

A decorative graphic consisting of several overlapping, wavy lines in shades of blue and grey, with small orange dots at their ends, positioned below the Iron Road logo.

# CHAPTER 23

## ECONOMIC



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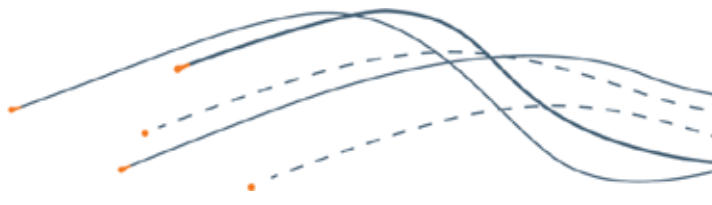
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## 23 Economic

The proposed activities to be undertaken on the proposed mining lease 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 Mining Lease Proposal (MLP) document, the economic impacts associated with the proposed CEIP Infrastructure have been included here given the inter-dependency with the CEIP Mine components, i.e. the impacts associated with the mine components do not occur unless those associated with the infrastructure also occur and vice versa. The CEIP refers to both the activities to be conducted within the proposed mining lease and the CEIP Infrastructure components. It is important to consider that this has resulted in a higher estimation of impacts and benefits than those predicted for the mine 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, 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 R.

The potential social impacts and benefits of the project are addressed separately in Chapter 22, Social. The regional, state and national level impacts are summarised in Table 23-1. 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 per cent over 2012/13 levels. The annual average state employment impact of 1,985 full-time equivalent (fte) jobs would add approximately 0.3 per cent to the state's employed labour force.

**Table 23-1 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 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 23-2. 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 23-2 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
<b>GRP (NPV, \$m)</b>	
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
South Australia	2,128
Eyre Peninsula	1,097
Wudinna	827
Kimba	11
Cleve	67
Tumby Bay	78
<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 Chapter due to different definitions and treatment for economic analysis  
\* Present values calculated using a discount rate of 6 per cent

### 23.1 Applicable Legislation and Standards

The relevant legislation in relation to the economic environment and the proposed mining lease is the *Mining Act 1971*. The *Australian Jobs Act 2013* (Commonwealth) 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 4: Statutory Framework.

## 23.2 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

### 23.2.1 Study Area

The EIA focuses on the areas that will be both directly and indirectly 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 23-1, 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 the 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 and where possible existing economic values and potential impacts are broken down to District Council (DC) level.

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
- Wudinna DC
- 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.

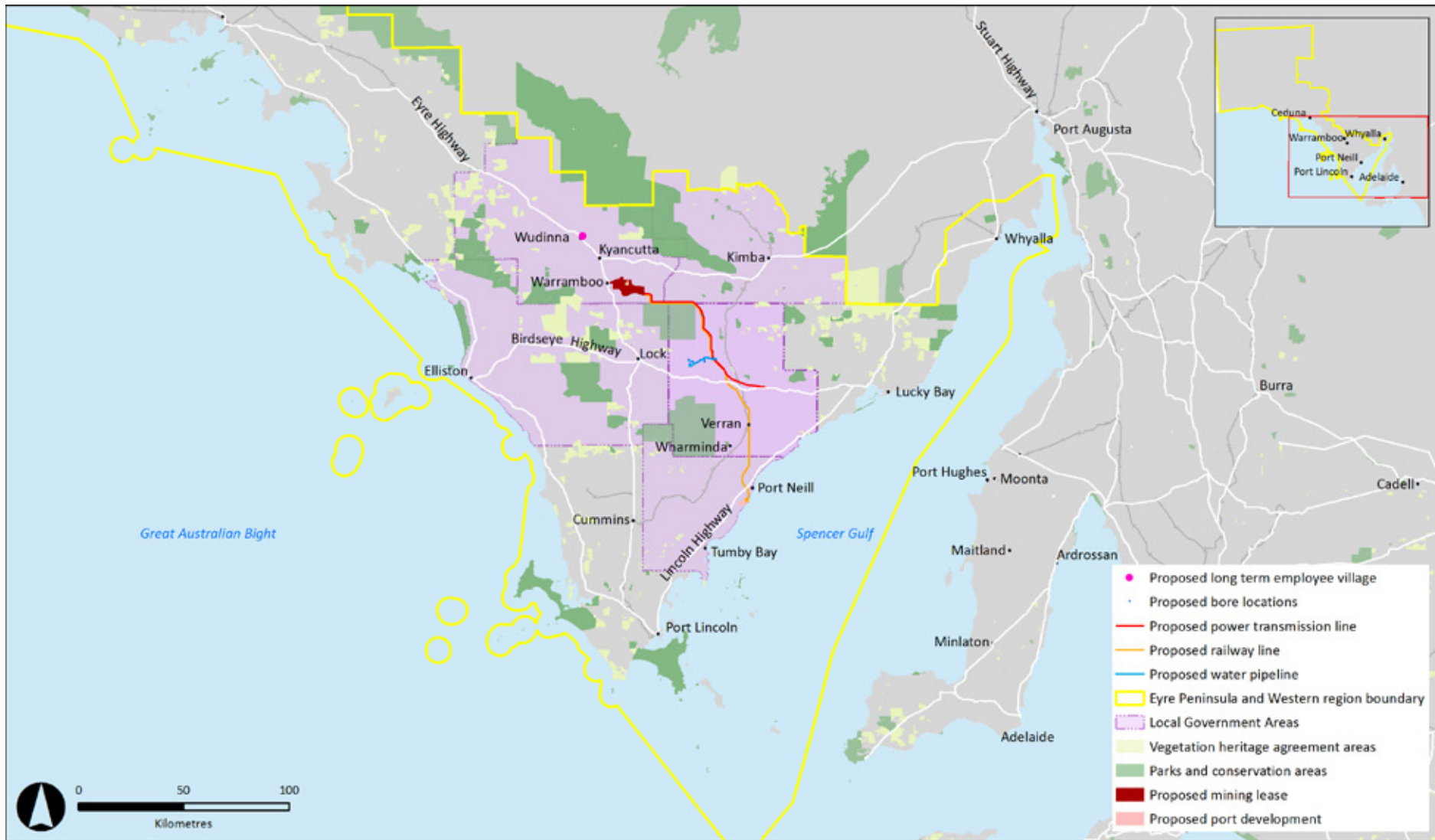


Figure 23-1 Local and Regional Study Areas



### 23.2.2 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

### 23.2.3 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 23-3.

#### *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 actually 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 ABS Categories. For the category 'agriculture, forestry 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 23-3 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 LDC workers, which will include both 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.

## 23.3 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 EIA (EconSearch 2015) for the CEIP presented in Appendix R.

### 23.3.1 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, was 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 23-1 Agriculture Currently Underpins the Local Economy on the Eyre Peninsula

### 23.3.2 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 23-4.

Table 23-4 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>
Wudinna	\$93 million	<ul style="list-style-type: none"> <li>• Agriculture and fishing (53 per cent)</li> <li>• Health care and social assistance (6 per cent)</li> <li>• Education and training (5 per cent)</li> <li>• Mining (5 per cent)</li> <li>• Wholesale trade (5 per cent)</li> </ul>	711	<ul style="list-style-type: none"> <li>• Agriculture and fishing (41 per cent)</li> <li>• Health care and social assistance (11 per cent)</li> <li>• Education and training (9 per cent)</li> <li>• Retail trade (6 per cent)</li> <li>• Wholesale trade (6 per cent)</li> </ul>

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

### Eyre Peninsula

The Eyre Peninsula has a resident population of approximately 56,346 people (Bowey and Associates 2015) with an estimated 65% of residents living in the LGAs of Whyalla and Port Lincoln (RDWEP 2014). The region is served by a number of regional centres including Port Lincoln, Whyalla and Ceduna which, in addition to other towns and settlements, may provide a source of workers, goods or services for the CEIP.

GRP in the Eyre Peninsula region in 2012/2013 was estimated to be \$3.5 billion, comprised of \$3.3 billion in total value added and \$0.2 billion in net taxes. Economic activity in the region is dominated by the agriculture and fishing, mining and manufacturing industries.

Agriculture and fishing, manufacturing and health care and social assistance are the largest contributors to the 25,057 FTE jobs in the region.

### Wudinna District Council

The 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 are also undertaken. The town of Warrambo 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 FTE jobs 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 people 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 contributor of employment with 604 FTE jobs 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 jobs in Tumby Bay in 2012/2013 (approximately 41%).

#### **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, also contributed to the greatest proportion (42%) of the 941 FTE jobs in Cleve in 2012/2013.

### **23.3.3 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 Wudinna DC 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.



## 23.4 Context and Views of Affected Parties

Stakeholders relevant to economic values include local landowners and community members, Aboriginal groups, local government, local industry and business, local community groups, regional and South Australian industry and community and the South Australian and Australian governments. Stakeholders are seeking the following outcomes relevant to economic values:

- Local community members are able to access employment opportunities arising from the CEIP
- Increased local and regional employment and income generation opportunities
- Increased local and regional training opportunities
- Growth in local and regional procurement and business opportunities arising from the CEIP
- Where possible, third party access to CEIP related infrastructure and infrastructure upgrades (e.g. rail, transmission infrastructure and port)
- Recognise and protect the importance of agricultural production to the local and regional economy
- Maintain availability of employees and suppliers for existing industries (particularly agriculture and fishing)

Impacts and risks relating to the existing economic values and the issues identified by relevant stakeholders are discussed in Section 23.7 below.

All issues raised by stakeholders across the entire project are presented in Chapter 5 and summarised in Table 5-8. Impacts and risks relevant to each of the existing environmental values associated with economic values and potential issues identified by stakeholders are discussed below and summarised in Table 23-14.

## 23.5 Potentially Impacting Events

The standard Source Pathway Receptor (SPR) assessment method is not appropriate when considering the economic aspects due to the fact that there are multiple indirect sources and pathways which are beyond the control of Iron Road. As such, no potential impact events are considered applicable unless a potential social outcome has been identified. These social impacts and risks have been addressed within the Social chapter.

## 23.6 Control Measures to Protect Environmental Values

This section identifies design measures and management or control strategies which will be implemented to mitigate the level of impact and risk associated with economic changes, such that they are considered as low as reasonably practicable.

### 23.6.1 Design Measures

The key design measures that have been implemented to maintain and protect the existing economic values and increase future economic benefits as a result of the proposed mine are:

- Minimise the CEIP footprint to reduce the impact on the existing agricultural land use
- Facilitate continued agricultural production on land within the proposed mining lease for as long as possible where this does not compromise mining and associated activities
- Design the mine 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.

### 23.6.2 Management Strategies and Commitments

To maximise the potential benefits and minimise and mitigate impacts to economic values during construction, operation and closure activities, control and management strategies would be incorporated into the PEPR and implemented for relevant project phases. Key control and management strategies are outlined below in Table 23-5.

Table 23-5 Control and Management Strategies: Economic Values

Control and Management Strategies	Project Phase <sup>1</sup>
<b>Economic activity</b>	
<ul style="list-style-type: none"> <li>• Developing 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.</li> <li>• Actively work with local and regional employment services and businesses to enhance opportunities and give preference to suitably qualified local and regional workers</li> <li>• 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</li> <li>• Maintain the existing register of businesses with an interest in supplying goods and services to the project</li> <li>• Work with other members of the Eyre Peninsula Mining Alliance to create long term business benefits to Eyre Peninsula communities</li> <li>• Where possible providing third party access to mine-initiated infrastructure, including maintenance tracks and the port facility to support existing regional industry.</li> <li>• A Memorandum of Understanding (MOU) has been entered into with a global grain handling organisation. This MOU provides for both parties to jointly investigate the export of grain via the proposed port (subject to necessary upgrades and regulatory approvals) and may provide an alternate export pathway for agriculture on the central Eyre Peninsula</li> <li>• Provide opportunities for post-mining beneficial land uses</li> </ul>	CO, OP, CL
<b>Employment activities</b>	
<ul style="list-style-type: none"> <li>• Develop employment programs and strategies to facilitate the participation of local and regional employment in the CEIP. These employment programs will be developed as part of an AIP and therefore will be consistent with the AIP requirements</li> <li>• As part of the Indigenous Land Use Agreement (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 to apply for</li> <li>• Develop flexible work practices where possible (e.g. job sharing, part-time) to accommodate farm work, including peak agricultural periods such as harvesting and other seasonal business activities</li> <li>• Provide family friendly work environments to facilitate diversity (particularly gender diversity) into the mining workforce</li> <li>• Maintain the existing online data base/register of prospective employees</li> <li>• 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</li> </ul>	CO, OP, CL



Control and Management Strategies	Project Phase <sup>1</sup>
<b>Training opportunities</b>	
<ul style="list-style-type: none"> <li>• 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</li> <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>• Implement a trainee and apprenticeship program as part of the project</li> </ul>	CO, OP, CL
<b>Skills shortages</b>	
<ul style="list-style-type: none"> <li>• Work with local and regional industry (including agriculture and fishing) and relevant associations to plan regional supply and employment requirements and identify opportunities to collaborate to minimise potential for supply and skills shortages</li> </ul>	CO, OP, CL

<sup>1</sup>CO = Construction, OP = Operation, CL = Closure

## 23.7 Impact and Risk Assessment

This section identifies and assesses impact and risk associated with economic values as a result of the construction, operation and closure of the proposed mine.

Whilst the standard SPR assessment method is not appropriate when considering the economic aspects, impact and risks have been identified. Where a potential social outcome has been identified these have been discussed in detail within the Social chapter.

Impact events are those predicted to occur as a result of the development, whilst risk events would not be expected as part of the normal operation of the project, but could occur as a result of uncertainty in the impact assessment process. Although the risks may or may not eventuate, the purpose of the risk assessment process is to identify management and mitigation measures required to reduce the identified risks to a level that is as low as reasonably practicable.

Impact and risk events were identified through technical studies and stakeholder consultation. A summary of impact and risk events relating to economic values is presented in Table 23-14 at the end of this section.

Impacts and risks are assessed following the application of the design measures outlined in Section 23.6. Where required, management measures are proposed to reduce the impact to a level that is considered as low as reasonably practicable.

Impacts to economic values will occur during construction, operation and closure of the proposed mine. 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 into the following areas:

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

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:

- 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 chapter. The key environmental impacts and risks would be monitored and managed through the social section of the PEPR.

### 23.7.1 Impact Assessment

A summary of the economic impacts and benefits in construction and operations can be found in Table 23-6 below.

**Table 23-6 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>		
<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>		

### 23.7.2 Construction

Iron Road will spend an estimated total of \$4.8 billion during construction of the CEIP. The approximate breakdown of area where spend will occur across study areas is outlined in Table 23-7.

**Table 23-7 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%

Area	Percentage of spend
<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 District Councils. Consistent with distribution of spend during construction, Wudinna DC, DC of Tumby Bay and DC of 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.

Anticipated direct and flow-on contributions to GRP across the DCs within the local study area over the four year construction period are outlined in Table 23-8.

**Table 23-8 CEIP Contribution to GDP / GSP and GRP (Value and %) (EconSearch 2015)**

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>
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, equating 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 is 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 DC 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 23-9.

**Table 23-9 Predicted Employment Resulting from CEIP at a Regional and Local Study Area (Number and %) (EconSearch 2015)**

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) the 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 2015).

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**

The permanent loss of productive land will occur in areas unable to be rehabilitated, such as the open pit. Some areas within the proposed mining lease not required by Iron Road may be made available to local farmers for cropping and/or grazing and will support the continued operation of land in accordance with established land management practices.

Combined, the proposed CEIP 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. This is comparable 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 Chapter 22: Social.

### **23.7.3 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 23-10.

Table 23-10 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 23-11.

Table 23-11 Predicted Contribution to GRP in Local Study Area (EconSearch 2015)

DC	Average Annual Contribution to Value Added	% Increase in GRP
Wudinna	\$59 million (figure excludes direct profits)	63%
Kimba	\$2 million per annum	2%
Cleve	\$4 million per annum	3%
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 23-8.

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 going to local government, an average annual contribution of \$165.8 million per annum going to State Government and an average annual contribution of \$469 million going 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 23-12 demonstrates the jobs (direct and flow-on) generated by the CEIP across the local study area.

**Table 23-12 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 would represent 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 almost 1,100 FTE in year 1, 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 operational 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**.





Plate 23-2 The CEIP will Bring Strong Benefit to the Local Community

#### 23.7.4 Additional Impacts and Benefits

##### Increased Business Development Opportunities

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 land (see Chapter 21 Land Use and Tenure), 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.

### Increased Labour Competition 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.

## 23.7.5 Summary of Impacts

A summary of the EIA outcomes is provided in Table 23-13.

Table 23-13 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>Additional benefits and impacts</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, for social impact assessment outcome)	Negligible impact

Impact Description	Impact Rating
Increased labour competition for existing industries (refer to Chapter 22: Social, for social impact assessment outcome)	Medium impact

### 23.7.6 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 Mine but could occur as a result of faults, failures and unplanned events. The risk assessment methodology is outlined in Chapter 6. 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.

#### 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**.

### 23.7.7 Summary of Impacts and Risks

With the implementation of design and management measures, all residual impacts have been categorised as medium. Similarly, all risks have been reduced to a level of medium. The impacts and risks were considered to be ALARP and do not warrant specific control measures, other than standard environmental management controls. A summary of each of the identified impacts and risks associated with visual amenity at the proposed mining lease are presented in Table 23-14.

Table 23-14 Impact and Risk Summary

Impact Event	Level of Impact <sup>1</sup>	Level of Risk <sup>2</sup>
Direct and flow-on expenditure arising from the 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	-
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, for social impact assessment outcome)	Negligible	-
Increased labour competition for existing industries (refer to Chapter 22: Social, for social impact assessment outcome)	Medium	Medium

<sup>1</sup> Impact events are expected to occur are part of the project. Level of impact is assessed post control strategies, as per the impact assessment methodology provided in Chapter 6.

<sup>2</sup> Level of risk reflects the risk that the assessment of impact is incorrect due to uncertainties in the assessment method, the control strategies, or in assumptions uses. Risk is assessed post control strategies, as per the risk assessment methodology provided in Chapter 6.

### Justification and Acceptance of Residual Impact and Risk

With the implementation of design and operational management measures, all impacts associated with economic values are considered to be **medium or less**. Similarly, all risks have been reduced to a level of **medium**. The impacts and risks are considered to be as low as reasonably practicable.

### 23.8 Proposed Outcome(s)

No economic outcomes are proposed for the CEIP. Where the identified economic impact or risk has a social outcome, these have been detailed in Chapter 22: Social.

### 23.9 Findings and Conclusion

The EIA has identified a range of potential economic impacts, both positive and negative, which are anticipated if the proposed CEIP is developed and operated. Design measures included in the proposed CEIP aim to enhance the positive benefits and reduce the negative economic impacts where practicable. Iron Road has undertaken design modifications to minimise the project footprint and will facilitate ongoing agriculture within the proposed mining lease for as long as practicable.

Management and control strategies have been focused on maximising local employment, training and supplier opportunities and contributing to local economic growth.

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, as outlined below:

- 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).
- 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 the 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
- During construction the CEIP would contribute to the creation of 1,458 FTE jobs per annum across the Eyre Peninsula region, would contribute to an average of 3,027 FTE jobs per annum across South Australia as a whole and would contribute an average of 5,478 FTE jobs per annum across the whole of Australia.
- During operations the CEIP would contribute 1,040 FTE jobs per annum across the Eyre Peninsula region, would contribute an average 1,985 FTE jobs per annum across South Australia as a whole and would contribute an average of 2,228 FTE jobs across Australia as a whole
- The CEIP would contribute significant revenue to local, state and commonwealth government revenue during both construction and operations. For the life of the mine, CEIP is expected to contribute \$5 million to local government (rates and natural resource levy), \$1.5 billion to the State Government (royalties, stamp duty and payroll tax) and \$4.4 billion to the Australian Government (company and income tax).



- 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.