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20 February 2019

Emeritus Professor Jim Galvin
Chairman
Independent Expert Panel for Mining in the Catchment
Office of the NSW Chief Scientist and Engineer
By email: catchment.panel@chiefscientist.nsw.gov.au

Dear Chairman

Thank you for the opportunity to make a submission to the inquiry being conducted by the Independent Expert Panel for Mining in the Catchment.

We note that the terms of reference for the Panel's inquiry are focused on the environmental impact of mining on the Sydney water catchment. We have not sought to address these terms because as steelmakers we are not experts in mining and water catchment management.

The purpose of this submission is to emphasise to the Panel the critical importance of coal mined in the Southern Coalfields to the ongoing viability of Port Kembla Steelworks, and therefore the economic health of the Illawarra region, including the 3,500 direct jobs and 5,400 indirect jobs that rely on the Steelworks.

BlueScope believes it is very important that policymakers such as the Department of Planning and Environment (DPE) and the NSW Government more broadly consider the economic benefits of metallurgical coal mining in the Illawarra region, and the connection between ongoing mining activities and the viability of a range of other businesses in the region. It is important that policymakers balance environmental and economic considerations when addressing the needs of different stakeholders in the region.

Put simply, the Port Kembla Steelworks relies on ongoing, competitive supplies from the Southern Coalfields for its continued viability. Indeed, the principal reasons the Steelworks was established at Port Kembla a little over 90 years ago, in 1928, were its ready access to rich seams of metallurgical coal and a deep-water port.

The continued operation of the Steelworks enjoys bipartisan support and strong support from the Illawarra community.

Accordingly, we have lodged this submission to provide the Panel and policymakers with an understanding of BlueScope and its operations in the Illawarra, the economic impact of these operations, coal and its role in steelmaking, and the unique benefits of local coal supply from the Southern Coalfields. In particular, uninterrupted supply of coal from the Dendrobium and Metropolitan mines is essential in underpinning the competitiveness of the Steelworks.

About BlueScope Steel

BlueScope is Australia's largest steel manufacturer and the only flat steel producer. We employ 6,500 people in Australian regions and cities to supply our nationwide customers in the building and construction, manufacturing, transport, and agriculture sectors. BlueScope also exports steel products and is a global leader in premium coated and painted steel products, operating in 17 countries.

Steel is a fundamental building block of any modern society and a domestic steel manufacturing capability is a critical and strategically valuable asset for Australia's future economic security and prosperity.

Keeping production costs at globally competitive levels is critical to the viability of the highly trade-exposed Australian steel industry, which accounts for only 0.3 percent of global steel capacity. The local industry operates under very low tariffs and non-tariff barriers and faces intense competition as excess global steelmaking capacity has led to the dumping of foreign-made steel into the Australian market. The Australian steel industry also exports approximately 700,000 – 800,000 tonnes of steel products each year, to a diverse range of markets including Asia and North America.

BlueScope's goal is to have sustainable businesses in Australia that generate sufficient cash flow and return for investors to support reinvestment in them. In an open market with low trade barriers, the only way to achieve this goal is to have a cost structure that is competitive with imported steel and competitors in major export markets.

The Port Kembla Steelworks

BlueScope's largest global manufacturing plant is the fully integrated Port Kembla Steelworks, near Wollongong.

The Port Kembla Steelworks and Springhill Works together employ approximately 3,500 people directly and are responsible for a further 5,400 indirect jobs in the Illawarra region. These plants generate \$6.5 billion in regional economic output (24 per cent of the Illawarra's total economic output), \$1.6 billion of gross regional product (11 per cent of the Illawarra's gross regional product) and \$800 million of household income (13 per cent of total household income in the region).¹

The Steelworks is the largest steel production facility in Australia, with an annual production capacity of approximately 3.0 million tonnes of crude steel. It manufactures steel slab, hot rolled coil and plate products. The Steelworks, and the company's adjacent metal coating and painting lines at the Springhill Works, which make products such as COLORBOND® steel and ZINCALUME® steel, constitute BlueScope in the Illawarra.

The Steelworks produces iron and steel using the blast furnace – basic oxygen iron and steelmaking process (BF-BOS process), in which iron ore, coal (in the form of coke) and limestone are used to produce molten iron in a blast furnace. The resulting molten iron still contains 4-4.5 per cent carbon and other impurities that make it brittle.

This iron is then turned into steel using a basic oxygen furnace process. With the addition of recycled scrap, oxygen is blown through the liquid metal at high temperatures, which reduces the carbon

¹ Illawarra Regional Information Service (IRIS), *'Economic Impact Study, 2017'*

content to between 0-1.5 per cent. The chemical composition can then be further refined using a number of secondary steelmaking processes.

Following casting into a solid shape, the mechanical properties and physical dimensions of the steel are determined by a series of processes that can include heating, cooling, rolling and shaping.

In light of global steelmaking overcapacity and consequent poor profitability in the wake of the global financial crisis, BlueScope has undertaken a significant structural transformation over the last eight years.

In 2011, the company halved its commodity steelmaking capacity in Australia by closing one of the two operational blast furnaces and associated plant at Port Kembla Steelworks.

In 2015, a successful campaign involving management, employees, unions, government and the community saw the company achieve permanent cost savings of over \$200 million per annum, thereby ensuring the remaining iron and steelmaking operations at Port Kembla were internationally cost competitive.

After a period of consecutive losses from FY2011 – FY2014, the company returned to profitability in FY2015 and has remained profitable since then.

BlueScope's sustainability credentials

BlueScope believes that sustainability is integral to the long-term growth of the company, and that steel plays a critical role in supporting a sustainable society. The company takes a life-cycle approach, seeking to improve the performance of its products over their entire lifecycles, with a focus on the four principles of a circular economy: reduce, reuse, remanufacture and recycle.

In 2017, BlueScope engaged with a wide cross section of its stakeholders, including investors, customers and employees, and identified five sustainability topics considered most material to its business: safety, health and wellness; climate change and energy; diversity and inclusion; governance and business conduct; and supply chain sustainability. These topics form the foundation for BlueScope's sustainability disclosure, including its annual Sustainability Report, which follows the core option of the Global Reporting Initiative (GRI).

BlueScope has a reputation for industry leading safety performance and has maintained a Lost Time Injury Frequency Rate of less than 1.0 injury per million hours worked, for the 14 years to financial year (FY) 2018. Encouraged as it is by this performance, the company is acutely aware that people are still harmed at work, and so continues to pursue its goal of zero harm.

BlueScope supports the Paris climate change agreement and the individually determined national targets of the countries in which it operates. The company believes that climate change presents both risks and opportunities for its operations and stakeholders. It recognises that investors, customers and the communities in which it operates are increasingly demanding that the company disclose these risks and opportunities and takes action to improve its greenhouse gas emissions and energy efficiency.

Accordingly, the company publicly reports in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). BlueScope has also set a public target for the year-on-year reduction in the greenhouse gas intensity of its three steelmaking plants globally and is implementing a pipeline of energy efficiency projects. Achieving these targets requires a stable and predictable supply of raw materials, so that we can optimise the performance of our plant & equipment. The company is also implementing renewable energy projects where it is commercially viable.

More broadly, the company is committed to reducing its environmental footprint by reducing consumption, reusing materials and recycling. At its Port Kembla Steelworks, the company has a 97 per cent material efficiency rate (recovery and reuse of by-products). Scrap steel (the most recycled material in the world) remains a very important raw material for its steelmaking operations, with scrap comprising about 20 per cent of the steelmaking feed at Port Kembla.

Many of BlueScope's products are registered under the Australian environmental product declaration program, which provides detailed information about their environmental performance, can assist in determining the environmental impact of buildings and infrastructure that use these products, and can help earn points for Green Star building projects.

Coal and its role in steelmaking

Coal is one of a small group of raw materials – along with iron ore and fluxes – that are essential ingredients in the manufacture of virgin iron and steel.

Based on its properties, a coal can be classified by rank, from lowest to highest, with lower rank coals containing less carbon, more moisture and having lower calorific values. In general terms, based on rank, coal can be classified as either *thermal coal* or *metallurgical coal*.

Thermal coal is primarily used in power generation or cement manufacture.

Metallurgical coals are primarily used in the production of iron and steel and can be grouped into four classes as follows:

- **Hard coking coal (HCC)** – Has a very high level of carbon and forms stronger coke. Coke strength is essential for efficient blast furnace operation.
- **Semi-hard coking coal (SHCC)** – High levels of carbon, but not as high as HCC. Not as competent in making stronger coke.
- **Semi-soft coking coal (SSCC)** – May be used in the coke blend, although only in limited quantities and subject to the cokemaking technology and the quality of the other coals being used in the blend.
- **PCI coal** – Limited coking coal characteristics. Used primarily for its energy/combustion value and injected directly into the blast furnace, avoiding the need for coking. PCI coal can only be used in limited quantities, however, due to the need for coke strength to efficiently operate the blast furnace.

BlueScope, like all other coke manufacturers, seeks to optimise the blend of coals its uses in order to reduce its manufacturing costs and remain internationally competitive. However, there are technical limits to the extent of this substitution, as a proportion of higher quality coals are needed to ensure efficient blast furnace performance and iron production.

Steel is an alloy manufactured primarily from iron, which is produced by converting iron ore to molten iron using carbon, in the form of coke, as the chemical reductant. The primary source of carbon for steelmaking at Port Kembla Steelworks and worldwide is metallurgical coal.

Metallurgical coal is heated to produce coke, with the coking process driving off various liquids, gases and volatile matter. The remaining solid matter forms coke, a solid mass of nearly pure carbon. The manufacture of coke takes place in coke ovens owned and operated by BlueScope at Port Kembla Steelworks.

There is a strong relationship between coke quality and blast furnace performance and determining the optimal blend of coking coal at the most efficient value-in-use price is a complex exercise.

The coking performance of a coal blend is complex, because it is not only dependent on the coking performance of each component coal, but also on possible interactions between coals.

While there is research being undertaken overseas that seeks to replace carbon sourced from coal in the iron and steelmaking process with other reductants (e.g. hydrogen), this work is embryonic and likely to be decades from commercialisation.

A proportion of steel is manufactured globally by recycling scrap steel. Port Kembla Steelworks also utilises approximately 20 per cent scrap feed. However, demand for steel globally continues to grow and there is not sufficient scrap to meet all the world's needs for steel purely from recycling.

This means that the production of virgin iron units manufactured using coke from metallurgical coal will continue to be the predominant method of making iron and steel in Australia and worldwide for the foreseeable future.

Local Illawarra coal supply

The Port Kembla Steelworks consumes approximately 3 million tonnes per annum of coal, of which over 90 per cent is sourced from mines in the Illawarra region.

The principal Illawarra mine sources currently are the South32/Illawarra Coal Dendrobium and Appin mines, Peabody's Metropolitan mine, and the SIMEC Tahmoor mine.

Because of its proximity to the Southern Coalfields, BlueScope has been able to economically optimise its blend of coals while maintaining an output of coke of the required quality.

In particular, the compatibility in coal properties between Metropolitan and Dendrobium coals, due in large part to them coming from adjacent locations, has facilitated a synergy within the coal blend that, in BlueScope's view, is quite unique and unable to be replicated to any meaningful extent.

BlueScope is widely recognised as producing the world's best quality coke due to our unique location adjacent to the Southern Coalfields; one that makes it logical and economically advantageous to use high quality coal, which in turn ensures reliable, consistent and efficient production of high quality coke.

In addition to consuming the coke we produce in our iron and steelmaking operations, BlueScope also sells surplus coke to export customers.

Coal is supplied to the Steelworks from the Southern Coalfields in a 'just-in-time' (JIT) arrangement.

This coal is transported to the Steelworks in daily deliveries by truck and rail transport. Local coal supplies are supplemented by coal shipped from other regions to berths at Port Kembla adjacent to the Steelworks. These primary raw materials berths are at a high utilisation level, and any significant increase in seaborne coal imports would require very substantial capital investment to expand the facilities. BlueScope has recently estimated such investment to be at least \$150 million.

Illawarra Coal operates a coal washery within the Steelworks, with a dedicated conveyor belt system feeding two coal beds. At any one time, one of these beds is being filled with new coal supplies while the other is being run down to feed BlueScope's cokemaking plant, with these coal beds being built and depleted on a weekly cycle.

There are no facilities at Port Kembla Steelworks to allow BlueScope to stockpile coal sufficient to feed the coal beds, and therefore the operation of the Steelworks is reliant on uninterrupted just-in-time supplies of coal from the Southern Coalfields.

BlueScope estimates that replacing local coal supply with coal shipped from interstate (or overseas) would increase steel production costs by between \$50 million and \$100 million per annum, principally as a result of higher logistics costs.

The Port Kembla Steelworks will continue to rely on competitive sources of locally-mined coal for the foreseeable future. In fact, it is not an exaggeration to say that without access to the coal supply from the Southern Coalfields, the Steelworks would not have been built in the Illawarra region. Without this supply, steelmaking would struggle to remain viable at Port Kembla.

The importance of the local coal supply to BlueScope was also observed in the ACCC's consideration of the proposal for South32 to acquire Peabody's Metropolitan mine in 2016 (subsequently abandoned). The ACCC identified the effective existence of a "...narrower market for the supply of coking coal to Australian customers and suppliers in this market (that) may be limited to coal producers in the Illawarra"².

The importance of stability in coal supply and mining regulation

Given the just-in-time nature of supply, and the lack of cost-effective alternative sources of supply, it is very important that BlueScope has access to a stable local coal supply that is subject to the least possible interruption.

For this reason, BlueScope works closely with its coal suppliers to understand their extraction plans, including milestones such as longwall changes and maintenance shut-downs.

We and our coal suppliers seek a regulatory and licensing regime that is stable, predictable, and promotes the safe and sustainable operation of mines according to proven scientific findings. Such a

² ACCC, 'Statement of Issues – South32 Proposed Acquisition of Metropolitan', 23 February 2017, paragraph 59.

regime will provide the basis for long-term investment decision-making in both the mines and the Steelworks.

Unexpected variations to licensing conditions for existing longwalls, or restrictions on future extraction plans, have the potential to interrupt coal supply, make mining less viable, and curtail investment in mines. Any of these outcomes would be of particular concern to BlueScope and other local stakeholders, if they threatened the viability of the Steelworks.

In this context we note that the Panel's *Initial Report* of 12 November 2018 endorsed the DPE's approach of only approving management plans for longwall panels at the Metropolitan mine on an incremental basis and attaching conditions to subsidence management plans and extraction plans, despite the report finding that in the case of the Metropolitan mine water inflows provide no evidence of a connective fracture to the surface or correlation with rainfall.

In addition, we have been advised by South32 that they are encountering restrictions on longwall lengths in approvals for Area 3C of Dendrobium, which reduces the viability of investment into mining this area. If this area is not able to be economically mined due to these sort of restrictions, it is highly probable that Dendrobium will cease mining 3-seam (Wongawilli seam) at Dendrobium and switch to mining 1-seam (Bulli seam) coal in a new area. The 3-seam coal is a very high-quality coking coal and has always been part of the blend of coals used to make coke at the Port Kembla Steelworks. Its non-availability would have significant negative implications for the viability of the Steelworks.

Conclusion

Thank you again for the opportunity to make a submission.

In conclusion, sourcing metallurgical coal from the Illawarra region allows BlueScope to:

- Generate \$6.5 billion in regional economic output (24 per cent of the Illawarra's total economic output), \$1.6 billion of gross regional product (11 per cent of the Illawarra's gross regional product) and \$800 million of household income (13 per cent of total household income in the region).
- Employ 3,500 people directly and 5,400 indirectly.
- Obtain a competitive advantage for its iron and steel manufacturing facilities, which enhances BlueScope's competitiveness against foreign steel importers and in steel export markets.
- Produce high quality coke, which in turn contributes to the manufacture of high-quality steel products.
- Develop export markets for high-quality coke.
- Avoid costly investment in berths, plant and equipment that would be required to import coal from interstate or overseas.

We would respectfully urge the Independent Expert Panel, the Department of Planning and Environment (DPE), and the NSW Government to be fully cognisant of the negative economic effects that would occur if coal mining in the Sydney catchment was curtailed or made unviable by an unfavourable regulatory environment.

An ongoing supply of competitively priced metallurgical coal from the Southern Coalfields is an essential feedstock for the Port Kembla Steelworks, thereby supporting the jobs, investment, exports and local economic activity generated by the Steelworks.

We would be happy to provide further information in support of this submission, including meeting with you in person. We would also be very happy to host you on a tour of the Steelworks, in order to aid your understanding of our operations and the role of locally-sourced coal as an essential feedstock.

For further information, or if you have any questions, please do not hesitate to contact me on 02 4240 1802, or Manager Government Relations, David Jenkins on 03 9666 4022.

Yours sincerely

A handwritten signature in blue ink that reads "John Nowlan". The signature is written in a cursive style with a long, sweeping underline.

John Nowlan
CHIEF EXECUTIVE – AUSTRALIAN STEEL PRODUCTS