmaking GHG emission intensity has been updated from preliminary data disclosed in the FY2024 annual results material following the completion of further internal verification. This includes updates to historical data to correct previous overstatements of Scope 2 emissions from FY2018 resulting in an additional restatement to our FY2018 base year and 2030 target year emission intensity.
3. Our non-steelmaking target applies to our midstream activities that include our cold rolled, metal coating and painting lines and long products. The above graph does not include data from hollow steel products from 2020 when production ceased in our New Zealand operation.
4. In FY2024, non-steelmaking data were updated to incorporate BlueScope Coated Products assets from FY2023. Non-steelmaking GHG emission intensity target has not been re-baselined as the acquired facilities do not have a material impact on the GHG emission intensity in the base year.

## Scope 3 GHG emissions

BlueScope commenced its Scope 3 reporting journey five years ago with emissions remaining fairly stable over this period, representing just over half of the Company's overall emissions profile.

BlueScope's FY2024 Scope 3 GHG emissions represent 54 per cent of our overall emissions profile. As presented on the chart below, the majority of these emissions come from the extraction, processing and production of raw materials, and the use and processing of our sold products (e.g. coke sales and processing of intermediate products such as slag). Of this, the largest contributor is emissions from the iron and steel that we purchase in the regions where we do not manufacture the steel ourselves.

We continue to improve the accuracy of our Scope 3 reporting each year and in FY2024 we updated the underlying assumptions related to the upstream and downstream transport of raw materials and products. This included the mode of transport (marine, road, rail) and the associated transport routes of our raw materials and finished products based on actual data. This resulted in upstream and downstream transport accounting for 8 per cent of our FY2024 Scope 3 GHG emissions profile.

In addition, we have continued to refine the accuracy of our Scope 3 GHG emissions for raw materials through supplier-specific emission factors received from several suppliers and will continue to engage with more suppliers to obtain this information going forward. Where supplier-specific emission factors are not yet available, we have relied on established global average emission factors.

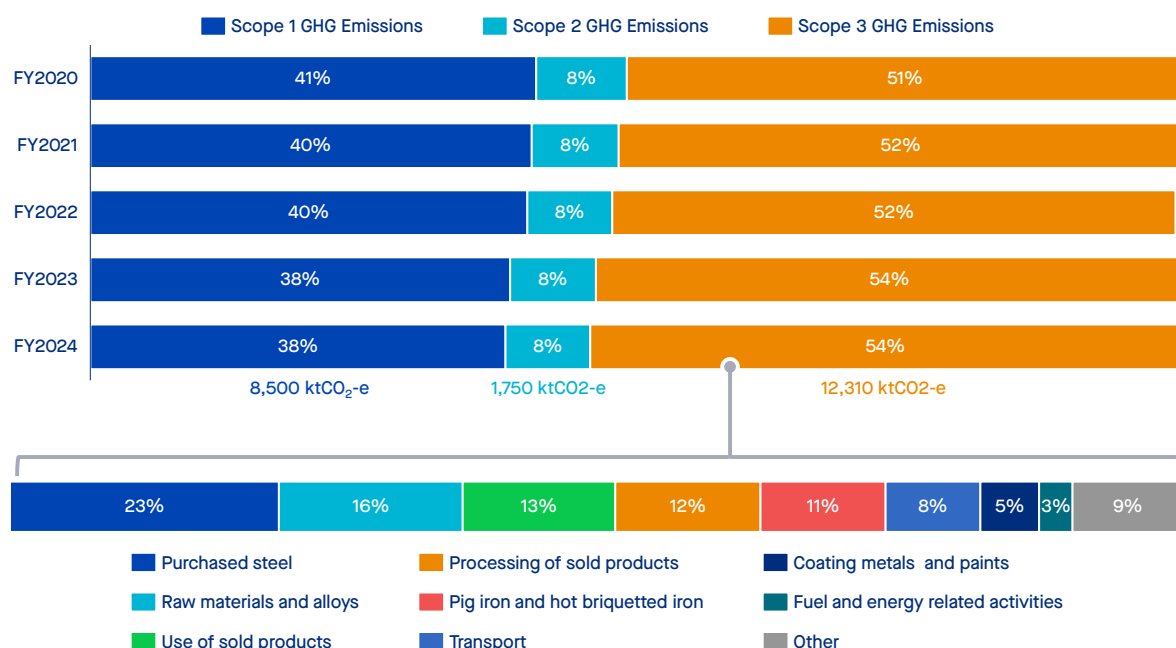
# 60%

of our Scope 1, 2 and 3 GHG emissions profile is associated with the manufacture or purchase of iron and steel. Therefore, we face the same challenges in managing the largest category of our Scope 3 GHG emissions as we do in managing our Scope 1 and 2 GHG emissions.



A detailed breakdown of our Scope 3 GHG emissions is presented in our [FY2024 Sustainability Data Supplement](#).

### BLUESCOPE'S SCOPE 1, 2 and 3 GHG EMISSIONS FOR THE LAST FIVE YEARS<sup>1</sup>



1. We have incorporated BlueScope Recycling and Materials for the first time into our Scope 3 GHG emissions in FY2024. This chart excludes data from BlueScope Coated Products.

# Climate scenario analysis





We have updated our climate scenario analysis in 2024 to help us ensure our business strategy and portfolio remain resilient against transitional and physical climate change impacts. This review incorporated revised scenario drivers, such as policy, technology and market outcomes for steel.

We have developed four scenarios to reflect global temperature outcomes, with two illustrating different policy pathways for ~2°C warming. The scenarios are based on the latest IPCC and International Energy Agency (IEA) reports, highlighting key drivers for each pathway.

Our analysis, developed with third-party consultants and industry experts, has been endorsed by BlueScope's Executive Leadership Team and Board.

The revision of our climate scenarios is informed by the evolving understanding of climate change trajectories, updated data, and emerging industry insights, ensuring they are robust and aligned with current scientific consensus and market trends.

## Scenario overview: key drivers, assumptions and scenario narratives

 <p><b>Accelerated Leap</b></p>	 <p><b>Coordinated Climb</b></p>	 <p><b>Fragmented Lanes</b></p>	 <p><b>Unchanged Paths</b></p>
<b>~1.5°C</b>	<b>~2.0°C</b>	<b>~2.0°C</b>	<b>~4+°C</b>
Global push to urgently abate emissions drives <b>unified policy front</b> that provides incentive for <b>rapid green technology commercialisation</b> and adoption	Global <b>alignment in carbon policies</b> creates a unified transition but economic challenges delay abatement progress relative to <i>Accelerated Leap</i> ; <b>steel expected to contribute to early emissions reduction</b>	Governments and industry initially <b>focus on 'easier to abate' sectors</b> while providing greater leeway for hard-to-abate sectors. <b>Misalignment in policy</b> between regions creates an uneven playing field which may be in part mitigated by country-specific protections	Governments <b>prioritise economic growth and adaptation</b> over emissions reduction although some progress is still made in some regions. As a result, emissions abatement progress does not move beyond today's trajectories



### Use of climate scenario analysis

Climate scenario analysis is a valuable tool for exploring possible futures for various industries and the economy to guide business strategy, identify key signposts to monitor and aid in testing business resilience as part of risk management. However, it is important to approach such analysis with caution due to the long timeframes and uncertain assumptions involved. **The scenarios and descriptions on the following pages are hypothetical constructs of possible futures, not definitive forecasts.**

## BlueScope's climate scenarios



### Accelerated Leap

#### ~1.5°C Temperature increase by 2100

Carbon price	Use of CBAMs <sup>1</sup>	Global policy alignment	Steel demand	Voluntary green premia <sup>2</sup>	Scrap & metallics prices	Fossil fuel input challenges	Link to published scenarios
\$\$\$\$	✓	→	→	Moderate until 2030s	\$\$\$	\$\$\$	SSP 1 - 1.9 & IEA NZE

1. Carbon Border Adjustment Mechanism (refer to Glossary).

2. A higher carbon price under the Accelerated Leap and Coordinated Climb scenarios will ultimately supersede the green premia from the 2030s onwards.

Public and government acceptance of climate change risks drives global, government-led action to urgently reduce emissions. Major emitters, including the US and China, act aggressively to meet 2050 net zero targets and the rest of the world quickly follows suit.

Globally, harmonised carbon pricing and trade policies create a unified carbon price which rapidly rises to incentivise investment in decarbonisation of hard-to-abate sectors, including steel. This spurs the rapid uptake of iron and steelmaking technologies, including hydrogen DRI and ESFs. Economies of scale reduce the cost of these

technologies, so they begin to compete with traditional iron and steelmaking technologies. Renewable electricity expands rapidly and becomes readily available at low cost. These trends are initially aided by large government investment in new technologies and supporting infrastructure and early demand from customers willing to voluntarily pay a premium.

At the same time, strict limits are applied to the future of fossil fuel related activity including bans on capacity expansion or extension, leading to earlier closures of existing gas and coal assets.



### Coordinated Climb

#### ~2.0°C Temperature increase by 2100

Carbon price	Use of CBAMs	Global policy alignment	Steel demand	Voluntary green premia <sup>2</sup>	Scrap & metallics prices	Fossil fuel input challenges	Link to published scenarios
\$\$\$\$	✓	→	→	Moderate until 2030s	\$\$\$	\$\$\$	SSP 1 - 2.6

Coordinated carbon policies drive global emissions reduction, albeit at a less ambitious rate than under *Accelerated Leap*; carbon prices and emissions reduction expectations are equally attributed across all sectors.

Demand for steel increases modestly, driven by GDP growth. Electric vehicle growth may drive lower steel use in automotive production, likely offset by growth in construction demand, including for renewable energy infrastructure. Carbon pricing drives widespread availability of lower emissions steel.

The cost of steel technology falls rapidly, with cost breakthroughs in the late 2030s. By 2050, most steel produced is lower emissions, using scrap and new ironmaking technology.

Growth in demand for scrap raises prices and reduces inter-regional trade. Renewable energy prices remain higher than under *Accelerated Leap* due to the higher carbon cost of meeting a 2°C rather than a 1.5°C target. Environmental issues challenge the availability of natural gas and metallurgical coal.



**Fragmented Lanes**

## ~2.0°C Temperature increase by 2100

Carbon price	Use of CBAMs	Global policy alignment	Steel demand	Voluntary green premia	Scrap & metallics prices	Fossil fuel input challenges	Link to published scenarios
\$-\$\$\$\$	x	↔	→	Moderate & sustained	\$-\$\$\$ <sup>1</sup>	\$	SSP 1 - 2.6

1. Some regions will still see increased scrap and metallics demand.

Public and government acceptance of climate change risks drives global, government-led action to reduce emissions. However, there is some delay in converting global commitments to actual policy, and different policies adopted in different regions. Before 2030, major emitters including the US and China act aggressively to meet their 2050 net zero targets; the rest of the world follows with a lag.

Governments act largely independently, in some instances through very high carbon prices with strong trade policies to limit carbon leakage, in others, through large tax incentives and subsidies for technology and infrastructure. There is a preference for lower cost domestic

abatement opportunities and general protection for traded strategic commodities, including steel. Hard-to-abate sectors exposed to global trade consume a disproportionate share of the remaining emissions budget and are expected to decarbonise later. Due to differences in incentives and input costs, the development of technology varies dramatically by region, with 'green' iron and steel emerging from lowest cost producers.

The corporate sector plays a greater role in driving emissions reduction, anticipating the future effects of policy environments and responding to customer needs.



**Unchanged Paths**

## ~4+°C Temperature increase by 2100

Carbon price	Use of CBAMs	Global policy alignment	Steel demand	Voluntary green premia	Scrap & metallics prices	Fossil fuel input challenges	Link to published scenarios
\$	x	↔	→	Very low	\$	\$	SSP 5 - 8.5

As we move toward 2030, economic concerns increasingly drive national policy. Threatened by global conflicts and supply chain disruptions, governments adopt protectionist measures to nurture strategic industries. More ambitious regions, such as Europe, Australia and New Zealand, continue to push forward carbon pricing but momentum fades as countries look to avoid a trend toward de-industrialisation. Attention turns to investing in adaptation and resilience to prepare for a higher temperature future.

Early quick wins in emissions reduction are achieved with growth in renewables and more CCS projects reaching operational stages, however technology costs remain high. Some blast furnaces close as they reach end of campaign life; EAFs continue to increase share in line with scrap availability.

A sustained effort by consumers and some businesses to reduce emissions drives a small but sustained green premium for a niche market.

## Implications for BlueScope

This scenario analysis indicates that our current strategy is broadly resilient across all of the refreshed climate scenarios tested. The implications of the four scenarios vary for each of our steelmaking sites.



### Port Kembla Steelworks, Australia

Carbon pricing and trade policies have the most significant impact under all scenarios. In the short to medium term, the *Accelerated Leap* and *Coordinated Climb* scenarios assume trade protection through adjusted safeguard mechanism baselines and ultimately a CBAM.

In all scenarios, profitability may decline in the longer term as customers turn to lower emissions imported steel.

Access to high quality, commercial metallurgical coal remains difficult, particularly in the *Accelerated Leap*, *Coordinated Climb*, and *Fragmented Lanes* scenarios when government approvals for extensions of coal mines may be restricted and would likely increase costs medium to long term.



### North Star, North America

Carbon pricing and trade policies support North Star's EAF steel production using scrap and ore-based metallics, and should result in higher margins in all scenarios. In the *Accelerated Leap* and *Coordinated Climb* scenarios, domestic steel prices reflect the high emissions intensity of local blast furnaces inclusive of carbon costs.

The *Accelerated Leap*, *Coordinated Climb*, and *Fragmented Lanes* scenarios encourage lower emissions steel using gas-based DRI and CCS, through a carbon price, tax-based financial incentives, and competitive developments in CCS. As customers seek to purchase low emissions steel, North Star should benefit given the lower emissions intensity of its EAF steelmaking process.



### Glenbrook Steelworks, New Zealand

Glenbrook benefits from higher carbon prices with increased margins for lower emissions EAF produced steel, but would need to further reduce its carbon footprint, e.g. via more EAF conversion or hydrogen-based ironmaking, if technically and commercially viable, under the lower temperature scenarios. Access to domestic coal remains difficult in the medium to long term, particularly in the *Accelerated Leap*, *Coordinated Climb*, and *Fragmented Lanes* scenarios when government approvals for extensions of the existing coal mine may be restricted.

In the *Fragmented Lanes* and *Unchanged Paths* scenarios, the longevity of Glenbrook's current ironmaking process is likely to be greater. However, policy imbalances, particularly without a local CBAM, may reduce the competitiveness of products (non-EAF output) compared to imports with a New Zealand carbon price.



### BlueScope

In the *Accelerated Leap* and *Coordinated Climb* scenarios, BlueScope benefits from low cost EAF production at North Star and the partial transition to EAF steelmaking at Glenbrook. Carbon pricing creates additional costs at Glenbrook and Port Kembla, but CBAMs are expected to offer protection in the medium term, providing time for lower emissions sources of iron to be developed when carbon prices rise. In the *Fragmented Lanes* and *Unchanged Paths* scenarios, there is an increased risk of country specific policies being out of step with global competitors which could challenge the outlook for coal-based ironmaking at Glenbrook and Port Kembla. Access to high quality scrap and ore-based metallics will become increasingly tighter in all scenarios over time.

Robust demand is expected to continue for BlueScope's products, with any demand destruction from shifting sectoral and GDP patterns offset by increased demand for steel required in construction and renewable energy infrastructure.

## Physical climate risks

In 2021, we conducted a physical climate risk assessment to better understand the potential physical impacts of climate change on our operations. Since then, our operational footprint has expanded through acquisitions, and climate models (and associated regional and local climate projections) have evolved with the release of the IPCC's Sixth Assessment Report. Consequently, we refreshed our quantitative physical risk assessment this year.

We engaged a specialist technical consultant to assess climate-related physical risks across a selection of our operations to understand the high-level impacts of these hazards on the most critical parts of our supply chain.

### WHAT WE DID<sup>1,2</sup>



# 71

#### Sites assessed for exposure to climate-related hazards

Includes our 3 steelmaking sites, the largest coating and painting and building manufacture sites as well as recently acquired sites.



# 3

#### Steelmaking sites assessed for supply chain impacts

A high-level supply chain impact analysis that mapped key supply chain routes for raw materials, and associated transport routes.



# 3

#### Time horizons assessed

2030, 2050 and 2100 were selected to stress test the exposure of our sites to climate-related hazards.



# 2

#### Climate scenarios applied

The selected scenarios are aligned to IPCC's SSP1-2.6 and SSP5-8.5<sup>2</sup>.

# 6

#### Climate-related hazards selected

A description of each climate-related hazard is outlined below:

##### Chronic risks



##### Heat stress

Heightened temperature, humidity and urban heat island effects result in increased heat stress



##### Water stress

Demand for safe, usable water exceeds supply



##### Sea level rise

Rising sea levels, high tides, vertical land movements, and storm surges result in a higher incidence of coastal flood events

##### Acute risks



##### Floods

Increased frequency and intensity of rainfall leading to increased river discharge and localised flash flooding



##### Cyclones/hurricanes/typhoons

Changes in wind regimes and sea surface temperatures have the potential to enhance wind speeds and intensity of cyclones/hurricanes/typhoons



##### Bushfires

Increased incidence of fire inducing weather due to confluence of days with higher temperatures, wind speeds and drier conditions

1. Our 2024 physical risk assessment differed to the 2021 assessment as it used IPCC's latest climate projections with a different set of climate-related hazards and modelling techniques.  
2. Aligned to IPCC's Shared Socioeconomic Pathways (SSP) aligned to its latest Assessment Report 6 climate projections. SSP1-2.6 was used to represent a low risk, stringent scenario, linked to the objectives of the Paris Agreement (with low emissions) and SSP5-8.5 was used to represent a high risk, 'business as usual' scenario (with high emissions).

## WHAT WE FOUND<sup>1,2,3</sup>

Similar to the findings from our 2021 assessment, the recent analysis shows that our overall risk exposure profile remains largely unchanged in the short to medium term under both assessed climate scenarios. However, this exposure is expected to slightly increase towards 2050 and rise significantly under the SSP5-8.5 'high temperature' scenario in the second half of the century. Based on 71 sites assessed, under the 'high temperature' scenario of SSP5-8.5:



### Heat stress and water stress are the dominant hazards expected to impact most of our sites by 2100

It should be noted however that floods, cyclones/hurricanes/typhoons and sea level rise may impact a select number of sites.



### Australia is projected to incur the highest climate-related financial impacts by 2100

This is followed by losses in regions including Thailand, USA and China.



### Exposure to climate-related hazards projected to increase over time, with variations across geographies

The exposure of each site is dependent on its location and associated climate projections. For our supply chains, Port Kembla and Glenbrook's downstream logistics routes will be increasingly impacted by heat, flooding and cyclones in the future. High resilience across North Star's upstream and downstream logistics routes, with river flooding expected to increasingly impact upstream routes.



### For our steelmaking sites

Of the climate-related hazards assessed:

#### Port Kembla

Will experience increasing exposure to sea level rise, water and heat stress towards 2100.

#### Glenbrook

By 2100, will experience increasing exposure to heat and water stress; with cyclones also posing a threat to site.

#### North Star

By virtue of its location, is largely benign to acute physical climate risks. Nevertheless, climate-related financial impacts modelled were driven by water and heat stress.

## Next steps

Since the 2021 assessment, we have considered the impact of climate-related hazards in our operational expansion and site acquisition strategies. For the supply chain analysis, as the upstream sourcing of raw materials is likely to change at some of our steelmaking sites as alternative lower emissions iron and steelmaking technologies are adopted in the future, we will focus on the downstream supply chain impacts. The findings have been shared across the Company and will inform future operational and strategic decisions, including asset vulnerability assessments during acquisitions and capital investments, where relevant. Although our projections to 2050 suggest no substantial capital will be required to mitigate potential exposures, we remain proactive in our approach to managing climate-related risks.

1. When assessing the above findings, it is important to understand the complexity of global climate models with high degrees of uncertainty associated with the assumptions that underpin them. Therefore, these results should not be considered as definitive forecasts of the future and are not a guarantee of these specific outcomes.
2. The analysis was based on the current technology and business processes in operation at our sites. We are actively exploring alternative iron and steelmaking technologies which may change the future operating conditions of our sites and could result in a change to the risk exposure of these sites.
3. The findings presented reflect the inherent climate-related physical hazard exposures at our sites. This analysis does not account for current or planned risk mitigation measures, which could reduce the actual level of risk.

# Our decarbonisation pathway

## BlueScope's indicative steelmaking decarbonisation pathway

**BlueScope takes a dual-stream approach to decarbonising its iron and steelmaking operations. This strategy focuses on both the near-term processes of asset optimisation and longer-term technology evolution.**

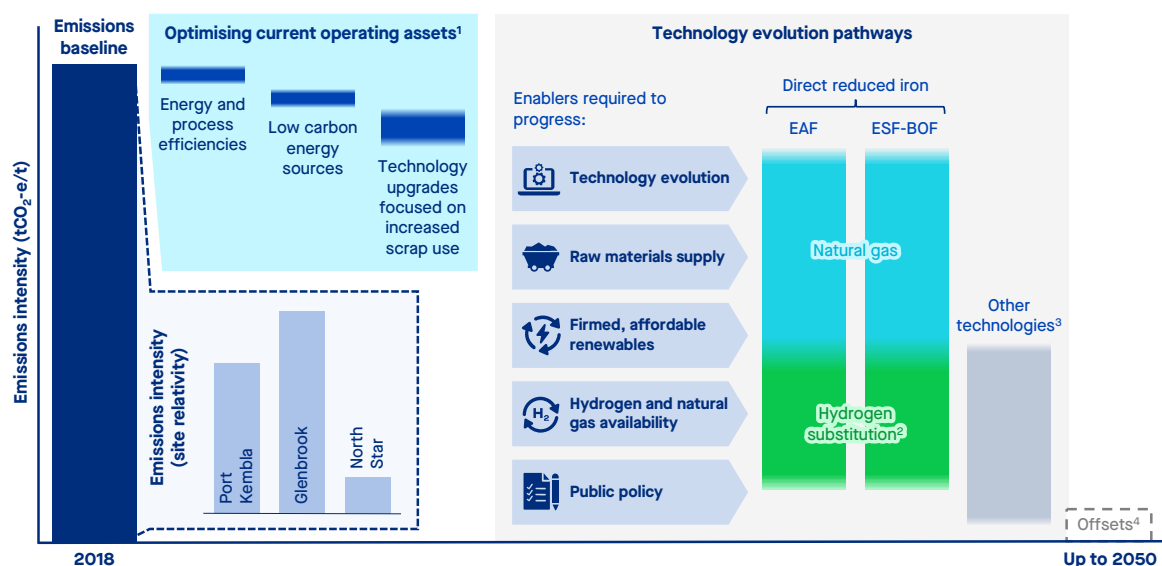
Our people at our three steelmaking sites identify and implement projects to optimise assets through energy and process efficiencies, including recycling increased amounts of scrap and energy, and moving towards low carbon energy sources.

BlueScope's Group-wide iron and steelmaking decarbonisation pathway below is indicative of how we expect to achieve our 2030 steelmaking target<sup>1</sup> and 2050 net zero goal<sup>2</sup>, and is revised as new information becomes available. In considering this pathway, it is important to recognise that BlueScope's three steelmaking operations use different iron and steelmaking technologies and raw materials. Port Kembla Steelworks is an integrated iron and

steelmaking operation (primary steelmaking via a BF-BOF), North Star operates an EAF mini-mill (secondary steelmaking via a scrap-based EAF) while Glenbrook, like Port Kembla, is an integrated iron and primary steelmaking operation that uses a unique upstream mining and ironmaking process (primary steelmaking via a direct reduction process coupled with ESF) and BOF steelmaking. Details of the specific decarbonisation pathway for each steelmaking site with commentary on the most important enablers, follow on pages 26 to 33.



**An overview of key developments across the five key enablers that underpin our 2050 net zero goal is outlined on page 24 to 25.**



1. Optimising current assets involves working within currently available technology options to improve the efficiency of assets and processes, including upgrading technology where there are supportive enablers. This continues beyond 2030 until such time as it is feasible to convert to lower emissions iron and steelmaking technology. Continuous improvement principles will apply to future production processes.
2. Contingent upon commercial supply of hydrogen from renewable sources.
3. Other technologies include electrolysis, CCS and biocarbon, etc.
4. We retain the option to use offsets to meet our 2050 net zero goal where direct abatement is not technically or commercially feasible.

1. Our 2030 steelmaking target is equivalent to a 1 per cent year-on-year combined emission intensity reduction from steelmaking operations, from FY2018. This 12 per cent emission intensity reduction applies to the combined emissions intensity of our three steelmaking sites and should not be considered to apply at an individual site level.
2. Achieving this goal is dependent on our key enablers as described on the following pages.

# Key developments across our net zero enablers



## Technology evolution

Development and diffusion of ironmaking technologies to viable and commercial scale

### Overview

- Primary steelmaking accounts for ~79 per cent of steel production<sup>1</sup> worldwide (and 93 per cent of steel sector emissions), principally through the BF-BOF process, with the remaining 21 per cent is comprised of scrap-based EAF secondary steelmaking<sup>2,3</sup>. Given insufficient quality scrap to meet global steel demand, the IEA expects primary steelmaking will still account for over half of global steel production in 2050<sup>4</sup>.
- It is critical to develop low emission primary iron and steelmaking technologies to commercial feasibility for the steel industry to reach net zero emissions. Some emerging technologies are not ready (e.g. electrolysis), while others available (e.g. DRI-EAF) are not suitable or possible in all locations due to energy or raw material availability.



## Raw materials supply

Access to appropriate quality and sufficient quantities of economic raw materials

### Overview

- Cost-effective raw materials of appropriate quality are crucial to maintain steel production and support the transition to net zero. Secondary scrap-based EAF steelmaking requires a continuous supply of scrap steel but there is insufficient global supply to meet demand. Accordingly, a combination of iron and scrap will still be required. Scrap quality can affect the steel grades able to be produced in an EAF and, combined with varying regional supply, is a challenge for the steel industry.
- The transition to lower emissions requires moving to either DRI-EAF with higher grade magnetite ores, or DRI-ESF-BOF with lower grade Pilbara iron ores.
- There is insufficient high-quality low impurity direct reduction (DR) grade ore to meet global steel demand as it makes up only six per cent of global iron ore supply and is priced at a substantial premium<sup>6</sup>. It is critical to find a way to use BF grade iron ore in DRI processes to enable the steel industry to decarbonise on a global scale.



## Firm, affordable renewables

Access to internationally cost-competitive, firm large-scale renewable energy

### Overview

- Reliable and affordable firm renewable energy is critical for transitioning to lower emissions iron and steelmaking and for BlueScope to maintain its internationally cost-competitive position as a trade-exposed business.
- Access to firm renewable electricity varies regionally. New Zealand Steel benefits from a largely decarbonised electricity grid, and North Star benefits from nuclear power; however, the Port Kembla local grid is largely based on coal-fired generation. As such, investment in grid-scale renewables, storage and transmission is required.



## Hydrogen & natural gas availability

Availability of competitively priced green hydrogen, with natural gas enabling the transition to green hydrogen

### Overview

- Green hydrogen produced using water and renewable energy for near zero or zero GHG emissions is in its infancy. To be commercially viable for the DRI process, it must be supported by low-cost firm renewable energy and may require initial government support.
- Solving the challenges of green hydrogen availability and economics may take years. Until then, natural gas offers a mature technology pathway to significantly lower ironmaking emissions. Natural gas availability and international cost-competitiveness are key enablers.
- A DRI plant can transition from using natural gas to green hydrogen (or a blend when hydrogen becomes viable).
- Transitioning to natural gas-based DRI from BF operations could reduce GHG emissions by ~60 per cent, while a green hydrogen-based DRI could largely eliminate up to ~85 per cent of emissions<sup>7</sup>.



## Public policy

Supportive and consistent policies across all these enablers to underpin decarbonisation

### Overview

- Supportive and consistent policy is essential across all enablers. Policy settings should prevent carbon leakage and provide incentives for iron and steel industries to invest in decarbonisation.
- Insufficient scrap to fulfil steel demand to 2050 and beyond<sup>4</sup> means primary steelmaking will be required. Policy settings must incentivise decarbonisation of ironmaking while maximising the use of available scrap, noting that the optimal mix of primary and secondary steelmaking will vary by region.
- Emission reduction targets set by countries as part of the Paris Agreement should be ambitious but achievable, taking into account the time required for the necessary enablers to be put in place and recognising hard-to-abate sectors will not decarbonise linearly.

We monitor and, where possible, encourage development of the enablers that underpin our 2050 net zero goal and climate strategy. In our FY2023 Sustainability Report, we published updates to these enablers to keep pace with the global transformation of iron and steelmaking technology and our increasing focus on DRI using natural gas as a transitional step ahead of the availability of affordable green hydrogen at scale – particularly for Port Kembla Steelworks.

Making progress on these enablers depends on collaboration and advocacy with many stakeholders, including global mining, steel, energy, building and construction, and financial and government representatives, to work towards the transformational changes required.

#### Key developments

- In 2023, we updated our indicative decarbonisation pathway to reflect our revised assessment of technology developments in DRI, using natural gas as a transitional step to green hydrogen. Access to cost-competitive natural gas, raw materials and renewable electricity is central to deploying this technology commercially in any given region.
- We are collaborating with some of the world's largest steelmakers including Tata Steel Europe, thyssenkrupp Steel Europe and POSCO, and Australian iron ore producers Rio Tinto and BHP, to develop the technology that can replace the BF technology that makes up most steel industry production today.
- Other technologies that may supplement the DRI-EAF and DRI-ESF decarbonisation pathways include CCS<sup>5</sup> and biocarbon. BlueScope's view is that due to technical limitations these technologies alone are not a viable pathway to achieve net zero emissions –rather they are expected to supplement a DRI pathway.

#### Key developments

- In 2024 we entered into a collaboration with Rio Tinto and BHP, Australia's two largest iron ore producers, to jointly investigate developing a pilot ESF for use with Pilbara ores (that first go through a DRI process).
- This work is supported by industry engagement, collaboration and partnerships, and the unique expertise and experience of the team at New Zealand Steel which has been operating an ESF using ironsands at our Glenbrook site for decades.
- We continued efforts to maximise the use of recycled scrap in our steelmaking process at Port Kembla, achieving a new record quantity of recycled scrap consumed at Port Kembla Steelworks in FY2024.

#### Key developments

- BlueScope will continue to support renewable energy projects where economically viable and advocate for policy that supports investment in lower emissions electricity in our operating regions. For example, we have entered into an innovative offtake agreement for renewable energy in New Zealand to support the installation of the EAF which will more than halve the site's GHG emissions; several midstream Asian sites now source a portion of their energy from renewable solar power, including in Malaysia where a facility has switched to renewable energy generated by the Sunfield solar farm. New Zealand Steel is in partnership with Contact Energy for Contact's first grid-scale battery to be hosted at Glenbrook.

#### Key developments

- We are closely monitoring technical and commercial green hydrogen developments and supporting industry initiatives where appropriate. In 2023, as part of our renewed assessment of lower emissions steel production, we updated our decarbonisation pathway to adopt natural gas as a transitional step to green hydrogen-based DRI. This is consistent with the transition to lower emission DRI production announced by many European steelmakers.

<sup>1</sup> Includes primary steel production from the BF-BOF and DRI-EAF routes. Data source: worldsteel.

<sup>2</sup> BlueScope calculations based on worldsteel, CO2 data report 2023 (2022 data year).

<sup>3</sup> Primary steel production refers to that which uses iron ore as its main source of metallic input. This includes for example, BF-BOF and DRI-EAF routes. Secondary steel production refers to that which uses scrap as its main source of metallic input (e.g. EAF).

<sup>4</sup> IEA, Net Zero Roadmap – A Global Pathway to Keep the 1.5°C Goal in Reach, 2023 Update; September 2023.

<sup>5</sup> Carbon capture and storage (CCS) involves the capture of CO2 generally from sources such as power generation or industrial facilities, which is compressed and transported so it can be permanently stored.

<sup>6</sup> CRU, Steel Long Term Market Outlook, June 2024.

<sup>7</sup> Based on a BlueScope analysis of transitioning Port Kembla Steelworks from BF to DRI. This analysis assumes that hydrogen alone cannot decarbonise Port Kembla's entire operations as a source of carbon is required in the ironmaking process which could be derived from natural gas, biocarbon, or other sources.

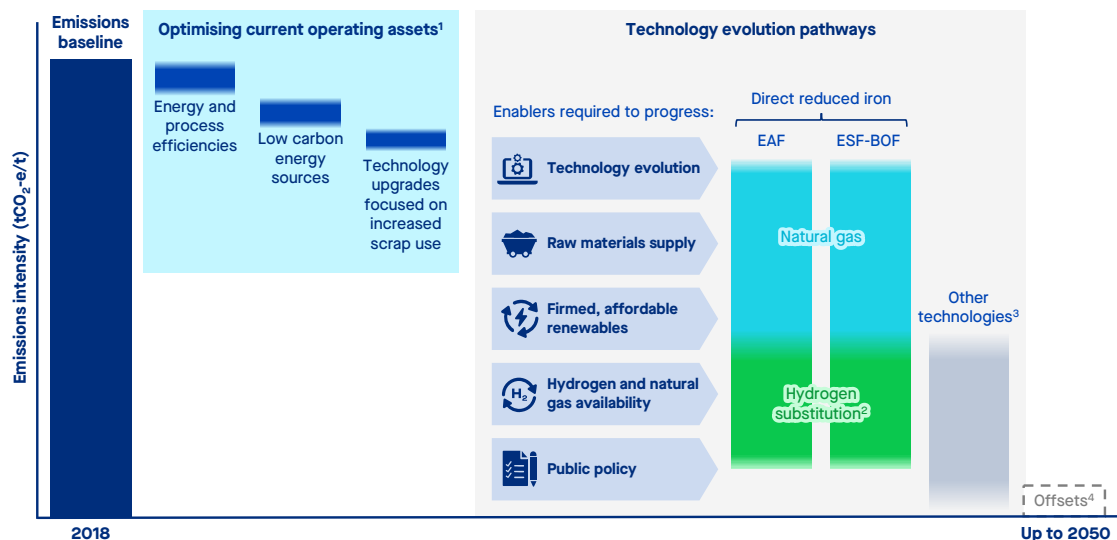
#### Key developments

- We have been engaging with all levels of government in our steelmaking regions to advocate for consistent policies to support steel sector decarbonisation. Government policies vary regionally, with respect to commitments to support investments in iron and steelmaking transformation and the necessary renewable energy, gas and ultimately hydrogen infrastructure. We welcomed the New Zealand government's co-funding for the construction of the EAF at Glenbrook through its Government Investment in Decarbonising Industry (GIDI) fund, which enabled the project to proceed.



## Port Kembla's indicative decarbonisation pathway

At Port Kembla Steelworks, the principal raw materials for iron and steelmaking via the BF-BOF method are iron ore from the Pilbara and metallurgical coal from the Illawarra escarpment. The Steelworks' location provides excellent access to Australia's high quality metallurgical coal and a port for shipping in Pilbara iron ores, which help maximise the productivity of the blast furnace operations.



- Optimising current assets involves working within currently available technology options to improve the efficiency of assets and processes, including upgrading technology where there are supportive enablers. This continues beyond 2030 until such time as it is feasible to convert to lower emissions DRI technology. Continuous improvement principles will apply to future production processes.
- Contingent on commercial supply of hydrogen from renewable sources.
- Other technologies could include electrolysis, CCS and biocarbon etc.
- While we do not intend to rely on offsets as a primary means of decarbonisation, we retain the option to use them to meet our 2050 net zero goal where direct abatement is not technically or commercially feasible. Such decisions will be reviewed at the BlueScope Group level and are included in this site level indicative decarbonisation pathway to indicate that offsets may have a role to play.

### Optimising current operating assets

Across BlueScope, our focus on optimising assets and reusing materials, heat and energy wherever possible has led to reduced emission intensity from iron and steelmaking over the years. Currently, we have a variety of projects underway and others in the pipeline aimed at achieving further efficiency gains.

#### Energy and process efficiencies

Projects and initiatives to improve energy and process efficiencies include:

- » The improved humidity injection control implemented in the blast furnace in FY2022 which has reduced coal use and associated emissions by approximately 70,000 tonnes of CO<sub>2</sub>-e per year<sup>1</sup>.
- » Various projects to use process gases more efficiently, such as installing a Waste Gas Heat Recovery (WGHR) system on No.6 Blast Furnace and a new more efficient plate mill furnace (expected to be operational by mid-2027) to lower indigenous process gas consumption. The process gases liberated by these initiatives will enable more onsite electricity generation and reduce external electricity consumption.

Photographer: Matt Dawson

- Based on BlueScope analysis which assumes an annual coke production average of 7,500 tonnes per day, equating to a saving of approximately 19,000 tonnes of coke per year.



- » Additional electricity generation from a larger Top Gas Recovery Turbine (TRT) to be installed on No.6 Blast Furnace, which will use pressure from top gases to generate electricity and reduce external electricity consumption.

### Low carbon energy sources

In 2023, the Australian Renewable Energy Agency (ARENA) co-funded a study into prioritising options for decarbonisation pathways at Port Kembla, highlighting biocarbon (also known as biochar) as a promising short to medium-term option in ironmaking. We successfully completed trials to test biocarbon as a partial replacement for pulverised coal injection in the blast furnace. However, there are challenges in sourcing cost-effective, sustainably produced biocarbon<sup>1</sup> in the quantities needed for commercial adoption. We are working with several prospective sustainable biocarbon suppliers to explore the potential for an industrial-scale supply chain in Australia.

### Increased scrap use

Increasing the proportion of scrap used in the BOF helps reduce emission intensity. Through optimising the inherent chemical and heat energy within the BOF process, capital upgrades and operating practices have allowed significant increase in scrap additions since 2018. However, the proportion of scrap used in the BOF is also dependent on economic factors and may fluctuate from time to time.

It is important to note that many of these projects remain subject to technical and economic feasibility assessment and require supportive government policies. We will continue to work to optimise the Port Kembla operations beyond 2030 until it is commercially and technically viable to transition to lower emissions iron and steelmaking technologies.

## Long term to 2050: technology evolution pathway at Port Kembla

Large-scale decarbonisation of the Port Kembla Steelworks relies on technology evolution, supported by action on each of the other enablers. Our Australian DRI Options Study (referred to as Project IronFlame) explores technology pathways for decarbonising iron and steelmaking processes in Australia. The diagram on page 29 shows the most prospective technology pathways being considered, and the projects underway to explore these opportunities.

Currently DRI is the most prospective technology option for lower GHG emissions ironmaking. To be converted into steel, and depending on the iron ore type and quality, DRI needs to be further processed in an EAF, or an ESF coupled with a BOF. Refer to page 8 and 9 for an explanation of this technology. DRI-EAF is already commercialised, while the DRI-ESF process, if developed, could capitalise on abundant Pilbara iron ores as an input into lower emissions steel. This would help accelerate the decarbonisation of steelmaking globally.

The DRI-ESF technology route is the focus of our collaborations with steelmaking partners thyssenkrupp Steel Europe, Tata Steel Europe and POSCO, and value chain partners Rio Tinto and BHP.

We are contributing to efforts to unlock the enablers that underpin this technology pathway by focusing on effective partnerships and policy. We recognise that:

- » DRI technology is 'hydrogen ready', however, green hydrogen is not yet cost-effective or available at required volumes. Until green hydrogen becomes viable, natural gas offers an available pathway to significantly lowering ironmaking emissions without delay. A DRI plant can transition from using natural gas to green hydrogen (or a blend of the two) when hydrogen becomes viable. We have engaged with the Australian Federal and State governments to emphasise the critical role of natural gas in reducing steel emissions.

1. This includes sourcing biocarbon in line with BlueScope's responsible sourcing guidelines, as well as ensuring appropriate treatment and capture of emissions from such sources.



- » Additionally, we have been in discussions with current and prospective gas producers to explore securing the necessary natural gas volumes at competitive prices, ensuring we remain internationally competitive with other DRI producers.
- » Australia has abundant, low cost, domestic Pilbara iron ores. Further technological development is required to utilise these ore types for lower emissions ironmaking. We are jointly investigating the opportunity to advance solutions to the challenge of using Pilbara iron ores in the DRI-ESF process through our collaboration with Rio Tinto and BHP (refer to call-out box on page 29).
- » Natural gas-based DRI has the potential to reduce emissions by up to 60 per cent. We believe emissions reductions of more than 85 per cent may be achieved when using hydrogen based DRI in an EAF or ESF-BOF, compared with Port Kembla's existing BF based operations<sup>1</sup>.
- » Operating a DRI production facility with output similar to Port Kembla Steelworks would require 30 to 40 petajoules (PJ) of natural gas per year, equivalent to seven per cent of natural gas demand on the Australian east coast in 2024<sup>2</sup> and 40 times Port Kembla's current gas use. Obtaining this amount of natural gas (at a competitive price) is challenging due to high export demand and limited domestic supply.
- » Port Kembla is one of Australia's largest industrial facilities and currently uses 1TWh of electricity per year. To transition Port Kembla Steelworks to natural gas or hydrogen DRI would require two times (natural gas DRI) up to 15 times (hydrogen DRI) this

consumption<sup>3</sup>. Lower emissions steel production via natural gas DRI, depending on technology type and operational configuration, will consume indicatively between 1.7 to 2.6TWh per year of electricity, then between 10 to 13TWh per year once transitioned to green hydrogen, the latter similar to South Australia's total electricity use.

- » The Illawarra region currently lacks the necessary transmission and electricity capacity for transitioning to lower emissions steelmaking. Upgrading transmission networks and availability of competitively-priced firm electricity are key policy priorities. We are working with the Australian and New South Wales (NSW) governments, the Australian Energy Market Operator (AEMO), Transgrid, and the Energy Corporation of NSW to address these challenges in the Illawarra.
- » Effective policies are essential for ensuring cost-competitive firm renewable electricity, sufficient quantities of cost-competitive gas, and the development of a green hydrogen supply chain. Grants and incentives are needed to help overcome technology barriers and high costs of lower emissions steel production. Additionally, policies to prevent carbon leakage and level the international playing field are essential to underpin the competitiveness of the domestic steel industry while it decarbonises.

BlueScope's specialist teams are also exploring emerging technologies that can form part of this decarbonisation pathway to either complement or replace existing assets (e.g. biocarbon, CCS, or electrolysis).

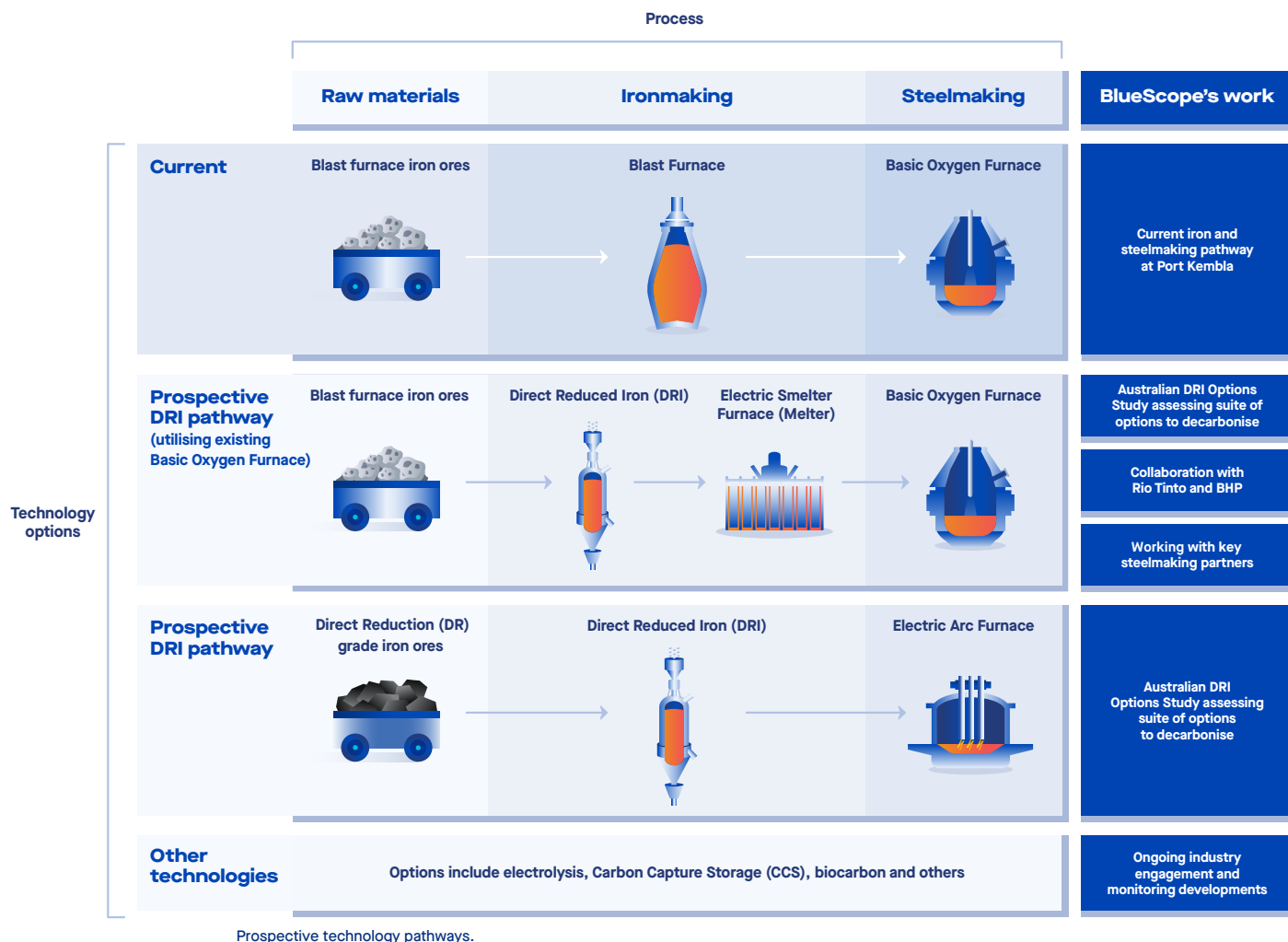


## No.6 Blast Furnace reline

The reline of the No.6 Blast Furnace at Port Kembla Steelworks is critical to maintaining the sovereign capability of flat steelmaking in Australia until we are able to transition to lower emissions technology, given the existing blast furnace will reach end of life between 2026 and 2030. The reline project is our bridge to the future, comprising a comprehensive refurbishment of the blast furnace, including investment in environmental improvements. It does not lock us into a full 20-

year campaign, but allows time to develop, test and pilot alternative ironmaking technology. This allows the broader economy time to develop and build the key enablers that underpin lower emissions steel production, including firm, affordable renewables. The relined No.6 Blast Furnace is estimated to be operational in late 2026 and has received partial funding from the Australian Government's Powering the Regions Fund – Critical Inputs to Clean Energy Industries stream.

1. Based on BlueScope's analysis in its Australian DRI Options Study; the transition to natural gas DRI assumes renewable energy utilisation. The remaining emissions reduction after transition from natural gas to hydrogen DRI is limited to 85 per cent due to technical limitations in ironmaking and steelmaking.  
2. Based on BlueScope's analysis in its Australian DRI Options Study that takes into account transitioning existing Port Kembla based assets from indigenous fuels to natural gas fuel and information on natural gas consumption in a DRI plant from publicly available sources.  
3. Based on BlueScope's analysis.



## Collaborating with leading iron ore producers

BlueScope is excited to be partnering with Australia's two largest iron ore producers, Rio Tinto and BHP, to jointly investigate developing Australia's first ironmaking ESF pilot plant.

Under a framework agreement, Rio Tinto, BHP and BlueScope are consolidating the work that each of them has completed to date on this technology pathway and will plan to continue to work together. The ultimate aim of the project is to build and operate a pilot plant, if approved after the pre-feasibility study work concludes. This partnership will leverage both Rio Tinto's and BHP's deep knowledge of Pilbara iron ores with BlueScope's unique operating experience in ESF technology from our Glenbrook ironmaking process in New Zealand.

This collaboration provides a platform to potentially develop and invest in a pilot plant to demonstrate the technical and commercial feasibility of Pilbara iron ores using natural gas (and eventually hydrogen) with the DRI-ESF process technology. If successful, DRI from hydrogen, or natural gas combined with CCS, could help open a pathway

to near-zero GHG emission intensity operations for global steelmakers relying on abundant Pilbara iron ore by potentially replacing blast furnaces and largely reducing reliance on metallurgical coal. This project can provide for a significant step towards substantial decarbonisation of BlueScope's Australian operations and could lay the foundation for an Australian lower carbon emissions iron export industry to help decarbonise global steelmaking.

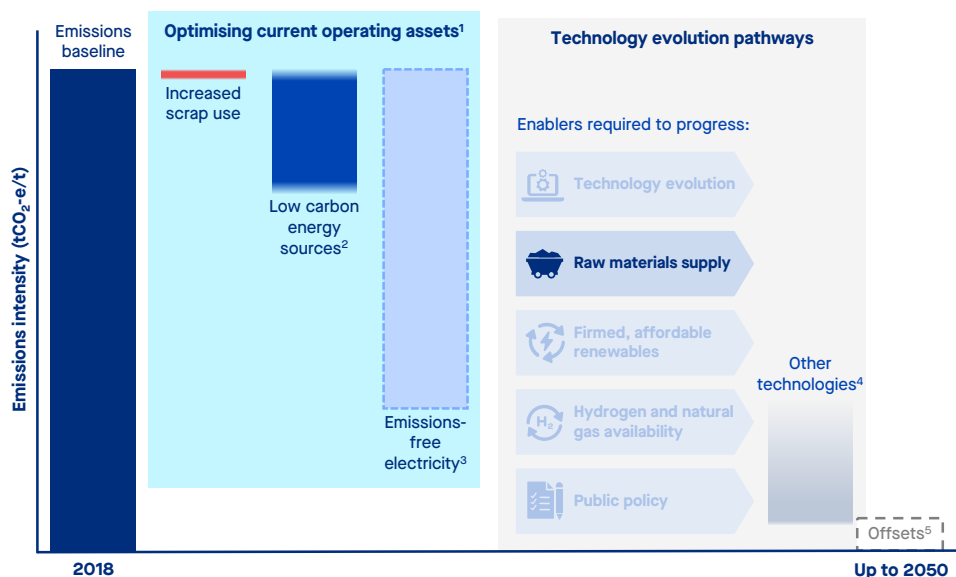
The parties are currently assessing several possible locations in Australia for the proposed pilot plant, taking into account factors such as cost of energy, supporting infrastructure, available workforce, access to target industry and supply chain partners, and suitability for operational trials. The pre-feasibility study work program is expected to conclude at the end of FY2025. The pilot plant could be operational as early as 2027, if approved.

The collaboration supports BlueScope's vision for its Australian steelmaking operations to be a vibrant, modern and sustainable manufacturer with a clear role to play in enabling Australia's energy transition.



## North Star's indicative decarbonisation pathway

Our North Star facility uses EAF technology which melts scrap steel and ore-based metallics (in this case, pig iron and hot briquetted iron) to produce high quality flat steel at a very low emissions intensity. This secondary steelmaking process uses electrical energy to melt steel scrap and iron, recycling it into new products and avoiding the GHG emissions associated with the ironmaking process (while noting that some primary iron in the form of pig iron and hot briquetted iron is still required in this process, but is not manufactured by North Star). In 2023, we finalised the commissioning of our third EAF at the facility, expanding steelmaking capacity by up to 850,000 tonnes, and have also ramped up scrap supply from the improved scrap processing capabilities of BlueScope Recycling and Materials.



1. Optimising current assets involves working within currently available technology options to improve the efficiency of assets and processes, including upgrading technology where there are supportive enablers. This continues beyond 2030. Continuous improvement principles will apply to future production processes.
2. Includes expected grid decarbonisation to 2030 which is reported under the location-based Scope 2 reporting method under the GHG Protocol; to retain consistency with the other steelmaking site decarbonisation pathway graphics as well as BlueScope's current GHG performance reporting.
3. This dotted outline indicates the abatement from North Star's nuclear power contract which has been in place since 2020, verified via Emissions-Free Electricity Certificates (EFECS). This is included to indicate the impact of recognising these EFECS under the market-based Scope 2 reporting method under the GHG Protocol. Refer to the call-out box on page 14 for further details.
4. Other technologies could include low emissions metallics, CCS, biocarbon etc.
5. While we do not intend to rely on offsets as a primary means of decarbonisation, we retain the option to use them to meet our 2050 net zero goal where direct abatement is not technically or commercially feasible. Such decisions will be reviewed at the BlueScope Group level and are included in this site level indicative decarbonisation pathway to indicate that offsets may have a role to play.



## Optimising current operating assets

Low carbon energy sources in the decarbonisation pathway on page 30 show the abatement expected from grid decarbonisation captured under the location-based Scope 2 reporting method under the GHG Protocol. However, it should be noted that North Star is powered by 'GHG emissions-free electricity' via a power purchase agreement with a local nuclear power provider – independently verified through the supply of Emission-Free Energy Certificates (EFECs) equivalent to North Star's electricity consumption. The decarbonisation pathway includes an additional category to indicate the impact of these EFECs, should BlueScope move to the Scope 2 market-based reporting method under the GHG Protocol<sup>1</sup>. This power purchase agreement has been in place since 2020 and covers North Star's entire electricity consumption. Refer to page 14 in the GHG performance section for further details.

While the steel production from the third EAF reduces the overall emission intensity of BlueScope's steelmaking portfolio, North Star's Scope 1 emission intensity has increased slightly as part of the commissioning and ramping up of production. A debottlenecking program to further expand steel production, through equipment upgrades and process efficiencies, is underway and is expected to help reduce the site's Scope 1 and Scope 2 emission intensity.

North Star's predominantly scrap-based EAF steelmaking, powered by a grid with high nuclear penetration, has a much lower emission intensity compared to global averages. Initiatives such as electric vehicles on site, and CO<sub>2</sub> off gas transfer, whereby the captured gas is sent to a local business,

are being explored for their potential to further reduce site emissions. Energy efficiency measures under consideration include increased use of oxy-fuel, enhancements to heat recuperation systems in tunnel furnaces, and the introduction of induction heating in select areas.

## Long term to 2050: lower carbon pathways at North Star

North Star benefits from key enablers - technology and raw materials through its EAFs and the region's abundance of scrap, energy supply, and US policy that has supported domestic steelmaking capability. North Star's metallics strategy focusing on low carbon energy sources will be an important driver in working towards our 2050 net zero goal. The metallics mix is being revised to reduce the total amount of pig iron (i.e. blast furnace iron) required and we are exploring opportunities for lower emissions ore-based alternatives. One of the options is to increase the use of natural gas or hydrogen-based metallics (e.g. iron produced through a natural gas or hydrogen based DRI process) as a low embodied-carbon alternative to pig iron, while the potential to use biocarbon-based pig iron is also being considered.

These initiatives could also potentially lead to a reduction in Scope 3 emissions associated with North Star's metallics sourcing and further reduce the CO<sub>2</sub> footprint - for further details, refer to the value chain decarbonisation pathway section.

For scrap, the strategy includes increasing supply from BlueScope Recycling and Materials, increasing the proportion and recovery of obsolete scrap to offset prime requirements, and using some scrap sizes in the new furnace that previously were not suitable.

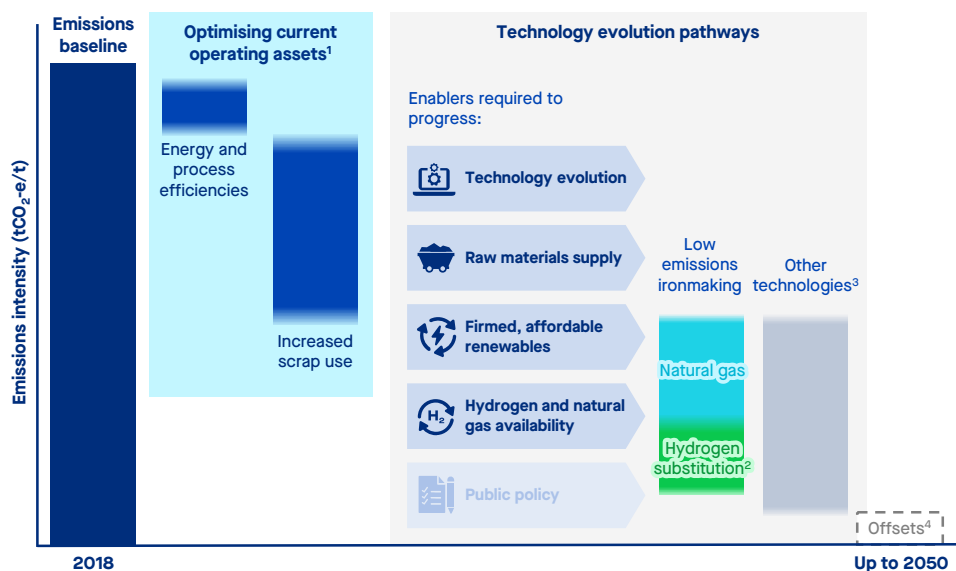
1. This additional category depicted in the decarbonisation pathway for North Star is mutually exclusive with the low carbon energy sources decarbonisation category as BlueScope currently reports against the location-based Scope 2 reporting method under the GHG Protocol.





## Glenbrook's indicative decarbonisation pathway

Glenbrook's unique ironmaking processes use local ironsand, along with coal and limestone, which is heated in one of four multi-hearth furnaces. It is then fed into one of four reduction kilns, where it is converted to a DRI product before passing through an ESF, or melter, to produce molten iron for steelmaking via oxygen steelmaking.



1. Optimising current assets involves working within currently available technology options to improve the efficiency of assets and processes, including upgrading technology where there are supportive enablers. This continues beyond 2030 until such time as it is feasible to convert to lower emissions technology. Continuous improvement principles will apply to future production processes.
2. Contingent on commercial supply of hydrogen from renewable sources.
3. Other technologies could include shift to 100 per cent EAF, CCS and biocarbon etc. Electrolysis may come in post 2050.
4. While we do not intend to rely on offsets as a primary means of decarbonisation, we retain the option to use them to meet our 2050 net zero goal where direct abatement is not technically or commercially feasible. Such decisions will be reviewed at the BlueScope Group level and are included in this site level indicative decarbonisation pathway to indicate that offsets may have a role to play.

### Optimising current operating assets

New Zealand Steel has consistently focused on energy and process efficiencies, such as optimising the ironmaking process, overall yield and iron to scrap ratio to reduce emissions intensity and has successfully reduced its coal and energy use without any loss of steel production. It uses co-products and waste products from its own operations as substitutes for mined raw materials. For example, replacing purchased limestone with recycled steelmaking slag has decreased the need for coal to calcine the limestone.

In addition, installing in-line crushers at the discharge of the kiln process has enabled in-stream processing of oversize kiln output directly into the feed for the ironmaking melter. As a result, heat and energy is retained because the need to remove, cool, crush, reintroduce and then reheat oversize kiln output has been eliminated.

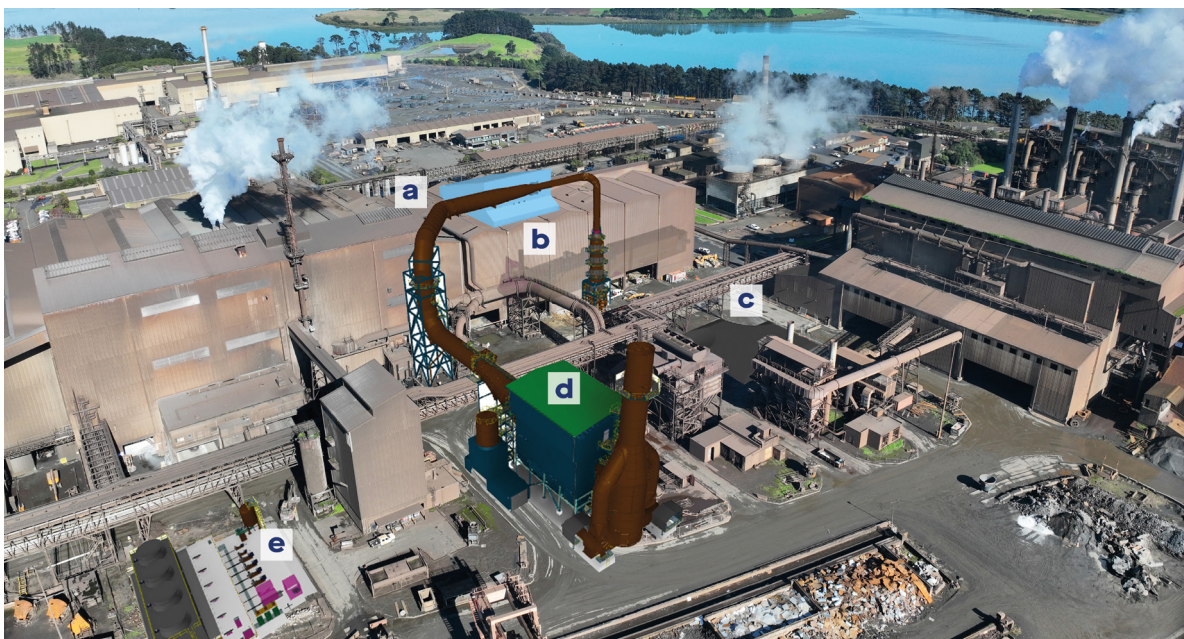
### Transforming steelmaking in New Zealand

In 2023, we announced that New Zealand Steel would build a NZ\$300M EAF to secure the future of lower emission steelmaking at Glenbrook. This investment is co-funded by the New Zealand Government and is a significant step towards BlueScope's long-term 2050 net zero goal. It demonstrates supportive government policy enabling a substantial decarbonisation project.

Investing in the EAF makes sense for New Zealand Steel given the reliable supply of both firmed renewable energy and domestic scrap steel, along with the right policy settings and support.

The EAF is expected to reduce New Zealand Steel's Scope 1 and 2 GHG emissions by approximately 55 per cent<sup>1</sup> by eliminating two of the four coal fed kilns and replacing the existing oxygen steelmaking furnace. Once the EAF is fully operational, it is estimated the initial average crude steel embodied carbon will be 1.6tCO<sub>2</sub>-e per tonne of steel, with potential for this to decrease further as scrap volumes increase. It will reduce coal use by approximately 50 per cent (~400,000 tonnes per year).

1. Subject to securing additional renewable energy power purchase agreements and recycling more domestic scrap steel in New Zealand.



Schematic of EAF overlaid on Glenbrook site. a. Roof canopy hood. b. EAF and conveyor system. c. Northern scrap yard. d. Fume treatment plant. e. Cooling water system.

The design phase, now underway, has proven there is an opportunity to reduce the site's GHG emissions by up to one million tonnes - over one per cent of New Zealand's annual GHG emissions - as well as to bring forward commissioning.

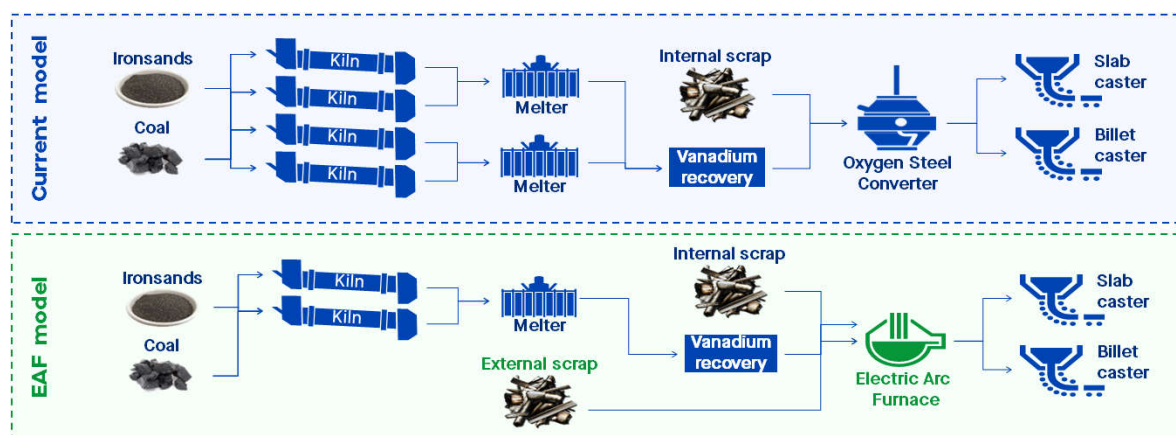
The project supports greater domestic scrap recycling and adds demand management flexibility to New Zealand's electricity grid. Contracts are in place for domestic scrap steel feed supply and supporting equipment. The EAF will use an average of 30MW from New Zealand's largely renewable energy grid and will be able to adjust production to match peak electricity demand. Achieving net zero emissions by 2050 will depend on advancements in four enablers – technology evolution (in particular lower emission ironmaking using ironsands), firmed, affordable

renewables, hydrogen and natural gas availability, and public policy.

One potential pathway is to transition the two remaining coal-based reduction kilns to hydrogen DRI, with natural gas as a first step. New Zealand Steel is exploring the viability of this pathway and supports research conducted at Victoria University in Wellington into hydrogen-based ironmaking using local ironsands. Laboratory hydrogen trials have been successful so far.

An alternative net zero pathway is to transition to 100 per cent cold-ferrous feed EAF steelmaking. This would require additional scrap supply and a source of imported lower emissions iron units (such as hot briquetted iron/DRI) to replace all local ironmaking.

#### The future of steelmaking at New Zealand Steel process diagram with the installation of an EAF.



## BlueScope's indicative non-steelmaking decarbonisation pathway

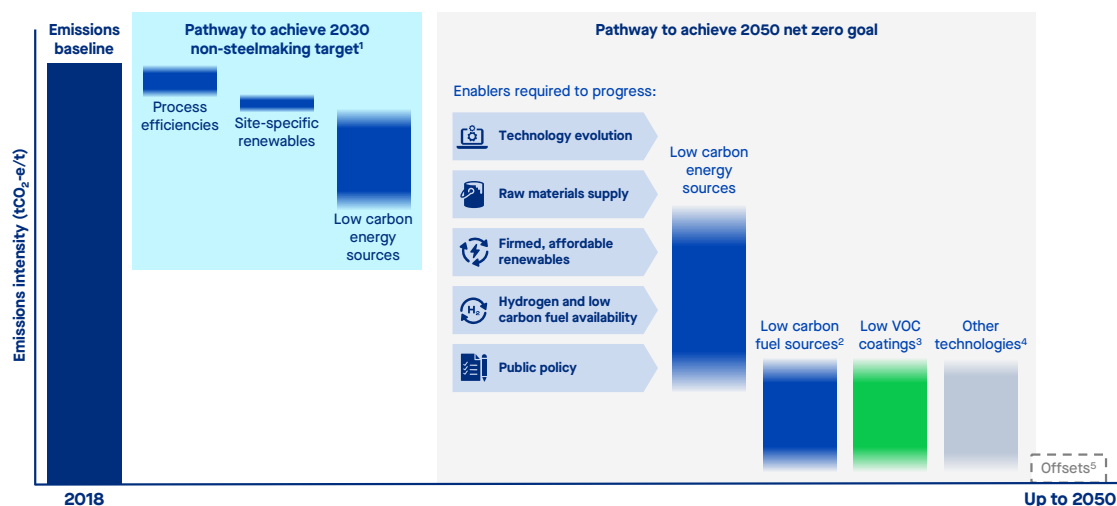
**7%**  
of total  
operational  
GHG  
emissions  
come from  
midstream  
activities

### Midstream decarbonisation

BlueScope's target for midstream non-steelmaking activities is to reduce Scope 1 and 2 GHG emission intensity by 30 per cent by 2030, against a FY2018 baseline. Midstream activities include cold rolled, metal coating and painting lines, and long products.

Within midstream activities, Scope 2 GHG emissions account for just over 50 per cent of the overall emissions profile. For Scope 1 GHG emissions, natural gas is the most significant contributor, as metal coating and painting lines are high temperature processes.

We have developed an indicative midstream decarbonisation pathway which articulates our mid-term and long-term ambitions to decarbonise our midstream operations aligned to our 2030 non-steelmaking target and long-term 2050 net zero goal.



1. This involves working within currently available technology options to improve the efficiency of assets and processes, including upgrading technology where there are supportive enablers. This continues beyond 2030 until such time as it is feasible to convert to lower emissions coating and painting technology. Continuous improvement principles will apply to future production processes.
2. Low carbon fuel sources are replacement fuels (for natural gas currently used in our operations) required for painting and coating operations. These may include biomethane, renewable fuels and biosolvents or other emerging technologies.
3. Low Volatile Organic Compound (VOC) coatings include breakthrough technologies such as radiation curing, high solids, and water-based technology.
4. Other technologies include CCS, further electrification and other emerging technologies.
5. We retain the option to use offsets to meet our 2050 net zero goal where direct abatement is not technically or commercially feasible.

### Pathway to 2030 non-steelmaking target

Energy and process efficiencies across our midstream operations help reduce Scope 1 GHG emissions. These include regenerative thermal oxidisers (RTO) and waste heat recovery systems to improve efficiency of coil painting ovens. For example, at Suzhou, China, a newly installed RTO system takes advantage of large volumes of hot waste air from coil painting ovens to heat incoming air to the oven and other ancillary operations. This improves energy efficiency and has reduced more than 3,200tCO<sub>2</sub>-e per year.

BlueScope Coated Products recently installed an RTO unit at its Middletown site in North America, expected to reduce emissions by 6,500tCO<sub>2</sub>-e per year following commissioning and start-up. Similarly,

in Australia, a project underway to upgrade one of two paint ovens at our Western Port site has the potential to reduce the site's Scope 1 emissions by 17,000tCO<sub>2</sub>-e. At Steelscape's Rancho Cucamonga site in California, a feasibility study is investigating the potential to improve energy efficiency by installing new ovens and upgrading heat recovery systems.

As electricity accounts for just over half of our midstream operational emissions footprint, the decarbonisation pathway relies on access to low carbon energy sources. Non-steelmaking sites have implemented many projects to reduce electricity consumption, such as the Kapar site in Malaysia switching to renewable energy generated by the Sunfield solar farm, which reduced emissions by approximately 4,800tCO<sub>2</sub>-e in FY2023. Projects are

also planned at sites in NS BlueScope's Map Ta Phut (Thailand), Phu My (Vietnam) and Cilegon (Indonesia) to assess installing site-specific solar.

The indicative midstream decarbonisation pathway takes into consideration the availability of renewables in the local electricity grid. As Australia accounts for nearly 60 per cent of BlueScope's total midstream GHG emissions, further decarbonisation of the Australian east coast electricity grid requires timely retirement of coal-fired generation capacity to be replaced with investment in sufficient firm renewables. BlueScope is advocating for policy and investment in this area which will lead to the availability of firm affordable renewables to support the decarbonisation of midstream operations towards both our 2030 non-steelmaking target and 2050 net zero goal.

### Pathway to 2050 net zero goal

While we will continue to focus on economically viable low carbon energy supply and manufacturing improvements to reduce GHG emissions, we recognise that emerging technologies will also be critical to achieving our 2050 net zero goal.

BlueScope is a technology leader in pre-painted steel building products and manufacturing processes.

Branded products, including COLORBOND® steel, are known globally for their high quality and durability. Thus, any change in technology must meet product performance requirements.

Metal coating and painting lines are high temperature processes which rely on using electricity and natural gas as a fuel source. Therefore, a large opportunity lies in low carbon fuel sources and low Volatile Organic Compound (VOC) coatings to help reduce our Scope 1 GHG emissions. In partnership with our paint suppliers, we are exploring the potential of low VOC coatings, including radiation curing, water-based paint systems, and high-solids. If able to be adopted on a commercial scale, and without compromising the quality of BlueScope's premium pre-painted steel products, such technology solutions would contribute to BlueScope's 2050 net zero goal.

Given that BlueScope has 18 metal coating and 21 paint lines across its global portfolio with differing levels of capability and asset life, one optimal solution may not be suitable for all markets and regions. Therefore, we will continue to monitor developments across a range of process efficiencies, low VOC coatings, renewable gas and electrification technologies to meet our 2050 net zero goal.

**<1%**  
of total  
operational  
GHG  
emissions  
come from  
downstream  
activities

### Downstream decarbonisation

BlueScope's downstream operations are actively working to reduce Scope 1 and 2 GHG emissions. Individual sites have a range of decarbonisation initiatives in place, largely focused on reducing electricity use, and often led by our people who identify ways to introduce operational and energy saving efficiencies.

Downstream operations are capturing the benefits of solar power systems to reduce electricity sourced from the grid, with a resulting reduction in emission intensity. For example, Lysaght Shah Alam (Malaysia), BlueScope Building Components Wangara (Australia) and BlueScope Lysaght Hume (Australia) sites have all installed solar power to help reduce Scope 2 GHG emissions.

Sites are also replacing outdated equipment with more energy efficient models and transferring from diesel to electric power. For example, BlueScope Butler Tianjin, China has adopted new generation, highly efficient welding technology, and new electric forklifts are helping reduce emissions at Lysaght Singapore.



## Capital allocation approach

### Climate integrated into capital allocation framework

BlueScope's Financial Framework describes how the Company seeks to operate with a focus on delivering returns above the cost of capital, maintaining a robust balance sheet and a disciplined approach to capital allocation. This approach is guided by the Capital Allocation Framework that states that BlueScope:

- » invests to maintain safe and reliable operations;
- » invests to support achieving its decarbonisation pathways;
- » invests in foundation and new technologies; and
- » drives a returns-focused process with disciplined competition for capital between investments in growth and shareholder returns.

Investment to support decarbonisation is critical alongside sustaining capital expenditure to ensure long-term viability and success. As such, the Capital Allocation Framework includes investing in climate initiatives.

Our approach to climate-related investment (for both capital projects and operating expenditure) is guided by our 2030 targets and 2050 net zero goal so that projects are generated and evaluated for their ability to achieve these aims. It recognises that an appropriate commercial overlay is critical to ensure we are pursuing decarbonisation in the most

capital-efficient manner, supported by the following processes and mechanisms:

- » capital investments are reviewed in line with BlueScope's four climate scenarios, including assessing the effect of long-term carbon pricing assumptions on the business case.
  - where a business is subject to a local carbon trading scheme (or equivalent), the financial impact of such a scheme is centralised in project evaluation.
- » investment in decarbonisation is prioritised in the most capital-efficient manner, including considering financial and non-financial return metrics, such as dollars invested per tonne of GHG emission abatement.
  - where climate-related investments do not meet required financial return hurdle rates, alternative models of funding are sought to improve project viability, including external funding via partnerships, grants, and low interest loans.
- » pursuit of investment and partnership opportunities with industry peers to further research and develop new technologies aligned to our technology pathways.

### Investing broadly in pursuit of our targets and goal

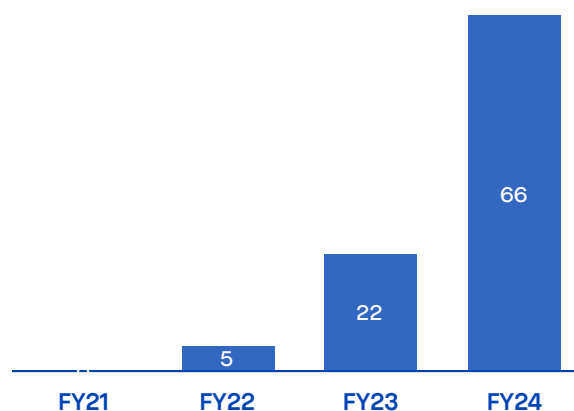
#### Investment in decarbonisation

##### Direct investment: projects and capital investment

In FY2021, we announced an investment of up to \$150M over five years in projects and processes to support our 2030 targets and long-term decarbonisation ambitions, with total estimated spend of \$300 to \$400M over 10 years (to 2030). The investment made under this program to June 2024 is \$66M predominantly for the New Zealand EAF, emissions reduction enhancements to the No.6 Blast Furnace reline and the Australian DRI Options Study. It also includes six climate-related investments by BlueScope's venture capital arm, BlueScopeX™, in green hydrogen, sustainable building materials and lower carbon energy sources<sup>1</sup>.

BlueScope's cumulative climate-related project and capital investment since FY2021 is shown in the graph to the right.

#### CUMULATIVE PROJECT AND CAPITAL INVESTMENT (\$M)<sup>1</sup>



1. Note: Climate projects include project spend that may not have been capitalised.

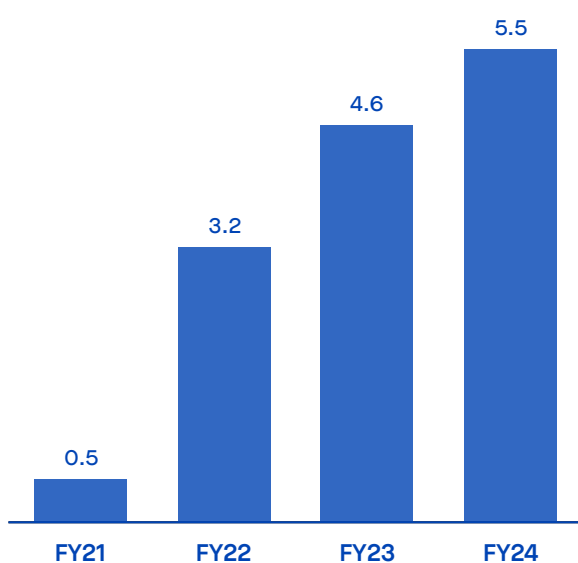
1. BlueScopeX™ identifies, inspires and invests in early-stage companies to support decarbonisation activities along the value chains in which BlueScope operates, from manufacturing steel through to the built environment.

### Operating expenditure

In addition to projects and capital investment, operating expenditure is also directed to decarbonisation in the form of resources embedded within the business, research and development and associated studies.

BlueScope's climate-related operating expenditure has totalled \$14M since FY2021, and the annual expenditure is set out below.

#### ANNUAL CLIMATE-RELATED OPERATING EXPENDITURE (\$M)



### Indirect investment

BlueScope operates energy-intensive assets on relatively low margins, and invests in sustaining and growth projects that also have decarbonisation benefits. Examples of these projects are described in detail throughout this Report, and include:

- » the North Star expansion which has increased low emissions EAF steelmaking capacity;
- » at the Port Kembla Steelworks, upgrades to support increased scrap consumption, co-generation upgrades, and upgrades to the plate mill which increase capability to support the renewable energy transition; and
- » upgrades to midstream facilities across the global footprint, including energy generation facilities and paint line oven, RTO and WGHR upgrades.

### Future investment

Midway through the five-year climate investment program, we have spent over 40 per cent of the \$150M, with approximately \$110M expected in FY2025 depending on the timing of delivering on a range of projects and largely reflecting ongoing expenditure on the new EAF in New Zealand and emissions reduction enhancements to the No.6 Blast Furnace reline. The total estimated capital requirement out to 2030 remains in the order of \$300M to \$400M. Further, climate-related operating expenditure for FY2025 is expected to approach \$7M, reflecting activity and resources to support ongoing decarbonisation initiatives.



## Investment focus areas

We invest in direct abatement, emission intensity reduction projects or technology development with strong consideration to relevant enablers, noting that the enablers for each of our steelmaking sites differ. Our approach to capital allocation for steelmaking and non-steelmaking operations is set out below.

### Port Kembla

Port Kembla Steelworks is a highly optimised, efficient blast furnace operation<sup>1</sup>. A range of projects underway are considered as climate capital projects (alongside sustaining expenditure). We are investing in what we consider to be the most prospective technology for Australian ironmaking, outlined in the Port Kembla decarbonisation section (page 26 to 29).

Our collaboration with Rio Tinto and BHP may lead to the commissioning of an ESF pilot plant as early as 2027, if approved after the pre-feasibility study work concludes. The funding structure for the proposed pilot plant project is yet to be finalised and the parties are exploring opportunities for funding to partner with governments to deliver the project.

Recognising the importance of the No.6 Blast Furnace Reline to retaining sovereign steelmaking capacity – particularly given the role of steel in building Australia's renewable energy capacity – the Australian Government is contributing \$136.8M toward the total capital cost of approximately \$1.15Bn from the Critical Inputs to Clean Energy Industries (CICEI) stream of its Powering the Regions Fund.

### North Star

BlueScope invested \$1Bn from FY2019 to FY2022 to expand North Star's production capacity from 2.1Mtpa to 3.0Mtpa, and is now investing a further \$200M to increase total capacity to 3.3Mtpa. The increased lower GHG emissions capacity is expected to replace higher-emitting blast furnace capacity in the US over the next decade.

As outlined in the North Star decarbonisation pathway section (page 30 and 31), achieving BlueScope's 2050

net zero goal depends on abatement of the remaining emissions from North Star. Future areas of focus will extend to Scope 3 GHG emissions sources such as pig iron supply.

### Glenbrook

In May 2023, BlueScope announced that New Zealand Steel would install an EAF to replace 50 per cent of its ironmaking requirements with scrap steel.

The NZ\$300M of capital required presented challenges in the business case, given there is no material improvement in the underlying economics of the business. As outlined in the Glenbrook decarbonisation pathway section (page 32 and 33), the New Zealand Government co-funded NZ\$140M towards the project, as part of its GIDI fund. The remaining capital is being funded by BlueScope from operating cash flows.

While GHG emissions will substantially decrease following the installation of the EAF, prospective technologies (such as green hydrogen DRI) will need to be developed to abate the remaining coal-based ironmaking processes and natural gas used. Accordingly, we are investing operating expenditure in New Zealand Steel's partnership with the University of Victoria in Wellington to investigate hydrogen-based direct reduction technology for the ironsands-based ironmaking process.

### Non-steelmaking operations

As outlined in the non-steelmaking decarbonisation section (pages 34 and 35), a large component of emissions from non-steelmaking activities relates to energy consumption – both electricity and gas. A range of projects is being pursued to reduce energy consumption, such as RTOs to re-use waste gas, energy efficiency upgrades for manufacturing equipment, solar power systems installed on site and power purchase agreements with solar energy providers. These projects are considered climate capital if the primary objective is a reduction in absolute GHG emissions or GHG emission intensity.

1. worldsteel CO<sub>2</sub> Data Report 2023 (2022 data year).

## BlueScope's value chain decarbonisation pathway

**>50%**  
of overall GHG emissions are Scope 3

**Understanding an organisation's Scope 3 GHG emissions profile is an important step towards effectively managing emissions-related risks and opportunities and reducing value chain GHG emissions.**

BlueScope's Scope 3 GHG emissions (or value chain emissions) result from upstream and downstream activities conducted across our value chain, but outside of our direct control or ownership. BlueScope's Scope 1 and 2 emissions are part of our customers' and suppliers' upstream or downstream Scope 3 GHG emissions (respectively), highlighting the need for collaboration across industries and sectors and all parts of the value chain to reduce the broader emissions footprint.

The key sources of our Scope 3 GHG emissions are outlined in the emissions performance section of this Report, which highlight the complexity of our value chain.

The diagram below<sup>1,2</sup> further illustrates the complexity of BlueScope's emission inventory, showing how our operations across various regions cover different segments of the value chain. This results in some emissions being classified as our direct operational Scope 1 and 2 GHG emissions, while others fall under indirect Scope 3 GHG emissions. For instance, in New Zealand, our operational GHG emissions span from raw material extraction (ironsand mine that we own and operate) to iron and steel manufacturing, coating and painting and downstream operations. Whereas, in Asia and China, our operational GHG emissions start at coating and painting, with the emissions associated with iron and steel manufacturing classified as Scope 3 as we do not manufacture our own steel in this region but purchase steel products externally.



- The above diagram is an indicative illustration of the varying degrees of vertical integration across BlueScope's operations and the relevant Scope 3 categories of GHG emissions. It does not indicate the exact breakdowns of emissions for each region. For example, in New Zealand & Pacific Islands, BlueScope owns and operates the Waikato North Head ironsands mine, which are our Scope 1 and 2 GHG emissions. However, other raw materials such as coal, limestone and dolomite, which are externally purchased, are our Scope 3 GHG emissions – the former is depicted in the diagram.
- Co-products in the diagram refer to emissions from transforming or processing BlueScope's co-products into a usable final product, subsequent to its sale. These co-products include blast furnace and steelmaking slag, BTX (benzene, toluenes, xylenes), coal tar, ammonium sulphate and calcined dolomite sold to customers from Port Kembla Steelworks, vanadium and melter slag sold to customers from Glenbrook Steelworks, and millscale, EAF slag and dust sold to customers from North Star.

## BlueScope's Scope 3 journey

BlueScope commenced Scope 3 reporting in 2020 and we have since made improvements to data collection and reporting processes focused on the accuracy of our Scope 3 GHG inventory.

As part of our continued focus on our Scope 3 GHG emissions, we developed an indicative long-term pathway and work program to further enhance the accuracy of our emissions inventory and determine feasible opportunities for Scope 3 GHG emissions reduction. Supported by our leadership team (both the Board and Executive Leadership Team (ELT)), our vision and objectives are outlined below.

### BLUESCOPE'S VISION:

**We are on a mission to understand and identify ways to reduce BlueScope's Scope 3 emissions. By collaborating with our suppliers, customers and employees, we're striving to create positive change in line with Our Purpose and Climate Strategy to showcase our commitment to a more sustainable future.**

#### ACCURATE DATA



Ensure we have an accurate Scope 3 emissions inventory that represents our entire value chain, from our raw materials to the use of our steel products.

#### VALUE CHAIN ENGAGEMENT



Find innovative ways to reduce our Scope 3 GHG emissions across our value chain and determine feasible longer-term Scope 3 commitments that reflect our most impactful activities throughout our value chain to drive positive change in our industry.

#### VALUE OF OUR PRODUCTS



Demonstrate the value and benefits of our products by understanding and clearly communicating the embodied carbon footprint to empower customers to make informed choices that align with their values and sustainability goals.

Given the nature of value chain emissions, we cannot accomplish our ambitions on our own. As such, achieving this long-term pathway, including developing feasible longer-term Scope 3 commitments, is highly dependent on several factors:

- » An accurate and comprehensive baseline of our Scope 3 GHG emissions that reflects all meaningful upstream and downstream activities in BlueScope's value chain.
- » Effective collaboration with stakeholders, including suppliers and customers, across our value chain, to influence and encourage them in setting and achieving their emission reduction commitments.
- » Decarbonisation of the steel sector to enable the achievement of net zero emissions (as purchased steel is our most material category of Scope 3 emissions).
- » Supportive policy settings in the regions where our key value chain partners operate, that assist decarbonisation and protect against carbon leakage.
- » An adequate framework that accurately captures emissions from the steel supply chain and associated boundaries.

We will consider BlueScope's own long-term decarbonisation pathway to lower emissions steelmaking and any associated implications for raw materials and energy mix ahead of considering any potential future Scope 3 reduction commitments.

## Value chain engagement

In FY2024, BlueScope initiated a supplier program to refine Scope 3 GHG emissions data and evaluate suppliers' decarbonisation goals. The initial phase revealed varying levels of supplier commitments to decarbonisation, with some having established targets with adequate support mechanisms to achieve them, while others are at the start of their decarbonisation journey. This engagement is aiding in obtaining accurate emission factors from suppliers, which will improve our Scope 3 emissions data and inform future supplier engagement and collaboration. We will provide further updates on the outcomes of this program in upcoming disclosures.

In addition to the supplier engagement program, in FY2024 we:

- » **updated our Supplier Code of Conduct** to encourage GHG emissions reporting by suppliers,

in line with global standards and frameworks. We have conducted information sessions to emphasise our commitment to emissions reduction across operations and supply chains.

- » **announced a collaboration** with Rio Tinto and BHP to jointly investigate the potential to develop a pilot DRI-ESF facility using Pilbara iron ores. While primarily targeting BlueScope's Scope 1 and 2 emissions, this would also have the potential to significantly reduce our Scope 3 emissions by altering our long-term raw material mix and offering the global steel industry a decarbonisation pathway for ironmaking, which would reduce emissions from the steel we purchase in regions where we do not manufacture it ourselves.
- » **enhanced our engagement with EcoVadis**, integrating tools for better GHG emissions insights and procurement discussions.



Western Sydney Stadium.

## Growing a sustainable supply chain

BlueScope Buildings North America convened a Supplier Sustainability Summit with around 30 attendees from 16 companies to discuss how to accelerate supply chain sustainability in the built environment. Experienced suppliers, like Kingspan Insulated Panels, Bay Insulation and Gerdau, shared insights, emphasising the interconnectedness of supplier and customer emissions, as highlighted by Sheri Flies, Senior Vice President, Global Sustainability and Compliance, Costco with the phrase "What's yours is ours."

Participants learned about BlueScope's investments and practices aimed at reducing GHG emissions and advancing renewable energy and a circular economy.

BlueScope Buildings understands the significance of committing to a long-term sustainability journey and is actively engaging its suppliers and working to provide lower carbon, highly recyclable products.

# Stakeholder engagement, partnerships and collaboration

**We understand the importance of engaging with stakeholders to achieve our 2030 emission intensity targets and 2050 net zero goal. We collaborate with customers, communities, suppliers, governments, industry peers and research institutions to help identify and implement new technology and other solutions.**

## Working with governments

Our 2050 net zero goal is predicated on several enablers that are in large part outside BlueScope's direct control. Accordingly, we engage with governments and value chain participants on the policy support, and investment in energy, raw materials, logistics and infrastructure, that will be needed to decarbonise iron and steelmaking.

In Australia, we have engaged with both Federal and State governments and with industry associations and thinktanks. This has included one-on-one meetings, written submissions, participation in roundtable discussions, and site visits for policymakers to our facilities.

In New Zealand, we have worked with the government to co-fund the EAF at Glenbrook. As part of the partnership, BlueScope is represented on an official working group alongside relevant public sector agencies to consider potential for further carbon reductions. This helps inform the government's emissions budgets to meet New Zealand's 2050 target, as well as the emissions reduction plans that set out policies and strategies for meeting those budgets. We also engage directly with the independent Climate Change Commission responsible for providing recommendations to the government on these budgets and plans.

In the US, our public policy engagement is currently not centred on national climate change and energy policy, given the low emissions technology already deployed at our North Star facility, and the general presence of appropriate enablers to support decarbonisation. However, we closely monitor developments in these areas that may impact the future operations and decarbonisation plans for our US

business, including policies that may underpin future investment in lower emissions energy (e.g. green hydrogen) and raw materials (e.g. iron from natural gas or hydrogen based DRI), engaging with local and state governments, and responding to formal government consultation, as appropriate.

In Australia, recent engagement with governments has focused on our Australian DRI Options Study, regarding both steel-specific and broader policies that will affect the enablers of decarbonisation, such as energy policy. We have also sought stakeholder support on the collaboration with Rio Tinto and BHP, which is examining the construction of a pilot ESF. This pilot is critical to demonstrating the feasibility of using Pilbara iron ores in a DRI process, and therefore foundational for a lower GHG emissions iron industry. As noted earlier, we also engaged with the Australian Government to secure part funding for the relining of the No.6 Blast Furnace at the Port Kembla Steelworks from the Powering the Regions Fund (Critical Inputs to Clean Energy Industries stream).

BlueScope will continue to advocate for the enablers and public policy needed to support investment in domestic lower emissions iron and steelmaking. We have also made submissions to government consultations on the development of the electricity system, the Future Gas Strategy and green metals. Our written submissions are publicly available on the relevant government websites (occasionally we will make commercially sensitive information confidential).



**More information on our position on these policy areas, and links to the submissions made to government, can be found [on our website](#).**



## Safeguard Mechanism

In January 2023, the Australian Government announced proposed changes to its Safeguard Mechanism (SGM). The SGM is a key policy to reduce emissions from large industrial facilities, including Port Kembla Steelworks and Western Port Works. It sets legislated limits, or baselines, on Scope 1 GHG emissions from covered facilities. These baselines will decline over time, to help Australia achieve its 2030 and 2050 emissions targets. We consulted with the government on measures to ensure that the SGM reflects the expected timing of iron and steelmaking decarbonisation in Australia, and to ensure the ongoing viability of the Port Kembla Steelworks, while maintaining incentives to reduce emissions from iron and steelmaking.



## Carbon Leakage Review

In July 2023, the Australian Government commenced a review to assess the extent of carbon leakage risks due to differences in emissions reduction policies between Australia and its key trading partners. The review was also tasked with identifying key sectors and products at risk, with a particular focus on the steel and cement industries. It will consider policy options to respond to such risks, including the feasibility of an Australian CBAM. BlueScope's view is that a well-designed and appropriately implemented CBAM, at the right time, could potentially help underpin the competitiveness of the domestic steel industry while it decarbonises. However, implementing an effective CBAM, particularly for the iron and steel sector, will be a complex exercise requiring careful design and learning from other jurisdictions.

## Industry associations

We also seek development of policy to support industry decarbonisation through membership of several industry associations.

Our key memberships in Australia include: Australian Industry Group (Ai Group); Australian Industry Greenhouse Network (AIGN); Australian Steel Institute (ASI); Business Council of Australia (BCA); Energy Users' Association of Australia (EUAA); Manufacturing Australia (MA); and Australian Aluminium Council (AAC).

Membership of these organisations allows us to be better informed about policy, to tap industry-wide expertise, and to jointly put to governments views about the most effective policy mechanisms to achieve industry decarbonisation, while maintaining and growing a vibrant steel manufacturing sector.

Our Industry Associations Governance Standard details membership principles, and processes to assess the alignment between the public policy positions of the industry associations and BlueScope's positions. Each year, we report the findings of this assessment, including in relation to climate change and energy policy, to the Risk and Sustainability Committee (RSC) of the Board. Since the introduction of the standard, we have not identified significant gaps in alignment.



More information on industry associations can be found [on our website](#).

## Led by Our Purpose, guided by Our Bond

In line with Our Purpose - we create and inspire smart solutions in steel, to strengthen our communities for the future - combined with the guiding principles of Our Bond, we work towards a just and equitable transition for our employees and communities as we develop and execute our climate strategy and decarbonisation pathway. Wherever possible we consult with employees and stakeholders about decisions that may affect them.

Our people are actively involved in our decarbonisation pathway, using their expertise to explore new technologies and develop innovative and efficient solutions to address the impacts of climate change. Many are also adapting to new ways of working as more energy efficient processes are introduced across the business.

Our sites actively engage with local communities through regular forums, keeping them informed of significant site activities and addressing any matters of concern to the community. At Port Kembla Steelworks, a comprehensive engagement program keeps the community informed of our growth manufacturing projects, like the No.6 Blast Furnace reline, our decarbonisation pathway, and our land transformation project<sup>1</sup>. BlueScope's commitment to First Nations

People is evident in our ongoing engagement and collaboration with local Aboriginal communities and representatives across various sectors.



For more details on our engagement with First Nations communities, refer to our [FY2024 Sustainability Report](#).



### Our local communities are our homes

As it transitions to a more sustainable steelmaking method through an EAF, New Zealand Steel understands the responsibility of being a major community employer and partner. It has a long and proud history of engagement with its people, suppliers, governments and the local community. Regular meetings and forums with local business leaders and suppliers and quarterly environment committee meetings present the opportunity to discuss the social implications of a lower carbon future that will accompany the commissioning of the EAF. New Zealand Steel representatives also maintain a strong relationship with the local Iwi<sup>2</sup> through regular consultation. It informs neighbours to the Glenbrook site of activities, associated with the construction of the EAF, such as increased traffic on the roads, through community forums and other initiatives.

The introduction of the EAF will bring changes and new opportunities for people at the Glenbrook Steelworks. New Zealand Steel is engaging and consulting with its people to explain what the new way of steelmaking might mean, how roles might change and the opportunities for learning new skills.

1. Refers to a Master Plan for approximately 200 hectares of landholdings adjacent to the Port Kembla Steelworks. The project will create a vision for the reimagination and transformation of land surplus to steelmaking needs, with the potential to unlock a wide range of new uses and enable significant long-term economic and social value for the region.  
2. Māori tribes or kinship group.

## Industry partnerships and collaborations

BlueScope plays an active role in identifying industry initiatives to develop consistent methodologies and approaches to GHG emissions performance, targets and a net zero pathway for the steel sector.

Across the regions our businesses belong to industry groups and forums, such as the Green Building Councils in Australia, New Zealand, Singapore and the US which advocate for sustainable buildings and communities, and help foster engagement with customers. This includes ResponsibleSteel™, the steel industry's first global independent multi-stakeholder standard and certification program, which covers a wide range of topics, including climate change and GHG emissions. We are a signatory to the Steel Standard Principles endorsed by the World Trade Organisation Secretariat and worldsteel. In Australia, BlueScope is a founding member of the Minerals and Embodied Carbon Leaders Alliance (MECLA), which aims to reduce embodied carbon in the building and construction industry.

BlueScope was a member of the Science Based Targets initiative's (SBTi) expert advisory group, providing feedback on updated methodologies and guidance for a steel Sector Decarbonisation Approach (SDA), which was finalised in July 2023. The SDA acknowledges the importance of key enablers for steel sector decarbonisation, such as availability of appropriate raw materials, low emissions fuels, a decarbonised electricity grid, and green hydrogen. As a result, steelmakers operating in regions where those enablers are more accessible, affordable or advanced

will more readily be able to align with the steel SDA. For BlueScope, the regional spread and diversity of our operations, and the differing levels of maturity of the key enablers for decarbonisation mean we are currently unable to commit to a SBTi-aligned target. However, we continue to execute our climate strategy, driving decarbonisation and advocating for the key enablers in the regions where we operate.



BlueScope's collaboration with Rio Tinto and BHP is examining the construction of a pilot ESF.

## Supply chain partnerships

In addition to our engagements on Scope 3 emissions, a number of our businesses are engaging in strategic partnerships to help develop local supply chains that support the renewable energy industry. For example, in Australia, Orrcon Steel has signed an agreement with US solar tracker maker Nextracker to manufacture components for Nextracker's smart solar trackers. We are also exploring the partnership opportunities that engagement with renewable energy developers may bring in new supply chains catering to solar, wind, transmission lines, and other aspects of the renewable energy industry.



BJCE Australia, Gullen Range Wind Farm, powered by Goldwind.

# Climate risks and governance

## Climate risk management

BlueScope is committed to an integrated approach to managing risk, with climate change a specific category in our risk management framework. We aim for a proactive risk culture, ensuring a balanced approach to managing uncertainty in delivering strategic and commercial outcomes.

Our Group Risk Appetite statements, set by the Board, describe the fundamental principles that govern how we will execute our strategy and the acceptable level of risk the Group is willing to take. For climate change, they are to:

- » play an active role in reducing GHG emissions associated with the manufacture and use of steel products; and
- » build the resilience of our operations and investments and support our customers to manage climate change impacts.



Refer to the [FY2024 Sustainability Report](#) and our website for further information on our three lines of accountability model.

We initially identified and published climate risks in our FY2019 Sustainability Report, and have continued to disclose them in subsequent Annual Reports. In 2024, we reassessed our climate risks in light of our renewed climate scenario analysis to better understand the impacts of the physical and transitional climate-related risks on our profile. No material changes were made to these identified risks following this process.

We evaluate and monitor the impact of climate-related risks on our business and corporate plans over a range of timeframes and build this into our corporate strategy, where appropriate. We present six-monthly updates to the RSC on identified climate risks and progress made on risk mitigation responses.



Refer to the 'Outlook, Future Prospects and Risks' section of our [FY2024 Annual Report](#) that outlines identified climate-related risks and proposed actions to address them.

## Climate governance

BlueScope recognises climate change as a material strategic issue requiring clear accountabilities for oversight and implementation of our commitments. Climate change considerations are included in strategy discussions, investment decisions and risk management and oversight, monitored by the Board of the company.

The Board, with the assistance of its Committees, oversees BlueScope's climate change strategy, performance and governance responsibilities, while day-to-day management accountability rests with BlueScope's Managing Director & CEO, the Chief Executive Climate Change and Sustainability and the rest of the ELT and other management.

The Board has ultimate responsibility for overseeing BlueScope's approach to climate change action. The Board receives regular updates on climate developments and progress made towards our GHG reduction ambitions and education sessions are held for the Board on climate-related matters as appropriate. Given the nature of this Report, the RSC has had oversight of it. This Report was approved by the Board, following recommendation by the RSC.



Refer to our [FY2024 Corporate Governance Statement](#) which contains further information on the Board and its Committees and Board skills and experience.

The Climate Change Council (comprising of senior leaders from across BlueScope) contributes to developing and implementing our climate strategy and associated work programs and provides recommendations to the ELT, the Board and relevant Committees.

BlueScope's remuneration framework rewards executives on the achievement of annual sustainability performance objectives where 10 per cent of the Short-Term Incentive (STI) scorecard relates to climate change objectives.



Refer to our [Remuneration Report](#) for details on performance against the FY2024 STI scorecard.



# Glossary

Term or metric	Definitions
<b>2050 Net zero goal</b>	<p><b>The 2050 net zero goal set out on page 11:</b></p> <ul style="list-style-type: none"> <li>» applies to our entire business including our GHG emissions from steelmaking and non-steelmaking operations (both midstream and downstream);</li> <li>» covers BlueScope's operational Scope 1 and Scope 2 GHG emissions;</li> <li>» considers the six greenhouse gases recognised under the Kyoto Protocol and the GHG Protocol. This includes carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>);</li> <li>» performance will be reported under the GHG Protocol's equity-based approach for organisational boundaries;</li> <li>» our Scope 2 GHG emissions are measured utilising the GHG Protocol Scope 2 location-based method (this approach is unchanged from our previous reporting approach);</li> <li>» this goal will be complemented by our existing emissions targets for 2030.</li> </ul> <p>Our ability to achieve net zero emissions by 2050 will be inextricably linked to five key enablers outlined on page 11.</p>
<b>2030 Steelmaking target</b>	<p>This target set out on page 11 relates to a 12 per cent reduction of GHG emission intensity by 2030 across BlueScope's steelmaking activities at Port Kembla, Glenbrook and North Star. Performance against this target will be measured against a FY2018 baseline.</p> <p>Emission intensity is calculated based on Scope 1 and Scope 2 GHG emissions per tonne of raw steel at our steelmaking facilities, reported in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>-e) per tonne (t) of raw steel (tCO<sub>2</sub>-e/t).</p>
<b>2030 Non-steelmaking target</b>	<p>This target set out on page 11 relates to a 30 per cent reduction of emission intensity by 2030 across BlueScope's midstream non-steelmaking activities which include our cold rolled, coated, painted, and long products. This target does not apply to our downstream activities which include roll-forming, pre-engineered building and other activities. Performance against this target will be measured against a FY2018 baseline.</p> <p>Emission intensity is calculated based on Scope 1 and 2 GHG emissions per tonne of despatched steel at our midstream sites, reported in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>-e) per tonne (t) of despatched steel (tCO<sub>2</sub>-e/t).</p>
<b>Australian DRI Options Study</b>	<p>Named Project IronFlame, a study initiated by BlueScope to explore low emissions iron and steelmaking options in Australia, with a particular focus on DRI technology pathways and the necessary enablers. The main objectives of the study are to identify iron and steelmaking options that provide a step-change in carbon emissions reduction, and identify and quantify the enablers required for each option and any additional government measures required to support them on an economic basis.</p>
<b>BlueScope's midstream activities</b>	<p>BlueScope's midstream non-steelmaking activities include our cold rolled, coated, painted, and long products.</p>
<b>BlueScope's downstream activities</b>	<p>BlueScope's downstream activities include roll-forming, pre-engineered building manufacture and other activities to support BlueScope's operations.</p>
<b>Carbon Border Adjustment Mechanism (CBAM)</b>	<p>A mechanism introduced in some jurisdictions to address 'carbon leakage', wherein industries shift production to countries with less stringent climate policies, undermining global emissions reduction efforts.</p>
<b>Carbon Capture and Storage (CCS)</b>	<p>CCS includes methods and technologies to remove CO<sub>2</sub> from the flue gas and/or from the atmosphere, for safe and permanent storage.</p>
<b>Climate capital</b>	<p>Capital investment by BlueScope where the primary objective is a reduction in GHG emissions or GHG emission intensity.</p>

Term or metric	Definitions
<b>CO<sub>2</sub> equivalent (CO<sub>2</sub>-e)</b>	The universal unit of measurement to indicate the global warming potential (GWP) of each GHG, expressed in terms of the GWP of one unit of carbon dioxide. It is used to evaluate the warming potential of releasing (or avoiding releasing) different greenhouse gases against a common basis.
<b>Co-products (or by-products)</b>	Materials that are produced in parallel to, or as a consequence of, the production of a primary product and also have a potential value. The main solid co-products produced during iron and crude steel production are slags (90 per cent by mass), dusts and sludges. Alongside solid co-products, process gases from coke ovens, blast furnaces and basic oxygen steelmaking furnaces are also important steelmaking co-products. Internally generated scrap steel (pre-consumer scrap) is not included as a co-product. Co-products are reported in tonnes (t).
<b>Despatch tonnes (t)</b>	Invoiced despatches of steel and steel products, including intercompany transfers, reported in tonnes (t).
<b>DRI or Direct Reduced Iron</b>	Refer to pages 8-9 for further information on Direct Reduced Iron.
<b>EAF or Electric Arc Furnace</b>	Refer to pages 8-9 for further information on steelmaking processes.
<b>Emissions factor</b>	A factor that converts activity data into GHG data (e.g. kg CO <sub>2</sub> -e emitted per GJ of fuel consumed, kg CO <sub>2</sub> -e emitted per kWh of electricity consumed).
<b>Equity share approach</b>	A consolidation approach whereby a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation.
<b>Government Investment in Decarbonising Industry (GIDI) fund</b>	A New Zealand Government fund that focuses on investing in, and promoting, cleaner industrial processes and process heat.
<b>Greenhouse gas emissions (tCO<sub>2</sub>-e)</b>	Total greenhouse gas emissions (GHG) arising from our operations on an equity basis in line with the GHG Protocol and reported in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> -e). The gases included are the six classes of gases listed in the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC): carbon dioxide (CO <sub>2</sub> ); methane (CH <sub>4</sub> ); nitrous oxide (N <sub>2</sub> O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF <sub>6</sub> ).
<b>IPCC</b>	The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.
<b>Paris Agreement</b>	A legally binding international treaty on climate change adopted at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP21) in Paris in 2015. The central objective of the Paris Agreement is its long-term temperature goal to hold global average temperature increase to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
<b>Primary steelmaking</b>	Steelmaking which uses iron ore as its main source of metallic input. This includes for example, Blast Furnace-Basic Oxygen Furnace and Direct Reduced Iron-Electric Arc Furnace steelmaking. Refer to pages 8-9 for further information on steelmaking processes.
<b>Raw (or crude) steel</b>	Steel in its first solid (or usable) form measured at each caster at our steel production facilities and reported in tonnes (t).
<b>Reductant</b>	An element or compound that loses or 'donates' an electron to an electron recipient. Both carbon and hydrogen can act as a reductant in removing oxygen from iron ore.
<b>Reline</b>	The replacement of the internal lining of a blast furnace.
<b>ResponsibleSteel™</b>	A not-for-profit organisation, ResponsibleSteel™ is the industry's first global multi-stakeholder standard and certification program.
<b>Scope 1 greenhouse gas emissions</b>	Direct GHG emissions that occur from sources that are owned or controlled by the Company reported in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> -e).

Term or metric	Definitions
<b>Scope 2 greenhouse gas emissions</b>	Indirect GHG emissions associated with the purchase of electricity, steam, heat or cooling and reported in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> -e). Scope 2 emissions physically occur at the facility where electricity or steam is generated, however they are accounted for in the inventory of the entity that uses the energy.
<b>Scope 3 greenhouse gas emissions</b>	Referred to as value chain emissions, indirect GHG emissions that occur in the Company's value chain from sources not owned or controlled by the Company and reported in tonnes of carbon dioxide equivalent (tCO <sub>2</sub> -e).
<b>Scrap steel</b>	Recovered and recycled scrap steel used in the steelmaking process. Includes raw steel production feedstock from internally generated scrap, industrial scrap and end of life scrap.
<b>Secondary steelmaking</b>	Steel production which uses scrap as its main source of metallic input (e.g. EAF steelmaking). Refer to pages 8-9 for further information on steelmaking processes.
<b>Shared Socio-economic Pathways (SSPs)</b>	SSPs are 'what if' scenarios used to outline the consequences of different levels of GHG emissions accumulating in the atmosphere in 2100. SSPs are used to describe different trajectories of future GHG emission concentrations linked to socio-economic and other assumptions. Each SSP further refine the emission scenarios previously used called Representative Concentration Pathways (RCPs).
<b>Sustaining capital expenditure</b>	Investment with the primary objective of sustaining the capacity and capability of current business operations at an appropriate level of risk.
<b>Tonnes (t)</b>	Unit of measurement equivalent to 1,000 kilograms, or 1.1023 short tons (US tons). In the US it may be referred to as a "metric ton".

## FORWARD-LOOKING STATEMENTS

This Report contains forward-looking statements and metrics (i.e. statements about matters that are not historical fact), such as emissions reduction estimates, targets, commitments, goals and pathways (e.g. indicative steelmaking decarbonisation pathways); climate scenarios and projections; absolute emissions and emission intensity projections and pathways; and other forecasts and statements about the BlueScope Group's current intent, belief or expectations (including without limitation with respect to our business and operations, macro and micro economic and market conditions, results of operations and financial condition, and assessment or management of risks and opportunities).

Forward-looking statements can generally be identified in this Report based on the use of terms such as "may", "could", "would", "will", "should", "expect", "intend", "aim", "seek", "believe", "plan", "anticipate", "estimate", "indicative", "continue", "assume", "project", "goal", "target" or "forecast" or similar expressions, or the negative thereof or comparable terminology, that convey the prospective nature of events or outcomes. Forward-looking statements may also be made – verbally and in writing – by members of the BlueScope Group's management in connection with this Report, and such statements are also subject to the same limitations, uncertainties, assumptions and disclaimers which are set out in this Report.

Forward-looking statements reflect our current best estimates, judgements, assumptions, views and intent as at the date of this Report with respect to future events and circumstances which are not certain. These forward-looking statements are subject to change, known and unknown risks, uncertainties and assumptions and other factors which are, in many instances, beyond the BlueScope Group's control. Although management currently believes that these forward-looking statements have a reasonable basis, there can be no assurance that future developments or performance will be in accordance with our expectations or that the effect of future developments on us will be those that are anticipated. There is a risk that the best estimates, judgements, assumptions, views, models, scenarios and projections used may subsequently turn out to be incorrect.

Actual results, performance, conditions, circumstances or the ability to meet commitments, goals and targets set forth in forward-looking statements could differ materially from those we expect or are that expressed or implied in such statements, depending on various factors. Such factors may include without limitation: significant uncertainty in climate change and sustainability related data, metrics and modelling (including scenario analysis) as well as further development of methodologies, reporting or other standards which could impact metrics, data and targets (noting that climate and sustainability science, standards, methodologies and reporting are subject to rapid change and development); uncertainty and changes to climate-related policy, laws and regulations; and variation in climate-related approaches and outcomes.

In addition, many of the forward-looking statements in this Report are based upon third party data, models, projections and scenarios, which have not been independently verified and may also be subject to change and uncertainty. No representation or warranty is made as to the accuracy, completeness or reliability of such third party information. For example, forecasts from the IEA and temperature projections from the IPCC were utilised in the development of the scenario analysis presented in this Report.

Forward-looking statements in this Report are not guarantees, forecasts or predictions of future climate-related outcomes, financial performance or share prices, and BlueScope gives no representation, warranty, assurance (including as to the quality, accuracy or completeness of this Report) nor guarantee, 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 being achieved or proven to be correct.

Readers of this Report should not place undue reliance on forward-looking statements in light of the significant uncertainty in the data and other information, including climate metrics and modelling, that limit the extent to which they are useful for decision-making, and the many underlying risks and assumptions that may cause actual outcomes to differ materially. Readers should rely on their own independent enquiries, investigations and analysis, with the advice of professional advisors as necessary, regarding the risks and consequences of any matter contained in this Report and when making any decisions based on forward-looking statements. To the maximum extent permitted by law, all responsibility for the accuracy or completeness of any forward-looking statements, whether as a result of new information, future events or results or otherwise, is disclaimed. BlueScope further disclaims any obligation, except to the extent required by law or the Listing Rules of the Australian Securities Exchange, to publicly release any updates to any forward-looking statement contained in this Report, whether as a result of new information or future events, changes to relevant risks, uncertainties or other factors, and/or BlueScope's understanding of them.



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