

Infrastructure Australia Project Business Case Evaluation

Project name	Eyre Infrastructure Project
Rating	Priority Project (subject to the Central Eyre Iron Project proceeding)
Date of IA Board rating	27 July 2016

Location	Eyre Peninsula, South Australia
Proponent	Iron Road Limited
Project timeframe	<ul style="list-style-type: none"> • Construction: 2017–2019 • First shipment: 2020

Evaluation Summary

Iron Road Limited, a public company, is proposing to develop an iron ore mine in South Australia’s Central Eyre Peninsula – the Central Eyre Iron Project (‘the mine’). The proponent estimates that the mine, when operating at full capacity, would produce 24 million tonnes per annum (mtpa) of 67% iron concentrate ore, for export.

To facilitate the export of this ore, the company is also proposing to develop the Eyre Infrastructure Project, which includes a deep water port at Cape Hardy with 70 mtpa capacity and Iron Road Limited stockpile capacity of 660,000 tonnes, and a 148 kilometre heavy-haul, standard gauge rail connection between the mine and Cape Hardy. At present, only a small network of narrow gauge rail lines exists on the peninsula. (‘The Eyre Peninsula rail network’). The proposed infrastructure would be available for other users (‘open access’), including grain exporters and other miners in the region, and the proponent has indicated that it could potentially connect to the National Rail Network.

When fully operational, the mine is expected to generate gross revenues of around \$3 billion per year (\$2015) for a period of 25 years. Of this, approximately \$500 million per year (\$2015) is anticipated by the proponent to be paid as royalties and tax to the South Australian and Australian Governments. Without the port and rail infrastructure, the economic activity associated with the mine, and the royalties and tax receipts expected to be derived from it, would not be realised. This renders the infrastructure nationally significant, and the South Australian Government has expressed its support for both the mine and infrastructure projects

The mine and Eyre Infrastructure Project are proposed to be fully funded by the private sector. The two projects are inextricably related, as the value of the proposed infrastructure is dependent on the viability of the mine. Infrastructure Australia does not assess the commercial viability of private projects – this is a matter for the investors in the project. Rather, Infrastructure Australia’s assessment focuses on whether the project – in this case, the mine, rail and port infrastructure taken together – would have public benefits if it is commercially viable.

The public net benefit to Australia is estimated by the proponent at \$3.8 billion (net present value at 7% real discount rate). Iron Road Limited’s stated benefit-cost ratio (BCR) for the project is 1.27 (from an Australian economy perspective). From an economic perspective, the public net benefit is the more useful measure of the value of this project to Australia, because the BCR is determined in part by costs and revenues which accrue outside of Australia.

Infrastructure Australia notes these benefits would be partially offset by environmental costs associated with the development. However, Infrastructure Australia is confident that the benefits of the project to Australia would outweigh these costs.

Context and Opportunity Description

1. Strategic Context

The South Australian Regional Mining and Infrastructure Plan (2014) identified the need to develop landside and port infrastructure to catalyse mining investment in the state. It proposed a strategy to develop multi-user ports and rail infrastructure to achieve economies of scale, and identified the need for a new multi-user port to the east of the Central Eyre region. The proponent's preferred Cape Hardy location is consistent with this identified need.

The *Australian Infrastructure Audit 2015* also noted that expansion of a number of regional ports in South Australia, as well as development of new high-capacity ports, could support further significant increases in exports of minerals and resources. At present, only a small network of narrow gauge rail lines exists on the peninsula. ('The Eyre Peninsula rail network').

The development of a single port to service mines in the Central and Southern Eyre region would reduce the overall cost of providing transport for mining in the region. The South Australian Regional Mining and Infrastructure Planning project — Eyre and Western Region noted the Central Eyre region had peak ore production potential of 40 mtpa from three mining projects, of which the mine is one, and 3 mtpa for the Southern Eyre region.

The proponent is designing its port at Cape Hardy to accommodate open access. The proponent recently announced a partnership with Emerald Grain for the development of the Cape Hardy port. This raises the prospect of other similar partnerships forming, with consequent economic benefits following. The proponents also note the option to connect the new rail line to the National Rail Network.

2. Opportunity description

The proponent proposes to develop a major iron ore mine in the Central Eyre region of South Australia. The mine is expected to produce around 24 mtpa of 67% iron concentrate ore, through the processing of lower grade magnetite ore. The iron concentrate would be transported by rail to Cape Hardy, and exported.

When fully operational, the mine is expected to generate gross revenues of around \$3 billion per year (\$2015) for a period of 25 years. Of this, approximately \$500 million per year (\$2015) is anticipated by the proponent to be paid as royalties and tax by the South Australian and Australian Governments.

The mine would not be viable without the proposed heavy haul rail connection and deep water high capacity port.

3. Project overview

The project consists of:

- the Central Eyre mine ('the mine'), a 24 mtpa iron ore mine, with a 25 year life;
- the Eyre Infrastructure Project, which includes:
 - a deep water port at Cape Hardy with 70 mtpa capacity and Iron Road Limited stockpile capacity of 660,000 tonnes; and
 - an infrastructure corridor including a 148 kilometre heavy-haul, standard gauge rail connection between the mine and Cape Hardy, a service road, groundwater pipeline and electricity transmission line.

The rail and port infrastructure would be available for use ('open access') by other mines and agricultural producers on the Eyre Peninsula.

Business Case and Economic Evaluation

4. Options identification and assessment

The proponent evaluated a range of potential land transport and port solutions, as part of its commercial development of the project. The options assessment was formalised using multi-criteria analysis (MCA) of potential options. The MCA included a commercially-focused MCA and an economics-focused MCA, the latter of which included impacts beyond those of Iron Road Limited.

The options assessment considered seven port sites, and four alternative transport methods – a new standard gauge rail, the existing narrow gauge rail, slurry pipeline and road. Initial feasibility screening led to nine shortlisted options, covering a range of land transport and port combinations.

The commercially-focused MCA was conducted from the perspective of Iron Road Limited and was evaluated against criteria including:

- capacity for the mine;
- capacity for third parties;
- timing;
- supply chain risk;
- scalability; and
- capital expenditure (capex).

This process identified construction of a port at Cape Hardy and a standard gauge heavy haul rail line from the mine to the port as the preferred option.

Upgrading the Eyre Peninsula rail network was considered during the option assessment process but was found to be unsuitable given the scale of the rebuilding, the inadequate carrying capacity of the upgraded network, and its lack of connection to a deepwater port.

The economics-focused MCA sought to assess the options based on benefits delivered to the community. This MCA places greater weight on impacts outside the proponent, such as for agricultural producers and other iron ore mines, as opposed to benefits which accrue solely to shareholders of Iron Road Limited.

Options were assessed against the following criteria:

- support economic development of the Eyre Peninsula (40% weighting);
- timing (10%);
- environmental approval risk (15%);
- minimises negative impacts on communities (25%); and
- supply chain risk (10%).

This economics-focused MCA selected the same preferred option as the commercially-focused MCA. The South Australian Government has expressed its support for this option.

The proponent undertook a cost benefit analysis of the preferred option based on (1) benefits and costs globally, and (2) benefits and costs within Australia, recognising that some benefits accrue to foreign owners of Iron Road Limited.

5. Economic evaluation

The public net benefit to Australia is estimated by the proponent at \$3.8 billion (net present value). The proponent's stated BCR for the project is 1.27 (from an Australian economy perspective). The public net benefit is the more useful measure of the value of this project to Australia. The BCR is determined in part by costs and revenues accrued outside of Australia.

The public net benefit to Australia comprises:

- royalty and company tax income from the project, estimated at \$933 million and \$2,979 million (net present value, \$2015) respectively by the proponent;
- some share of the producer surplus for Australian owners of the project;
- gains to people working at the mine or supplying inputs to the mine, relative to their alternative employment; and
- possible future benefits to potential future users.

These benefits are partially offset by environmental costs of the mine and the transport infrastructure. The environmental costs of the mine have not been quantified in the cost benefit analysis but these have been extensively considered by the proponent as part of its Mining Lease Proposal and Environmental Impact Statement, and the proponent has advised that these approval processes are well-advanced.

The environmental cost of the transport infrastructure is estimated at \$83 million (present value) by the proponent.

Subject to the mine's commercial viability, Infrastructure Australia has a high degree of confidence that benefits to Australia will outweigh the environmental costs. The commercial viability of the mine will depend on whether, and at what price, the proponent can agree long term supply contracts for the iron concentrate produced by the mine.

The proponent is not seeking any funding from the South Australian Government or the Australian Government. If Government funding was to be sought, an evaluation of commercial components of the project would be required.

Major benefit items

The economic benefits amount to \$3.9 billion (present value, \$2015) and comprise the following:

- Royalties to the South Australian Government (\$0.9 billion);
- Company tax to the Australian Government (\$3.0 billion); and
- Producer surplus to owners of the project (Australian component unquantified).

Major cost items

The economic costs comprise capital costs, operating costs, and environmental costs.

- Capital costs: \$4.7 billion (present value, \$2015) made up of:
 - mine: \$3.0 billion;
 - rail: \$0.5 billion;
 - port: \$0.4 billion;
 - other: \$0.8 billion.
- Operating costs \$9.7 billion (present value, \$2015) made up of:
 - mine: \$9.2 billion;
 - rail: \$0.2 billion;
 - port: \$0.3 billion.
- Environmental costs \$0.1 billion (present value, \$2015):
 - rail: \$83 million;
 - port: unquantified;
 - mine: unquantified.

From the Australian economy perspective, the public benefit (as measured by the net present value) only counts the environmental costs because the capital and operating costs are paid for by the (majority foreign-owned) company.

Total capital cost (real, undiscounted)	\$6 billion (±15%) (\$2015)
Proponent's proposed Australian Government funding contribution (nominal, undiscounted)	No Australian Government funding is sought
Other funding (source / amount / cash flow) (nominal, undiscounted)	The project is fully funded by the private sector

Deliverability

The project will be delivered by Iron Road Limited, a public company listed on the Australian Stock Exchange (ASX). The proponent has submitted a Mining Lease Proposal and an Environmental Impact Assessment for the rail and port infrastructure to the state government (available at http://www.ceipconsultation.sa.gov.au/view_the_applications). The proponent has advised that these processes are well-advanced.

The risks to the project are predominantly commercial. The main risks to the project achieving expected benefits are:

- Iron ore prices fall below the proponent's expectations. The proponent is unlikely to proceed without long term supply contracts to manage this risk;
- The operating costs of the project are not achieved, leading to concerns about commercial viability;
- Company tax payments are lower than expected, because of tax minimisation strategies or because iron ore prices fall below expectations / costs increase above expectations; and
- Royalties are lower than expected, because iron ore prices fall lower than expectations.

The project is fully funded by the proponent. The governance of the project is reflective of the requirements of an ASX listed company.

There are also risks around the provision of rail and port infrastructure to support mining in the Central and Southern Eyre region more generally. Costs could be reduced if a single facility offering third party access could provide capacity for all mines. The port proposed by Iron Road at Cape Hardy is preferred by the South Australian Resources Infrastructure Taskforce, over other options, because it meets these requirements.