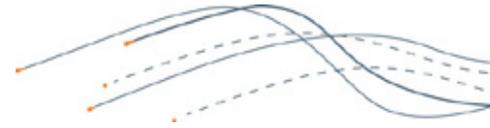


# Central Eyre Iron Project Environmental Impact Statement



## CHAPTER 21 ECONOMIC ENVIRONMENT



## COPYRIGHT

**Copyright © Iron Road Limited, 2015**

All rights reserved

This document and any related documentation is protected by copyright owned by Iron Road Limited. The content of this document and any related documentation may only be copied and distributed for the purposes of section 46B of the *Development Act, 1993 (SA)* and otherwise with the prior written consent of Iron Road Limited.

## DISCLAIMER

Iron Road Limited has taken all reasonable steps to review the information contained in this document and to ensure its accuracy as at the date of submission. Note that:

- (a) in writing this document, Iron Road Limited has relied on information provided by specialist consultants, government agencies, and other third parties. Iron Road Limited has reviewed all information to the best of its ability but does not take responsibility for the accuracy or completeness; and
- (b) this document has been prepared for information purposes only and, to the full extent permitted by law, Iron Road Limited, in respect of all persons other than the relevant government departments, makes no representation and gives no warranty or undertaking, express or implied, in respect to the information contained herein, and does not accept responsibility and is not liable for any loss or liability whatsoever arising as a result of any person acting or refraining from acting on any information contained within it.

## 21 Economic Environment ..... 21-1

21.1	Applicable Legislation and Standards .....	21-3
21.2	Assessment Method .....	21-3
21.2.1	Study Area .....	21-3
21.2.2	Profiling the Existing Economic Environment .....	21-6
21.2.3	Modelling to Identify Potential Impact and Benefits .....	21-6
21.2.4	Impact Classification.....	21-8
21.3	Existing Environment .....	21-9
21.3.1	Overview of Existing Economic Environment in Regional and Local Study Area ...	21-9
21.3.2	Existing Economic Value and Job Numbers.....	21-10
21.4	Design Modifications to Protect Economic Values.....	21-12
21.5	Impact Assessment .....	21-12
21.5.1	Construction .....	21-14
21.5.2	Operations.....	21-17
21.5.3	Additional Benefits .....	21-19
21.5.4	Summary of Impacts.....	21-21
21.6	Control and Management Strategies.....	21-21
21.7	Residual Risk Assessment .....	21-23
21.8	Findings and Conclusion .....	21-24

### List of Figures

Figure 21-1	Local and Regional Study Areas.....	21-5
-------------	-------------------------------------	------

### List of Plates

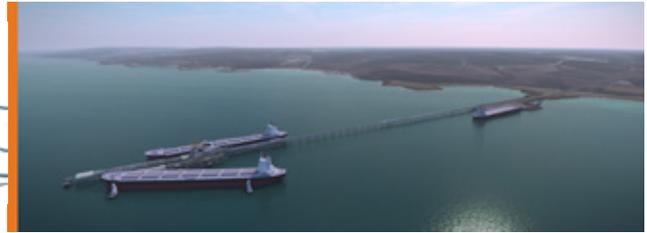
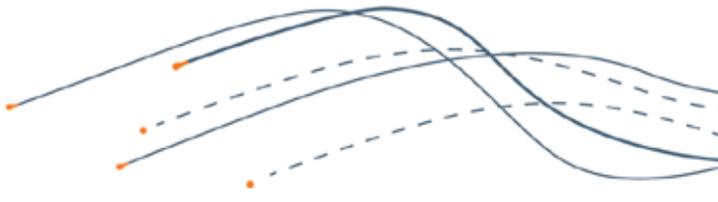
Plate 21-1	The CEIP will Create Economic Benefits for Local Communities such as Port Neill .....	21-9
Plate 21-2	Agriculture Currently Underpins the Local Economy on the Eyre Peninsula .....	21-10
Plate 21-3	The Proposed CEIP Infrastructure will Bring Strong Benefit to the Local Community.....	21-20

### List of Tables

Table 21-1	Regional, State and National Economic Impact of the CEIP, Construction and Operation Phases.....	21-2
Table 21-2	Key Findings Over the Life of the Mine.....	21-2
Table 21-3	Key Modelling Assumptions.....	21-7
Table 21-4	Criteria for Categorising Residual Project Impacts and Benefits.....	21-8
Table 21-5	State, Regional and Local GRP and Employment in 2012/2013 .....	21-10
Table 21-6	Economic Impact of the CEIP, Construction and Operation Phases.....	21-13
Table 21-7	Breakdown of Spend During Construction .....	21-14
Table 21-8	CEIP Contribution to GRP in Local Study Area .....	21-14
Table 21-9	Predicted Employment Resulting from CEIP in the Local Study Area (Number and %) ..	21-16
Table 21-10	Breakdown of Expenditure during Operations.....	21-17
Table 21-11	Predicted Contribution to GRP in Local Study Area (EconSearch 2015).....	21-18
Table 21-12	Predicted Employment Resulting from CEIP (EconSearch 2015) .....	21-19



Table 21-13 Summary of Impacts: Economic Assessment .....	21-21
Table 21-14 Control and Management Strategies Economic Environment .....	21-21
Table 21-15 Residual Risks.....	21-24



## 21 Economic Environment

The proposed Central Eyre Iron Project (CEIP) would bring significant economic benefit to the local communities within the Eyre Peninsula and more broadly across South Australia and Australia. Benefits include an increase in economic activity resulting in economic growth, an increase in employment and training opportunities, an increase in business development opportunities for suppliers and an increase in government revenue.

This chapter describes the existing economic environment at a local and regional level to assess the predicted economic impacts associated with the construction and operations of the CEIP. Where relevant the South Australian and Australian economies are also discussed. Although subject to a separate government approvals process and therefore not required in this Environmental Impact Statement (EIS) document, the economic impacts associated with the proposed CEIP Mine have been included here given the inter-dependency with the CEIP Infrastructure components, i.e. the impacts associated with the infrastructure components do not occur unless those associated with the mine also occur and vice versa. The CEIP refers to both the CEIP Infrastructure and the activities conducted within the mining lease. It is important to consider that this has resulted in a higher estimation of impacts (benefits) than those predicted for the CEIP Infrastructure alone.

Iron Road is committed to maximising the economic benefits of the CEIP and reducing or avoiding any potential negative economic impacts. Economic risks associated with the project that could reasonably occur during construction and operations are considered. Further details regarding the Economic Impact Assessment (EIA) for the CEIP are provided in the economic technical report (EconSearch 2015) presented in Appendix X.

Iron Road is committed to maximising the economic benefits of the CEIP and reducing or avoiding any potential negative economic impacts. Economic risks associated with the project that could reasonably occur during construction, operations and closure are considered. Further details regarding the Economic Impact Assessment (EIA) for the CEIP are provided in the economic technical report (EconSearch 2015) presented in Appendix X.

The potential social impacts and benefits of the project are addressed separately in Chapter 22 - Social Environment.

The regional, state and national level impacts are summarised in Table 21-1. For SA, the project is expected to generate an average annual increase to gross state product of around \$2.7 billion over the 25 operational years of the project. This would represent an increase of 2.9% over 2012/13 levels. The state employment impact of 1,985 full-time equivalent (FTE) jobs would add approximately 0.3% to the state's employed labour force.

Table 21-1 Regional, State and National Economic Impact of the CEIP, Construction and Operation Phases

	Eyre Peninsula	Rest of South Australia	Total South Australia	Rest of Australia	Total Australia
<b>Construction (Average / annual, years 1-4)</b>					
Gross State Product (\$m)	112	406	518	653	1,171
Employment (FTE) <sup>1</sup>	1,458	1,569	3,027	2,451	5,478
<b>Operation (Average / annual, years 5-29)</b>					
Gross State Product (\$m)	2,431	294	2,725	98	2,823
Employment (FTE) <sup>1</sup>	1,040	945	1,985	244	2,228

<sup>1</sup> Numbers will vary to the Social Environment Chapter due to different definitions and treatment for economic analysis

The key findings over the life of the mine, including the construction and operation phases, are detailed in Table 21-2. For SA, the project is expected to generate a total increase to gross state product of approximately \$28 billion over the full life of the project with over \$1.5 billion in revenues delivered to the State Government and \$4.4 billion to the Australian Government.

Table 21-2 Key Findings Over the Life of the Mine

Economic Measure	Outcomes under the Expansion Scenario (Years 1 to 29)	
GDP Australia (NPV, \$m)	31,268	
GSP South Australia (NPV, \$m)	27,953	
GRP (NPV, \$m)		
Eyre Peninsula	1,097	
Wudinna	827	
Kimba	11	
Cleve	67	
Tumby Bay	78	
<b>Full-time equivalent employment (average absolute and % change over BAU case)<sup>1</sup></b>		
Australia	2,677	(0.02%)
South Australia	2,128	(0.3%)
Eyre Peninsula	1,097	(3.7%)
Wudinna	827	(98.0%)
Kimba	11	(1.5%)
Cleve	67	(6.0%)
Tumby Bay	78	(6.8%)
<b>Government Revenues (NPV, \$m)</b>		
Australia Government	4,422	
SA State Government	1,510	
SA Local Government	5	

<sup>1</sup> Numbers will vary to the Social Environment Chapter due to different definitions and treatment for economic analysis

\* Present values calculated using a discount rate of 6%

## 21.1 Applicable Legislation and Standards

This chapter addresses the requirements of the Major Development Assessment Guidelines for the CEIP Infrastructure under the *Development Act 1993*. The *Australian Jobs Act 2013* requires Australian entities have full, fair and reasonable opportunity to bid for the supply of key goods and/or services. Further information regarding the requirements and relevance of the legislation is provided in Chapter 5: Statutory Framework.

## 21.2 Assessment Method

The assessment method for the economic impact assessment (EIA) has been based on industry recognised baseline profiling and modelling approaches, including the use of input output (I-O) and Computable General Equilibrium (CGE) modelling.

The economic impacts of the CEIP were assessed through a three stage process, which included the following activities:

- Defining the study areas for the EIA
- Profiling the existing economic environment of potentially affected communities to establish baseline economic conditions
- Economic modelling to identify potential impact and benefits

### 21.2.1 Study Area

The EIA focuses on the areas that will be both directly and in-directly affected by the CEIP. This includes the local and regional economies that are most likely to be affected by the CEIP given their geographic proximity to the Project. These communities, shown in Figure 21-1, comprise two distinct study areas, the local study area and the regional study area, which are described below.

The local study area comprises the local government areas (LGAs) that the project lies adjacent to or within. This includes:

- Wudinna District Council
- District Council of Kimba
- District Council of Cleve
- District Council of Tumby Bay

Given proximity and comparative size of economies, the local study area is likely to be impacted to a greater extent than the broader regional, state and national economies. To consider this, existing economic values and potential impacts are broken down to District Council (DC) level where possible.

The regional study area comprises the wider regional area that may provide a source of workers, goods or services for the project and includes coastal towns and settlements that may provide a residential base for drive-in drive-out workers. For the purposes of this assessment the regional study area has been defined based on South Australian Planning Strategy Boundaries (DPTI 2012) and comprises the local government areas outlined below. Throughout the Chapter the regional study area is referred to as the Eyre Peninsula:

- City of Whyalla
- City of Port Lincoln
- DC of Ceduna
- DC of Kimba
- DC of Wudinna
- DC of Streaky Bay
- DC of Cleve

- DC of Franklin Harbour
- DC of Elliston
- DC of Tumby Bay
- DC of Lower Eyre Peninsula.

Where appropriate, the assessment also draws comparisons with South Australia and Australia as a whole.

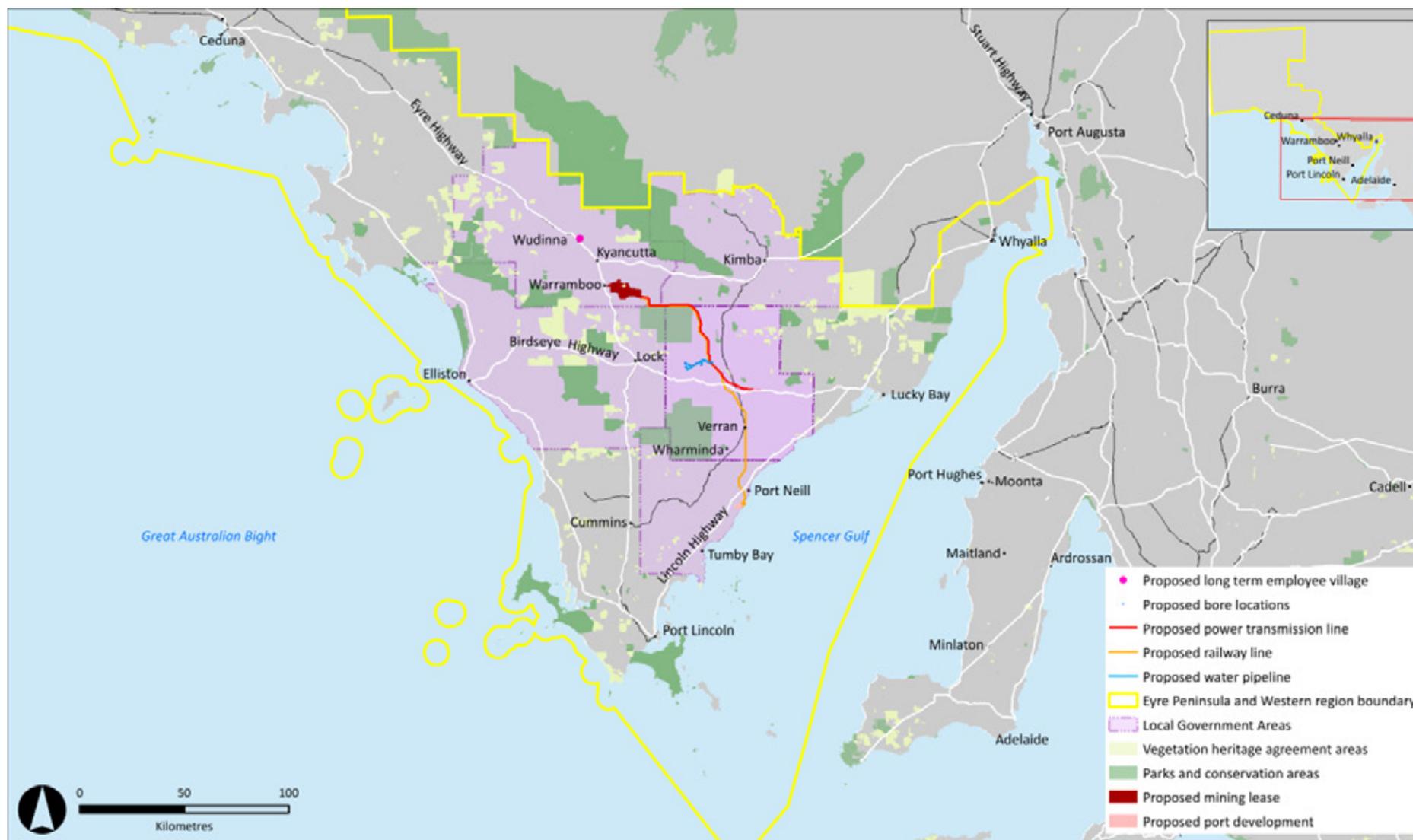


Figure 21-1 Local and Regional Study Areas

### 21.2.2 Profiling the Existing Economic Environment

The profile of the existing economic environment was prepared using data collected through desktop research which included:

- Analysis of quantitative data from the Australian Bureau of Statistics (ABS), State and Commonwealth government departments and other publically available economic sources.
- Review of Regional Development Australia (RDA) reports, local government reports and plans, state government plans, and other planning documents relating to the economic environment of the study areas.

### 21.2.3 Modelling to Identify Potential Impact and Benefits

Modelling was undertaken to analyse the potential economic impact the CEIP would have on the local, regional, South Australian and Australian economies, with a focus on directly and in-directly affected areas. The models utilised to perform this analysis were an I-O model and a TERM (The Enormous Regional Model) CGE model as outlined below.

#### **Input-Output Model**

The assessment of local and regional economic impact was undertaken based on the Regional Industry Structure and Employment (RISE) I-O model, which is an extension of the conventional input-output method and is widely used by Government. The RISE model provides a comprehensive economic framework that is useful in the resource planning process, particularly for regional economic impact applications (EconSearch 2015).

#### **CGE Model**

Economic Impacts at the state and national level were estimated using the Victoria University Centre of Policy Studies' TERM comparative statics CGE model (EconSearch 2015). This model version is well-known to State and Commonwealth Governments and widely accepted for the modelling of state and national economies (EconSearch 2015).

#### **Assumptions**

A number of assumptions were made in order to undertake the modelling and these are outlined below and in Table 21-3.

#### ***Commencement and completion dates***

Assumptions have been made regarding the anticipated commencement and completion dates for the purposes of the modelling of economic impacts and benefits. Changes to these dates will result in no material changes to economic impacts or benefits.

#### ***Definition of employment***

Direct employment (during both the construction and operations phases) has been allocated to the LGAs where the jobs occur (i.e. Wudinna, Cleve and Tumby Bay). It has been assumed, based on the findings of the Social Impact Assessment (Bowey and Associates 2015), that 100% of the direct employment for the construction phase would be fly in fly out (FIFO) (a conservative approach) and that during operations 40% of the workforce would live locally and 60% would consist of Long Distance Commute (LDC) workers.

### *Categorisation of economic activity*

The industry categories used to illustrate economic activity are based on the Australian Bureau of Statistics Categories. For the category 'agriculture and fishing' it is assumed that the majority of activity on the Eyre Peninsula relates to agriculture and fishing and thus forestry has been removed from the descriptor to reduce confusion.

**Table 21-3 Key Modelling Assumptions**

Project Phase	Timing and Duration <sup>1</sup>	Capital Expenditure	Workforce
Construction	<p>It has been assumed for this chapter that:</p> <ul style="list-style-type: none"> <li>The anticipated commencement date of this phase will be in early 2015, with anticipated completion by mid-2018.</li> <li>Phase duration will be 4.5 years.</li> </ul>	<p>It has been assumed for this chapter that:</p> <ul style="list-style-type: none"> <li>Capital expenditure during construction will be approximately \$4.8 billion.</li> </ul>	<p>It has been assumed for this chapter that:</p> <ul style="list-style-type: none"> <li>100% of jobs for the construction phase would be taken up by Long Distance Commute (LDC) workers, which will include both Fly-in Fly-out (FIFO) and Drive-in Drive-out (DIDO).</li> <li>Employment numbers for the economic assessment are presented as annual average figures. This differs from the social impact assessment (SIA) which considers peak employment numbers.</li> </ul>
Operations	<p>It has been assumed for this chapter that:</p> <ul style="list-style-type: none"> <li>The anticipated commencement date of operations will be mid-2018. It is anticipated that operations will continue until 2042.</li> <li>Phase duration will be 25 years.</li> </ul>	<p>It has been assumed for this chapter that:</p> <ul style="list-style-type: none"> <li>Average annual expenditure during operations will be approximately \$1.1 billion.</li> <li>Additional expenditure of \$1.1 billion on mine, rail and port operation, which will begin in the second half of 2018.</li> </ul>	<p>It has been assumed for this chapter that:</p> <ul style="list-style-type: none"> <li>In the first year of operation 40% of the workforce would live locally and 60% would be FIFO or DIDO.</li> <li>By year 5 of the operating period 60% of the workforce would live locally and 40% would be FIFO or DIDO workers.</li> <li>Employment numbers for the economic assessment are presented as annual average figures. This differs from the SIA which considers peak employment numbers.</li> </ul>

<sup>1</sup> Timeframes that were used for the assessment have passed. No material changes in the assessment outcomes are expected as a result.

## Definitions

When describing economic activity a number of terms have been used for the purposes of this report and are defined below:

- **Value-added** – The total value of goods and services produced by an industry, after deducting the cost of goods and services used up in the process of production.
- **Gross regional/state/domestic product** – A measure of the contribution of an activity to the economy. For the purposes of this report this is equivalent to total value added plus net taxes (i.e. taxes less subsidies on products and production) paid by households and other components of final demand.

### 21.2.4 Impact Classification

The economic impacts and benefits have been assessed broadly in accordance with the methodology outlined in Chapter 9. The criteria for categorising the residual project impacts and benefits, as outlined in Table 21-4 have been tailored for the purposes of the economic environment because of the potential for economic benefits and impacts to span more broadly than other project impacts.

**Table 21-4 Criteria for Categorising Residual Project Impacts and Benefits**

Category	Impacts	Benefits
Negligible	A negative change below detectable limits.	A positive change below detectable limits.
Low	A short-term (<3 years) negative change affecting receivers located within the local study area only.	A short-term (<3 years) positive change experienced within the local study area only.
Medium	A long-term (>3 years) negative change affecting receivers located within the local study area only. OR A short-term (<3 years) negative change affecting the regional study area or state-wide receivers.	A long-term (>3 years) positive change experienced within the within the local study area only. OR A short-term (<3 years) positive change experienced by the regional study area or state-wide receivers.
High	A long-term (>3 years) negative change affecting the regional study area or state-wide receivers.	A long-term (>3 years) positive change experienced by the regional study area or state-wide receivers.



Plate 21-1 The CEIP will Create Economic Benefits for Local Communities such as Port Neill

## 21.3 Existing Environment

The following section provides an overview of the existing economic environment and job numbers for the local study area, the regional study area, and South Australia. Where possible, data for the local study area has been broken down into District Council areas to provide a detailed overview of the local economies within closet proximity to the CEIP. Further details of the existing economic environment are provided in the Economic Impact Assessment (EIA) (EconSearch 2015) for the CEIP presented in Appendix X.

### 21.3.1 Overview of Existing Economic Environment in Regional and Local Study Area

The GRP for the Eyre Peninsula region in 2012/2013 was approximately \$3.5 billion (EconSearch 2015) and there were 25,056 jobs. Agriculture and fishing, mining and manufacturing are the largest industries in terms of contributions to GRP,, and health care and social assistance and agriculture and fishing are the largest contributors to regional jobs. In the local study area, agriculture and fishing, are the largest contributing industry and largest employing industry across all DC areas. The mining industry, despite relatively strong contributions to regional and local GRP was not one of the top five contributing industries to jobs.

In 2010-2011 the total gross value of the agricultural commodities produced by the Eyre Peninsula was \$986.6 million (ABS 2011a). The region produces 41% of South Australia's wheat crop, 25% of the barley crop (RDAWEP 2013) and has significant livestock grazing activity (particularly cattle and sheep). Fishing and aquaculture is also a major primary industry, with the RDAWEP (2013) estimating that the Eyre Peninsula produces approximately 80% of South Australia's commercial seafood produce (including tuna, prawn, rock lobster, oysters, mussels and abalone).

The manufacturing industry in the Eyre Peninsula has experienced small growth since 2001, with employment increasing by 3.6% (RDAWEP 2013). It is anticipated that additional growth will arise from the ongoing development of the mining industry, particularly for regional towns such as Whyalla (a major centre for manufacturing, steel production and resource processing) (RDAWEP 2013).

The regional mining industry is located within one of South Australia’s highest potential minerals provinces, the Gawler Craton and the Eucla Basin and currently produces a range of commodities including iron ore, gypsum, heavy minerals sands and salt. Mining contributed 16% to regional total value added in 2012/2013 (EconSearch 2015).

The regional tourism industry has been experiencing growth in recent years, with approximately 700 tourism related businesses that directly employ approximately 2,000 people and contributing more than an estimated \$270 million per annum to the regional economy (RDAWEP 2013).

### South Australia

South Australia had a Gross State Product (GSP) of \$94.2 billion in 2012/2013 (ABS 2013). Major contributing industries included manufacturing (8.81%), ownership of dwellings (8.48%), health care and social assistance (8.37%) and construction (7.89%). Agriculture and mining were also important contributors at 5.16% and 4.42% respectively.



Plate 21-2 Agriculture Currently Underpins the Local Economy on the Eyre Peninsula

### 21.3.2 Existing Economic Value and Job Numbers

An overview of the existing economic values and job numbers in the Eyre Peninsula and each DC are provided below, with a summary outlined in Table 21-5

Table 21-5 State, Regional and Local GRP and Employment in 2012/2013

Location	GRP	Top Contributors to Value-Added	Number of Jobs	Top Contributors to FTE Jobs
Eyre Peninsula	\$3.5 billion	<ul style="list-style-type: none"> <li>• Agriculture and fishing (17%)</li> <li>• Mining (16%)</li> <li>• Manufacturing (9%)</li> <li>• Construction (7%)</li> <li>• Health care and social assist (7%)</li> </ul>	25,056	<ul style="list-style-type: none"> <li>• Agriculture and fishing (15%)</li> <li>• Manufacturing (12%)</li> <li>• Health care and social assist (12%)</li> <li>• Retail trade (9%)</li> <li>• Construction (8%)</li> </ul>

Location	GRP	Top Contributors to Value-Added	Number of Jobs	Top Contributors to FTE Jobs
Wudinna	\$93 million	<ul style="list-style-type: none"> <li>• Agriculture and fishing (53%)</li> <li>• Health care and social assistance (6%)</li> <li>• Education and training (5%)</li> <li>• Mining (5%)</li> <li>• Wholesale trade (5%)</li> </ul>	711	<ul style="list-style-type: none"> <li>• Agriculture and fishing (41%)</li> <li>• Health care and social assistance (11%)</li> <li>• Education and training (9%)</li> <li>• Retail trade (6%)</li> <li>• Wholesale trade (6%)</li> </ul>
Kimba	\$96 million	<ul style="list-style-type: none"> <li>• Agriculture and fishing (57%)</li> <li>• Finance and insurance (8%)</li> <li>• Construction (5%)</li> <li>• Health care and social assistance (5%)</li> <li>• Wholesale trade (4%)</li> </ul>	604	<ul style="list-style-type: none"> <li>• Agriculture and fishing (48%)</li> <li>• Retail trade (9%)</li> <li>• Health care and social assistance (8%)</li> <li>• Education and training (6%)</li> <li>• Accommodation and food services (6%)</li> </ul>
Cleve	\$125 million	<ul style="list-style-type: none"> <li>• Agriculture and fishing (50%)</li> <li>• Transport, postal and warehousing (9%)</li> <li>• Health care and social assistance (7%)</li> <li>• Retail trade (5%)</li> <li>• Ownership of dwellings (5%)</li> </ul>	941	<ul style="list-style-type: none"> <li>• Agriculture and fishing (42%)</li> <li>• Transport, postal and warehousing (11%)</li> <li>• Health care and social assistance (10%)</li> <li>• Retail trade (8%)</li> </ul>
Tumby Bay	\$154 million	<ul style="list-style-type: none"> <li>• Agriculture and fishing (42%)</li> <li>• Mining (20%)</li> <li>• Construction (7%)</li> <li>• Ownership of dwellings (6%)</li> <li>• Health care and social assistance (5%)</li> </ul>	971	<ul style="list-style-type: none"> <li>• Agriculture and fishing (41%)</li> <li>• Construction (12%)</li> <li>• Health care and social assistance (9%)</li> <li>• Education and training (8%)</li> <li>• Retail trade (6%)</li> </ul>

### Wudinna District Council

Wudinna DC is a rural area with a population of 1,253 (ABS 2011f). Agriculture, predominantly cereal cropping, is the areas major economic activity. Sheep and beef cattle farming is also undertaken. The town of Warramboos is located within the Wudinna DC and is the closest town to the proposed mine. Wudinna is the major township for the area and would host the proposed long-term employee village.

GRP in Wudinna in 2012/13 is estimated to be \$93 million comprised of \$88 million in total value added and \$5 million in net taxes. Agriculture and fishing, is the major economic activity, contributing 53% to total value added in 2012/2013. Agriculture and fishing also contributed to the greatest proportion (41%) of the 771 Full Time Equivalent (FTE) positions in Wudinna in 2012/2013.

### District Council of Kimba

The DC of Kimba is a rural area with a resident population of approximately 1,088 in 2011 (ABS 2011b). The economy is based largely on primary production including wheat, barley, canola, pulses and oats, meat and wool.

GRP in 2012/2013 is estimated to be \$96 million comprised of \$91 million in total value added and \$5 million in net taxes. Agriculture and fishing, is the major economic activity, contributing 57% to value added in 2012/2013.

Agriculture and fishing is the greatest contribution of employment, with 604 FTE in Kimba (48% in 2012/2013).

### **District Council of Tumby Bay**

The DC of Tumby Bay has a population of approximately 2,586 (ABS 2011e) and is a largely rural, agricultural area. The local economy is predominantly based on the farming of cereal crops and sheep, with mining and fishing also being significant contributors.

GRP in Tumby Bay in 2012/13 is estimated to be \$154 million comprised of \$145 million in total value added and \$9 million in net taxes. Agriculture and fishing, is the major economic activity, contributing 42% to value added in 2012/2013.

Agriculture and fishing is the greatest contributor to employment, with 971 FTE positions in Tumby Bay (41%) in 2012/2013.

### **District Council of Cleve**

The DC of Cleve has a population of 1,733 (ABS 2011c) and an economy underpinned by agriculture, (largely cereal grains, oilseeds, pulses) livestock and fishing. Aquaculture is an emerging industry.

GRP in Cleve in 2012/13 is estimated to be \$125 million comprised of \$118 million in total value added and \$7 million in net taxes. Agriculture and fishing, is the major economic activity, contributing 50% to value added in 2012/2013.

Agriculture and fishing, is the greatest contributor to employment, with 941 FTE positions in Cleve (42%) in 2012/2013.

### **Summary of Key Environment Values**

The economies within the local study area are dominated by the agriculture and fishing sectors in terms of both contributions to GRP and employment. The DC of Wudinna is the LGA in closest proximity to the proposed mine and agriculture and fishing play a vital role in the local economy contributing close to 53% of the total value added. At a regional level the economy is more diversified with (in addition to agriculture and fishing), the mining and manufacturing industries also making important contributions to the economy.

## **21.4 Design Modifications to Protect Economic Values**

Design measures to maintain and protect the economic diversity, viability and wellbeing of potentially affected communities and increase economic benefits include:

- Minimise the CEIP footprint to reduce the impact on the existing agricultural land use e.g. all infrastructure within one infrastructure corridor.
- Design CEIP to be economically viable for the long term. This has involved the completion of the Definitive Feasibility Study (Iron Road 2014) which demonstrates that the CEIP is internationally competitive.
- Provision of long-term accommodation options as part of the project (the long-term employee village) adjacent to Wudinna, to encourage the operational workforce to reside locally rather than to FIFO.
- Ensuring that the design and siting of infrastructure minimises the division of land and separation of farming activities and encourages participation of the CEIP workforce in local economies (e.g. locating the long-term employee village adjacent to the township of Wudinna).

## **21.5 Impact Assessment**

This section assesses the expected economic impacts and benefits of the CEIP (CEIP Infrastructure and Mine components) on the local, regional, South Australian and Australian economies. The economic impacts and benefits have been identified as a result of modelling, as outlined in Section 21.2.3 and presented in Appendix X.

The categorisation of impacts has considered the design modifications described in Section 21.4 and the control and management strategies outlined in Section 21.6. The EIA has focused on the major issues identified as either medium or high. The impacts identified as low or negligible have been addressed only to the extent necessary to demonstrate that they have been considered.

The economic impacts and benefits that have been modelled in the EIA have been addressed according to the project phases of construction and operations and can be classified as follows:

- Contribution to economic activity (using impact to GRP/ GSP/ GDP as indicators)
- Contribution to growth in employment opportunities
- Contribution to growth in government revenue

Additional economic impacts and benefits, although not directly modelled in the EIA, have also been identified as arising from the CEIP. The impacts and benefits can be classified into the following areas and will be addressed as additional benefits and impacts:

- Contribution to growth in business development opportunities (including potential new mine development)
- Contribution to growth in training opportunities
- Loss of agricultural land and potential production losses
- Increased labour competition for existing industries

Due to the social aspect of the identified impacts, these are discussed in detail in the Social Environment chapter. The key environmental impacts and risks would be monitored and managed through the construction and operational environmental management programmes.

### Impact Assessment

A summary of the economic impacts and benefits in construction and operations can be found in Table 21-6.

**Table 21-6 Economic Impact of the CEIP, Construction and Operation Phases**

	Wudinna	Kimba	Cleve	Tumby Bay	Eyre Peninsula	South Australia	Australia
<b>Construction (Average / annual, years 1-4)</b>							
<b>GRP (\$m)</b>							
Direct	29	0	12	16	57	518	1,171
Flow-on	12	1	4	6	55		
<b>Total</b>	<b>41</b>	<b>1</b>	<b>16</b>	<b>22</b>	<b>112</b>		
<b>Employment (FTE)</b>							
Direct	551	0	164	273	988	3,027	5,478
Flow-on	135	7	37	57	470		
<b>Total</b>	<b>686</b>	<b>7</b>	<b>201</b>	<b>330</b>	<b>1458</b>		
<b>Operation (Average / annual, years 5-29)</b>							
<b>GRP (\$m)</b>							
Direct	2,376	0	1	2	2,379	2,725	2,823
Flow-on	26	2	3	2	52		
<b>Total</b>	<b>2,402</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>2,431</b>		

	Wudinna	Kimba	Cleve	Tumby Bay	Eyre Peninsula	South Australia	Australia
<b>Employment (FTE)</b>							
Direct	654	0	26	25	705	1,985	2,228
Flow-on	195	11	20	13	335		
<b>Total</b>	<b>849</b>	<b>11</b>	<b>46</b>	<b>38</b>	<b>1,040</b>		

### 21.5.1 Construction

Iron Road will spend an estimated \$4.8 billion during construction. The approximate breakdown of area where spend will occur across study areas is outlined in Table 21-7.

Table 21-7 Breakdown of Spend During Construction

Area	Percentage of Spend
<b>Local Study Area</b>	
Wudinna DC	11%
DC of Kimba	Less than 1%
DC of Cleve	4%
DC of Tumby Bay	5%
<b>Regional Study Area</b>	
Eyre Peninsula (not including local study area spend)	4%
<b>Other</b>	
South Australia (not including local or regional area spend)	32%
Australia (not including spend in local or regional study area or South Australia)	21%
Overseas	22%

### Contribution to GRP: Construction

During construction the CEIP will result in a significant increase in economic activity in the local and regional study areas, demonstrated through increases in GRP across all DCs. Consistent with distribution of spend during construction, Wudinna, Tumby Bay and Cleve will receive the largest contributions to GRP through both direct and flow-on impacts, with average annual contribution to GRP during construction of \$41 million, \$22 million and \$15 million, respectively.

Contributions to GRP across the DCs within the local study area over the four year construction period are outlined in Table 21-8.

Table 21-8 CEIP Contribution to GRP in Local Study Area

Contribution to GSP / GDP / GRP <sup>1</sup> (value and % <sup>2</sup> )	Year 1	Year 2	Year 3	Year 4
Australia (including South Australia)	<ul style="list-style-type: none"> <li>• \$66 million</li> <li>• 0.08% (4 year average)</li> </ul>	<ul style="list-style-type: none"> <li>• \$825 million</li> <li>• 0.08% (4 year average)</li> </ul>	<ul style="list-style-type: none"> <li>• \$2.202 billion</li> <li>• 0.08% (4 year average)</li> </ul>	<ul style="list-style-type: none"> <li>• \$1.591 million</li> <li>• 0.08% (4 year average)</li> </ul>
South Australia (including Eyre Peninsula)	<ul style="list-style-type: none"> <li>• \$27 million</li> <li>• 0.6% (4 year average)</li> </ul>	<ul style="list-style-type: none"> <li>• \$367 million</li> <li>• 0.6% (4 year average)</li> </ul>	<ul style="list-style-type: none"> <li>• \$979 million</li> <li>• 0.6% (4 year average)</li> </ul>	<ul style="list-style-type: none"> <li>• \$699 million</li> <li>• 0.6% (4 year average)</li> </ul>

Contribution to GSP / GDP / GRP <sup>1</sup> (value and % <sup>2</sup> )	Year 1	Year 2	Year 3	Year 4
Eyre Peninsula (including local study area)	<ul style="list-style-type: none"> <li>• \$4 million</li> <li>• Less than 1%</li> </ul>	<ul style="list-style-type: none"> <li>• \$82 million</li> <li>• Less than 1%</li> </ul>	<ul style="list-style-type: none"> <li>• \$217 million</li> <li>• 2%</li> </ul>	<ul style="list-style-type: none"> <li>• \$145 million</li> <li>• 1%</li> </ul>
Wudinna DC	<ul style="list-style-type: none"> <li>• \$1million</li> <li>• 1%</li> </ul>	<ul style="list-style-type: none"> <li>• \$31million</li> <li>• 34%</li> </ul>	<ul style="list-style-type: none"> <li>• \$79 million</li> <li>• 87%</li> </ul>	<ul style="list-style-type: none"> <li>• \$51 million</li> <li>• 57%</li> </ul>
DC of Kimba	<ul style="list-style-type: none"> <li>• 0</li> <li>• Less than 1%</li> </ul>	<ul style="list-style-type: none"> <li>• \$1million</li> <li>• Less than 1%</li> </ul>	<ul style="list-style-type: none"> <li>• \$1million</li> <li>• 2%</li> </ul>	<ul style="list-style-type: none"> <li>• \$1million</li> <li>• 1%</li> </ul>
DC of Cleve	<ul style="list-style-type: none"> <li>• \$1 million</li> <li>• 1%</li> </ul>	<ul style="list-style-type: none"> <li>• \$12 million</li> <li>• Less than 10%</li> </ul>	<ul style="list-style-type: none"> <li>• \$30 million</li> <li>• 25%</li> </ul>	<ul style="list-style-type: none"> <li>• \$19 million</li> <li>• 16%</li> </ul>
DC of Tumby Bay	<ul style="list-style-type: none"> <li>• \$1million</li> <li>• 1%</li> </ul>	<ul style="list-style-type: none"> <li>• \$16 million</li> <li>• 10%</li> </ul>	<ul style="list-style-type: none"> <li>• \$43 million</li> <li>• 29%</li> </ul>	<ul style="list-style-type: none"> <li>• \$28 million</li> <li>• 18%</li> </ul>

<sup>1</sup>Direct and Flow-on

<sup>2</sup>Compared with 2012/2013 GRP values

At a regional level, the direct and flow-on average GRP for the life of construction in the total Eyre Peninsula (includes local study area) is expected to be \$112 million per annum, this equates to \$4 million in year one, \$82 million in year two, \$217 million in year three, and \$145 million in year four.

For South Australia, based on a GSP of \$94.2 billion in 2012/2013, average annual contributions of \$518 million during the four year construction period would increase GSP by 0.6% during the period. Contributions to GSP would peak during year three at \$980 million.

For Australia, the project is expected to contribute to GDP by approximately \$66 million in year one, peaking at almost \$2.2 billion in year three and averaging more than \$1.2 billion per annum over years one to four (EconSearch 2015). In the context of Australia's GDP of \$1,521.5 billion in 2012/13 the estimated GDP average impact in years one to four of the CEIP would represent an increase of 0.08% over that period.

The contribution to GRP in the local and regional study areas and the transformative effect this will have on a number of regional economies, and the value of contributions to GSP and GNP, this is considered to be a **high benefit**.

#### **Contribution to Government Revenue: Construction**

The CEIP will contribute significant taxes and royalties to local, State and Commonwealth government revenue. Total average government revenue during the construction period will be \$17.3 million, with an average annual contribution of \$300,000 to local government, an average annual contribution of \$4 million to State Government and an average annual contribution of \$13 million to Commonwealth Government (EconSearch 2015).

This significant contribution to government revenue will occur at a local, state and national level and has been considered a **high benefit**.

#### **Contribution to Job Creation: Construction**

The CEIP would generate a significant number of new employment opportunities during the four year construction period in the local and regional study areas. On average there will be 1,458 jobs created annually in the Eyre Peninsula, peaking at 2,867 jobs in year three. The greatest number of jobs by District Council area during construction will be generated in Wudinna, Tumby Bay and Cleve. The predicted employment arising from the CEIP across the local study area in outlined in Table 21-9.

Table 21-9 Predicted Employment Resulting from CEIP in the Local Study Area (Number and %)

Employment <sup>1</sup> (Number and % <sup>2</sup> )	Year 1	Year 2	Year 3	Year 4
Eyre Peninsula (excluding local study area)	<ul style="list-style-type: none"> <li>• 7 FTE jobs</li> <li>• Less than 1%</li> </ul>	<ul style="list-style-type: none"> <li>• 163 FTE jobs</li> <li>• 1%</li> </ul>	<ul style="list-style-type: none"> <li>• 448 FTE jobs</li> <li>• 2%</li> </ul>	<ul style="list-style-type: none"> <li>• 315 FTE jobs</li> <li>• 1%</li> </ul>
Wudinna DC	<ul style="list-style-type: none"> <li>• 13 FTE jobs</li> <li>• 2% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 478 FTE jobs</li> <li>• 72% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 1356 FTE jobs</li> <li>• 203% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 898 FTE jobs</li> <li>• 134% of total FTE jobs in area</li> </ul>
DC of Kimba	<ul style="list-style-type: none"> <li>• 1 FTE jobs</li> <li>• Less than 1% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 6 FTE jobs</li> <li>• 1% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 14 FTE jobs</li> <li>• 3% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 8 FTE jobs</li> <li>• 2% of total FTE jobs in area</li> </ul>
DC of Cleve	<ul style="list-style-type: none"> <li>• 4 FTE jobs</li> <li>• 1% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 140 FTE jobs</li> <li>• 16% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 397 FTE jobs</li> <li>• 45% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 263 FTE jobs</li> <li>• 30% of total FTE jobs in area</li> </ul>
DC of Tumby Bay	<ul style="list-style-type: none"> <li>• 6 FTE jobs</li> <li>• 1% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 228 FTE jobs</li> <li>• 24% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 651 FTE jobs</li> <li>• 68% of total FTE jobs in area</li> </ul>	<ul style="list-style-type: none"> <li>• 433 FTE jobs</li> <li>• 46% of total FTE jobs in area</li> </ul>

<sup>1</sup>Direct and Flow-on

<sup>2</sup>Compared with 2012/2013 employment figures

In South Australia (including local and regional study areas) direct and indirect employment is expected to peak at more than 5,800 additional FTE jobs in year three, averaging 3,000 FTE jobs over the four year period. This is an average annual increase of 0.4% above 2012/13 employment numbers (EconSearch 2015).

Direct and indirect employment in Australia as a whole is also expected to increase, peaking at more than 10,000 FTE in year three and averaging 5,478 FTE jobs over the four year construction period. This would represent an average increase in employment of 0.06% over the four years construction period (EconSearch 2014).

Given the significance of the employment opportunities generated during construction in local and regional study areas and across South Australia and Australia more broadly this is considered a **high benefit**.

#### Loss of agricultural land and potential production losses

Permanent loss of productive land will occur in areas unable to be rehabilitated, such as the railway line and port. Some areas within the proposed port site not required by Iron Road may be made available to local farmers for cropping and/or grazing, which will support the continued operation of land in accordance with established land management practices.

Combined, the proposed mine and CEIP Infrastructure will result in the permanent loss of approximately 7,050 ha of productive agricultural land, less than 0.2% of all productive land in the Eyre Peninsula NRM Region (DWLBC 2003).

The revenue from this area of land has been conservatively calculated using above average and average data (yield 2-3 t/ha, price \$250-300/ha, cropping intensity 50-80% and livestock \$150-250/ha) and does not include any allowance for drought years. The annual revenue loss is \$3.2-6.8 million, compared to the predicted annual revenue range for the mine of \$1.6-3.8 billion based on a conservative range of iron concentrate prices (AU\$75-175). For the life of the 25 year mine, the total farming revenue is \$79-171 million as compared to \$40-94 billion from the mine. Thus it would take between 6,000 and 30,000 years of farming the equivalent area of land to return the same revenue as mining.

As such, the overall loss of productive agricultural land (0.2%) and subsequent reduction of supply in agricultural products (not detectable within seasonal variations) is considered to represent a **negligible** impact to the overall agricultural productivity and is not considered to adversely affect the sustainability of the agricultural industry on the Eyre Peninsula.

Individual farmer impacts and benefits are discussed from a social perspective in the SIA chapter (Chapter 22).

### 21.5.2 Operations

During the operations phase the average annual revenue of the CEIP will be almost \$3.5 billion and gross operating surplus (GOS) will average \$2.3 billion annually. Average annual expenditure by Iron Road for the life of the CEIP will be approximately \$1.1 billion. The operating phase will be characterised by an additional expenditure on the mine, rail and port of \$1.1 billion, which based on construction phase commencement in 2014/2015, will begin in the second half of 2018. The breakdown of expenditure during operations is provided in Table 21-10.

Table 21-10 Breakdown of Expenditure during Operations

Area	Percentage of Expenditure
<b>Local Study Area</b>	
Wudinna DC	13%
DC of Kimba	Less than 1%
DC of Cleve	1%
DC of Tumby Bay	1%
<b>Regional Study Area</b>	
Eyre Peninsula (not including local study area spend)	2%
<b>Other</b>	
South Australia (not including local or regional area spend)	40%
Australia (not including spend in local or regional study area or South Australia)	9%
Overseas	33%

#### Contribution to GRP: Operations

During the operation phase and consistent with the breakdown of operational expenditure, the greatest impact to GRP will occur within the Wudinna DC with economic activity expected to increase GRP by (on average) almost \$2.4 billion per annum. This will have a transformative effect on the local economy. It is necessary to consider however that this figure of \$2.4 billion includes direct profits arising from the CEIP. If direct profits are excluded the impact is anticipated to be an average increase in annual GRP of \$59 million per annum. DCs across the local study area will gain benefits to GRP during operations as outlined in Table 21-11.

Table 21-11 Predicted Contribution to GRP in Local Study Area (EconSearch 2015)

DC	Average Annual Contribution to Value Added	% Contribution to GRP/GSP/GDP
Wudinna DC	\$59 million (figure excludes direct profits)	63%
DC Kimba	\$2 million per annum	2%
DC Cleve	\$4 million per annum	3%
DC Tumby Bay	\$4 million per annum	3%

In the regional study area, the CEIP is predicted to contribute an estimated average of \$2.431 billion per annum.

In South Australia the CEIP is expected to contribute an estimated annual average of \$2.725 billion per annum (including local and regional study area), which will result in an increase in GSP of 2.9% (from 2012/2013 GSP levels) over the 25 years of operations.

Across Australia more broadly the predicted contribution towards GNP is \$2.8 billion or 0.2% of GNP.

Annual contributions to GRP, GSP and GDP during operations in the Eyre Peninsula, South Australia and Australia are demonstrated in Table 21-11.

Given the significance of the contribution to boosting local and regional GRP, South Australian GSP and Australian GNP, this is considered a **high benefit**.

#### Contribution to Government Revenue: Operations

The CEIP will contribute significant revenue, through taxes and royalties to local, State and Commonwealth Government during the operations phase. Total average annual government revenue during the operations period will be \$663 million, with an average annual contribution of \$300,000 per annum to local government, an average annual contribution of \$165.8 million per annum to State Government and an average annual contribution of \$469 million to the Commonwealth Government (EconSearch 2015).

The CEIP would generate **high benefits** given that it is contributing to long-term increases in local, state and national government revenue.

#### Contribution to Job Creation: Operation

Within the Eyre Peninsula region, across the life of the CEIP, an average of 1,040 jobs will be generated per annum. Wudinna will be the DC where the largest creation of jobs will occur, with direct employment in the area expected to average 654 FTE jobs per annum over the operational life of the project. This is comprised of 392 FIFO FTE jobs and 261 FTE jobs where the project workers would be living locally. The flow-on jobs (for local suppliers and service industries) are estimated to average 196 FTE per annum.

The direct (residents) plus flow-on employment is 98% of the estimated employment (FTE) for the Wudinna region for 2012/13 (668 FTE). If the FIFO workforce of approximately 400 FTE is also included, the project would more than double current employment numbers in the Wudinna region.

Table 21-12 demonstrates the jobs (direct and flow-on) generated by the CEIP across the local study area.

Table 21-12 Predicted Employment Resulting from CEIP (EconSearch 2015)

DC	Average Annual Contribution to Employment (Direct and Flow-On)	% Increase in Total Employment
Wudinna	827	98%
Kimba	11	1.5%
Cleve	67	6.0%
Tumby Bay	78	6.8%

Direct and indirect job creation in the regional study area is expected to be over 518 in year five, peaking at 1,087 in year eight and averaging approximately 1,040 across the 25 operational years of the project.

Across South Australia employment generated by the CEIP is expected to be over 990 FTE jobs in year five (first year of operation), peaking at 2,128 FTE jobs in year eight and averaging around 1,985 FTE jobs over the 25 operational years of the project. This represents an average 0.3% increase in employment above 2012/13 levels (704,981 FTE) for the 25 years of operation (EconSearch 2015).

Direct and indirect employment in Australia as a whole is expected to increase by almost 1,100 FTE jobs in year one, peaking at more than 2,388 FTE in year eight and averaging 2,228 FTE jobs over the 25 year period. This would represent an average 0.02% increase in national employment above 2012/13 levels (9,718,000 FTE) over the 25 years (EconSearch 2015).

Given that the CEIP operation phase will generate significant employment opportunities for more than three years at the local, regional, state and national level, this is considered to be **high benefit**.

### 21.5.3 Additional Benefits

The CEIP would provide substantial direct and indirect business opportunities for local, regional and State-wide businesses. Direct business opportunities would relate to the provision of goods and services to Iron Road employees and contractors and indirect flow-on effects generated in other sectors of the economy as a result of higher incomes levels and consumer spending in the region. This includes the provision of goods and services to LDC workers or incoming residents in local townships. This could benefit a range of business types from small to large, stimulate growth in the local and regional economy and contribute to the overall well-being of communities.

Business opportunities will change over the construction and operation phases of the project and are likely to include fuel supplies, communications, transport and logistics (including workforce transport), engineering and construction services (such as light earthworks, road maintenance), the supply of services, goods or consumables to camp and village accommodation, catering, training and the provision of materials.

Business opportunities will also potentially arise for other minerals explorers in the region who are likely to use proposed CEIP infrastructure to facilitate the development of their ore bodies. No quantification of this opportunity has occurred.

Approximately 26% of direct construction expenditure on the CEIP and 19% of direct operational expenditure would be spent in the Eyre Peninsula, with the greatest expenditure occurring in the Wudinna DC. During construction the greatest flow-on in terms of both GRP and employment generation would be in accommodation and food services and construction. During operations the greatest flow-on in terms of GRP and employment generated would be in the wholesale trade, accommodation and food services and retail trade industries.

Whilst the CEIP would result in some loss of agricultural/pastoral land (see Chapter 23 Land Use), the project represents an opportunity to diversify the economic base on the Eyre Peninsula, at the same time as maintaining the agricultural viability of the local economy.

The assessment of business opportunities shows the project would have a **high benefit**, given the long-term opportunities for local, regional and state businesses.

### Contribution to Growth in Training Opportunities

Iron Road is committed to ensuring, where possible, local and regional community member participation in the direct employment and supplier opportunities arising from the CEIP. To enable participation Iron Road will work collaboratively with government, education and training providers, and other relevant organisations, to train and up skill local and regional people to work on the project and to enhance business capacity among local and regional suppliers.

The assessment of training opportunities shows the CEIP would have a **high benefit**, given the long-term opportunities for people within the local and regional study areas.

### Potential Impacts to Workforce Availability for Existing Industries

The CEIP has the potential to increase competition for workers, attracting them from other sectors of the economy, including agriculture and fishing. Experiences in other rural areas suggests the mining industry can compete with other industries for employees and drive up wages that other industries may find difficult to match (Haslam McKenzie 2002, 2009; Lockie et al. 2009; Brasier et al. 2011; House of Representatives Standing Committee on Regional Australia 2013). This can also generate competition between industries for products and supplies.

The assessment of potential impacts to workforce availability for existing industries shows that the CEIP would have a **medium impact**, given that any impact would be long term (>3 years) but is likely to only affect individuals and businesses located within the local study area.



Plate 21-3 The Proposed CEIP Infrastructure will Bring Strong Benefit to the Local Community

## 21.5.4 Summary of Impacts

A summary of the EIA outcomes is provided in Table 21-13.

**Table 21-13 Summary of Impacts: Economic Assessment**

Impact Description	Impact Rating
<b>Construction</b>	
Direct and flow-on expenditure arising from CEIP leading to economic growth at a local, regional, state and national level.	High benefit
Direct and flow-on employment opportunities generated at the local, regional, state and national level.	High benefit
Direct contributions to local, state and national government revenue.	High benefit
<b>Operations</b>	
Direct and flow-on expenditure arising from CEIP leads to economic growth at a local, regional, state and national level.	High benefit
Direct and flow-on employment opportunities created at the local, regional, state and national level.	High benefit
Direct contributions to local, state and national government revenue.	High benefit
<b>Whole of project</b>	
Increased business development opportunities.	High benefit
Contribution to growth in training opportunities.	High benefit
Loss of agricultural land and potential production losses (refer to Chapter 22: Social Environment, for social impact assessment outcome)	Negligible impact
Increased labour competition for existing industries (refer to Chapter 22: Social Environment, for social impact assessment outcome)	Medium impact

## 21.6 Control and Management Strategies

Iron Road will implement control measures and management strategies to maximise the potential economic benefits and mitigate and reduce potential negative economic impacts. These strategies have been taken into account in the assessment and categorisation of benefits and impacts discussed in Section 21.5. The management strategies are outlined in Table 21-14. The strategies reflect Iron Road's commitment to maintaining and protecting the economic sustainability and viability of potentially affected communities.

**Table 21-14 Control and Management Strategies Economic Environment**

Control and Management Strategies	EM ID
<b>Construction</b>	
Develop an Australian Industry Participation Plan (AIP) that sets out Iron Road's strategy and intent for providing full, fair and reasonable opportunity to local, South Australian and Australian suppliers, manufacturers and contractors. The AIP will establish a specific local supplier policy to maximise benefits to local and regional industry.	EBS_C1
Work collaboratively with government, education and training providers and other relevant organisations to train and up skill local and regional people to work on the project and to enhance business capacity among local and regional suppliers, including: <ul style="list-style-type: none"> <li>Consult with Wudinna TAFE about vocational and pre- vocational training programs to enhance local skills and support local entry to the mining workforce</li> </ul>	EBS_C2

Control and Management Strategies	EM ID
<ul style="list-style-type: none"> <li>· Consider supporting vocational education and training programs at Port Lincoln and Wudinna to address skills requirements of relevance to the project</li> <li>· Implement a trainee and apprenticeship program as part of the project</li> <li>· Take part in programs targeting skills development and job placement for local Indigenous people (as per the Indigenous Land Use Agreement (ILUA)).</li> </ul>	
Work with business groups to identify local business opportunities, provide information on CEIP business opportunities, tendering and procurement processes and standards to facilitate the pre-qualification of local and regional businesses.	EBS_C3
Maintain the register of businesses with an interest in supplying goods and services to the project	EBS_C4
Identify contract packages that could potentially be let locally or regionally.	EBS_C5
Actively work with local and regional employment services and businesses to enhance opportunities and give preference to suitably qualified local and regional workers	EBS_C6
Work with the Industry Capability Network (ICN) South Australia, RDAWEP and other regional development organisations to promote the participation of local, regional and South Australian businesses in the project	EBS_C7
Work with other members of the Eyre Peninsula Mining Alliance to create long term business benefits to Eyre Peninsula communities	EBS_C8
Maintain the existing online data base/register of prospective employees	EBS_C10
Collaborate with the Eyre Peninsula Mining Alliance, the SA Chamber of Mines and Energy and other mining companies to provide information on careers in the Eyre Peninsula mining industry.	EBS_C11
Work with local and regional industry and associations to plan regional supply and employment requirements and identify opportunities to collaborate to minimise potential for supply and skills shortages.	EBS_C12
Continue discussions with directly affected landholders in relation to construction and operational activities, including land access, crossing points, fencing and strategies for dealing with potential impacts and opportunities during construction and operation phases.	LA_C8
<b>Operation</b>	
<p>Develop employment programs and strategies to facilitate the participation of local and regional employment in the CEIP, including:</p> <ul style="list-style-type: none"> <li>· Actively work with the local and regional employment services and businesses to enhance opportunities and give preference to suitably qualified local and regional workers</li> <li>· Provide family friendly work environments to facilitate women's entry into the mining workforce</li> <li>· Develop flexible work practices where possible to accommodate the potential for farmers to gain employment within the CEIP, such as job sharing.</li> <li>· Maintain the existing online data base/register of prospective employees.</li> </ul>	EBS_O1
<p>Continue to work collaboratively with government, education and training providers and other relevant organisations to train and up skill local and regional people to work on the project and to enhance business capacity among local and regional suppliers, including:</p> <ul style="list-style-type: none"> <li>· Consult with Wudinna TAFE about vocational and pre- vocational training programs to enhance local skills and support local entry to the mining workforce</li> <li>· Consider supporting vocational education and training programs at Port Lincoln and Wudinna to address skills requirements of relevance to the project</li> <li>· Implement a trainee and apprenticeship program as part of the project</li> <li>· Take part in programs targeting skills development and job placement for local Indigenous people (as per the ILUA).</li> </ul>	EBS_O2
Continue to implement the AIP developed for the CEIP to maximise opportunities for Australian and South Australian businesses to participate in the CEIP.	EBS_O3

Control and Management Strategies	EM ID
Continue to work with the ICN South Australia, RDAWEP and other regional development organisations to promote the participation of local, regional and South Australian businesses in the project	EBS_04
Continue to maintain the existing register of businesses with an interest in supplying goods and services to the project	EBS_05
Continue to collaborate with the Eyre Peninsula Mining Alliance, the SACOME and other mining companies to provide information on careers in the Eyre Peninsula mining industry	EBS_06
Continue to identify contract packages that could potentially be let locally or regionally	EBS_07
Work with other members of the Eyre Peninsula Mining Alliance to create long term business benefits to Eyre Peninsula communities.	EBS_08
Liaise with the South Australian Government's Resources Infrastructure Taskforce and the Eyre Peninsula Mining, Oil and Gas Community Development Taskforce to provide information on the CEIP, facilitate strategic planning and promote sustainable regional growth	EBS_09
Work with local and regional industry and associations to plan regional supply and employment requirements and identify opportunities to collaborate to minimise potential for supply and skills shortages.	EBS_010
As part of the ILUA between Iron Road and the Barngarla Aboriginal Corporation, a Liaison Committee will be formed to ensure that all employment opportunities and apprenticeships relating to the CEIP are noted on a register and available for both Barngarla or other indigenous people.	EBS_011
Where possible, provide third party access to infrastructure, including maintenance tracks and port facility to support existing regional industry.	EBS_012
Jointly investigate the export of grain via the proposed port (subject to necessary upgrades and regulatory approvals) under an MoU that has been signed with a global grain handling company.	EBS_013
Upon closure of the CEIP, existing CEIP Infrastructure will be left in place if it will benefit stakeholders. Prior to project completion and as part of the CEIP closure plan, Iron Road will work with stakeholders, including future land users, to have a coordinate approach to accessing infrastructure upon project completion.	EBS_014

## 21.7 Residual Risk Assessment

This section identifies and assesses economic risks to the local and regional communities that are not expected as part of the normal operation of the CEIP Infrastructure but could occur as a result of faults, failures and unplanned events. The risk assessment methodology is outlined in Chapter 9. Although the risks may or may not eventuate, the purpose of the risk assessment process was to identify control and management measures required to reduce the identified risks to a level that is as low as reasonably practicable and therefore acceptable. The management and mitigation measures identified are presented in Section 21.6 and form the basis of the economic management measures included in the Environmental Management Framework presented in Chapter 24.

### Increased Labour Competition for Existing Industries

The CEIP has the potential to increase competition for workers and increase competition for products and supplies in the short-term, beyond that predicted. Given the CEIP control and management strategies, this risk is considered possible, with a moderate consequence and therefore has a **risk rating of medium**.

### Summary of Residual Risk

The key economic risks associated with the project is presented in Table 21-15. Through the adoption of design modification or specific control and management measures, all identified risks are reduced to levels of medium, which is considered to be as low as reasonably practicable and therefore acceptable. These risks will be monitored through the CEIP Environmental Management Framework.

Table 21-15 Residual Risks

Risk Event	Cause	Residual Risk After Controls		
		Likelihood	Consequence	Residual Risk
Increased labour competition for existing industries (refer to Chapter 22: Social Environment, for social impact assessment outcome)	Skilled workers are attracted to the CEIP from other industries due to higher wages.	Possible	Moderate	Medium

## 21.8 Findings and Conclusion

The EIA has identified a range of potential economic impacts, both positive and negative, that would arise from the CEIP. Iron Road has undertaken design modifications and developed a range of management and control strategies to minimise potential adverse impacts and maximise potential benefits. Design modifications have been focused on maximising local employment, training and supplier opportunities and contributing to local economic growth (through such measures as enabling where possible third party access to infrastructure, encouraging the operational work force to live locally and ensuring that the CEIP footprint minimises disturbance to local enterprises).

The key findings and conclusions from the EIA of the CEIP suggest that a high level of economic growth and employment benefits would be generated, those being:

- The unavoidable loss of agricultural land required to facilitate mining of the State's resources identified by the CEIP will result in a combined mine, corridor and port permanent loss of approximately 7,050 ha of productive agricultural land, less than 0.2% of all productive land in the Eyre Peninsula NRM Region (DWLBC 2003) and thus a negligible impact to the overall agricultural industry.
- The projected revenue from the mine is the equivalent to farming the same area of land for between 6,000 and 30,000 years (range due to grain/livestock and iron price ranges).
- The assessment of contribution to economic activity found that the CEIP would generate significant direct and flow-on contributions to GRP, GSP and GNP.
- Increase of South Australia's GSP (NPV) by \$27.953 billion over the life of the CEIP and an increase the Eyre Peninsula's GRP (NPV) of \$1.097 billion of the life of the CEIP.
- Increase of South Australia's FTE employment numbers by 2,128 over the life of the CEIP and Eyre Peninsulas FTE employment numbers by 1,097 during the life of the CEIP.
- During construction the CEIP would contribute \$112 million annually to GRP, \$518 million annually to GSP, \$1.171 billion annually to GNP.
- During operations the CEIP would contribute \$2.431 billion annually to GRP, would contribute to an average annual increase to GSP of around \$2.725 billion and would generate an average annual increase to GNP of around \$2.823 billion.
- The assessment of employment opportunities found that the CEIP would generate new direct and flow-on employment opportunities at local, regional, state and national levels in the short and long term.

- During construction the CEIP would contribute to the creation of 1,458 FTE positions per annum across the Eyre Peninsula region, an average of 3,027 FTE positions per annum across South Australia as a whole and an average of 5,478 FTE positions per annum across the whole of Australia.
- During operations the CEIP would contribute 1,040 FTE positions per annum across the Eyre Peninsula region, an average of 1,985 FTE positions per annum across South Australia as a whole and an average of 2,228 FTE positions across Australia as a whole.
- The CEIP would contribute significant revenue to local, state and commonwealth government revenue during both construction and operations. During construction the CEIP is expected to contribute an average \$17.3 million annually to government revenue and during operations is expected to contribute an average \$663 million annually.
- The CEIP would generate significant direct and indirect business opportunities for local, regional and State-wide businesses, including the provision of goods and services to Iron Road employees and contractors and indirect flow-on effects generated in other sectors of the economy as a result of higher incomes levels and consumer spending in the region.
- Iron Road's commitment to local and regional workforce and supplier participation in the CEIP includes collaboration with government and education and training providers to increase training and education opportunities in the local and regional study areas.
- In addition to significant benefits the EIA has identified there may be potential impacts to existing industries as a result of competition for employees, products and services. This impact will be addressed through Iron Road design measures and control and management strategies.



This page has been left blank intentionally.