Submission to the *Roadmap to establish an Australian decommissioning industry – Issues paper*

AUSTRALIAN STEEL INSTITUTE

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The Australian Steel Institute (**ASI)** is pleased to make a submission to the *Roadmap to establish an Australian decommissioning industry*.

Introduction

The ASI is the nations peak body representing the entire steel supply chain, from the primary producers through to end users in building and construction, resources, heavy engineering and manufacturing.

Its membership base includes approximately 6,000 individuals that are associated with more than 500 corporate memberships and over 350 individual memberships.

A not-for-profit member based organisation, the ASIs activities extend to, and promote, advocacy and support, steel excellence, standards and compliance, training, events and publications. The ASI provides marketing and technical leadership to promote Australian-made steel as the preferred material to the resources, construction, and manufacturing industries, as well as policy advocacy to government.

The Australian steel industry

The Australian steel industry consists of four primary steel producers, supported by over 300 steel distribution and processing sites throughout the country and hundreds of manufacturing, fabrication and engineering companies.

Australia's primary steel producers and steel product manufacturers together form a strategically important value chain that has the capability to supply in excess of 90 per cent of the steel grades and qualities required in this country. If special categories such as very large diameter pipe, stainless steel, electrical steel, and tinplate are excluded, then the capability is significantly closer to 100 per cent.

Australia produces around 6 million tonnes of steel per annum across five major manufacturing locations, with approximately 74 percent produced via the more emissions-intensive method in the blast furnace - basic oxygen furnace and the remainder produced via the electric arc furnace method.

It is important to note the economic and social contribution of the Australian steel industry. It employs over 100,000 people and generates $29 billion in annual revenue, and it associated with a disproportionally large share of skilled jobs in regional and rural areas.

Australia has world leading manufacturing capability in many areas of steel product application. Some examples include wear resistant and ballistic plate steels for mining and defence applications, grinding media for mineral processing, strata control products for underground mining, wire rope for open cut mining, wheels, rail,

and sleepers for both mainline and heavy haul railway applications, strapping for load restraint, engineered bar and resultant products such as automotive springs and specialty fasteners, high pressure gas storage tanks, highly durable coated steel water pipe for infrastructure, and a myriad of specialised components for building, construction and defence industry applications.

Steel fabrication is essential for manufacturing of bespoke construction products such as foundations, piling, columns, beams, girders, gantries, platforms, and towers. Areas of specialisation include wind turbine towers, transmission towers, storage tanks, chemical processing plant, boilers and pressure vessels, mining infrastructure refurbishment, mobile equipment for underground and surface mining, mobile cranes, bridges, armoured vehicles for Defence, naval and domestic ship building, rolling stock, truck bodies and trailer chassis.

The steel industry is a key enabler for the nation's renewable energy transition and associated legislated climate targets. Between now and 2030 it is estimated that at least 400,000 tonnes of extra fabricated steelwork will be required per annum to service over 23 GW of existing renewable energy generation projects across wind, solar, water and transmission infrastructure. Refer to the Appendix for additional details.

Decarbonisation of the Australian steel industry enabled by scrap recycling

In terms of environmental benefits, the domestic steel industry has prioritised the increased use of scrap as one of the enablers in its decarbonisation pathway, and supporting the drive towards 'green steel'. Higher scrap use decreases the intensity of greenhouse gas emissions produced in the steelmaking process and reduces reliance on iron ore and coking coal.

However, there is currently a shortage of domestic processed ferrous scrap. In New South Wales for example, BlueScope's Port Kembla Steelworks and Infrabuild's Sydney Steel Mill together sourced just over 500,000 tonnes of ferrous scrap from a combination of interstate and overseas sources in FY2022. In May 2023, the ASI surveyed steel producing members to ascertain their expected future scrap requirements. The resultant industry aggregated estimate was as follows:

0 to 3 years out timeframe: 500,000 tonnes per annum additional scrap required

3 to 10 years out timeframe: 2,500,000 tonnes per annum additional scrap required

To summarise this point, the Australian steel industry is seeking to increase the overall use of scrap steel as a feedstock, in order to reduce emissions intensity and progressively decarbonise. There is currently insufficient domestically processed scrap steel available to meet requirements, necessitating the importation of processed scrap. The forecast industry requirements are for a significant increase in the demand for processed scrap steel.

Response to Issues paper questions

Question 1. How can Australia best capture value from the decommissioning of offshore oil and gas infrastructure?

In the context of both sovereign capability and enabling the decarbonisation of the Australian steel industry, the greatest value capture occurs when decommissioned offshore oil and gas infrastructure results in an increased supply of processed scrap available for use in domestic steelmaking.

Question 22. How can a decommissioning industry maximise its contribution to a circular economy in Australia?

As noted in the introductory section on Decarbonisation of the Australian steel industry enabled by scrap recycling, and the above answer to question 1, the reuse of scrap steel is a valuable strategic resource, which is also central to the circular economy. The key to unlocking the value of this resource is that the scrap undergoes processing after recovery, such that it is then suitable for use as a steelmaking feedstock. Processing typically involves operations such as shearing of long sections, crushing of low-density material, and shredding to separate mixed materials. These processes are used to remove non-metallics, and any hazardous materials, as well as prepare the scrap to the required shape and density specifications for use in steelmaking.

Currently the situation exists whereby a significant proportion of the scrap steel generated in Australia each year is exported in an unprocessed form. This results in the export of hazardous components that may not be subject to appropriate environmental controls, as well as a lost opportunity for economic value adding associated with the processing being done locally.

It is therefore recommended that all domestic scrap arisings, including those sourced from future decommissioning of offshore oil and gas, be subject to a requirement for local processing.

23. What are the barriers to recycling material from offshore in Australia, including steel?

The domestic scrap processing industry is well established. It is equipped to meet the technical requirements of local steel producers, as well as satisfy all relevant Australian Standards. The industry has latent capacity to rapidly increase annual scrap processing volumes through increased labour utilisation, should this be required. From the perspective of the local steel producers, the main barrier to making use of scrap steel from offshore decommissioning, is if the material doesn't first undergo processing and is instead directly exported after initial recovery.

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Appendix - The role of steel in the growth of renewable energy

The steel industry is a key enabler for the nation's renewable energy transition and associated legislated climate targets. Between now and 2030 it is estimated that at least 400,000 tonnes of extra fabricated steelwork will be required per annum to service over 23 GW of existing renewable energy generation projects across wind, solar, water and transmission infrastructure, as illustrated in this table:

Wind:

- It is estimated that each 1 MW generated by an onshore wind tower requires 124 tonnes of steel.
- Offshore wind increases generation scale and steel consumption further. Each 1 MW generated by an offshore wind tower requires 190 tonnes of steel.

Solar:

- The steel components include a foundation pile (normally a hot rolled channel or column), torque tube (octagonal, square or tubular hollow section), frames or Rails for PV panels and Brackets.
- Typically, about 45 tonnes of steel are required for each 1 MW of solar energy generated.

Water:

- Hydro projects require large diameter steel liner pipes, penstock, related fabrications, tunnel reinforcement, and foundations.
- It is estimated that each 1 MW of hydro power will require 161 tonnes of steel.

Transmission:

- Each 1000 kms of transmission line typically requires 2500 towers at 30 tonnes per tower.

The fabricated steelwork required for this transition includes a mixture of components that are readily available in Australia and those that haven't been sourced locally for many years. The sheer scale of the demand and the extended timeframe over which it is required mean that this energy transition provides a unique opportunity to develop advanced manufacturing capability in several areas of strategic importance for future energy security. These opportunities include but are not limited to:

- Onshore wind tower fabrication;
- Offshore wind tower fabrication;
- Production of large diameter tube suitable for manufacturing of torque tubes for solar cell tracking and support frame structures;
- High voltage transmission tower fabrication.