

***A Future Made in Australia: Unlocking  
Australia's Green Iron, Steel, Alumina and  
Aluminium Opportunity Consultation Paper***

Submission to Department of Industry, Science  
& Resources

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**South Australian Chamber of Mines & Energy**

*The leading industry body representing the resources sector in South Australia*

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## 1. Introduction

The South Australian Chamber of Mines & Energy (SACOME) is the leading industry association representing resource and energy companies with interests in the South Australian resources sector, including minerals, energy, extractives and petroleum.

SACOME welcomes the opportunity to provide a submission to the *Unlocking Australia's Green Iron, Steel, Alumina and Aluminium Opportunity* Consultation Paper (the Consultation Paper).

SACOME notes the rationale underpinning this consultation process, namely: to better understand the *"important role green metals can play in Australia's net zero transformation, the potential for comparative advantage in this industry, and the need for public investment in order to align economic incentives with the national interest and unlock private investment at scale."*

SACOME is a strong supporter of green iron and steel production in South Australia. Its membership includes companies that are directly responsible for exploring, extracting and producing the resources necessary to realise this ambition.

## 2. South Australia's Green Iron & Steel Advantages

South Australia is well-positioned to meet the green iron and steel opportunity, having an abundance of defined iron ore resource across the North Gawler, Eyre Peninsula and Braemar Iron Regions.

South Australia's iron ore resources are approximately 94% magnetite and 6% hematite. As of **June 2024**, South Australia has a total of **18.8 billion tonnes of JORC compliant magnetite ore**, including **7.4 billion tonnes of Economic Demonstrated Resources**.<sup>1</sup>

South Australian magnetite ores are relatively soft, making them easier to process, and reducing the amount of energy required for beneficiation. Coupling South Australia's high penetration of renewable energy to green iron and steel production offers further jurisdictional advantage by reducing the carbon emissions intensity of processing through use of net-zero energy sources.

Multiple South Australian deposits have also demonstrated they can produce high quality magnetite concentrates, with iron content >67% Fe. These concentrates make for favourable feedstock in Direct Reduced Iron (DRI) and as a necessary input to the production of green steel. In this respect, South Australian magnetite offers distinct advantage, as compared to other Australian jurisdictions, in providing the required low-impurity feedstock necessary for both DRI and Directed Reduced Pellet Feed (DRPF) production.

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<sup>1</sup> <https://www.energymining.sa.gov.au/industry/geological-survey/gssa-projects/magnetite-south-australia#:~:text=South%20Australia's%20iron%20ore%20resources,total%20magnetite%20resources%20from%202018.>

South Australia has seen substantial investment in renewable energy resources, themselves a critical input to the production of green iron and steel. Importantly, the State has an abundance of natural gas as a feedstock to supply necessary industrial heat; and as a transitional, lower emission fuel while alternatives like hydrogen progress to commerciality.

The presence of steel production at Whyalla is identified in the Consultation Paper. Facility owner and SACOME member company, GFG, announced in March 2024 that it would phase out its existing blast furnace and build a new Direct Reduced Iron-Electric Arc Furnace (DRI-EAF).

The DRI-EAF will initially consume natural gas and hydrogen before shifting completely to green hydrogen. GFG has already tested the possibility of producing Direct Reduced-grade iron ore pellets from existing magnetite ores in South Australia.

Further, GFG subsidiary SIMEC Mining, is implementing its Magnetite Expansion Project. This multi-stage project presently aims to expand magnetite concentrate production to 5mtpa, ultimately increasing production levels to 30mtpa by 2030.

SACOME member companies also hold highly prospective mineral assets in the South Australian Iron Regions and are actively pursuing options that will advance project development of premium grade direct-reduced ('DR') iron ore concentrates, an essential input to green iron and steel production.

These companies include:

- SIMEC Mining (GFG Alliance)      Eyre Peninsula Iron Region
- Lincoln Minerals                      Eyre Peninsula Iron Region
- Magnetite Mines                      Braemar Iron Region
- Peak Iron Mines                      North Gawler Iron Region

Given the importance of magnetite to green iron and steel production, South Australia's magnetite reserves can underpin both the rapid growth and long-term sustained production of 'green metals' as envisaged by the Commonwealth Government's *Future Made in Australia* policies; and the South Australian Government's *Green Iron & Steel Strategy*.

The South Australian Department of Energy & Mining has created a 'Magnetite Resources Summary' table that summarises South Australia's total magnetite resources, current as of June 2024.

This table provides a comprehensive overview of both the total and demonstrated volumes of magnetite within South Australia by company and region (including the above listed companies). It can be accessed at:

[https://www.energymining.sa.gov.au/data/assets/excel\\_doc/0007/1017817/Magnetite-resource-summary-May-2024.xlsx](https://www.energymining.sa.gov.au/data/assets/excel_doc/0007/1017817/Magnetite-resource-summary-May-2024.xlsx)

Additionally, the South Australian Government has enacted supportive regulatory and policy settings which harmonise with the Commonwealth's *Future Made in Australia* and green metals initiatives.

The South Australian Government's *Hydrogen Jobs Plan* aims to facilitate investment in hydrogen production alongside the construction of a \$600m hydrogen power plant, electrolyser and storage facility in Whyalla by 2026.

The South Australian *Hydrogen and Renewable Energy Act* provides both a regulatory framework for hydrogen development; and demarcates areas of the State as Renewable Energy Zones to drive further investment in renewable energy in parts of South Australia that are most prospective for renewable generation.

In June 2024, the South Australian Government released the *Green Iron and Steel Strategy*, aiming to facilitate the establishment of a new green iron plant in the Upper Spencer Gulf by 2030 or earlier.

This confluence of activity demarcates South Australia's Upper Spencer Gulf, and the cities of Whyalla, Port Pirie and Port Augusta, as the epicentre of the green industry transformation and the development of green manufacturing into the future.

South Australia is substantially advanced across key measures in the push for decarbonisation of heavy industry and offers a template for the rest of the nation in how to advance net-zero economic ambitions as contemplated by the Consultation Paper.

### **3. South Australia's Jurisdictional Challenges**

The Consultation Paper states that '*green iron, steel, alumina and aluminium are estimated to be worth up to A\$122 billion per year to Australia's economy by 2040*' and that '*global demand for low-emissions steel is expected to grow from negligible amounts today to more than 10% (or 200 Mt) of total steel demand in 2030 and an estimated 25% by 2040.*'<sup>2</sup>

This presents a major opportunity for the South Australian resources sector, noting that meeting this projected demand can be materially advanced through vastly increased extraction and processing of South Australian magnetite, coupled with use of this product in domestic green iron steel production utilising renewable energy.

South Australia has significant magnetite resources that can be harnessed to meet the Commonwealth Government's green iron and steel ambitions and, in turn, projected global demand.

Realising this vision necessitates resolving first principles issues like land access, power, water and the path to market, as these are the key hurdles to project development.

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<sup>2</sup> At page 6.

To summarise:

- Mining of magnetite needs power and water and a path to market.
- Beneficiation of magnetite requires water and power.
- Iron and steel production requires industrial heat – currently coal, potentially gas, and nuclear or hydrogen in the future.
- Hydrogen production requires power and water, and the technology is in its infancy.
- Export of product requires efficient road, rail and port facilities and markets.
- The supply of skilled workforces in key regional areas is fundamental to expansion of green metals production.

### **3.1 Enabling Measures**

Since 2020, SACOME has worked collaboratively with its member companies, the South Australian Government, and the Commonwealth Government to progress the Northern Water Project.

SACOME reiterates its support for this project as a truly transformative economic development measure in the strongest terms. The Northern Water Project aims to resolve a key hurdle to development of resources projects in South Australia in line with the principles expressed above.

Completion of the Northern Water Project achieves the necessary supply of water as an input to industrial processes in the Far North, facilitates further development of the Gawler Craton, plays a critical role in production of green steel and hydrogen in the Upper Spencer Gulf and provides a new source of water for the Eastern Eyre Peninsula.

The Northern Water Project remains a critical enabler to growth of the South Australian resources sector and the South Australian Government’s hydrogen and green industry transition goals.

SACOME welcomes the strong support shown to date by the Commonwealth and State Governments, including the \$100 million in equity contribution funding that formed part of the 2023 State Budget; and the \$65 million contributed by the Commonwealth in the 2024-25 Federal Budget for planning work as part of the *Future Made in Australia* initiative.

The Northern Water Project provides an excellent example of the type of activity required to advance industry development in South Australia – major investments (in financial, regulatory and policy terms) in the foundational infrastructure required to catalyse industrial activity and drive the green economy transition.

Additionally, SACOME continues to advocate for the development of a Resources Sector Economic Heatmap to provide government, industry and investors with a consolidated understanding of the value of South Australia's resources provinces and facilitate greater project investment across the State.

SACOME promotes the Heatmap as a tool for informed decision making by government and industry through the consolidation of requisite knowledge, including:

- The potential economic value of a province to the State and nation;
- The investment required to build a path to market for identified provinces/regions;
- What actions the State/Commonwealth could take to resolve infrastructure-related barriers to investment;
- Opportunities to leverage State/Commonwealth funding;
- The timeframes necessary for implementing a solution; and
- The opportunity cost of doing nothing.

SACOME also continues to advocate for implementation of the Infrastructure Corridors initiative as an infrastructure investment attraction tool that identifies and establishes infrastructure project pathways to major South Australian resources provinces and facilitates the efficient development of enabling infrastructure required to catalyse development of South Australia's resources provinces.

This includes holistically resolving land access, approvals and logistics issues and operating as a jurisdictional advantage by providing operators with a de-risked and expedited path to project development.

### **3.2 Suggested Actions**

In responding to the Consultation Paper, SACOME believes similar transformative measures that address development hurdles in the North Gawler, Eyre Peninsula and Braemar Iron Regions; and enable value-adding activities in Upper Spencer Gulf cities should be prioritised.

SACOME members have suggested a range of actions that could facilitate mineral asset development to support the Green Iron/Steel vision articulated by both the Commonwealth and South Australian Governments.

These include:

- Expansion of existing rail network backbone capacity (Tarcoola to Whyalla, Olary to Port Pirie / Port Augusta), coupled with the construction of project specific branch lines connected to mine sites. This will also provide significant benefit to the wider freight and industrial stakeholders through overall reduction in freight costs and improved reliability of services.

- Commercially efficient access to haulage on existing rail infrastructure, particularly rail that is privately owned and operated.
- Incorporating commercially efficient bulk port infrastructure development as part of Green Iron/Steel strategies to facilitate the export of iron products in addition to that used in green iron / steel production.
- Development of multi-user power and water solutions that maximise existing water infrastructure, along with development of policy frameworks that better leverage integrated water supplies and networks.
- Power supply solutions that leverage South Australia's low-carbon grid and anticipate connection to Project Energy Connect and ElectraNet's emerging Green Energy Network project.
- Provision of land for industrial development, supported by expedited federal approvals and relevant bi-lateral agreements with the South Australian Government.
- Ensuring a cost-competitive and sustainable gas supply to key industrial precincts like Port Pirie and Whyalla is achieved as an interim supply measure while hydrogen comes down the cost curve.
- Incentives to attract investment in downstream 'green metals' processing and as a means of competing with programs being implemented in other international jurisdictions.
- Listing magnetite on the Australian Critical Minerals List.
- Continued support for coexistence to allow for development of appropriate mineral assets within the Woomera Prohibited Area.



## 4. Conclusion & Next Steps

SACOME welcomes the opportunity to make this submission to the Commonwealth Government's *A Future Made in Australia: Unlocking Australia's Green Iron, Steel, Alumina and Aluminium Opportunity* Consultation Paper.

SACOME and its member companies recognise both the challenges and opportunities of green iron and steel production and are committed to working collaboratively with the Commonwealth to advance development of the South Australian resources sector and the green metals opportunity.

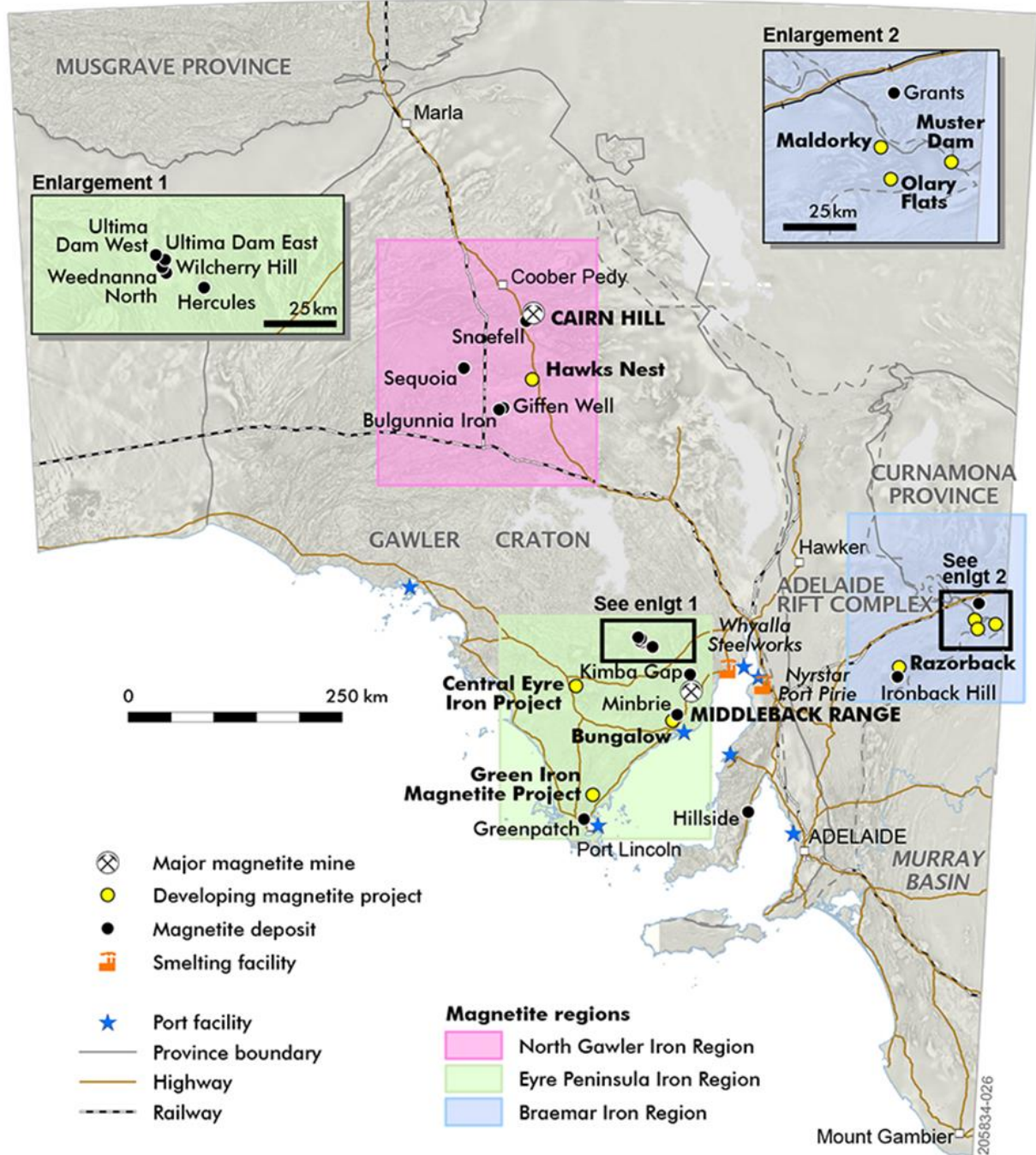
As a jurisdiction, South Australia is considerably advanced in many aspects relevant to green metals production.

More must be done, however, to unlock our State's vast magnetite resources, recognising that they offer a critical input to DRI and a necessary feedstock to green steel at the volumes contemplated by the Consultation Paper.

As a next step, SACOME would welcome the opportunity to host a meeting between Commonwealth Government representatives and relevant SACOME members to progress discussions on the Commonwealth's vision and opportunities for information sharing and collaboration

## Appendix 1 – Department of Energy & Mining ‘South Australian Iron Regions Map’

<https://www.energymining.sa.gov.au/industry/geological-survey/gssa-projects/magnetite-south-australia>



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