2025 consultation

Submission type	Upload
Submitter	BlueScope
Response ID	277404

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NSW Net Zero Commission 2025 Consultation

BlueScope Submission

11 July 2025

Executive Summary

BlueScope welcomes the opportunity to contribute to the NSW Net Zero Commission's 2025 consultation. Climate change is a present and pressing issue, and achieving net zero emissions is a significant challenge requiring coordinated action. The state's net zero emissions target aligns with Australia's Nationally Determined Contribution under the Paris Agreement and is consistent with BlueScope's own 2050 net zero goal for Scope 1 and Scope 2 emissions across all global operations. This goal is further supported by BlueScope's interim emissions intensity targets for 2030.

As outlined in this submission, **BlueScope operates in a complex and highly competitive global market**. Products are exported to international markets while also competing with imported steel products in the domestic market. The Australian steel sector is highly trade-exposed, with Australia's crude steel production accounting for less than 0.4% of global output. Domestically, BlueScope faces extensive competition from imports, which often have higher greenhouse gas emissions intensity and are subject to less stringent environmental standards.

Given the absence of global market signals, supportive and consistent policies and programs from all levels of government are essential to achieving net zero ambitions. Existing primary steelmaking processes, such as the one used at Port Kembla, are greenhouse gas intensive. BlueScope's net zero goal is ambitious and its achievement depends on the availability of several key enablers, including firmed, affordable renewable electricity; competitively priced natural gas and ultimately green hydrogen; sufficient quantities of economically viable raw materials; and advancements in ironmaking technology. The availability of these key enablers, and the economic sustainability of BlueScope's operations in the face of intense global competition, relies on stable and coordinated government support.

A nationally harmonised and stable climate policy environment will promote investment and support the state's transition to net zero. It is critical that the whole-of-economy impacts of climate policy are considered, and that ambitious decarbonisation goals are matched with support for trade-exposed industries. This will help ensure industry remains viable while contributing to emissions reduction. State and federal decarbonisation policies must be stable and complementary to minimise investment risk and avoid unnecessary costs and administrative burden. Without this, there is a risk of deterring future industrial investment and causing carbon leakage in internationally exposed industries.

Decarbonising the electricity and energy sector, which accounts for 40 percent of state emissions, is critical to enabling emissions reductions in other sectors. Driving investment in affordable, reliable, firmed renewable energy sources is essential for reducing emissions across the manufacturing industry. Without a timely energy sector transition, manufacturing facilities will face significant challenges in achieving step-change reductions in greenhouse gas emissions, due to their heavy reliance on electrification in future decarbonised operations.

Natural gas will remain critical as NSW transitions to net zero. Access to sufficient quantities of affordable natural gas, until green hydrogen becomes commercially viable, is essential for energy security and industrial decarbonisation.

This submission provides context for BlueScope's position, identifies key issues for the Commission's consideration, and responds to specific questions raised in the consultation paper. BlueScope welcomes ongoing engagement with the Commission and looks forward to contributing to future discussions that support a successful transition to net zero.

1 Context for BlueScope's submission

1.1 Australia's largest steel producer

BlueScope is an Australian-headquartered, ASX-listed steel manufacturer, specialising in the production of steel materials, products, systems and technologies. It operates in 15 countries, with approximately 100 sites in Australia, being a mix of large manufacturing plants including iron and steel production, roll-forming facilities and distribution centres. The business specialises in flat steel products, including hot rolled coil, cold rolled coil, plate, value-added metallic coated and painted steel solutions and tubular steel sections. Its key focus is on higher value, branded products for the building and construction industry, with increasing capability in supplying locally made steel for the renewable energy, infrastructure and defence sectors.

BlueScope's products are recognised leaders in Australia, and include COLORBOND® steel, TRUECORE® steel, ZINCALUME® metallic coated steel, TRU-SPEC® steel and the LYSAGHT® and FIELDERS® building products. BlueScope manufactures approximately 3.2 million tonnes of steel annually at the Port Kembla Steelworks (**PKSW**) in Australia, using the Blast Furnace Basic Oxygen Furnace (**BF-BOF**) method of primary iron and steelmaking. The BF-BOF production route is often referred to as 'primary' steelmaking as it creates iron and steel with virgin iron ore as the primary input. Using this production method, iron ores are smelted with coke, limestone and other inputs in a BF to produce virgin iron. Molten virgin iron and a proportion of cold ferrous feed (**CFF**), usually in the form of steel scrap, are then converted into steel in a BOF.

BlueScope is the only domestic manufacturer of flat steel products, providing sovereign capability to supply key sectors including building and construction, manufacturing, agriculture, infrastructure, transport and defence. In addition to supplying key domestic sectors, BlueScope exports around a quarter of its Australian steel production, with volumes varying according to domestic and international market conditions.

BlueScope employs approximately 7,000 people in Australia, including around 3,500 people at the PKSW and adjacent facilities in the Illawarra region of New South Wales. BlueScope's contribution to New South Wales includes generating a total of 20,000 direct and indirect jobs, $12 billion in output per year and $2.3 billion in household income per year.[1] BlueScope is currently progressing several major investments in NSW, including the No. 6 Blast Furnace reline ($1.15b) and Plate Mill Modernisation ($300m) at the PKSW, construction of a new metal coating line ($415m) at its Erskine Park facility, and a new state-of-the art $70M new pipe and tube mill at Unanderra which all contribute to the state and national economies.

BlueScope also recognises the deep and ongoing connection First Nations peoples have with land, water and Country. In line with its First Nations Framework, BlueScope is committed to respectful, place-based engagement with First Nations communities, and to identifying practical opportunities for inclusion and partnership across its operations. This includes creating pathways for employment, training and business development, as well as supporting cultural understanding and leadership through programs such as Jawun. These initiatives contribute to BlueScope's ongoing efforts to consider Care for Country principles in its approach to environmental stewardship.

[1] IRIS Study 'BlueScope's Economic Contribution to Australia, NSW and the Illawarra', January 2023

1.2 BlueScope operates in a highly competitive market against producers that do not bear material carbon costs

BlueScope operates in a highly competitive global market, exporting to the world and competing against imports at home. In 2022, the global steel industry produced just under 1.8 billion tonnes of finished steel, and one in every five tonnes produced was exported.[2] The Australian steel sector is highly trade exposed. Australia's crude steel production was 5.8 Mt in 2021-2022 with steel imports of 2.5 Mt and exports of 1.0 Mt.[3] The steel sector is even more trade exposed when considering the steel contained in imported goods. The World Steel Association estimates Australia's true steel use is 10.5 Mtpa[4], meaning imports account for approximately half of Australia's true steel consumption.

Australian steelmakers are fundamentally price-takers. BlueScope competes domestically against imports from producers in low-cost jurisdictions, often with higher greenhouse gas emission (**GHG**) intensity and less stringent environmental standards. GHG emissions from the PKSW are lower than the average of blast furnace emissions from Australia's major source countries of steel imports (China, Japan, Korea and India).[5] Furthermore, steelmakers in jurisdictions with relatively strong climate policy settings, such as the EU and Korea, are shielded from carbon pricing through the allocation of free credits or permits. As a result, almost no sources of imported steel in Australia are currently required to bear material carbon costs.

1.3 BlueScope strongly supports decarbonisation and is committed to reducing its greenhouse emissions

BlueScope supports Australia's 2030 and 2050 GHG targets, consistent with Australia's Nationally Determined Contribution under the Paris Agreement. BlueScope has developed a decarbonisation pathway to support delivery of its climate strategy. It has a 2050 net zero goal for Scope 1 and Scope 2 emissions across all operations globally, supported by two interim emissions intensity targets for 2030:

- A 12 per cent reduction in GHG emissions intensity for its steelmaking operations globally; and
- A 30 per cent reduction in GHG emissions intensity for its non-steelmaking activities globally (such as cold rolling, metal coating and painting lines).

Both targets are measured against a FY2018 baseline.

Existing primary steelmaking processes are GHG intensive. Achieving the 2050 net zero goal is ambitious and highly dependent on several key enablers, including the development of emerging low-emissions ironmaking technologies, access to affordable, firmed large-scale renewable energy, availability of competitively priced green hydrogen (with natural gas as a first step in enabling the transition), access to appropriate quality and sufficient quantities of economic raw materials, and supportive and consistent policy settings.

BlueScope has delivered NSW and Australia's largest emission reduction from facilities covered by the Safeguard Mechanism (**SGM**). The PKSW's Scope 1 emissions have decreased by 40 per

[2] World Steel Association, World Steel in Figures 2023
[3] Department of Industry, Science and Resources, Commonwealth of Australia, Resources and Energy Quarterly December 2022, steel imports
[4] World Steel Association, Steel Statistical Yearbook 2022, table 58
[5] CRU Emissions Analysis Tool, average blast furnace emissions from China, Japan, Korea and India

cent (4 Mt CO2e) since 2005, in large part by reducing iron and steelmaking capacity through the closure of a blast furnace in 2011.

BlueScope has a strong track record of realising energy efficiency and emissions reduction opportunities. Between FY2012 and FY2023, the PKSW reduced its Scope 1 and Scope 2 emissions per tonne of output from 2.53 tCO2e/t to 2.07 tCO2e/t raw steel – an 18 per cent decline.[6] According to data from the World Steel Association (**Worldsteel**), PKSW ranks in the best fifteenth percentile for emissions efficiency of the 56 BF-BOF facilities surveyed globally.[7] From this position, further reductions from the PKSW using a BF-BOF production route will be much harder and more costly to achieve.

BlueScope believes converting from blast furnace iron making to direct reduced iron (**DRI**) is the most prospective technology option for future low-emissions ironmaking in Australia. Most DRI is currently manufactured via shaft furnaces using natural gas but could be produced using green hydrogen once commercially available. To be converted into steel, DRI needs to be further processed in an electric arc furnace (**EAF**), or an electric smelting furnace (**ESF**) coupled with a BOF. The ESF is a furnace that can separate impurities from the DRI feed to produce liquid iron suitable for a BOF. It is potentially suitable for utilising low to medium grade iron ores (for example hematite ores that are prevalent in the Pilbara) due to its ability to remove impurities from DRI without significant yield losses. The DRI-ESF technology route is the focus of BlueScope's technical collaborations with steelmaking partners ThyssenKrupp, Tata Steel and POSCO.

BlueScope is partnering with BHP, Mitsui Iron Ore Development, Rio Tinto and Woodside Energy to jointly investigate the development of the country's largest ironmaking ESF pilot plant. This partnership provides a platform to demonstrate that production of molten iron from Pilbara hematite ores is feasible using natural gas when combined with DRI and ESF process technology. This could help open a pathway to near-zero GHG emission intensity operations for global steelmakers relying on abundant Pilbara iron ore through the replacement of coal dependent blast furnaces with DRI-ESF equipment. Estimates show that reductions of around 85 per cent in CO2 emission intensity are potentially available processing Pilbara iron ores through a DRI-ESF pathway with green hydrogen, compared with the current industry average for the conventional blast furnace steel route.[8]

Success in this project would provide the basis for substantial decarbonisation of BlueScope's operations at PKSW and the foundation for an Australian 'green' (near-zero emissions) iron export industry to help decarbonise global steelmaking. The project progressed to feasibility stage in June 2025. The feasibility study will help inform a final investment decision, expected in 2026. If approved, the pilot facility is scheduled to begin operations in 2028. 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.

1.4 BlueScope has a significant role to play in enabling Australia's renewable energy transition

Steel's role in the larger task of decarbonising the Australian economy will be crucial because it is an essential enabler in the development of renewable energy. Much of the infrastructure that Australia needs to drive the energy transition will be made from steel, including wind towers, solar

[6] National Greenhouse and Energy Reporting Scheme
[7] World Steel Association, CO2 Data Report 2023 (2022 data year)
[8] Media Release: "Australia's leading iron ore producers partner with BlueScope on steel decarbonisation" 9 February 2024

farms, hydro and transmission infrastructure. It is estimated that approximately 400,000 tonnes per annum of additional steel will be required for renewable energy and related infrastructure, between now and 2050, to meet Australia's targets based on AEMO NEM forecasting.[9] Additional steel will also be required to meet Australia's green hydrogen ambitions. As Australia's only flat steel producer, BlueScope has a critical role to play in enabling Australia's renewable energy transition.

1.5 BlueScope's operations are fundamental to sovereign capacity in iron and steelmaking

Domestic iron and steelmaking is core to a vibrant Australian manufacturing sector. Steel is a key input to the construction, engineering, mining and manufacturing sectors. Sovereign iron and steelmaking capacity also supports Australia's strategic interests including critical infrastructure and defence.

Retaining sovereign iron and steelmaking capacity now is essential if Australia is to play its part in emerging and future low emissions iron and steelmaking. Sovereign production helps guard against loss of supply in potential periods of geopolitical instability and dislocation of global supply chains, as seen in recent years. Loss of this capability will hinder the renewable energy transition; on the other hand, achieving this transition while supporting sovereign capacity in iron and steel making can unlock strategic, economic and environmental benefits for Australia, including the development of a global scale low emissions Hot Briquetted Iron (**HBI**)[10] export industry in Australia.

2 BlueScope's responses to specific questions included in the NSW Net Zero Commission 2025 consultation paper

2.1 Question 3: *How should the commission best engage with First Nations people to learn about cultural knowledge and practices to support adaptation, and what information and evidence should it draw on to inform its understanding of these practices?*

BlueScope's approach to engaging with First Nations peoples is guided by its First Nations Framework, developed through extensive consultation with communities surrounding its operations, particularly in the Illawarra region. The Framework outlines BlueScope's commitment to building respectful, long-term relationships that are place-based and grounded in cultural understanding.

Key principles that underpin BlueScope's engagement include:

- Building trust through open, honest, and ongoing engagement with First Nations peoples in the communities where BlueScope operates.
- Ensuring engagement is place-based and tailored to reflect local context, community priorities and cultural protocols.

[9] Australian Energy Market Operator, 2022 Integrated System Plan for the National Electricity Market (June 2022)
[10] Hot Briquetted Iron is a compacted form of Direct Reduced Iron designed for shipping

- Listening to and learning from Traditional Custodians, Elders and Aboriginal community leaders to inform our decision-making.
- Working in partnership to identify practical opportunities for economic participation, cultural inclusion, and shared benefit.
- Supporting leadership and cultural exchange through initiatives such as involvement in the Jawun Partnership Program, where BlueScope leaders are seconded into First Nations organisations and immersed on Country — experiences that help shape more inclusive and culturally responsive leadership.

BlueScope also works closely with local First Nations organisations, including the Illawarra Aboriginal Corporation, the Illawarra Local Aboriginal Land Council and Dharawal Traditional Custodians, to support cultural heritage management and land care programs that reflect community-led priorities.

BlueScope encourages the Commission to consider a similar principles-based engagement approach that respects the diversity of First Nations communities and supports genuine partnership.

2.2 Question 4: *What additional mechanisms, support, or incentives can meaningfully empower and enhance First Nations people's involvement in climate mitigation, adaptation and environmental stewardship?*

BlueScope's First Nations Framework includes a strong focus on supply chain partnerships as a way of creating sustainable opportunities for First Nations owned and culturally sensitive businesses. Through initiatives such as BlueScope's partnership with Supply Nation, the development of a First Nations Procurement Strategy, and targeted support to grow supplier capability, BlueScope is working to remove barriers and expand representation across our operations. As a result, BlueScope increased its spend with First Nations suppliers by 60% in FY2024 compared to FY2023, demonstrating how proactive and structured engagement can help support greater participation by First Nations peoples, and could be adopted in areas such as climate mitigation, adaptation and environmental stewardship.

BlueScope also supports initiatives that build cultural capability and leadership across its business. Through the Jawun Partnership Program, BlueScope leaders are immersed on Country with First Nations communities – an experience that continues to influence BlueScope's approach to environmental responsibility and Caring for Country. These experiences help embed a deeper understanding of First Nations perspectives into decision-making processes, including those related to environmental management.

BlueScope encourage the Commission to consider the value of frameworks and partnerships, like those outlined in BlueScope's approach, that build capability, strengthen inclusion, and enable long-term, practical involvement of First Nations peoples in climate and environmental stewardship.

2.3 Question 5: *What additional information and evidence should the commission consider when assessing progress towards NSW's targets for reducing net greenhouse gas emissions?*

In evaluating progress towards NSW's net greenhouse gas emissions reduction targets, the Commission should consider several critical factors that influence the pace, cost, and feasibility of emissions reduction across different sectors. These include:

The Role of Decarbonisation Enablers as Leading Indicators

While absolute and intensity-based emissions reductions are fundamental metrics, it is equally important to monitor the development and availability of key enablers for decarbonisation. Leading indicators can offer early insights into the effectiveness of current decarbonisation policies and support timely adjustments to government programs.

For example, BlueScope's decarbonisation strategy relies heavily on access to competitively priced, firmed renewable energy, suitable raw materials, and sufficient supplies of affordable natural gas, as well as breakthroughs in low-carbon steelmaking technologies. Monitoring the development of these enablers provides a forward-looking perspective on decarbonisation progress and is essential for understanding and influencing the feasibility and timing of emissions reduction initiatives in the steel manufacturing sector.

Sectoral Variability in Decarbonisation Capacity

The pace and cost of decarbonisation vary significantly across industrial sectors.

Some sectors already have access to commercially viable low-emissions technologies, enabling them to reduce emissions at relatively low marginal abatement costs. These sectors are therefore positioned to decarbonise more rapidly and cost-effectively.

In contrast, the steel manufacturing sector faces a more complex and non-linear decarbonisation pathway. Progress in this industry is likely to occur through significant step changes, dependent upon the development and deployment of enabling technologies and supporting infrastructure.

The commission should account for sector-specific decarbonisation timelines and enabling conditions when evaluating progress towards emissions reduction targets.

Economic Indicators and Policy Impact Assessment

The Commission should also consider economic indicators that reflect the relationship between state-level emissions reduction policies and broader economic performance. Understanding this relationship is vital to ensuring that climate policy supports sustainable economic growth. Such analysis can help identify policy settings that deliver both environmental and economic benefits, thereby strengthening public and industry support for the transition to a low-carbon economy.

2.4 Question 6: *The speed of deployment of electricity generation and infrastructure is a key risk to emissions reduction targets. What more could be done to fast-track deployment?*

BlueScope supports the Net Zero Commission's view that decarbonising the electricity sector is pivotal, as it enables emissions reductions across all sectors of the economy. In this context, BlueScope strongly endorses the accelerated deployment of affordable, reliable and firmed renewable electricity.

To enable this transition, energy system planning must align closely with the decarbonisation needs of industry, particularly energy-intensive sectors such as steelmaking. This alignment

requires proactive forecasting of future energy demand, streamlined regulatory processes and timely investment in firming and transmission infrastructure. These elements are essential to ensure the electricity system can support the scale and pace of industrial transformation required to meet emissions reduction targets.

Energy Demands of Low-Emissions Steelmaking

BlueScope's transition to low-emissions steelmaking will require a substantial increase in energy inputs, with natural gas playing a critical role in the shift towards near-zero emissions production. For example, natural gas demand could rise by up to 40 times compared to current operations under a natural gas-based direct reduced iron (NG DRI) technology pathway.

Securing access to significant volumes of cost-effective natural gas supplies over an extended period is essential, not only for BlueScope's transition but also to support the state's broader move toward net zero emissions.

A subsequent transition to hydrogen-based DRI (H_2 DRI) would require up to 16 times more firmed renewable electricity. These energy sources must be available at internationally competitive prices to ensure the long-term viability of Australia's steelmaking industry, which faces intense global competition.

Ensuring Affordability and Reliability of Energy Supply

It is essential that the increasing penetration of renewable energy places downward pressure on energy prices for both consumers and energy-intensive industries. However, recent years have seen high volatility in electricity markets and sustained increases in gas prices. These trends have been driven in part by the declining reliability of ageing thermal generation and constraints on the development of new gas resources that could support renewable electricity firming. Additionally, the substantial investments required in transmission, storage and firming infrastructure to support distributed, intermittent energy sources have contributed to these price pressures.

These challenges highlight the need for coordinated policy and investment to ensure that the accelerated energy transition supports industrial decarbonisation without compromising affordability or reliability.

Accelerating Renewable Electricity Deployment

To fast-track the deployment of renewable energy, the NSW Government must ensure that policy settings attract investment and mitigate delivery risks.

Several factors influence investment in renewable assets and should be considered as levers to accelerate the energy transition. These include consistent and enduring government policies and incentives, wholesale electricity price outlooks, project delivery timelines, network connection and constraints, technology and labour costs, and access to finance. As these factors become increasingly uncertain and volatile, it becomes more difficult to attract the investment needed to accelerate the deployment of renewable electricity.

Material risks associated with the delivery of renewable electricity generation and infrastructure must be addressed to accelerate both the investment in and deployment of renewable electricity projects. Such projects can currently take five to eight years from conception to completion. The NSW Government has a role in mitigating these risks, with a focus on:

- Community engagement: Early and regionally sensitive engagement is essential to securing community support. Where local communities perceive renewable energy

infrastructure as a net benefit, enduring social licence can be maintained and project risks reduced.

- Supply chain and local content: Most infrastructure required for the energy transition is manufactured offshore, presenting escalating supply chain risks. Policy settings (beyond the current local content settings in the Electricity Infrastructure Roadmap) that catalyse investment in additional local manufacturing and at-scale supply chains can help alleviate these risks, ensure the viability of local industry, and improve social licence by delivering economic benefits to communities.
- Renewable energy workforce: The energy transition depends on the availability of skilled labour, such as electricians, engineers and plant operators to support the construction, operation and maintenance of renewable energy infrastructure. This labour pool is already limited, and proactive, coordinated workforce planning is essential. Strategic staging of major energy infrastructure projects can alleviate labour market pressures by enabling a sustainable pipeline of work rather than cycles of peaks and slumps.
- Streamlined approval processes: Efficient and coordinated regulatory, planning and approval processes, aligned across federal, state and local levels, are needed to unlock investment and accelerate the deployment.

Supportive and complementary state-level policies, such as the New South Wales Electricity Strategy, play a vital role in accelerating the deployment of firmed renewable energy. Such frameworks help coordinate investment, streamline regulatory and planning processes, and ensure that industrial users can access the energy they need to decarbonise.

It is important that these frameworks incorporate holistic network assessments to maximise the utilisation of existing transmission assets and consider the total delivered cost of renewable energy. For example, using existing network capacity to host smaller or marginally less efficient generation assets may deliver energy at a total cost equivalent to large-scale projects but on an expedited timeline. There also needs to be recognition that the energy transition will require generations of investment, and timely long-term strategic planning is critical to maintain momentum. This includes planning for future renewable energy zone locations, requirements and timing.

State governments also play a crucial role in supporting federal market reform activities, particularly those aimed at ensuring cost-reflective pricing and efficient investment signals across the energy system.

2.5 Question 13: *What policies or programs at a sectoral level could complement the Safeguard Mechanism to support the accelerated decarbonisation of heavy industry in NSW?*

The NSW Government plays a critical role in supporting the decarbonisation of heavy industry to ensure the transition strengthens, rather than undermines, industrial competitiveness and economic resilience. A coordinated, whole-of-economy approach to climate policy is essential to achieving this outcome.

To be effective, sectoral policies must be integrated with national frameworks, tailored to the unique challenges of each industry, and designed to enable investment in key decarbonisation enablers. The following considerations outline how NSW can complement the SGM while supporting a competitive and resilient industrial base.

Policy Stability and Alignment

Policy stability and alignment between state and federal governments are essential to reducing investment risk and administrative burden. Inconsistent or overlapping regulatory frameworks lead to inefficiencies and can deter future industrial investment in NSW. Specifically:

- Facilities already subject to regulated emission reduction targets under the SGM should not face additional state-level emission reduction obligations. The SGM drives substantial emissions abatement, but as noted previously, decarbonisation for certain industrial sectors can be challenging, costly and complex. As facility baselines progressively decline, many facilities will be unable to meet their compliance requirements without utilising carbon units. The NSW Government should view the SGM as an ambitious and demanding decarbonisation mechanism, not a minimum expectation.
- Where the Federal Government is leading the development of policy and programs, NSW policies should complement and support these efforts. This is preferable to creating parallel mechanisms, as suggested in the consultation paper, which could undermine the guiding principles of the Act.

Independent state-level targets or pathways risk creating duplication, misalignment, and inefficiencies that could hinder, rather than accelerate, industrial decarbonisation activities.

Sectoral Differences in Decarbonisation Pathways

State policy must recognise the diversity of decarbonisation pathways across sectors. Some industries have access to commercially viable low-emissions technologies and can decarbonise more rapidly and at lower cost. Others, such as the steel manufacturing process used at Port Kembla, face a more complex and non-linear transition.

The timing of material reductions in steel manufacturing emissions will depend on the availability of key enablers previously outlined: competitively priced, firmed renewable energy; access to suitable raw materials; sufficient supplies of competitively priced natural gas, and breakthroughs in low-carbon steelmaking technologies. A “one size fits all” approach to decarbonisation would disadvantage hard-to-abate, emissions-intensive, and internationally trade-exposed industries such as steel manufacturing.

Targeted Support for EITE Sectors

BlueScope supports the Commission’s intention to collaborate with stakeholders in developing whole-of-economy emission reduction policies and plans.

As part this approach, ambitious emissions reduction targets must be matched with targeted support for hard-to-abate emissions-intensive, trade-exposed (EITE) sectors. These industries are vital to the economy and must remain viable contributors while progressing toward net zero.

Without adequate policy support, there is a risk of carbon leakage – where emissions-intensive production shifts offshore to jurisdictions with weaker climate policies – undermining both environmental and economic objectives.

Emissions Intensity vs. Absolute Emissions

To support emissions reduction and economic resilience, future state-level metrics for industrial decarbonisation should be framed in terms of emissions intensity rather than absolute emissions. An intensity-based approach enables emissions to be reduced per unit of output, allowing manufacturers to increase production where necessary – particularly in sectors such as steel

manufacturing that underpin the broader energy transition – without being penalised for overall emissions growth. This decoupling of emissions from production volume provides the flexibility needed to accommodate fluctuations in demand and supports the long-term competitiveness of trade-exposed industries operating in a global market.

Programs Supporting Key Enablers for Industrial Decarbonisation

To support the availability of the key enablers required to decarbonise steel manufacturing, the NSW Government should consider the following programs:

- East Coast Domestic Gas Reservation Policy: As previously noted, natural gas is a crucial transition enabler under a natural gas-based direct reduced iron (NG DRI) pathway, prior to the commercial viability of green hydrogen. This process may require up to 40 times more natural gas than current steelmaking methods and could reduce emissions by up to 60%. Prioritising affordable gas supply for hard-to-abate domestic industries would address a critical enabler for decarbonising the steel sector.
- Energy Infrastructure Support: Invest in infrastructure to deliver energy at scale to clean manufacturing precincts.
- Renewables and Low-Carbon Fuel Development: Plan and invest in infrastructure to support a large-scale renewables industry and a commercially viable supply of low-carbon fuels for hard-to-electrify processes.
- R&D and Capital Support: Expand support for research and development alongside provide funding mechanisms to offset significant capital and operating costs – beyond what is currently available through the SGM and existing funding programs.

A coordinated and supportive policy environment, anchored by collaboration and alignment between state and federal governments, is essential to enable the decarbonisation of heavy industry in NSW. By aligning regulatory frameworks, recognising sectoral differences, and investing in key enablers, the NSW Government can help ensure that industrial decarbonisation proceeds at pace while safeguarding economic competitiveness and regional prosperity.

2.6 Question 14: *What measures could accelerate industrial heat electrification in NSW, where technology is viable?*

BlueScope would welcome efforts to simplify access to energy-efficiency project funding to better support medium to large-scale, complex industrial initiatives.

While a range of state-level funding programs exist to support industrial heat electrification and energy efficiency improvements, many are designed with small and medium-sized enterprises (SMEs) in mind. As a result, they are often not well-suited to the scale and complexity of larger industrial facilities. For example, the NSW Energy Savings Scheme provides valuable incentives for businesses to install energy-efficient equipment but has limited and challenging applicability to bespoke, site-specific projects.

In complex industrial environments such as steelmaking, significant effort is required to educate scheme certifiers and develop appropriate methodologies for assessing energy savings. Combined with burdensome regulatory requirements, this creates uncertainty around funding eligibility and extends project timelines – ultimately deterring investment in otherwise viable emissions reduction initiatives.

Navigating the evolving funding landscape also presents challenges. Determining which grant or program is most appropriate for a given project can be difficult, particularly when eligibility criteria, application processes, and assessment methodologies vary significantly across programs. This complexity introduces project risk, as the viability of a business case may depend on securing funding within a specific timeframe.

Planning approval processes can further delay project delivery. The current State Significant Development Application (SSDA) has a development cost threshold which is relatively low in the context of steel manufacturing, meaning even modest projects may trigger a process that takes 18 to 24 months to complete. For projects that fall below the SSDA threshold, delays can still occur due to limited specialist resources within local councils, which can slow the assessment of development applications. Raising the SSDA threshold and/or introducing expedited pathways, such as complying development mechanisms for eligible industrial projects, would be beneficial.

The question highlights a focus on electrification, rather than alternative low-carbon solutions. In heavy industry, there is a clear opportunity for the NSW Government to support the development of a local biomethane industry. Biomethane offers a viable low-emissions alternative for hard-to-electrify industrial processes, such as steel coating and painting ovens. However, to be effective, this emerging industry must be developed at a scale and price point that is commercially viable for industrial users. Complementary state policy, such as incentives for biomethane production, infrastructure investment and market development, would facilitate emissions reductions in sectors where electrification technology is currently nascent.

In summary, simplifying funding and planning processes, aligning program design with the needs of complex industrial operations, and supporting the development of alternative low-carbon solutions are critical enablers of industrial decarbonisation.

2.7 Question 19: *What additional measures could accelerate electrification and increase energy efficiency of new and existing buildings?*

Regulatory measures aimed at improving the energy efficiency of new and existing buildings have traditionally focused on incremental enhancements to building fabric, often drawing on Passivhaus principles. However, in the context of a decarbonising electricity grid, these measures can result in high embodied emissions (e.g. from additional insulation or glazing) that may not be offset by operational energy savings – particularly in milder climates. This approach risks increasing whole-of-life building emissions, raising construction costs and negatively impacting housing affordability and supply.

To more effectively reduce emissions from new buildings, the focus should shift from marginal gains in building fabric efficiency to improving design and construction quality (e.g. reducing leakage and waste due to compliance failures) and accelerating full electrification, supported by on-site renewable energy. These measures are more likely to deliver long-term emissions reductions, lower household energy bills, and support broader decarbonisation objectives.

BlueScope suggests the NSW Government consider the following:

- Refocus regulation to prioritise high construction quality standards and promote good design (e.g. optimising building orientation), electrification and solar adoption in new buildings.

- Align energy efficiency reforms with government priorities on housing affordability and supply by avoiding high-cost, high-embodied-emissions mandates that offer limited return.
- For older, lower-efficiency buildings, adopt a multi-pronged approach combining education and incentives to support cost-effective building fabric improvements alongside electrification and solar uptake.

This approach delivers both immediate and long-term emissions reductions, reduces household energy costs, and supports the broader energy transition. Homes with solar are more likely to adopt electric technologies, reinforcing the shift away from fossil fuels.

2.8 Question 22: *What should be included in a monitoring framework for NSW in the context of the transition to net zero, including any specific metrics and indicators?*

A monitoring framework for NSW should be designed to deliver actionable insights into the state's progress toward net zero. It should support evidence-based policy development while minimising duplication and reducing the administrative burden on industry stakeholders.

BlueScope strongly recommends that the NSW Government leverage existing federal reporting mechanisms, particularly the National Greenhouse and Energy Reporting (**NGER**) scheme, as the foundation for the proposed monitoring framework. NGER already provides detailed, facility-level data on greenhouse gas emissions and energy use. Complying with this scheme requires significant investment in systems, processes, and personnel. If facilities are required to submit similar data through separate state-level mechanisms, it would impose additional costs and administrative burden without improving data quality. Aligning with NGER would ensure consistency, reduce duplication, and support efficient policy implementation. BlueScope supports the establishment of pragmatic and practical processes to overcome any potential barriers to inter-jurisdictional data sharing.

In addition to emissions data, the monitoring framework should incorporate leading indicators that reflect the availability and development of key decarbonisation enablers. These indicators are critical for understanding whether the conditions necessary for decarbonisation, particularly in hard-to-abate sectors, are being established. Relevant metrics may include:

- Installed capacity and utilisation of renewable electricity and storage
- Transmission infrastructure development and grid connection timelines
- Total cost of electricity delivered to consumers
- Supply and pricing of biomethane and natural gas for industrial use
- Recovery and availability of scrap steel
- Green hydrogen production capacity and uptake

Tracking these indicators will help identify emerging constraints and guide timely policy and investment responses.

It is also essential that the monitoring framework capture the economic impacts of the transition to net zero. Incorporating economic indicators will enable assessment of how state-level emissions reduction policies interact with economic growth and industrial performance. For trade-exposed industries in particular, maintaining competitiveness depends on the cost and availability of

renewable energy, timely access to enabling technologies, and the stability and predictability of policy settings.

2.9 Question 23: *The adaptation objective is for NSW to be more resilient to a changing climate. The Act allows for regulations to further define the adaptation objective. What does a more resilient NSW look like to you?*

A more resilient NSW is one where communities, infrastructure and industries are equipped to anticipate, withstand and recover from the increasing impacts of climate change. The following examples from BlueScope's operations and broader building design considerations illustrate how resilience can be practically achieved and supported through policy and regulation.

BlueScope Operations

Managing the growing impacts of climate change presents significant challenges. BlueScope has identified a range of physical climate-related hazards could affect its sites, with heat stress and water stress identified as the most prevalent. These hazards also pose risk to upstream and downstream supply chains, potentially disrupting operations and product delivery.

Enhancing the resilience of critical infrastructure, such as transport, energy and utility networks, to withstand increasingly frequent severe weather events (e.g. flooding) is a crucial challenge for the NSW Government. Addressing this is essential to ensure business continuity and maintain economic activity across the state.

Earlier this year, BlueScope experienced operational and delivery disruptions due to significant rainfall events in NSW and QLD. Storm damage to the northern NSW rail networks, a key freight corridor for transporting BlueScope's products, prompted the company to establish a team to identify alternative road transport options and maintain business continuity.

As the climate continues to change, the availability and reliability of utilities such as renewable electricity and water may be compromised by weather-related events. Policy development must consider these risks to ensure future utility and energy supply systems are resilient enough to provide secure and reliable services for both the community and industry.

Building Design

A more resilient NSW is one where communities, infrastructure, and ecosystems are designed to withstand and recover from the increasing impacts of climate change – particularly extreme heat, bushfires, hail, floods, and wind. Resilience can be enhanced through updated building design standards and regulations that improve resistance to and recovery from these events.

Insurance frameworks could also be adapted to recognise and reward resilient construction, offering incentives such as reduced premiums for homes built or retrofitted to withstand extreme weather. By embedding these principles into regulation and planning, NSW can foster safer, more adaptive communities that are better prepared for a changing climate.

BlueScope recommends the NSW Government consider the following:

- Extreme Heat: Widespread adoption of cool roofing offers a practical, scalable solution to help reduce heat stress. Cool roofing can help lower indoor temperatures in extreme heat[11],

[11] UNSW research underlines benefits of cool roofs | HVAC&R News | 16 June 2022 | https://hvacrnews.com.au/news/unsw-research-underlines-benefits-of-cool-roofs/)

improving comfort and health outcomes, especially for vulnerable populations[12]. They also can help reduce urban heat island effects, cut energy use, and enhance the performance of solar panels and cooling systems[13]. Embedding cool roofs into NSW's State Environmental Planning Policy (Housing) 2021, building codes, retrofitting programs, and planning regulations would support NSW Government's adaptation objective by reducing heat-related risks, lowering emissions, and creating cooler, healthier communities.

- Bushfire: Designing for bushfire resilience is critical as climate change increases the frequency and severity of fire events in NSW. Bushfire-resilient design includes using fire-resistant materials, enclosing subfloors, installing ember-proof vents, and ensuring defensible space around buildings[14]. With many NSW residents living in bushfire-prone areas, upgrading design standards is essential to protect lives, homes, and infrastructure. One example is the *NASH Bushfire Standard* for steel-framed construction, which demonstrates that resilience can be achieved using non-combustible materials without adding significant cost. This standard provides an alternative compliance pathway that delivers strong bushfire resistance and is well-suited for residential housing[15]. The NSW Government could encourage or specify the use of the NASH Bushfire Standard in relevant government housing projects and consider extending its application to other institutional buildings in bushfire-prone areas, such as schools and hospitals.
- Hail: Hail resilience can be improved through impact-resistant roofing materials, reinforced glazing, and protective awnings. These measures reduce damage and insurance costs in hail-prone areas. While specific NSW guidelines are limited, these strategies align with broader BASIX and BCA standards for climate-adaptive design.
- Flood: Flood-resilient design includes elevating buildings, using water-resistant materials, and integrating effective drainage. NSW flood risk management and associated planning can support the assessment of flood constraints and embed resilience into land use and building design.
- Wind: Stronger winds and cyclonic conditions may require reclassification of regions and zones in NSW. This may necessitate changes to local practices, such as reinforcing framing, secure roof anchoring, and installing storm shutters. Updating construction standards to reflect these changes will help reduce structural failures and improve community safety during extreme wind events.

[12] Are cool roofs the future for Australian cities? | 15 June 2022 | https://www.unsw.edu.au/newsroom/news/2022/06/are-cool-roofs-the-future-for-australian-cities-
[13] Heat-resistant homes promise cooling benefits - create digital | 18 June 2022 | https://createdigital.org.au/heat-resistent-homes-promise-cooling/
[14] How to build bushfire-resilient communities for a changing climate | 6 November 2023 | https://study.unimelb.edu.au/study-with-us/professional-development/blog/how-to-build-bushfire-resilient-communities-for-a-changing-climate
[15] Bushfire-proof houses: raising the standards - CSIRO | 5 December 2015 | https://www.csiro.au/en/news/All/Articles/2015/December/raising-the-standard-for-bushfire-proofing-houses