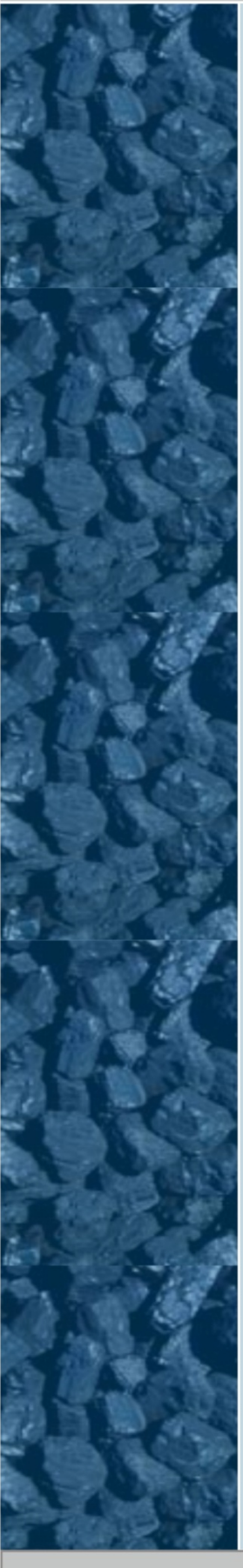
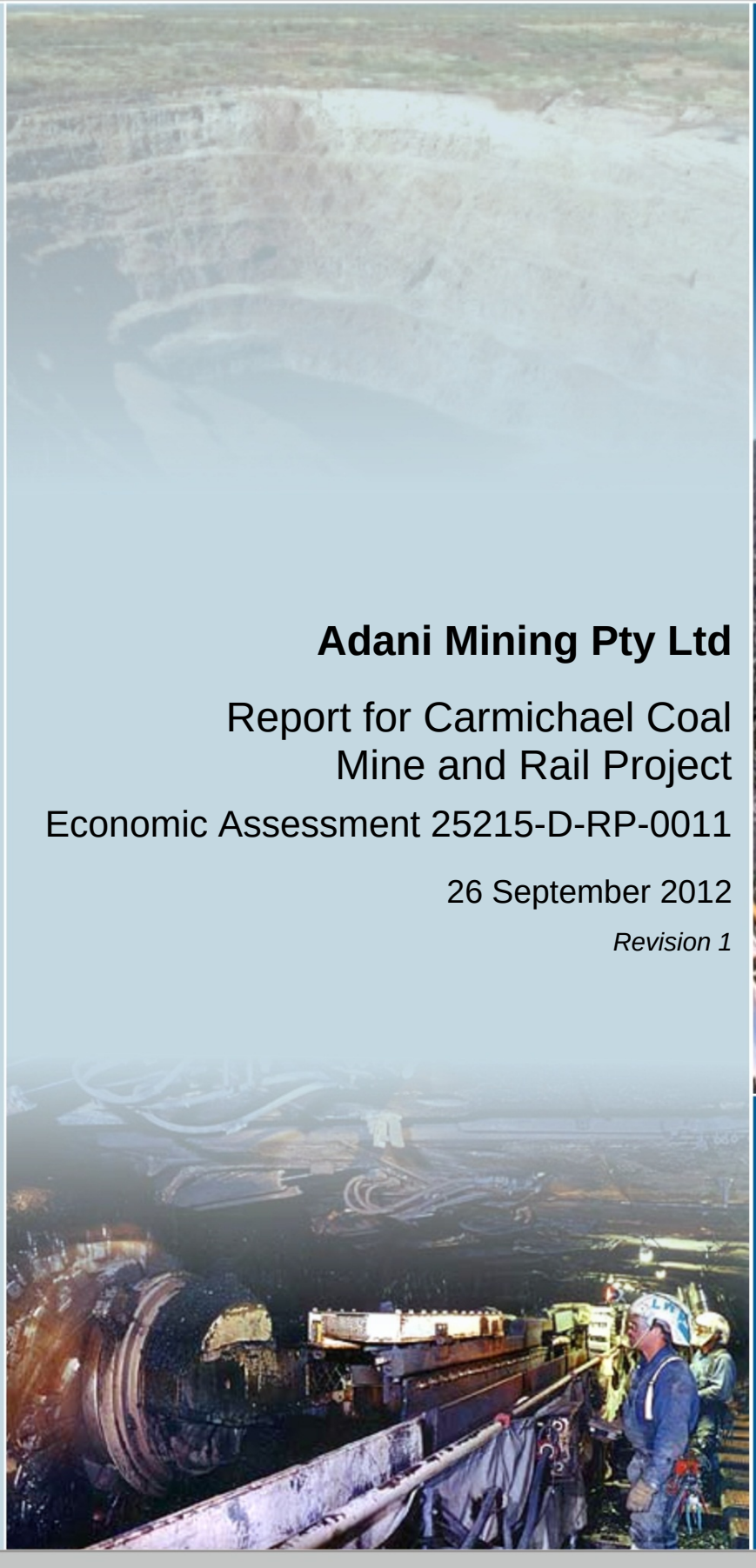
Adani Mining Pty Ltd





Adani Mining Pty Ltd

Report for Carmichael Coal Mine and Rail Project

Economic Assessment 25215-D-RP-0011

26 September 2012

Revision 1

This Carmichael Coal Mine and Rail Project: Economic Assessment (the Report) has been prepared by GHD Pty Ltd (GHD) on behalf of and for Adani Mining Pty Ltd (Adani) in accordance with an agreement between GHD and Adani.

The Report may only be used and relied on by Adani for the purpose of informing environmental assessments and planning approvals for the proposed Carmichael Coal Mine and Rail Project (Purpose) and may not be used by, or relied on by any person other than Adani.

The services undertaken by GHD in connection with preparing the Report were limited to those specifically detailed in Section 1.3 of the Report.

The Report is based on conditions encountered and information reviewed, including assumptions made by GHD, at the time of preparing the Report.

To the maximum extent permitted by law GHD expressly disclaims responsibility for or liability arising from:
• any error in, or omission in connection with assumptions, or
• reliance on the Report by a third party, or use of this Report other than for the Purpose.

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Abbreviations and Glossary

Project Specific Terminology	
Abbreviation	**Term**
the EIS	Carmichael Coal Mine and Rail Project Environmental Impact Statement - refers to the particular document that GHD is preparing to facilitate approval of the Project
the Proponent	Adani Mining Pty Ltd
the Project (Mine)	Carmichael Coal Mine and Rail Project: Mine Component
the Project (Rail)	Carmichael Coal Mine and Rail Project: Rail Component

Generic Terminology	
Abbreviation	**Term**
ABS	Australian Bureau of Statistics
Capex	Capital expenditure
fte	Full time equivalent
GFC	Global financial crisis
GNP	Gross National Product
GRP	Gross Regional Product
GSP	Gross State Product
I/O	Input – output analysis
LGA	local government authorities
Mtpa	million tonne (product) per annum
Opex	Operating expenditure
SLA	statistical local areas

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Executive Summary

Adani Mining Pty Ltd (Adani) is proposing to develop a 60 million tonne (product) per annum (Mtpa) thermal coal mine in the north Galilee Basin approximately 160 kilometres (km) north-west of the town of Clermont, Central Queensland. All coal will be railed via a privately owned rail line connecting to the existing QR National rail infrastructure at Moranbah, and shipped through coal terminal facilities at the Port of Abbot Point and the Port of Hay Point (Dudgeon Point expansion). The Carmichael Coal Mine and Rail Project (the Project) will have an operating life of approximately 90 years.

The Carmichael Coal Mine and Rail Project (the Project) comprises of two major components:

- The Project (Mine): a greenfield coal mine over EPC1690 and part of EPC1080, which includes both open cut and underground mining, on mine infrastructure and associated mine processing facilities (the Mine) and offsite infrastructure.
- The Project (Rail): a greenfield rail line connecting the Mine to the existing Goonyella rail system to provide for export of coal via the Port of Abbot Point and/or the Port of Hay Point (Dudgeon Point expansion).

The economic assessment addresses Section 5.1 of the Project Terms of Reference and deals with the whole Project.

The economic assessment has been developed based on the conduct of an input output analysis (I/O) which provides a numerical picture of the size and shape of the economy and an estimation of the relative contribution of a specific sector to the affected economy. The model for this specific economic assessment was then extended beyond the basic I/O model, to a demographic-economic model. This enables the additional analysis of how local population levels will respond to employment growth or decline. The addition of an unemployment sector allows a preliminary estimate to be generated for the consumption induced impact from the growth or decline in unemployment.

The baseline economic overview provides an indication of the current economic activities within the Project Study Area. Data clearly indicates that mining activities already dominate industry within the Project region, with 83 per cent of the regions GRP generated by mining. Recent trends indicate that mining has consistently grown within the region, not being impacted by the global financial crisis, unlike other industries such as the construction and retail sectors. It is reasonable to assume that this consistent increase in output will remain whilst mining activities are continuing within the region.

Employment within the region is also dominated by the mining industry with an increase of mining employees to over 92 per cent between the 2001 and 2006 census. The proportion of employees engaged within the mining industry is vastly greater than the average for Queensland as a whole. Industries that provide support services to coal production such as construction and public administration and safety are seeing increases in employment. The continued and uninterrupted growth in the mining industry is the main contributor to the lower levels of unemployment seen in the region in comparison to the State average and the 42 per cent growth in average household weekly income seen between 2001 and 2006.

The I/O results identify the distribution of the impacts of the Project on the local and regional economies. It outlines the impacts on the local, regional and State economies, which are mostly positive. The remaining positive impacts will be felt nationally throughout Australia but more often

overseas. In order to ensure the local and State economies reap the maximum possible benefits from the development strategies, policies and legislative measures are in place to ensure these economies retain as many of the benefits as possible. Distributional effects may also be felt at the micro level within the community. The Indigenous or disabled community benefit from strategies such as the Queensland government's Indigenous Employment and Training Strategy.

Construction of the Project (Mine) is expected to generate on average over the construction years $78.2 million per annum in direct and indirect benefits on the Mackay region's GRP, a considerable proportion of which will be direct benefits such as purchase of local materials or services. For the State as a whole, positive impacts on average over the construction period are estimated to be $203 million per year. The construction phase also provides considerable benefits to household income and employment. On average, construction will generate an additional 378 full time equivalent (fte) jobs per year within the Mackay region and 1,192 full time equivalent jobs for Queensland.

The operational phase of the Project (Mine) sees benefits that increase in line with production rates of coal. At the point of full production (60 Mtpa) total positive benefits on GRP, for that year, in the Mackay region reach an estimated total of $3,795 million and at a State level $4,170 million. Positive impacts on household incomes within the region will total $372.2 million and State wide $573.5 million. Employment levels locally will see an increase in fte of 4,093 and State wide 6,789.

Construction of the rail infrastructure is expected to generate on average over the construction years $145 million per annum in direct and indirect impacts on the Mackay region's GRP. For the State as whole positive impacts on average over the construction period is estimated to be $229 million per year. The construction phase also provides considerable benefits to household income and employment. On average construction will generate an additional 1,451 full time equivalent jobs within the Mackay region and 2,481 full time equivalent jobs for Queensland. Benefits during the construction period will be felt most vigorously during years one and two.

The operational phase of the Project (Rail) sees impacts that increase in line with production rates of the Mine. At the point of full production (60 Mtpa) total impacts per year on GRP, for that year, in the Mackay region reach an estimated total of $176.6 million and at a State level $274.1 million. Benefits to household incomes within the region will total $107.2 million and State wide $157.9 million. Employment levels locally will see an increase in fte of 1,215 and State wide 2,025.

1. Introduction

1.1 Project Overview

Adani Mining Pty Ltd (Adani) is proposing to develop a 60 million tonne (product) per annum (Mtpa) thermal coal mine in the north Galilee Basin approximately 160 kilometres (km) north-west of the town of Clermont, Central Queensland. All coal will be railed via a privately owned rail line connecting to the existing QR National rail infrastructure, and shipped through coal terminal facilities at the Port of Abbot Point and the Port of Hay Point (Dudgeon Point expansion). The Carmichael Coal Mine and Rail Project (the Project) will have an operating life of approximately 90 years.

The Project comprises of two major components:

- The Project (Mine): a greenfield coal mine over EPC1690 and the eastern portion of EPC1080, which includes both open cut and underground mining, on mine infrastructure and associated mine processing facilities (the Mine) and the Mine (offsite) infrastructure including:
  - A workers accommodation village and associated facilities
  - A permanent airport site
  - Water supply infrastructure
- The Project (Rail): a greenfield rail line connecting the Mine to the existing Goonyella and Newlands rail systems to provide for the export of coal via the Port of Hay Point (Dudgeon Point expansion) and the Port of Abbot Point, respectively; including:
  - Rail (west): a 120 km dual gauge portion from the Mine site running west to east to Diamond Creek
  - Rail (east): a 69 km narrow gauge portion running east from Diamond Creek connecting to the Goonyella rail system south of Moranbah

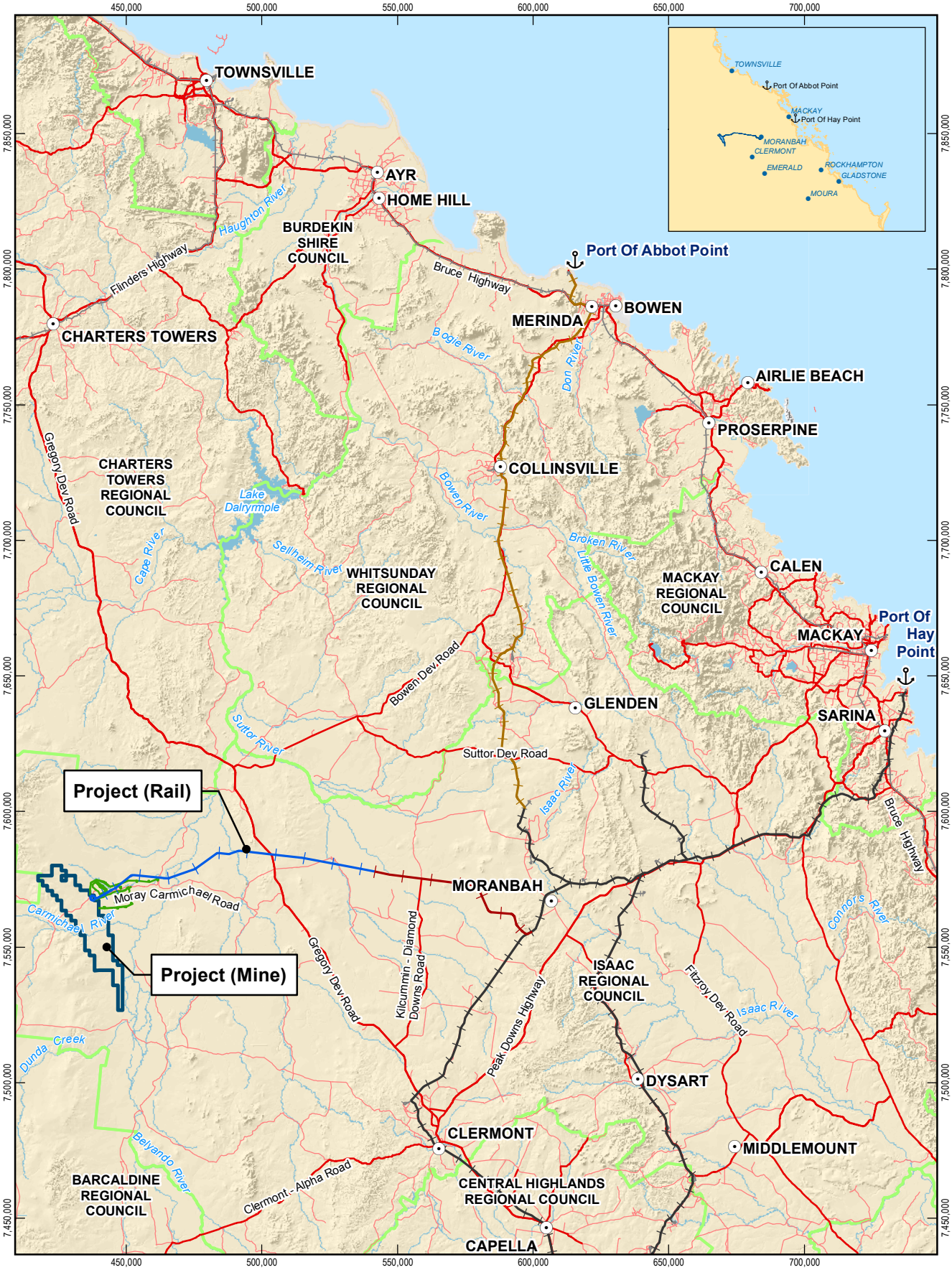
The Project has been declared a 'significant project' under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and as such, an Environmental Impact Statement (EIS) is required for the Project. The Project is also a 'controlled action' and requires assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Project EIS has been developed with the objective of identifying, avoiding or mitigating all potential adverse impacts to environmental, social and economic values and enhancing positive impacts. Detailed descriptions of the Project are provided in Volume 2 Section 2 Project Description (Mine) and Volume 3 Section 2 Project Description (Rail).

Figure 1-1 shows the Project location.

1.2 Study Area

Figure 1-1 shows the Study Area, which is formed by the local government areas and regions likely to be influenced by the Project, principally comprises, Isaac, Mackay and Whitsunday.



LEGEND

- Town
- Major Port
- Other Rail Network
- Goonyella System
- Newlands System
- State Road
- Local Road
- Watercourse
- Local Government Area
- Project (Rail)
- Rail (West)
- Rail (East)
- Project (Mine)
- Mine (Offsite)

1:2,000,000 (at A4)

0 10 20 30 40 50

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55

N

Adani Mining Pty Ltd

Carmichael Coal Mine and Rail Project

Job Number 41-25215
Revision L
Date 28-08-2012

Project Location

Figure: 1-1

Level 4, 201 Charlotte St Brisbane QLD 4000 T +61 7 3316 3000 F +61 7 3316 3333 E bnemail@ghd.com W www.ghd.com

Data Source: © Commonwealth of Australia (Geoscience Australia): Town, Railways, Watercourses (2007); DERM: LGA, (2011), Hillshade (2009); DMR: State Roads (2008); Gassman/Hyder: Mine (Offsite) (2012); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012). Created by: BW, JVC

1.3 Report Scope

The economic assessment covers the Project (Mine) and Project (Rail). This report:

- Provides a snapshot of the demographic characteristics of the region
- Identifies trends in economic indicators, such a gross regional product, industry structure and sector drivers such as construction, mining and tourism
- Outlines other economic indicators such as building approvals and wages
- Outlines employment and unemployment trends in the region
- Outlines estimates of the scale of the Project's economic impact on the Queensland economy

Table 1-1 provides a cross-reference to the relevant sections of the Project Terms of Reference addressed herein; see Appendix A for a detailed breakdown.

Table 1-1 Terms of Reference Cross Reference

Terms of Reference Requirement/Section Number	Section of this report
5.1.1 Describe the existing economy in which the Project is located and the economies materially impacted by the project	Section 1.2, 2.4, and 3.3.3.5. Figure 1-1
With regard to the region's key industries and factor prices, provide information on: ◗ Current input costs (wage rates, building costs, housing rent etc.) ◗ Land values in the region by type of use.	Section 2.4.9, 2.3.10, 2.5.3 and 2.4.11
5.1.2 The potential impacts should consider local, regional, state and national perspectives as appropriate to the scale of the project.	
◗ Describe both the potential and direct economic impacts	Section 3.2
◗ The distributional effects of the proposal including proposals to mitigate any negative impacts	Section 3.4.3
The assessment of economic impacts should outline strategies for local participation:	Section 3.5.2
Identify and discuss strategies responding to relevant government policy.	Section 3.5.2
Address the current and future management processes for adjacent properties that are likely to be impacted by the project during construction and/or operation.	Section 3.2.3.6 and 3.3.3.6 and Section 3.4.3

1.4 Methodology

1.4.1 Model Extent

The economic assessment is largely based on the input-output (I/O) method of impact determination. Table 1-2 identifies the relevant local government authorities (LGA) and statistical local areas (SLA) utilised for the modelling.

Table 1-2 Local Government Areas and Statistical Local Areas

LGA	SLA
Isaac	Isaac – Belyando
	Isaac – Broadsound
	Isaac – Nebo
Mackay	Mackay – Mackay – Pt A
	Mackay – Mackay – Pt B
	Mackay – Mirani
	Mackay – Sarina
Whitsunday	Whitsunday – Bowen
	Whitsunday – Whitsunday

1.4.2 Data Sources

Data used for the baseline economic overview has predominantly been gathered from publicly available sources and includes:

- Queensland Government's Office of Economic and Statistical Research (OESR)
- Australian Bureau of Statistics (ABS)
- The Local Government Authority for Isaac
- Regional Economic Development Corporation (Mackay, Whitsunday and Isaac)

1.4.3 Input Output Analysis

The input output analysis (I/O) analysis is able to provide two types of information:

- A numerical picture of the size and shape of the economy: this describes the important features of the economy, the interrelationships between different sectors within the affected economy and their relative importance.
- An estimation of the relative contribution of a specific sector to the affected economy: this provides the multiplier numeric relative to the scale of the Project, which is utilised to develop the approximation of the potential economic impacts scaled from the initial estimation.

The economic assessment for the development of the Project has a range of economic impacts for both the local region (Mackay) and the wider State economy (Queensland). The assessment required the use of data from a number of data sources such as:

- Australian Bureau of Statistics (ABS)
- 2006 Census of Population and Housing
- 2006 Agricultural Census and AgStats data for 2008/0
- 2003/04 Household Expenditure Survey
- 2009/10 Australian National Accounts, State Accounts
- Regional Population Growth, Australia and New Zealand
- Department of Employment and Workplace
- Australian Taxation Office

The model for this specific economic assessment was then extended beyond the basic I/O model, to a demographic-economic model. This enabled the additional analysis of how local population levels will respond to employment growth or decline. The addition of an unemployment sector allows a preliminary estimate to be generated for the consumption induced impact from the growth or decline in unemployment.

The economic impact assessment estimates the expected impact on the affected economies. The employment numbers provided in Section 3 outline the additional employment within those economies as a result of the Project. These numbers have been determined using an assumption that a certain per cent of labour will be sourced from the local or State economy. In addition, as outlined in the report, these impacts will only occur if every effort is made to procure labour from within these economies – which will largely depend on the mitigation strategies, outlined in Section 3.4.3.

This specific model for the Project also provides a profile of sales of goods and services to visitors to the region, i.e. expenditure by tourists. Such data was sourced from Tourism Research Australia (2010) and the ABS. Once amalgamated, the model produced impacts for 66 different sectors within the affected economies. Using such an approach to estimate the expected impacts also requires a number of assumptions such as:

- Price changes between the model construction year and the base year of analysis, i.e. the model base year was 2008/09, due to available data, however the base year for the analysis in this assessment was 2013. Growth rates of one per cent per annum were incorporated into the modelling to allow for increases in productivity in all sectors. Table 1-3 identifies the household incomes, GRP and employment for the model base year of 2008/09.
- In the creation of new jobs by the Project it is assumed that a certain proportion of jobs, unless otherwise stated, will be filled by individuals from the local or regional areas. This assessment has used the assumption that 60 per cent of employees will be sourced from the local and regional economies and 90 per cent will be sourced from the State of Queensland as a whole.
- Industries incorporated into the model have a linear production function, which assumes that industries have fixed input proportions.

- Firms within industry sectors are homogeneous. They produce a fixed set of products that are not produced by any other firms and their input structures are all the same.
- The model does not account for permanent changes that may occur in the management of natural resources for example due to legislative requirements.

Table 1-3 Household Income, Employment and GRP, Mackay Region*, 2008/09

Sectors	Household Income		Gross Regional Product		Employment	
	$ million	%	$ million	%	fte	%
Agriculture, Forestry and Fishing	195	5	833	8	3,201	7
Mining	1,006	28	4,965	46	8,750	18
Manufacturing	243	7	410	4	3,999	8
Utilities	37	1	92	1	393	1
Building and Construction	339	9	455	4	4,117	8
Trade	436	12	602	6	8,462	17
Accommodation, Restaurants and Cafes	185	5	278	3	3,360	7
Transport	201	6	483	4	2,850	6
Communication	30	1	68	1	267	1
Finance	86	2	198	2	704	1
Ownership of Dwellings	0	0	757	7	0	0
Business Services	289	8	436	4	3,238	7
Public Administration	124	3	154	1	1,308	3
Education	159	4	166	2	2,958	6
Health	201	6	221	2	3,479	7
Recreational Services	12	0	18	0	448	1
Personal Services	64	2	79	1	1,157	2
Total	**3,608**	**100**	**10,793**	**100**	**48,692**	**100**

Source: ABS (2006, 2010a)
* Mackay LGA

2. Baseline Economic Overview

2.1 Introduction

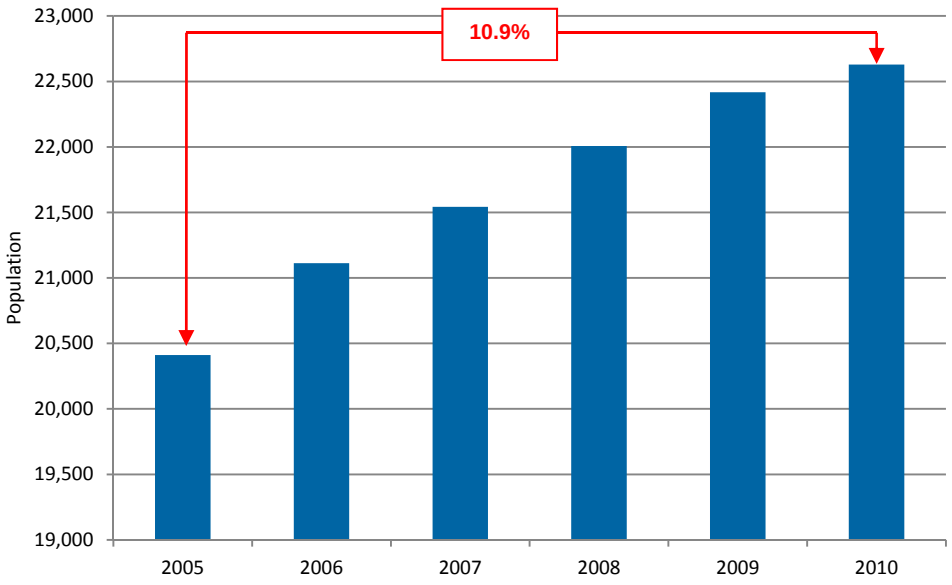
The baseline economic overview provides a description of the affected local and regional economies that will be either positively or negatively impacted by the construction and on-going operation of the Project. The economic overview provides data on the composition, growth and level of the existing economic activity within the region. It aims to provide a baseline against which impacts of the mine and associated infrastructure development is measured.

The Project (Mine) is located predominantly within the Local Government Authority (LGA) of Isaac. A small part of the north-western corner of the Project (Mine) is located Charters Towers LGA. Access to the Project is generally not directly available from the Charters Towers LGA, due to the road network configuration. The Project (Rail) is located wholly within the Isaac LGA. The access to and therefore influence of the Project will be to the east; as such, the baseline economic overview considers inputs, outputs and impacts within the region, being the Isaac LGA and broader Mackay region.

2.2 Regional Characteristics

The Isaac LGA covers an area of 58,869 square kilometres (km^2), accounting for 3.4 per cent of the State of Queensland. This region has an estimated population of 22,629 (2010), accounting for 0.5 per cent of Queensland's total population. The LGA had recorded growth of 0.9 per cent since the previous year, and average annual growth of 2.1 per cent over the previous five years. This translates into an estimated absolute increase of 2,218 persons. Figure 2-1 shows population growth in Isaac for the period 2005 to 2010, over which time the growth was equivalent to 10.9 per cent of the 2005 Isaac LGA population.

Figure 2-1 Isaac LGA Population Growth 2005 – 2010



Source: ABS (2010b)

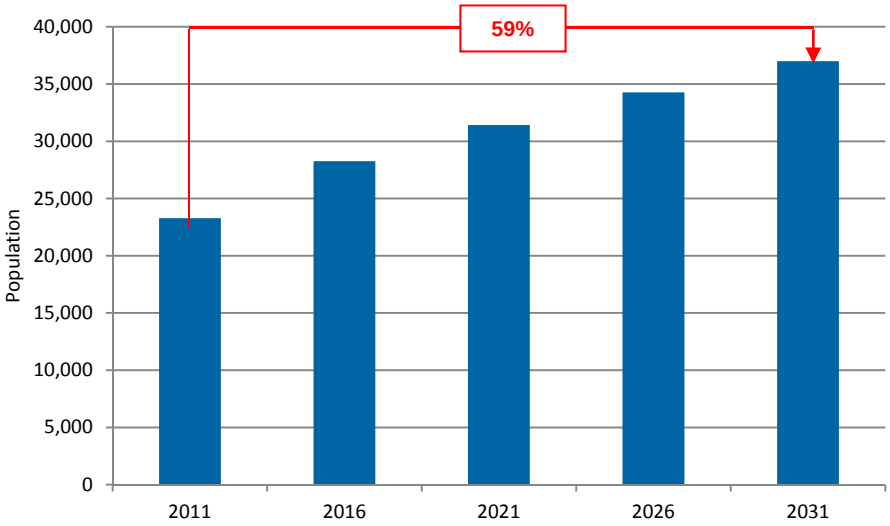
Figure 2-2 shows that the population is projected to increase by 59 per cent over the next 20 years. This represents an average annual growth rate of 2.9 per cent. This is 1.1 percentage points higher than the projected annual growth rate in the Queensland population for the same period. By 2031, the population of Isaac is forecast to reach 37,000 persons.

Figure 2-3 provides a snapshot of the population age profile for the Isaac LGA. In 2010, 58 per cent of the population were of working age (aged between 25 and 64); while a further 24.9 per cent were under the age of 14. The Queensland State averages are 20 per cent of the population in the 0-14 cohort and 53.1 per cent 25-64 age cohorts. This indicates the region supports a higher number of young families, perhaps attracted by increased employment opportunities in the mining and construction sectors. The region also retains a much smaller percentage of individuals aged over 65 (4.1 per cent) compared to the State average of 12.6 per cent, inferring that retirees tend to move out of the region.

Migration data for 2006 confirms that 23.1 per cent of the Isaac population lived at a different address in the previous year. This was above the State average of 19.7 per cent, suggesting the LGA has a higher transient population than the State as a whole (OESR, 2011). Approximately 79 per cent of the LGA population live in an urban centre. Moranbah is the largest centre with an estimated 2010 population of 8,530 persons; followed by Dysart with an estimated 2010 population of 3,430 persons.

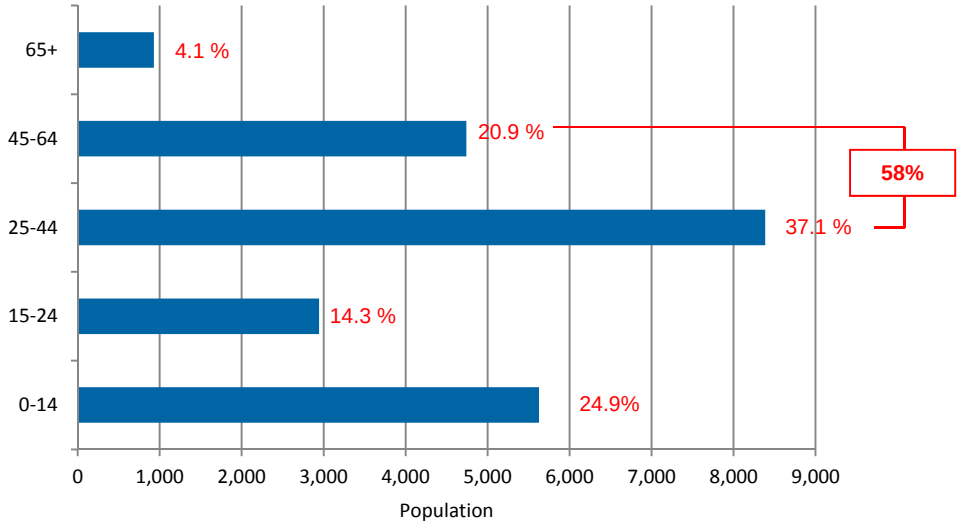
The closest township to the Mine is Clermont, which is 160 km southeast. Moranbah is the nearest regional centre. It is located 200 km west of the site and already has established service providers to the mining industry.

Figure 2-2 Projected Isaac LGA Population



Source: OESR (2011)

Figure 2-3 Isaac Estimated Population by Age Cohort 2010



Source: OESR (2011)

2.3 Government Policy

2.3.1 Mineral Resources Rent Tax

The minerals resource rent tax (MRRT) commenced on 1 July 2012 and applies to all coal and iron ore projects in Australia. MRRT may be payable on group mining profits of more than $75 million in a year. It is expected that the project will be subject to the MRRT.

The MRRT applies at a rate of 30 per cent to the value of the extracted resources only and not the value added in the downstream activities such as processing. The base rate is reducible by 25 per cent to allow for the cost of extraction, which results in an effective rate of 22.5 per cent. The operating and capital expenses incurred to win the resource are deductible as are any pre-mining losses.

2.3.2 Carbon Tax

A Carbon Pricing Mechanism under the *Clean Energy Act 2011* (Cth) took effect on 1 July 2012 and established a mechanism to set a price on carbon emissions, which is commonly referred to as the Carbon Tax. The Carbon Tax applies to entities with operational control over facilities that emit in excess of 25,000 t of carbon dioxide equivalent (CO_2-e) per financial year. Liable entities are required to surrender an equivalent number of carbon units as their Scope 1 emissions. This carbon price has been initially set at $23 during the 2012-13 financial year, $24.15 during 2013-14, and $24.50 during 2014-15. From 1 July 2015 the carbon price will be determined by a market-based emissions trading scheme.

Adani's mine and rail operations are likely to trigger the relevant thresholds required for participating under the *Clean Energy Act 2011* (Cth).

2.4 Economic Activity

2.4.1 Gross Regional Product

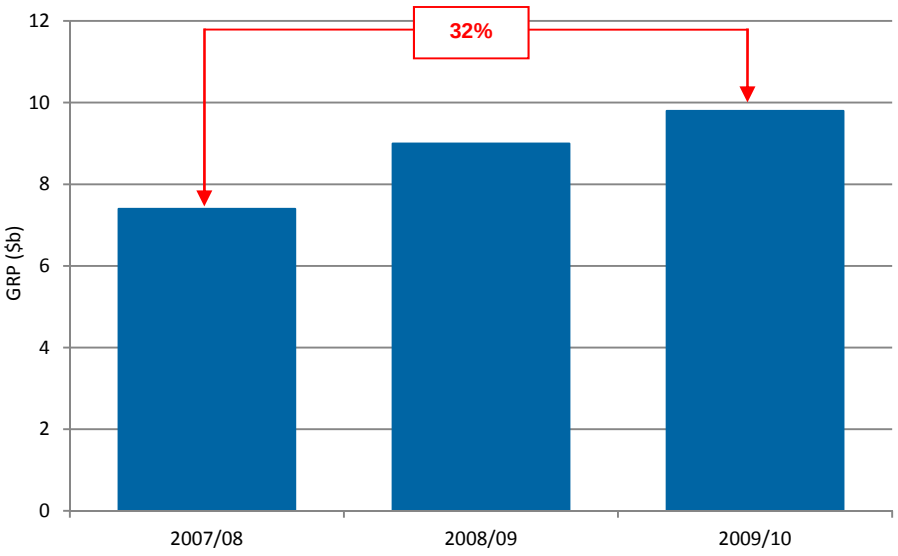
Gross Regional Product (GRP) is a key measure of regional economic performance. It is an established indicator that can provide insight into the health and size of the region's economic activity.

GRP for the Isaac LGA in 2009-10 was $9.8 billion, 3.8 per cent of Queensland Gross State Product (GSP). In 2007-08 and 2008-09, the region's GRP accounted for 3.1 per cent and 3.7 per cent, respectively, of Queensland GSP. This demonstrates a consistent increase in the region's contribution to overall State economic activity. Figure 2-4 shows a strong increase in GRP over recent years. GRP rose by 32 per cent between 2007-08 and 2009-10.

There are a number of sectors that underpin GRP in the region. Figure 2-5 outlines the top 10 sectoral contributors. Mining is by far the largest contributor, accounting for 83 per cent of the Isaac LGA's GRP. The construction sector is the next largest contributor at nearly 2 per cent of GRP. This is followed by the transport, postal and warehousing sector at almost one per cent of GRP and the agriculture/forestry/fishing and retail sectors at 0.7 per cent and 0.5 per cent, respectively, of GRP. The five largest sectoral contributors to regional GRP are considered in turn in the following sections.

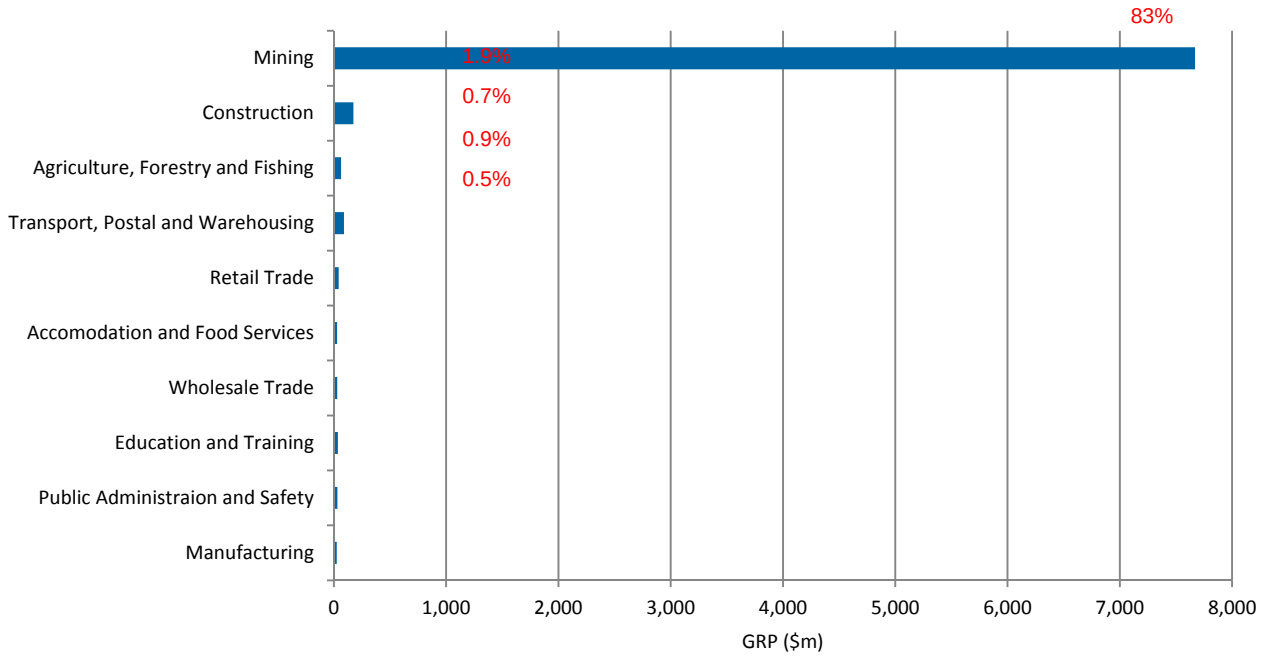
GRP in the Mackay, Isaac and Whitsunday region increased from $17.3 billion in 2008-09 to $18.1 billion in 2009-10 equating to 4.5 per cent growth with the mining sector being the most signficant contributor (REDC 2011).

Figure 2-4 GRP of Isaac LGA



Source:REDC (2009) & (2011)

Figure 2-5 Contribution to GRP by Industry 2009/10, Isaac LGA

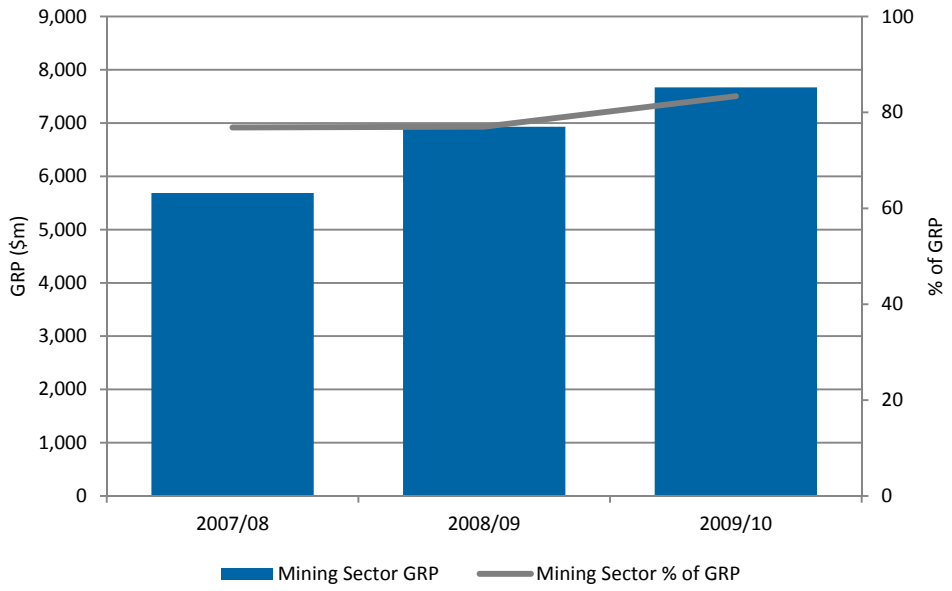


Source: REDC (2010)

2.4.2 Mining Sector

As shown in Figure 2-6 the mining sector output increased by $1.9 billion over the three years to 2009-10, this represents a total increase of 34 per cent and average annual growth of 11.3 per cent. The contribution of the sector to overall economic activity increased from 79 per cent to 83 per cent over the three years to 2009-10. The sector has continued to reinforce its position as the overwhelming driver behind regional economic activity. The mining sector is the most significant sector contributing to the Mackay, Isaac and Whitsunday region with this industry sector increasing from $8.7 billion in 2008-09 to $9.1 billion in 2009-10, or by 5.3 per cent (REDC 2011).

Figure 2-6 Mining Sector GRP, Isaac LGA

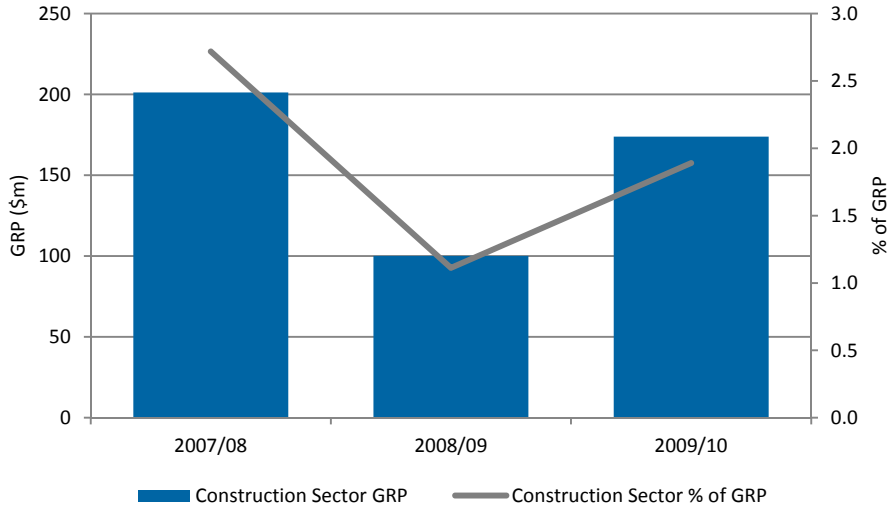


Source: REDC (2008), REDC (2009), REDC (2010)

2.4.3 Construction Sector

The construction sector averaged $158 million of annual output between 2007-08 and 2009-10. This accounted for 0.1 per cent of total Queensland output over this period. Figure 2-7 shows a sharp drop in output in 2008-09. This is likely to have reflected delays in construction projects proceeding and/or being completed due to the adverse confidence impacts of the global financial crisis (GFC). Output rebounded strongly, by 70 per cent, in 2009-10. The sector accounted for an average of 1.9 per cent of Isaac GRP between 2007-08 and 2009-10.

Figure 2-7 Construction Sector GRP

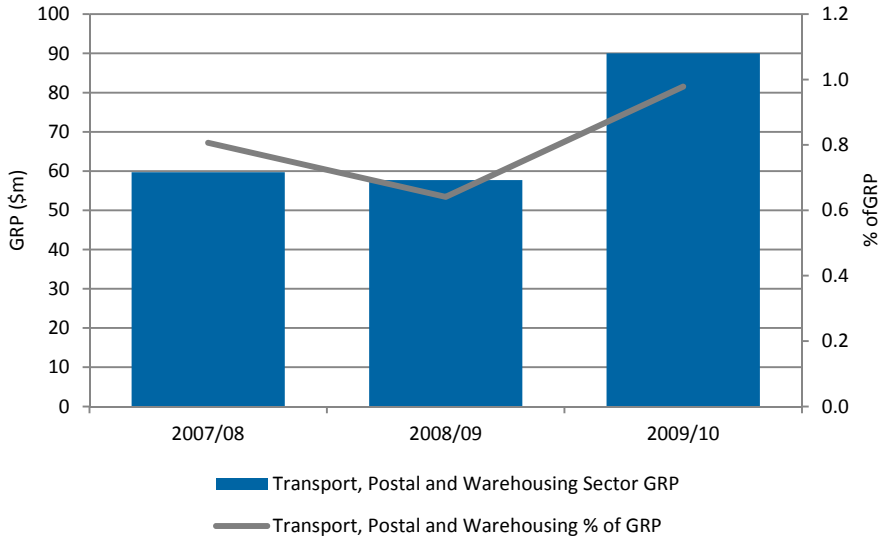


Source: REDC (2008), REDC (2009), REDC (2010)

2.4.4 Transport, Postal and Warehousing Sector

As shown in Figure 2-8 the transport, postal and warehousing sector averaged $69 million of annual output between 2007-08 and 2009-10. The sector recorded a minor decline in output from 2007-08 to 2008-09, before experiencing a 56 per cent increase in output in 2009-10. The sector accounted for an average of 0.8 per cent of Isaac's GRP between 2007-08 and 2009-10.

Figure 2-8 Transport, Postal and Warehousing Sector GRP

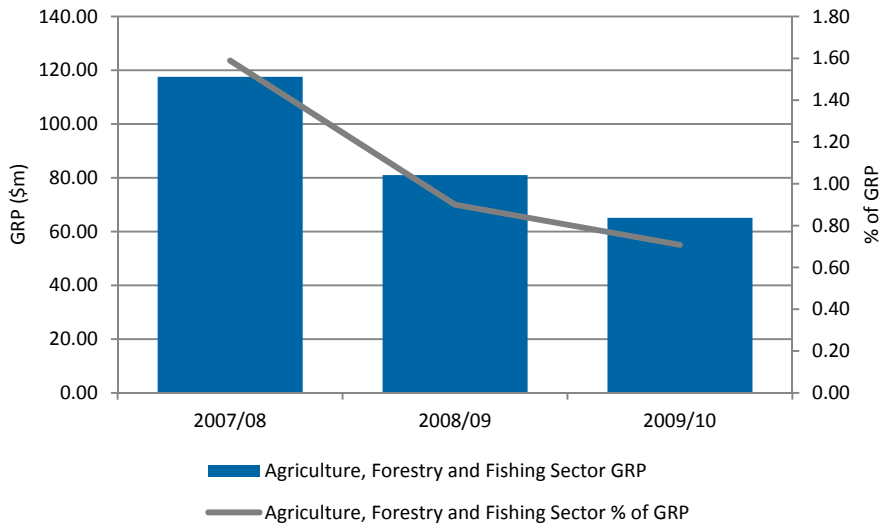


Source: REDC (2008), REDC (2009), REDC (2010)

2.4.5 Agricultural Sector

The agriculture, forestry and fishing sector averaged $88 million of annual output between 2007-08 and 2009-10. As shown in Figure 2-9 this sectors has experienced a notable decline, output has exhibited a downward trend with a reduction of $52 million between 2007-08 and 2008/09. The sector accounted for an average of one per cent of Isaac's GRP between 2007-08 and 2009-10. When viewed in light of the mining activity (see Section 2.4.2) the data indicates that the previously dominant agricultural sector declines sharply over this period.

Figure 2-9 Agricultural Sector GRP



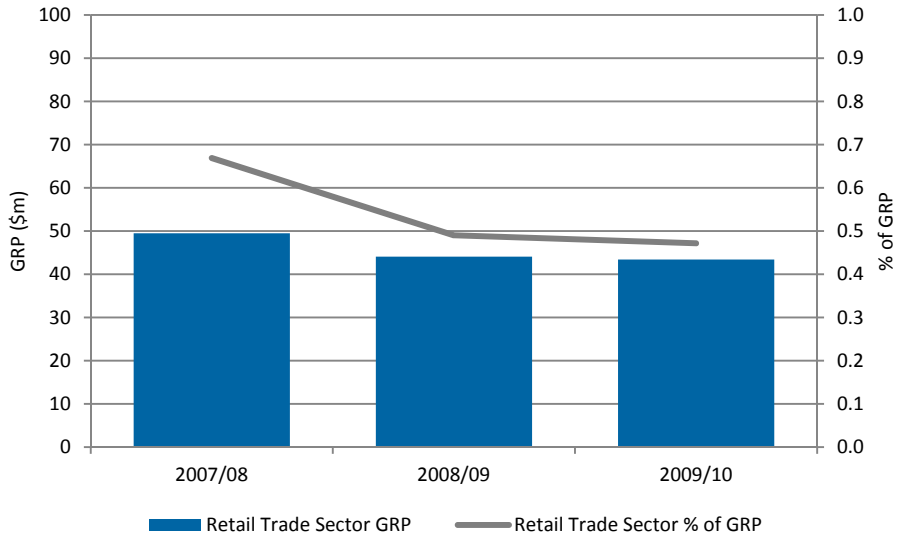
Source: REDC (2008), REDC (2009), REDC (2010)

2.4.6 Retail Sector

The retail sector averaged $45 million of annual output between 2007-08 and 2009-10. As shown in Figure 2-10, the sector experienced a substantial reduction in output in 2008-09 and a further decline in 2009-10. This is somewhat surprising given the strength of mining sector activity in the region.

The retail sector accounted for an average of 0.5 per cent of Isaac's GRP between 2007-08 and 2009-10.

Figure 2-10 Retail Sector GRP



Source: REDC (2008), REDC (2009), REDC (2010)

2.4.7 Tourism Sector

Detailed data regarding supply and demand for tourist facilities is not publicly available. The ABS regional profile for Isaac, released in 2010, identified no change in the supply of tourist accommodation between 2007 and 2009.

Some information is provided by Tourism Queensland on the Mackay Tourism Region, within which the Isaac LGA falls. It outlined that the majority of visitors to the Mackay Tourism Region are domestic (91 per cent). Of these domestic visitors, only 3.1 per cent of them were visiting for business purposes (REDC, 2009).

2.4.8 Number of Businesses

Table 2-1 provides business counts up to and including 2009. Current business counts by industry sector are not available for the Mackay region. The data indicates the agriculture/forestry/fishing and mining sectors had the highest and lowest number of businesses, respectively. At the same time, the mining sector accounts for nearly 50 per cent of total employment in the region. Taken together, these data suggests mining companies each employ considerably more employees than their counterparts in other sectors. This, in turn, implies the size and scale of mining companies is substantially greater than companies in other industry sectors. Therefore, mining is a considerable driver of total employment within the LGA.

Table 2-1 Number of Businesses and Employment by Industry Sector 2008-09

Industry Sector	Number of Businesses	Percentage of Employment
Mining	27	48.7
Construction	180	8.1
Transport, Postal and Warehousing	84	3.0
Agriculture, forestry and fishing	668	8.1
Retail	54	5.4

Source: OESR (2011)

2.4.9 Residential Property

In 2011, there were about 130,200 occupied private dwellings in the regional area incorporating

- Isaac Region
- Charters Towers Region
- Central Highlands Region
- Mackay Region
- Whitsunday Region
- Townsville City

The housing mix within this area is characterised by separate houses, with fewer semi-detached dwellings and apartments than the Queensland average. Very high rental rates were clustered in Isaac and Central Highlands local government areas (60.8 per cent and 44.4 per cent of total housing respectively) given the mining presence in these communities.

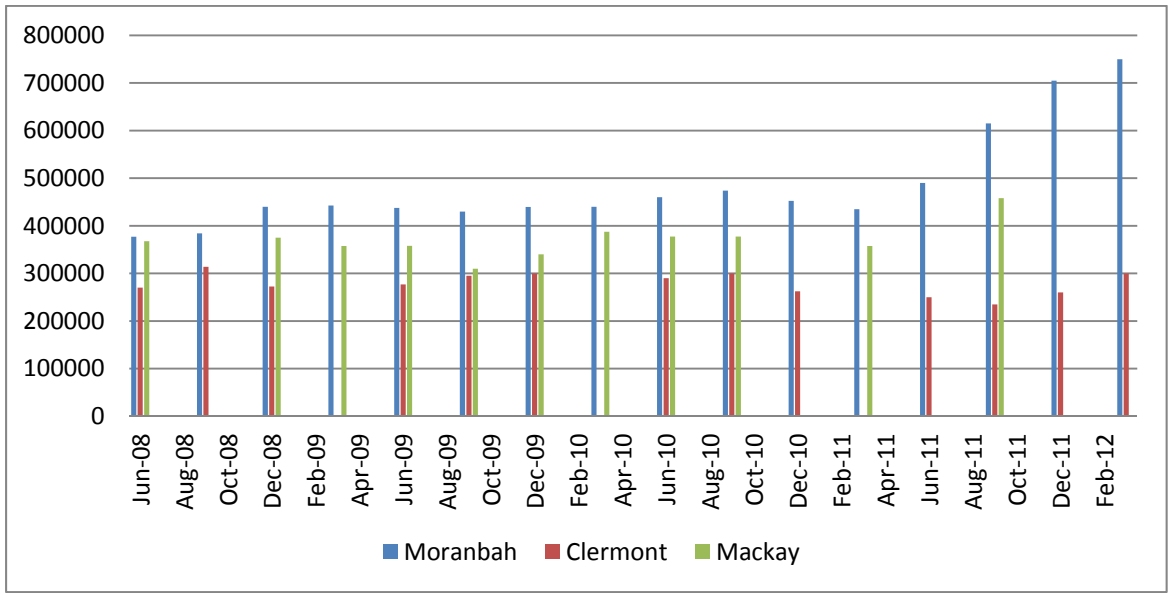
In the 12 months to March 2012, there were 3,075 dwelling units in new residential buildings approved in the broader region. A consistent theme to emerge during consultations at the sub-regional level was the capacity for residential expansion and housing affordability in coastal regions, to support mining workforce growth and emerging FIFO hubs.

In terms of temporary accommodation, the Bowen Basin had a total capacity of 22,730 beds in Workers Accommodation Villages (WAVs) – an increase of 4,940 beds from 2010-2011 with the largest number located in Isaac Region. Many hotels/motels are also reportedly subject to strong demand from the mining sector, reducing the capacity to cater for other visitors – the Bowen Basin recorded a 3 per cent room vacancy rate in 2011.

Figure 2-11 shows Moranbah's housing prices have experienced a rapid increase over the last decade from about $65,000 in 2002 to almost $650,000 in 2011 and nearing $700,000 in mid-2012. Clermont has also shown a trend of steady increase before a general plateau emerged in 2007. However, increases in Clermont have not been at the same rate as in Moranbah. Charters Towers and Mackay have not been affected by the same price spikes recording a median of $237,000. Further details relating to house prices are provided in Volume 1 Section 3 Social Impact Assessment.

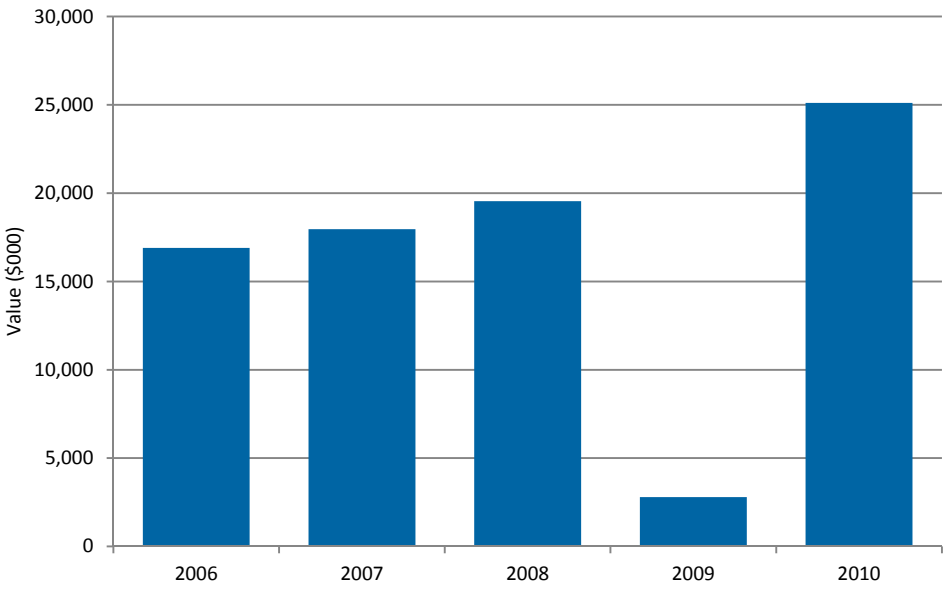
As shown in Figure 2-12, the overall trend in residential building approvals across the State was up for the five years to 2010. The clear exception was 2009, where an unprecedented drop of around $17 million was recorded. This could either reflect the confidence effects of the Global Financial Crisis (GFC) and/or data collection or reporting errors in that particular year. Discussions within the ABS interpretation revealed the 2009 observation should be interpreted with caution.

Figure 2-11 Average Housing Values (Houses < 2,400 m²)



Source: REIQ 2012

Figure 2-12 Total Value of Residential Building Approvals



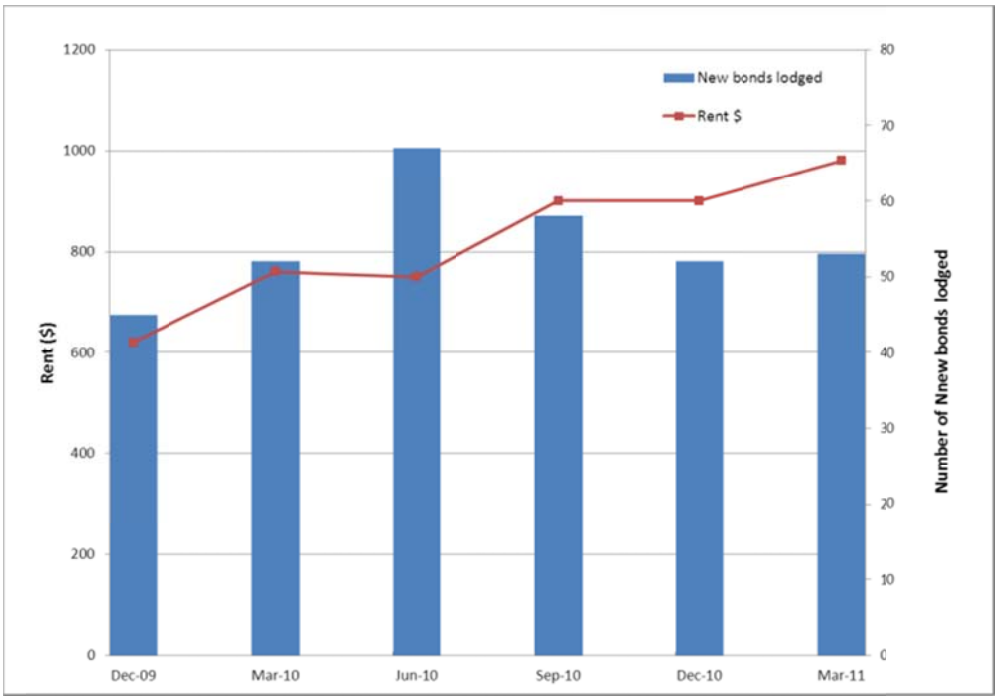
Source: ABS (2006a), ABS (2007), ABS (2008), ABS (2009), ABS (2010c)

Figure 2-13, Figure 2-14 and Figure 2-15 show the median rents from the December quarter of 2009 to the March quarter of 2011 for Isaac Region (including postcodes 4800, 4802, 4804 and 4805). These figures show a trend of increasing rental prices across all dwelling types. The figures show a high demand for three bedroom houses with weekly rents ranging from $400 to $800, with demand peaking in March and June quarters of 2010, followed by demand for four bedroom houses with rents ranging from $600 to $1,000 per week, with high demand in June and December quarters of 2010 and March quarter of 2011.

Rents for two and three bedroom apartments fluctuated significantly from $250 to over $1,000 per week. However, the demand for the two bedroom apartments was steady through the December 2009 to March 2011.

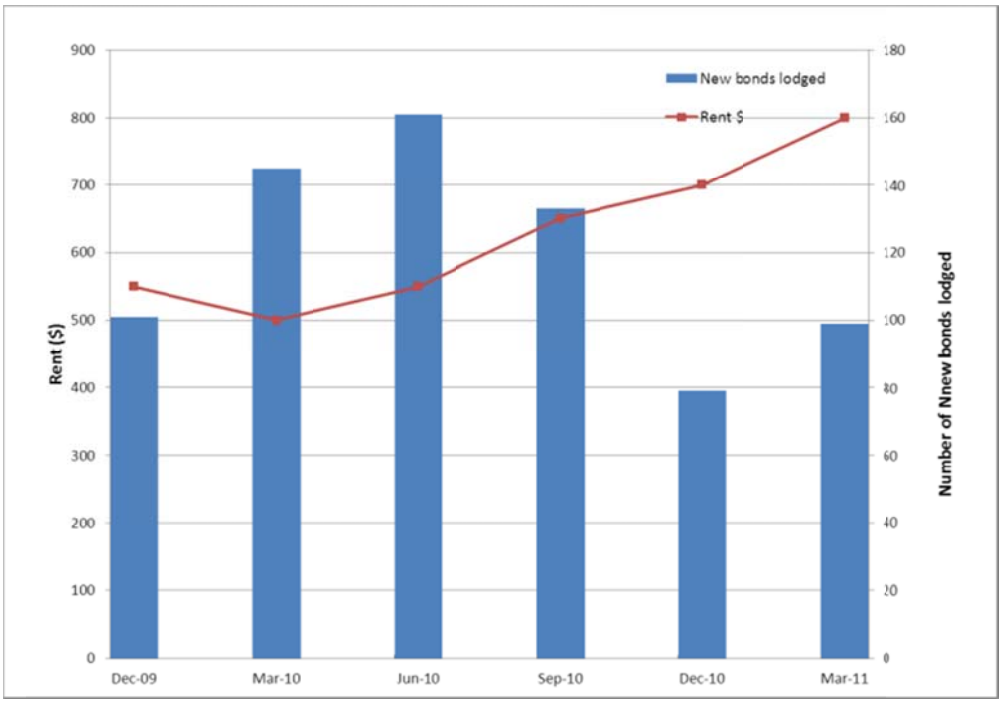
Further details regarding rental market are provided in Volume 1 Section 3 Social Impact Assessment.

Figure 2-13 Weekly Rents and Value of Bonds Lodged, Four Bedroom Houses, Isaac Region



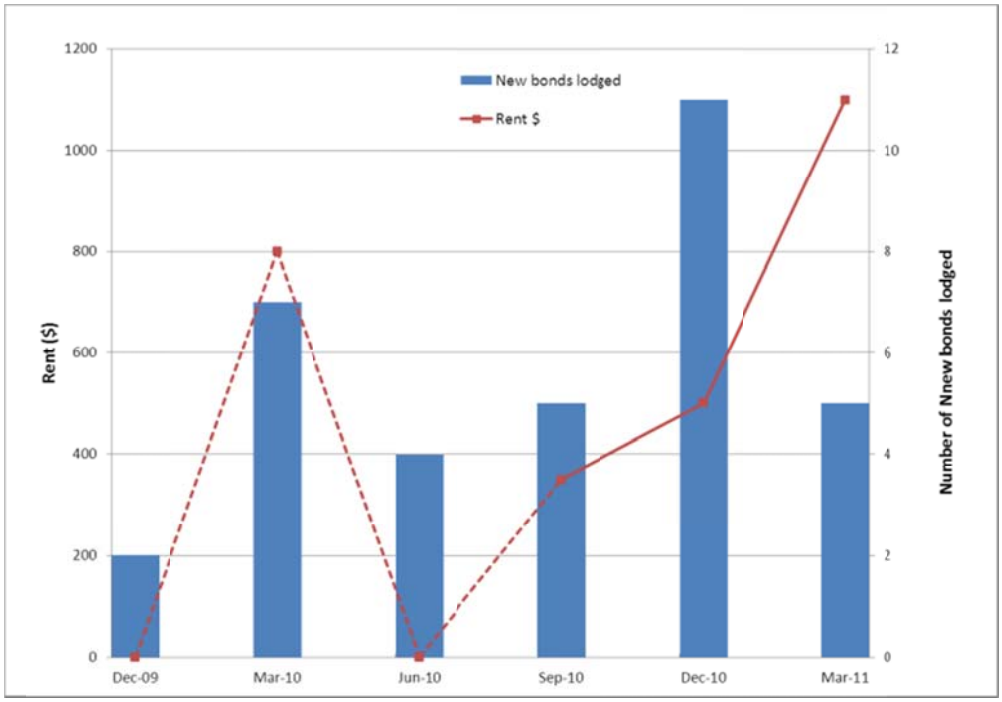
Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

Figure 2-14 Weekly Rents and Value of Bonds Lodged, Three Bedroom Houses, Isaac Region



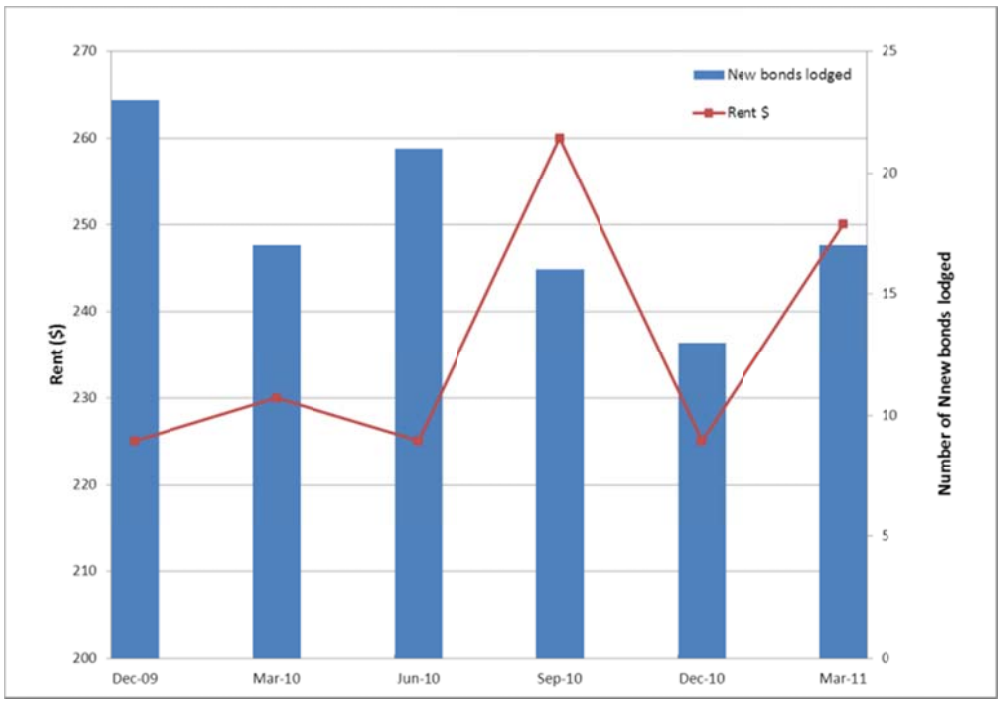
Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

Figure 2-15 Weekly Rents and Value of Bonds Lodged, Three Bedroom Unit/Apartment, Isaac Region



Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

Figure 2-16: Weekly Rents and Value of Bonds Lodged, Two Bedroom Unit/Apartment, Isaac



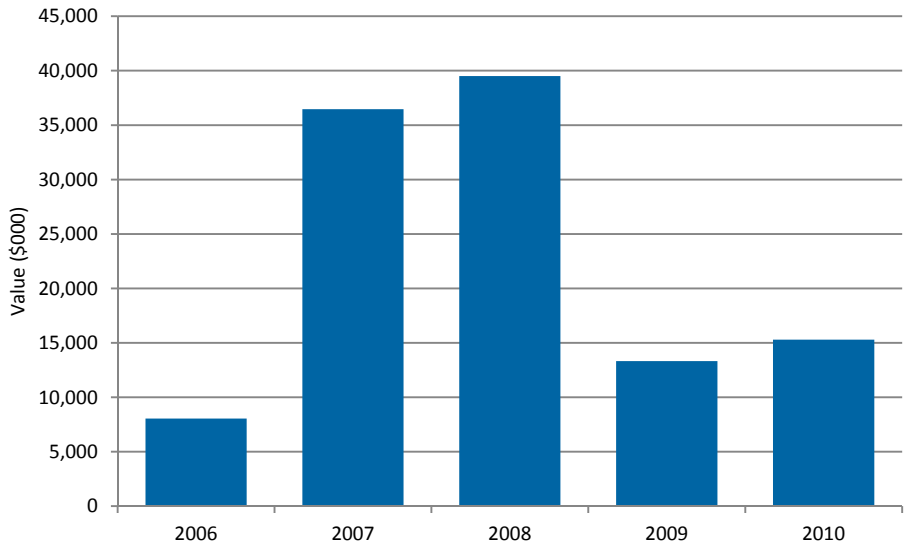
Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

In order to address shortages of housing stock the Moranbah Urban Development Area (UDA) was declared on 30 July 2010, it is a 1,218 ha area made up of a number of different sites within the existing Moranbah town and a large site to the west of Goonyella Road. The Moranbah UDA is proposed to provide more affordable housing through the improved supply of residential land and a greater range of housing types to suit the needs of the Moranbah.

2.4.10 Non-residential Property

Figure 2-17 shows that non-residential building approvals peaked in 2007 and 2008. As with residential approvals, there was a significant drop in non-residential approvals in 2009. However, unlike the residential sector, there was only a muted recovery in approvals in 2010. It may be interpreted that the high value of approvals activity in 2007 and 2008 was unsustainable or due to some very large one-off projects being approved, and so the values recorded in 2006, 2009 and 2010 are representative of underlying activity levels.

Figure 2-17 Total Value of Non Residential Building Approvals



Source: ABS (2006a), ABS (2007), ABS (2008), ABS (2009), ABS (2010c)

2.4.11 Land Value

The Valuer-General has a general duty under the *Land Valuation Act 2010* to make an annual valuation of all land in a local government area. The Department of Natural Resources and Mines has the responsibility of publishing the Valuer-General's findings in an annual report; The Valuer-General's Indicative Market Movements Report. Land values in Central Queensland, as reported by the Valuer-General have three major determinants; the mining industry, tourism and funding for development projects. Residential land is directly influenced by the level of exposure to the mining industry.

Since the last valuation (2011), residential land within the region has increased in value. Commercial land has remained relatively stable over the period however, industrial land within the Isaac region has experienced moderate to major increase, primarily due the development of mining activities.

Agricultural land value has remained stable since the last value. The report indicates that there has been a softening in values of land utilised for grazing, however the report does not feel there is sufficient evidence to support this claim.

2.5 Labour Market

2.5.1 Employment

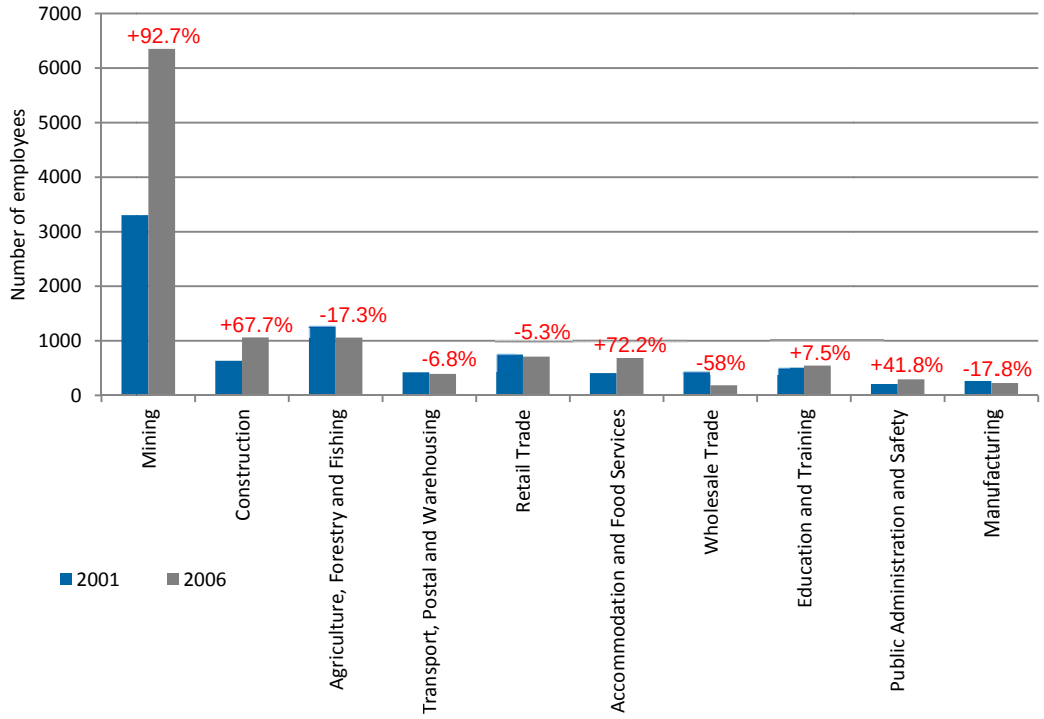
Figure 2-18 displays how the sectoral contribution to total employment within the region has changed between 2001 and 2006. Mining remains, by far, the largest source of employment within the region. This is confirmed in Figure 2-19. In 2006, the agriculture/forestry/fishing and construction sectors were the next highest employers after the mining sector.

Employment growth in the mining sector has been exceptional. Over the five-year period, mining sector employment almost doubled to account for nearly 50 per cent of total employment. The construction sector was another sector in which strong employment growth was recorded; construction sector employment increased by 68 per cent over the same five year period. In contrast to the mining and construction sectors, the agriculture/forestry and fishing sector incurred a 17 per cent contraction in employment compared to 2001 levels.

Figure 2-19 shows the proportion of employment by sector in comparison to the State average. It confirms that the region is dominated by mining sector employment, where the share of total employment is much higher than the State average.

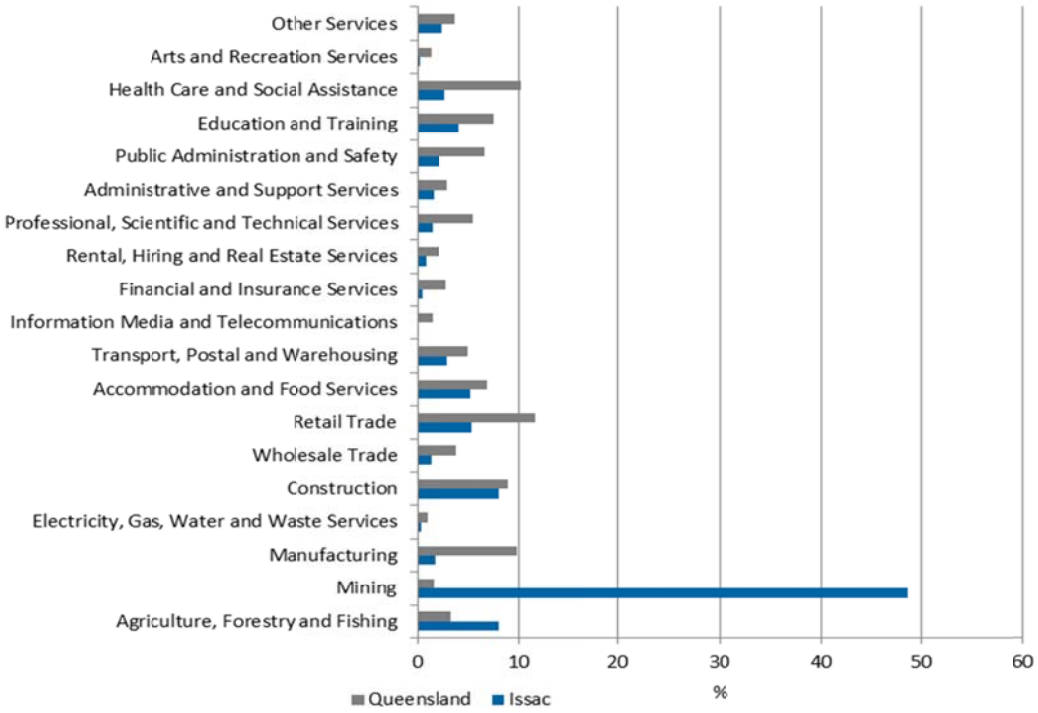
The share of employment in the agriculture/forestry and fishing sector is higher than the State average. However, if recent trends continue the sector's share of total regional employment is likely to decline to become consistent with the State average.

Figure 2-18 Number of Employees per Sector



Source: ABS (2001), ABS (2006b)

Figure 2-19 Proportion of Employment by Industry Sector, 2006

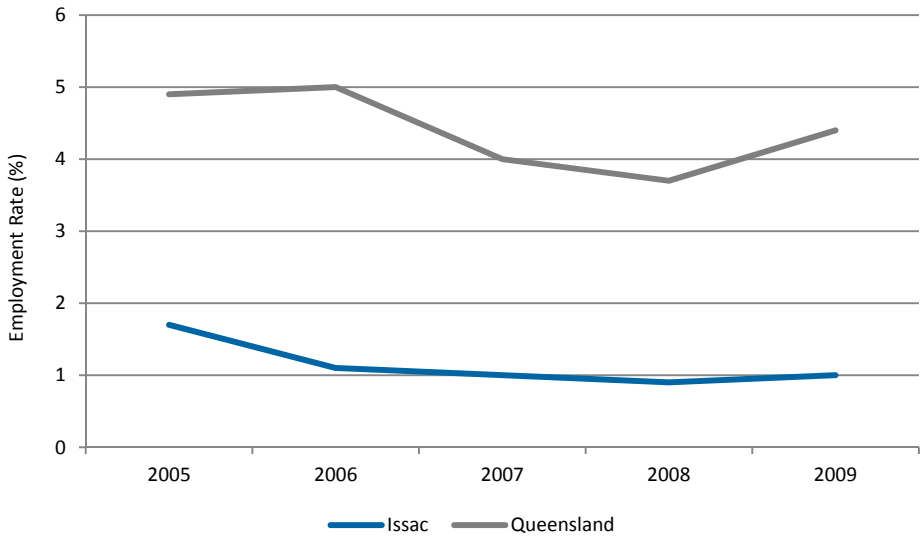


Source: ABS (2001), ABS (2006b)

2.5.2 Unemployment

In 2009, ABS data indicates that unemployment rates in Isaac and the Central Highlands were one per cent and 2.3 per cent, respectively. This is considerably lower than the State average of 4.4 per cent. Figure 2-20 shows Isaac unemployment has remained very low and stable over the past four years, while state-wide unemployment has fallen moderately.

Figure 2-20 Employment Rates

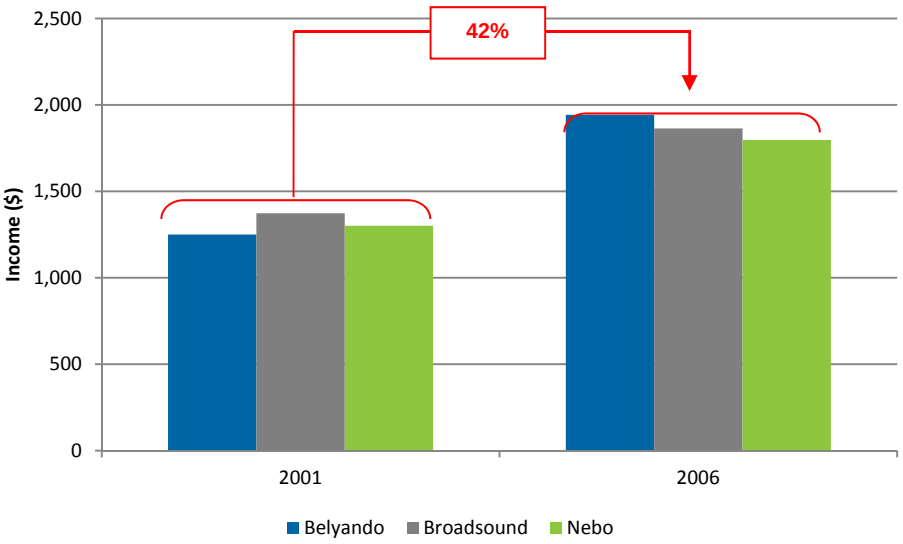


Source: ABS (2010b), ABS (2011)

2.5.3 Wages

Average weekly household income in Isaac LGA increased significantly between 2001 and 2006 (see Figure 2-21). Overall, the wages for the whole of Isaac have increased by 42 per cent over this period. Wage increases of this magnitude are broadly consistent with a booming or lead sector such as the mining sector.

Figure 2-21 Average Weekly Household Income 2001 and 2006 Isaac LGA



Source: REDC (2009)

2.6 Summary

The baseline economic overview provides an indication of the current economic activities within the Study Area. Data clearly indicates that mining activities already dominate industry within the region, with 83 per cent of the regions GRP generated by mining. Recent trends indicate that mining activity has consistently grown within the region, and has had limited exposure to the impacts of the GFC, unlike other industries such as the construction and retail sectors. It is reasonable to assume that this consistent increase in the region GRP will remain whilst mining activities are continuing within the region.

Employment within the area also continues to be dominated by the mining industry with an increase of employees of over 92 per cent between the 2001 and 2006 census. The proportion of employees engaged within the mining industry is vastly greater than the average for Queensland as a whole. Industries that provide support services to coal production such as construction and public administration and safety are seeing increases in employment.

The continued and uninterrupted growth in the mining industry is the main contributor to the lower levels of unemployment seen in the region in comparison to the State average and the 42 per cent growth in average household weekly income seen between 2001 and 2006.

The region's competitive advantage emerges from the presence of natural resources and capabilities for value-adding to these natural resources. The Mackay, Isaac, Whitsunday region has driven specialisation in the mining sector, which is evidenced by the growth in this sector. Locally, Isaac LGA, with an average annual growth of 11.3 per cent for the three years to 2009-2010 and regionally, Mackay, Isaac, Whitsunday by 5.3 per cent over the same period.

The strong growth in employment within the mining sector demonstrates a competitive advantage for the region within the sector. Similarly, the sector represents higher levels of total employment per business than other sectors. The total employment and number of businesses within the mining

sector accounts taken together, suggests mining companies each employ considerably more employees than other sectors. This, in turn, implies the size and scale of mining companies is substantially greater than companies in other industry sectors. Therefore, mining is a considerable driver of total employment within the LGA.

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3. Economic Impact Assessment

3.1 Introduction

The purpose of this stage of the analysis is to estimate the scale of the proposed development's economic impact on the Queensland economy. The assessment aims to estimate the scale of output, income and employment impacts resulting from the development. Impacts are measured through a range of economic indicators namely; Gross Regional Product (GRP); household income and employment. These indicators provide a strong measure of economic impact:

- GRP measures the value of outputs minus the cost of inputs. It is therefore able to measure the net contribution of the development to the relevant economies.
- Household income is a component of GRP and measures the value of wages paid by employers to employees
- Employment identifies the number of full time equivalent (fte) persons engaged in work within a region. This indicator is measured by place of remuneration rather than place of residence.

Indicators, which provide a picture of economic activity in a region resulting from a specific activity, can be considered in two tranches:

- Direct/initial impacts identify the change in final demand or level of economic activity generated by the development
- Indirect/flow-on impacts are the total of:
  - Production induced impacts: purchasing goods and services from other industries and employment
  - Consumption induced impacts: additional output and employment stemming from the consumption of additional goods and services by households that are the result of increased wages or employment in the development and associated activities.
  - Offset consumption effects: the lost consumption by the local unemployed before they take a new job and the lost consumption of those who have lost a job before they start receiving welfare payments.

Direct and indirect flows into economies likely to be affected by the Project have been combined in order to ascertain the total impact of the Project.

3.2 Project (Mine)

3.2.1 Overview

The Project (Mine) will at full production produce 60 Mtpa (product) and have an operating life of approximately 90 years. The scale of the Project (Mine) and technical aspects i.e. the different methods of mining used on the same site, poses a number of complications due to the uncertain nature of required investments further into the life of the Project. Therefore, high-level estimates have been generated based on a number of assumptions specific to the modelling technique, outlined in Section 1.1, and to the Project itself.

The analysis has been conducted for the two main stages of the mine; construction, the majority of which is expected to occur prior to 2015, and operation for the first 10 years, post-2015, which takes the mine through ramp up to full production.

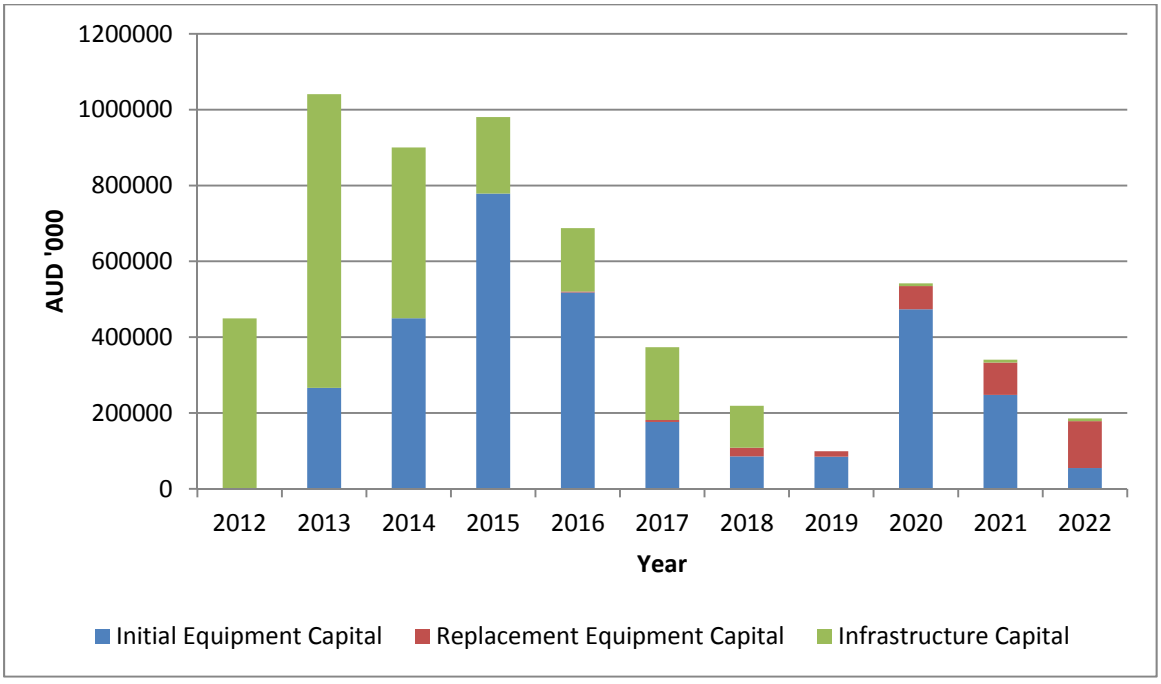
3.2.2 Construction

3.2.2.1 Capital Investment

Capital investment for the life of the Mine is expected to total $21.5 billion (Runge Limited 2011). It is estimated that $5.818 billion will be spent in the years preceding 2022, with the remaining $15.6 billion being spent over the remaining years of operation. Figure 3-1 shows capital investment for the life of the Project (Mine).

Direct expenditure for the construction phase of the Project (Mine) between years 1 and 3 (nominally 2013-2015) and to full production in year 10 (nominally 2022) is estimated from this data. The location in which the expenditure would take place is also estimated. Table 3-1 outlines the values and expected location of expenditure.

Figure 3-1 High Level Estimate of Capital Investment over the Construction to Full Production of the Project (Mine)



Source: Runge Limited (2011)

Table 3-1 Direct Expenditure Associated with Construction of the Project (Mine)

Year	1	2	3	
Fiscal year	**2013 ($m)**	**2014 ($m)**	**2015 ($m)**	**Total ($m)**
Mackay Region	119.5	106.5	118.1	344.1
Queensland	134.4	199.8	132.8	386.9
Outside Queensland	800.2	713.2	791.0	2,304.4
Total	**1,054.1**	**939.4**	**1,042.0**	**3,035.4**

3.2.2.2 Gross Regional Product (GRP)

The analysis provides an estimate of the direct and indirect impacts of the development on the affected economies GRP. Table 3-2 provides a synopsis of the results. The analysis suggests the net contribution of the Project (Mine) to the affected economies is positive. In the first year of construction of the Project (Mine), the region's GRP would be boosted by 1.2 per cent - that is, $82 million (based on 2008-09 GRP). This figure would drop to $73 million in 2014 before rising to $80.5 million in year three of construction.

At the State level Table 3-2 outlines the Project's contribution to gross state product (GSP), which is expected to be $212 million in year one and $189 million and $209 million in subsequent years. In the context of the Queensland economy, which had a GSP of $243.9 billion in 2008-09, year one, the peak year of the development, would provide an increase in GSP of 0.1 per cent.

Table 3-2 Direct and Indirect Impacts on GRP and GSP during Construction

Year	1	2	3
Fiscal year	**2013 ($m)**	**2014 ($m)**	**2015 ($m)**
Mackay Region			
Direct	61.3	54.6	60.6
Indirect	20.2	18.0	19.9
Total	81.5	72.6	80.5
Queensland			
Direct	124.5	111.0	123.1
Indirect	87.3	77.8	86.3
Total	211.8	188.8	209.4

3.2.2.3 Household Income

The impacts of the development on household income follow similar patterns to those for GRP and GSP. Year one of the construction sees the most considerable contribution to household income. Considering both direct and indirect impacts, the Mackay region is expected to experience an increase of $32.6 million in year one, plus subsequent annual increases of $29.1 million and $32.3 million in the following years.

As can be seen in Table 3-3, impacts are similar at the State level; the highest levels of impacts are seen in year one, dropping by $9.4 million in year two and increasing by $8.4 million in year three.

Table 3-3 Direct and Indirect Impacts on Household Income during the Construction Phase

Year	1	2	3
Fiscal year	**2013 ($m)**	**2014 ($m)**	**2015 ($m)**
Mackay Region			
Direct	23.3	20.8	23.1
Indirect	9.3	8.3	9.2
Total	32.6	29.1	32.3
Queensland			
Direct	43.0	38.4	42.5
Indirect	44.2	39.4	43.7
Total	87.2	77.8	86.2

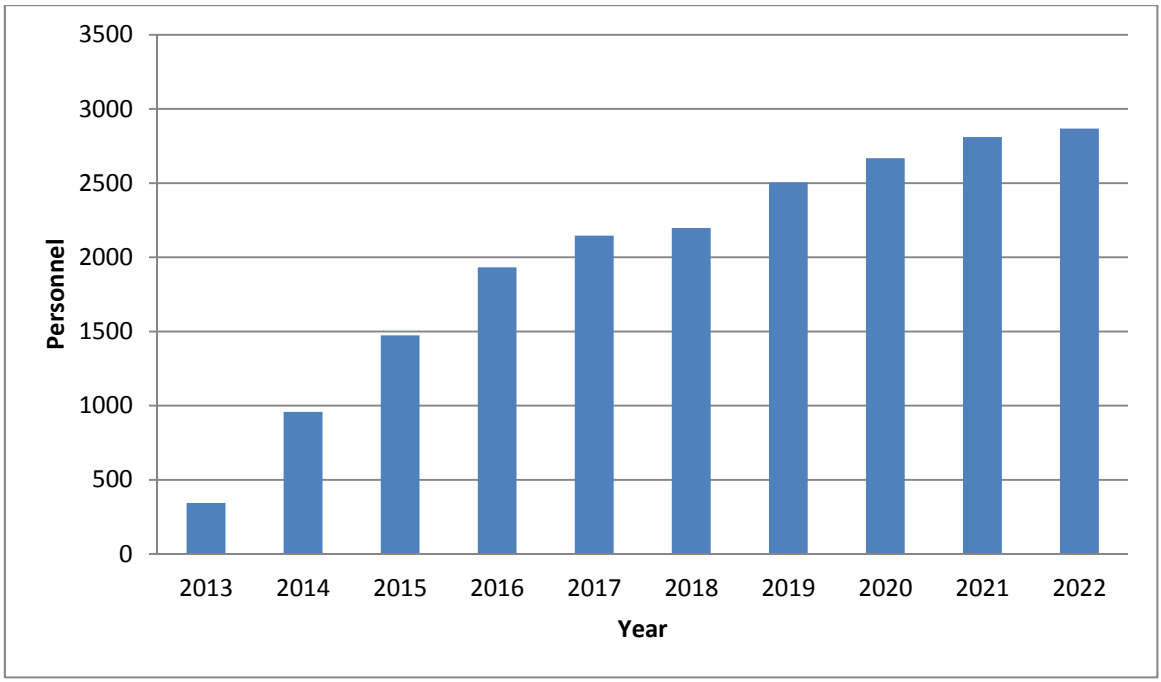
3.2.2.4 Employment

Employment, which shows the welfare of households within the affected economies, is the final indicator used to identify potential impacts of the Project (Mine) on the region.

An initial workforce of 400 persons is anticipated to be onsite in January 2013 for the pre-construction phase and then construction phase of the Project (Mine). Numbers are expected to increase to up to 3,000 people over the next ten years where full production is reached. Figure 3-2 shows the workforce numbers for the construction period. As there is an overlap between construction and initial operation of the Mine, total workforce Figure 3-2 shows workforce for the period of 2013 through to full production at 2022.

Table 3-4 identifies the estimates the impact that the Project (Mine) will have on employment within the region and within the State. Year one sees the greatest benefits both in the Mackay Region and for the State as a whole. In 2008-09 total employment within the Mackay region was 52,322. Using these figures, the Project (Mine) will boost local employment by 0.8 per cent and State employment by 0.05 per cent.

Figure 3-2 Mine Construction Workforce by Year



Source: Runge Limited (2011)

Table 3-4 Direct and Indirect Impacts on Employment During the Construction Phase

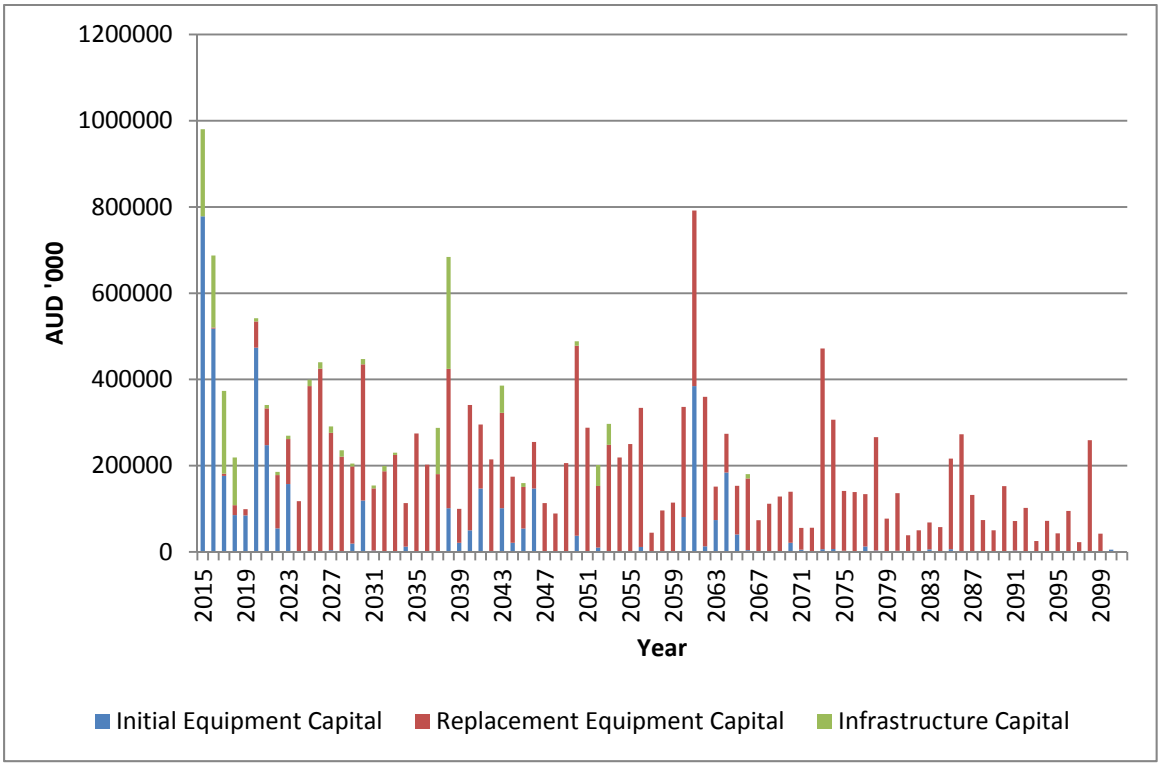
Year	1	2	3
Fiscal year	**2013 (fte)**	**2014 (fte)**	**2015 (fte)**
Mackay Region			
Direct	275	242	266
Indirect	124	109	120
Total	399	351	386
Queensland			
Direct	580	512	562
Indirect	675	595	654
Total	1,255	1,107	1,216

3.2.3 Operation

3.2.3.1 Operational Cost

The operation of the Mine is expected to commence with an initial output of 2 Mtpa. Over the subsequent years, output is expected to ramp up to reach full production target of 60 Mtpa product in the tenth year after construction commences (nominally 2022). The operational scale of the Project is significant, with coal extracted via underground and open cut mining techniques. Therefore, the Mine will continue to see considerable investment in capital, as can be seen in Figure 3-3, as the Mine is expanded and as machinery reaches the end of its life and needs to be replaced.

Figure 3-3 High Level Estimate of Capital Investment from Full Production to Completion of the Project (Mine)



The estimated production cost, over the life of the Mine (for the purpose of this assessment) is expected to be around $33 per tonne. Table 3-5 provides an expected operational expenditure taking into account both the production cost and the on-going capital expenditure. Table 3-5 was derived from the assumptions that 11 per cent of operational expenditures would occur within the Mackay region, 13 per cent would occur within Queensland and the rest, 76 per cent will occur outside Queensland.

Economic impacts, both direct and indirect have been determined until 2025, the first 10 years of the Mine life. This forecast period has been selected as it has the appropriate level of certainty. It has been assumed that once the Mine has reached full production (60 Mtpa), and stabilised at that output, the impacts would remain the same with perhaps some variation as new deposits are found and pits constructed.

Table 3-5 Coal Production and Operational Capital Expenditure of the Project (Mine)

Year	3	4	5	6	7	8	9	10	11	12	13
Fiscal year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Production (Mtpa)	2	7	14	24	29	34	43	47	50	50	60
Opex and Capex ($m)											
Mackay Region	101	87	83	101	164	166	188	190	229	234	260
Other Queensland	114	98	93	113	184	186	212	213	257	263	293
Outside Queensland	680	584	555	675	1,096	1,110	1,262	1,270	1,531	1,568	1,744
Total	895	769	731	889	1,443	1,462	1,662	1,673	2,016	2,065	2,298

3.2.3.2 Gross Regional Product

Impacts on GRP are expected to continue rising through the life of the Project. Impacts in year three of the mine life are estimated at $106 million (Table 3-6). This is projected to rise to $3,769 million by 2025, representing 35 per cent of GRP.

At the State level, as seen Table 3-7, impacts are estimated to be $231.3 million in 2015 and have grown to $4,170 million by 2025.

3.2.3.3 Household Income

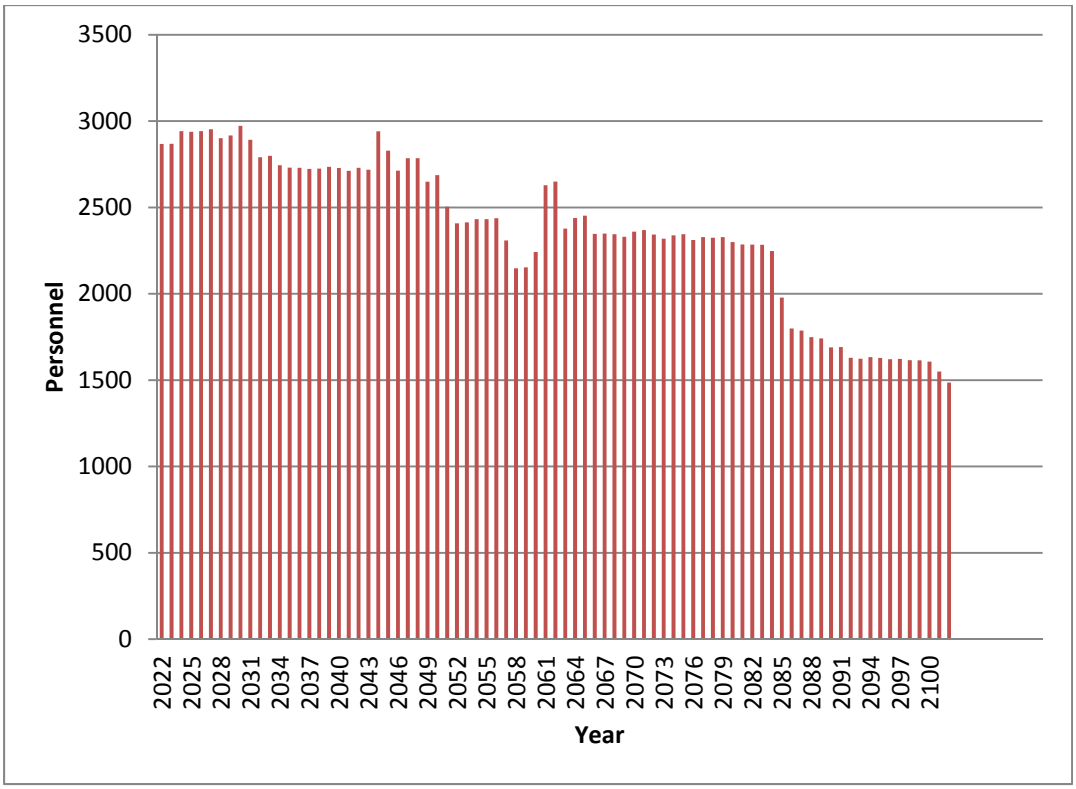
Household income is predicted to increase by 10.1 per cent solely due to the development of the Project (Mine) from 2008-09 value, to 2025, year 13 of the Mine life when it is operating at maximum production. At the State level, the long-term increase is expected to be almost $574 million, representing 0.45 per cent of the State total in 2008-09 ($128.6 billion).

3.2.3.4 Employment

The Project (Mine) total operational workforce, including underground and open cut operations, is expected to average 2,366 persons (peak just under 3000) for the period from full production in 2022 to completion of all onsite works in 2102. The number will remain above 2,000 when underground mining ceases production by 2067, but will gradually reduce as the production winds done and the mine ceases production in 2102.

The Mackay region is expected to see an increase of 7.8 per cent, of 2008-09 levels, in employment due to direct and indirect impacts of the Mine development. Similar trends are expected State wide where employment levels will increase from 1,502 fte to 6,789 fte in 2025. Therefore, by 2025, employment levels State wide will have been boosted 0.3 per cent by the Project (Mine).

Figure 3-4 Project (Mine) Total Operational Workforce



Source: Runge Limited 2011

Table 3-6 Summary of Impacts of the Operational Phase of the Project (Mine) – Mackay Region

Year	3	4	5	6	7	8	9	10	11	12	13
Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Mackay Region											
GRP ($m)											
Direct	31.5	85.5	705.1	1,514.2	1,448.8	1,899.3	2,563.1	2,936.4	2,882.7	2,882.7	3,541.7
Indirect	74.3	84.8	99.2	123.9	189.3	173.9	197.6	203.3	230.6	230.6	254.3
Total	105.8	170.3	804.3	1,638.1	1,638.1	2,073.2	2,760.7	3,139.7	3,113.3	3,113.3	3,795.9
Household Income ($m)											
Direct	31.5	85.5	133.2	171.0	193.5	198.0	225.0	238.5	247.5	247.5	258.1
Indirect	29.9	34.5	41.4	53.4	73.3	75.7	87.2	90.4	102.0	102.0	114.0
Total	61.4	12.0	174.6	224.4	266.8	273.7	312.2	328.9	349.5	349.5	372.2

Year	3	4	5	6	7	8	9	10	11	12	13
Employment (fte)											
Direct	350	950	1,480	1,900	2,150	2,200	2,500	2,650	2,750	2,723	2,868
Indirect	351	417	503	637	853	869	988	1,013	1,127	1,115	1,225
Total	701	1,367	1,983	2,537	3,003	3,069	3,488	3,663	3,877	3,838	4,093

Table 3-7 Summary of Impacts of the Operational Phase of the Project (Mine) – Total Queensland

Year	3	4	5	6	7	8	9	10	11	12	13
Fiscal year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Queensland											
GRP ($ million)											
Direct	31.5	85.5	705.1	1,514.2	1,448.8	1,899.3	2,563.1	2,936.4	2,882.7	2,882.7	3,541.7
Indirect	199.8	208.8	231.6	287.8	413.7	420.5	478.3	489.4	564.1	564.1	628.0
Total	231.3	294.3	936.7	1,802.0	1,862.5	2,319.8	3,041.4	3,425.8	3,446.8	3,446.8	4,169.7
Household Income ($million)											
Direct	31.5	85.5	133.2	171	193.5	198	225	238.5	247.5	247.5	258.1
Indirect	84.9	94.2	110.8	143.2	199.8	206.9	238.8	247.1	280.6	280.6	315.4
Total	116.4	179.7	244.0	314.2	393.3	404.9	463.8	485.6	528.1	528.1	573.5
Employment (fte)											
Direct	350	950	1,480	1,900	2,150	2,200	2,500	2,650	2,750	2,723	2,868
Indirect	1,152	1,304	1,539	1,961	2,676	2,736	3,119	3,116	3,578	3,542	3,921
Total	1,502	2,254	3,019	3,861	4,826	4,936	5,619	5,846	6,328	6,265	6,789

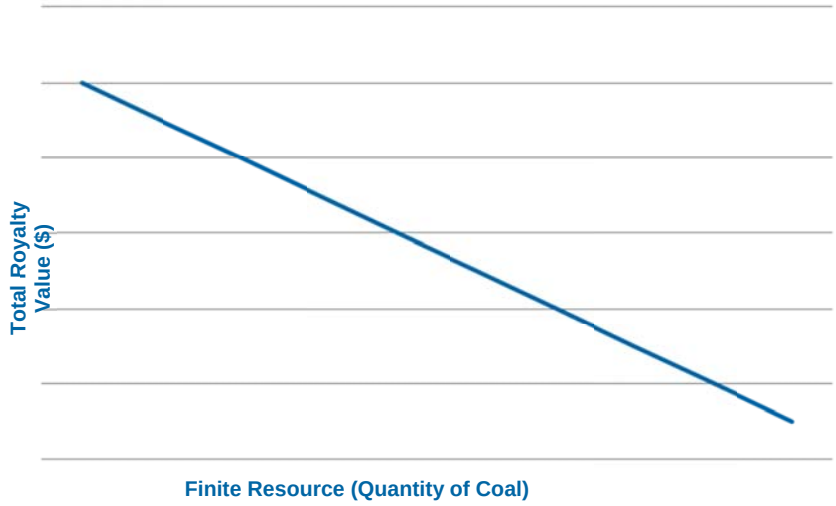
3.2.3.5 Extractive Resource Consequences

The estimated resource available to be mined is approximately 7.8 billion tonnes of coal, which underlies almost the total areas of EPC1690. The available resource has been optimised through the inclusion of part of EPC1080 which enables an optimisation of resource extraction through the placement of overburden and mine infrastructure on EPC1080 (west) rather than over EPC1690. It is

also indicated that limited resource is located in the area of EPC1080 which would be sterilised. Further exploration will be undertaken in 2012 to further refine the resource definition.

Economic consequences relevant to the State include royalties earned on mined resources. Coal, being a finite resource will diminish over time. Therefore, it is assumed that royalties earned from finite resources will diminish over time, unless further deposits are found. This is highlighted in Figure 3-5 where it is shown that over time as the volume of resource is depleted the potential revenue earned through royalties will also decline.

Figure 3-5 Conceptual Diagram of Diminishing Returns



The Office of State Revenue publishes a summary of royalty rates annually. The current rates, for coal sold after 1 October 2012, is that the first $100,000 of profit earned from minerals sold in a year is royalty tax-free. After this the rate stands are as follows, based on average price per tonne for the period:

- Up to and including $100—7%
- Over $100 and up to and including $150
  - First $100—7%
  - Balance—12.5%
- More than $150
  - First $100—7%
  - Next $50—12.5%
  - Balance—15%

Queensland Treasury and Trade currently set mining royalty rates and the methods through which they are derived. These are outlined in detail in Determination of Coal Royalty: Min 140 (2008). It must also be noted that royalty rates vary depending on whether the commodity is sold (or consumed) domestically or internationally.

The Mine layout has been developed to maximise resource extraction and minimise potential waste. Details regarding resource sterilisation are provided in Volume 4 Appendix M Land Use Report.

3.2.3.6 Agricultural Impacts

The dominant land use in the Isaac region is land for grazing: nearly 90 per cent of the Isaac LGA land is used for grazing. The region accounts for 5.6 million ha of land of which only 76,000 ha is used for cereals and 15,000 ha for non-broad acre crops. Cattle production dominates as a source of agricultural production with over 85 per cent of the total gross value of agricultural production for Isaac and a herd size estimated in 2006 at 861,000 head.

The Project (Mine) covers an area of approximately 44,730 ha. The mine directly impacts parts of six cattle stations, Moray Downs, Carmichael, Mellaluka, Albinia, Doongmabulla and Lignum. Adani has purchased the leasehold for the Moray Downs property and a package of compensation will be provided for impacts to the Lignum and Mellaluka properties.

There is a wide range in the market value of grazing land in this region which currently sells for between $500 and $2,000 per hectare, depending on quality of the land (e.g. creek flat land versus more rugged and poorer soils land) as well as the level and quality of 'improvements' such as water facilities (dams, bores etc.), accommodation, yards, fencing, existing stock and so forth. Other factors influencing property value will include access to a water licence and terrain.

The area lost to agriculture (grazing) as a result of the Mine assuming the whole site is made unavailable for grazing is approximately 44,730 ha. Assuming an average level land value of $600 per ha, this represents a cost of around $27 million, or expressed as an annuity over 10 years at 10 per cent, a cost of $4.8 million per year. If land values are reflective of its productive values, then this loss of production is small relative to the regional gross agricultural value of $233 million (2006).

There will be marginal adverse economic impacts such as direct impacts of reduced agricultural production due to the development of the Project (Mine). Construction and operation of the Mine will have a minor impact on the access of stock to grazing land. This impact can be minimised by the project design, which can include rehabilitation of land post-mining activities and implementation of appropriately designed crossing points on the railway for stock and vehicle access.

Other impacts relate to the possible reduced security of stock and ability for stock to escape or damage themselves from interaction with the construction site or activity and the introduction and/or transfer of weeds and disease to regional properties. Mitigation measures are available to minimise the likelihood of this. Details regarding assessment of good quality agricultural land are provided in Volume 4 Appendix M Land Use Report. There is no strategic cropping land within the mine footprint.

3.2.3.7 Land Severance

Physical impacts on the local communities may induce economic impacts. As noted above, the Project (Mine) covers an area of approximately 44,730 ha. The mine will be developed in a staged process. The land identified for the mine is used to graze cattle and also contains a number of access tracks and watering bores. Of the two properties significantly impacted in terms of land area and operations, the following mitigation measures have been implemented.

Adani has purchased in full the leasehold for Moray Downs property. As such, no direct impact associated with severance will be realised. In regard to Lignum and Mellaluka, Adani is negotiating a package of compensatory measures to minimise operational impacts associated with severance of land and infrastructure. In addition, measures implemented during operations such as the Near Neighbour Policy proposed in the Social Impact Management Plan (Volume 1 Section 4) will provide greater certainty in regard to staged development and how these may impact property operations.

3.3 Project (Rail)

3.3.1 Overview

Construction of the Project (Rail) has an expected delivery time of two to three years. Construction is expected to commence in 2013, in line with construction timing for the Project (Mine) and be completed nominally in 2015. Therefore, data has been collected and impacts determined for the three-year period. The following analysis to determine the economic impacts of the Project (Rail) on affected economies has been broken down into two sections: construction and operation.

3.3.2 Construction

3.3.2.1 Capital Investment

The Project (Rail) is expected to require capital expenditure totalling $1.2 billion. Table 3-8 has been developed from estimates for the distribution of expenditure over the three years and the location in which the expenditure is assumed to take place. As part of the construction of the I/O model it is necessary to have some insight into where materials and labour will be sourced to estimate the impact at varying levels e.g. on the local / regional economy, on other parts of Queensland and on economies outside of Queensland. Table 3-8 presents the results of these assessment based on previous similar projects and details in construction reports. Table 3-8 clearly shows that the main economic impact in terms of direct expenditure associated with the Project (Rail) will accrue in the Mackay Region.

Table 3-8 Direct Expenditure Associated with the Construction of the Project (Rail)

Year	1	2	3	
Fiscal year	**2013 ($)**	**2014 ($)**	**2015 ($)**	**Total ($)**
Mackay Region	246.1	491.9	76.6	814.6
Other Queensland	1.1	35.9	61.1	98.1
Outside Queensland	8.1	101.2	134.3	243.6
Total	255.3	629.0	272.0	1,156.3

3.3.2.2 Gross Regional Product

Direct and indirect impacts of the Project (Rail) are expected to increase in year one and year two of the construction period, recording increases in GRP of $131.5 million and $265.3 million respectively. This represents 1.3 per cent and 2.5 per cent, respectively, of the Mackay region's GRP in 2008-09. Year three sees a smaller, 0.3 per cent, impact on GRP which equates to $39.2 million.

State wide impacts are also significant. These impacts follow a similar trend to the regional impacts with the peak in impacts, in year two. Impacts jump from $184.5 million in year one, to $402.6 million in year two. This represents a 0.31 per cent share of the Queensland Economy total of $128.6 billion in 2008-09.

Table 3-9 Direct and Indirect Impacts on GRP and GSP during the Construction Phase of the Project (Rail)

Year	1	2	3
Fiscal year	**2013 ($ million)**	**2014 ($ million)**	**2015 ($ million)**
Mackay Region			
Direct	79.7	158.9	22.8
Indirect	51.8	106.4	16.4
Total	131.5	265.3	39.2
Queensland			
Direct	80.1	171.4	40.5
Indirect	104.3	231.2	61.1
Total	184.4	402.6	101.6

3.3.2.3 Household Income

The Project (Rail) is expected to create a significant amount of direct impacts within the Mackay region. Direct household income is expected to increase by $63.7 million in year one, $130.4 million in year two and $19 million in year three. Including indirect impacts, in the peak year, total household income is expected to reach $183.8 million. This represents 4.8 per cent of the region's 2008-09 estimated household income.

At a State level, the increase is expected to peak at $262.1 million, in year two, representing 0.2 per cent of the State's total in 2009-10 ($128.6 billion).

3.3.2.4 Employment

Employment during the construction phase of the Project (Rail) is expected to see similar trends to those identified in other indicators for the Project (Rail). It sees a peak in impacts in year two with a tailing off in year three. At its peak, the direct and indirect impacts boost employment by 4.9 per cent (of 2008-09 levels) within the Mackay region and 0.19 per cent (of 2008-09 levels) throughout the State.

Table 3-10 Direct and Indirect Impacts on Employment during the Construction Phase of the Project (Rail)

Year	1	2	3
Fiscal year	**2013 (fte)**	**2014 (fte)**	**2015 (fte)**
Mackay Region			
Direct	958	1,890	261
Indirect	361	759	123
Total	1,319	2,649	384
Queensland			
Direct	1,118	2,383	515
Indirect	896	1,994	537
Total	2,014	4,377	1,052

3.3.3 Operation

3.3.3.1 Operational Cost

The Project (Rail) line is expected to be operational in 2015/2016, in line with the start of coal production at the Mine. As previously discussed, the Mine is expected to start production at 2 Mtpa and gradually ramp up to full production of 60 Mtpa by 2022. It is expected that on average the cost of coal transportation will be $7.70 per tonne. The rail line will have capacity for 100 Mtpa and there may be additional impacts associated with third party use of the additional capacity. However, we are unable to quantify these impacts at this point. Table 3-11 outlines the anticipated operational expenditure for the different phases of the rail operation.

Using the assumptions outlined in Table 3-11 impacts across GRP, household income and employment can be derived. Analysis shows that in all cases impacts continue to rise through the first 10 years of operation as mine production grows.

Table 3-11 Direct Operational Expenditure Associated with the Project (Rail)

Year	3	4	5	6	7	8	9	10	11	12	13
Fiscal year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Production (mtpa)	2	7	14	24	29	34	43	47	50	50	60
Rail OPEX per tonne ($)	11.9	7.4	7.4	7.5	7.2	7	7.3	7.2	7.3	7.3	7
OPEX ($ million)											
Mackay Region	17	37	73	127	147	167	220	239	257	257	296
Queensland Elsewhere	2	4	9	15	18	20	26	29	31	31	36
Outside Queensland	5	11	22	38	44	50	66	71	77	77	89
Total ($million)	**24**	**52**	**104**	**181**	**209**	**237**	**312**	**339**	**364**	**364**	**420**

3.3.3.2 Gross Regional Product

GRP is expected to see significant impacts at both a regional and State level. The Mackay region will see an increase in GRP, due to the development of the project of $166 million over the first 10 years of operation. Total economic impacts in 2025 will account for 1.6 per cent of the region's GRP as estimated in 2008-09. At a State level, it will contribute an additional $258.5 million over the same period. In the peak year, it will contribute 0.11 per cent to the State's 2009-10 GSP.

3.3.3.3 Household Income

Impact estimates also include the effects on household income directly arising from the operation of the Project (Rail). Data indicates that impacts at a regional level will increase from $6.1 million in 2015 to $107.2 million in 2025. Such scale in impacts is also seen at a State level with impacts increasing from $9 million in 2015 to $157.9 million in 2025.

3.3.3.4 Employment

Total impacts generated by the Project (Rail), that is both direct and indirect, in the Mackay region will result in an increase from 76 additional full time equivalent jobs in 2015 to 1,215 additional full time equivalent jobs in 2025. This scale of increase is experienced at the State level as well (Table 3-13).

Table 3-12 Summary of Operational Phase Impacts of the Project (Rail) – Mackay Region

Year	3	4	5	6	7	8	9	10	11	12	13
Fiscal year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Mackay Region											
GRP ($ million)											
Direct	7.1	15.3	30.7	53.5	61.8	70	92.4	100.3	107.8	107.8	124.3
Indirect	3	6.5	12.9	22.5	26	29.5	39	42.3	45.4	45.4	52.4
Total	10	21.8	43.6	76	87.8	99.6	131.4	142.6	153.2	153.2	176.6
Household Income ($million)											
Direct	4.8	10.4	20.7	36.2	41.8	47.4	62.5	67.9	72.9	72.9	84.1
Indirect	1.3	2.9	5.7	10	11.5	13	17.2	18.7	20.1	20.1	23.1
Total	6.1	13.2	26.5	46.1	53.3	60.4	79.7	86.5	93	93	107.2
Employment (fte)											
Direct	59	127	252	435	498	559	730	785	835	826	943
Indirect	17	37	73	126	144	161	211	227	241	239	272
Total	76	164	325	561	642	720	941	1,011	1,076	1,065	1,215

Table 3-13 Summary of Operational Phase Impacts of the Project (Rail) – Total Queensland

Year	3	4	5	6	7	8	9	10	11	12	13
Fiscal year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Total Queensland											
GRP ($ million)											
Direct	8	17.4	34.8	60.6	70	79.3	104.7	113.6	122.1	122.1	140.8
Indirect	7.6	16.5	32.9	57.4	66.2	75.1	99.1	107.6	115.6	115.6	133.3
Total	15.6	33.8	67.7	117.9	136.2	154.5	203.9	221.2	237.7	237.7	274.1

Year	3	4	5	6	7	8	9	10	11	12	13
Household Income ($million)											
Direct	5.2	11.4	22.7	39.6	45.7	51.9	68.5	74.3	79.8	79.8	92.0
Indirect	3.7	8.1	16.3	28.4	32.8	37.2	49	53.2	57.2	57.2	65.9
Total	9	19.5	39	68	78.5	89	117.5	127.5	137	137	157.9
Employment (fte)											
Direct	73	157	311	536	613	688	899	966	1,028	1,017	1,161
Indirect	54	117	231	399	456	512	669	718	764	756	863
Total	127	274	542	935	1,069	1,200	1,568	1,684	1,792	1,774	2,025

3.3.3.5 Extractive Resource Consequence

The location and extent of mining tenements have been considered when determining the location of the Project (Rail) alignment to reduce the potential of resource sterilisation. A management hierarchy has been implemented to undertake consultation with key tenure holders to gain their feedback on the alignment of the Project (Rail). Where it is not feasible to realign the Project (Rail), negotiations will be undertaken with key tenure holders to reach mutually satisfactory outcomes.

3.3.3.6 Agricultural Impacts

Many of the properties affected by the Project are large landholdings, with the smaller landholdings tending to be within 50 km of Moranbah. The Project (Rail) alignment tends to follow property boundaries wherever possible along these smaller landholdings significantly reducing the potential for adverse impacts, including land fragmentation. Pastoral farming is undertaken across the Local Study Area with small areas of cropping to provide cattle fodder. Many properties comprise a mix of productive grazing land used for 'finishing' cattle prior to market sale, and less productive land used for general grazing. Many of the directly affected properties are vast with cattle grazing spread across expansive areas.

Pastoral farming practices within Australia are generally similar between most areas, however within this area it is important to acknowledge there will be some specific practices which will be impacted and discussed further with each landholder on an individual basis. As negotiations with individual landholders progress, property management practices will be better understood. Most properties are managed as single production units, some as part of a larger property network elsewhere in Queensland. There are however some properties that are managed as a single production unit for efficiency. These are generally contiguous properties owned by members of the same family.

Properties affected by the Project are predominantly classified as rural leasehold land used for the purposes of agricultural, grazing or pastoral activities. Occupied homesteads are present on many of the properties - very few are unoccupied. Those that are unoccupied tend to be the smaller units. In this situation, it is common for a farm manager or landholder to visit the property on a regular basis.

The rail line traverses a length of approximately 189 km within a 95 m wide corridor. The eastern portion of the rail line is within the strategic cropping land management area and flanks large portions

of strategic cropping land (management). Areas good quality agricultural land impacted by the corridor are as follows:

- 157.7 ha of Class A
- 454.2 ha of Class B
- 721.7 ha of Class C1

The rail corridor's effect on good quality cropping land is identified in greater detail in the Volume 4 Appendix Y Rail Soils Assessment. The line travels through grazing farmland and traverses a number of stock routes, impacts of which will need to mitigated, ensuring stock movement and rotation is still possible via over passes or rail crossings.

There will be marginal adverse economic impacts such as direct impacts of reduced agricultural production due to the development of the rail project. Construction and operation of the railway will have a minor impact on the access of stock to grazing land and movement of stock within and between properties. This impact has been minimised by the project design, and can be further reduced through implementation of appropriately designed crossing points on the railway for stock and vehicle access. Other impacts relate to the possible reduced security of stock and ability for stock to escape or damage themselves from interaction with the construction site or activity and the introduction and/or transfer of weeds and disease to regional properties.

Further details regarding good quality agricultural land are provided in Volume 4 Appendix M Land Use Report. Assessment of impacts to properties directly impacted by the Project (Rail) are described in Volume 1 Section 3 Social Impact Assessment.

3.3.3.7 Land Severance

Mitigation measures that could be considered are set out below. To address the uncertainty on land use effects on land values, the voluntary purchase of properties significantly affected could be undertaken.

Where there is direct loss of agricultural production, purchasing the property(ies) in part or whole will be considered where impact is likely to be significant. Where potential for reduced access to property arises, Adani will work with landowners to minimise impact including implementing measures such as agreeing the location of easements to reduce impacts e.g. outside property boundaries and/or along fence lines, rather than through middle of property where practicable. The provision of appropriate access and ability to cross easements has been considered (see Volume 3 Section 4 Land). Infrastructure and facilities will be avoided as far as possible and, where impacted, replaced on a like for like basis. The crossing of pastoral property and farm access roads will be minimised and alternative access provided during unavoidable construction activities as appropriate.

To mitigate the introduction/transfer of weeds/disease (biosecurity), Adani will develop appropriate biosecurity protocols including potentially restricted access, vehicle/plant wash down/ etc. Information will also be provided on road closures/detours and alternative routes provided in appropriate media and with signage during railway construction. Following construction, adequate reinstatement of agricultural properties as reasonably practical, along with appropriate rehabilitation to ensure post construction condition is suitable for the intended use will be undertaken.

3.4 Implications of Existing Policies

3.4.1 Regional Policy

The size, scale and required expertise of such developments often impose considerable strains on the mining proponent, resulting in the use of large levels of resourcing from outside the local region. Such strategies are implemented due to corporate economies of scale or due to company policy.

As a State, Queensland currently has a considerable level of mining activity underway. A concerted effort is being made by the Queensland Government and residents to bolster policies and campaigns that encourage the use of local or state-wide resources. Such campaigns, strongly backed by the State Government, such as the 'Buy Local' campaign have renewed vigour after the Queensland floods. They are important in the encouragement of large mining firms to implement a procurement strategy that sees local goods and services used instead of their international equivalents. Such procurement will help the region and affected economies realise the benefits outlined in analysis such as, higher levels of employment, greater GRP and higher average household incomes. The strategy is ensuring that significant investment is seen both in the local and State economies.

The Queensland Department of State Development, Infrastructure and Planning's Coal Plan 2030 recognises the potential challenges that will be faced by mining communities, in light of the growth of the mining industry over the following years. Regional planning and skills development have been highlighted by the plan as critical areas for development to ensure a sustainable, integrated mining community in Queensland.

The Sustainable Resource Communities Policy looks to ensure that regional planning in mining communities is sufficient to manage the rapid development occurring in such districts. It outlines a number of initiatives that:

- Strengthen the coordination role of the Government
- Improve linkages between social impact assessment and regional planning
- Foster partnerships with local government, industry and community
- Ensure an enhanced regulatory environment for social impact assessment

The Growing Liveable Regions policy aims to ensure that mining communities remain attractive to prospective workers and their families, such as the provision of affordable housing.

Skills development is also critical to ensure that the mining industry is continuing to attract more workers and that their skills are appropriately developed. Therefore, the Queensland Department of Education, Training and Employment is investing in training infrastructure that is focused on providing the right skills required by the mining industry.

3.4.2 Local Procurement

Strong Government and public backing will increase pressure on potential new developments to increase the percentage of resources procured from local economies. The Federal Government's Buy Australian and Abroad package (announced in the 2011-12 Budget) is aimed at increasing Australian industry participation in the resources sector. The package includes the appointment of supplier advocates to develop enterprise capabilities with up to 180 small to medium enterprises. Amongst other things, these advocates would be responsible for pooling the capabilities of domestic

suppliers to obtain the sorts of economies of scale (and therefore cost economies) required when tendering for large resource projects. In the local context, this would require bringing together suppliers from the Isaac and surrounding regions, Queensland Resources Council, Regional Economic Development Corporation and mining companies.

Impacts will be felt across an array of businesses, either due to direct consumption by the mine or indirect consumption i.e. additional goods and services purchased by the workers. Table 3-14 provides an indication as to the local businesses that may either directly or indirectly service the mining industry.

Table 3-14 Local Businesses Opportunities

Business	Opportunities
Food Shops / Catering	Some work may be required directly by the mine and offsite infrastructure
Construction	Residential and commercial
Bulk Fuel	Directly for the mine and for transportation importing the additional goods
Electrical	Some work may be required directly by the mine and offsite infrastructure
Industrial Equipment Hire	For construction work and mine
Mechanical Workshops	Some work may be required directly by the mine and offsite infrastructure
Plumbing	Some work may be required directly by the mine and offsite infrastructure
Road Construction	To provide for the additional population of the town and heavy maintenance required due to the mine trucks
Service Stations	Both in and out of town
Steel Fabrication	Construction and mining support
Transport	To provide for transportation of mining related goods and workers
Tyres	To support mining industry
Waste collection/recycling	Service provision to the offsite infrastructure, workers accommodation village and mine

3.4.3 Mineral Resources Rent Tax and Carbon Tax

It is expected that the project will be subject to the Mineral Resources Rent Tax, however at this stage it is not possible to provide an accurate estimate of the total commitment that would be applicable to the Project.

The assessment of greenhouse gas emissions contained in Volume 4 Appendix T Mine Greenhouse Gas Emissions Report concludes that during operations the average annual Scope 1 greenhouse gas emissions as 782 kilotonnes of CO_2-e per annum for the mine operations and 641 kilotonnes of CO_2-e per annum for the rail operations.

Since the relevant threshold would be exceeded in both instances, The Project will likely be subject to the carbon pricing mechanism. However, it is not possible to estimate the total commitment that would be applicable to the Project until such time as operations commence.

3.5 Impact Mitigation

3.5.1 Distributional Effects

The input output analysis results; identified in Sections 3.2 and 3.2.3.5 of the report has identified the distribution of the impacts on the local and regional economies. It outlines the, mostly positive, impacts on the local, regional and State economies. The remaining positive impacts will be felt nationally throughout Australia. In order to ensure the local and State economies reap the maximum possible impacts from the development strategies, policies and legislative measures are put in place to ensure these economies retain as many of the benefits as possible. Examples of such are outlined in the table in Section 3.5.2.

Distributional effects may also be felt at the micro level within the community. The indigenous or disabled community benefit from strategies such as the Queensland Government's Indigenous Employment and Training Strategy. Table 3-15 outlines these strategies.

Such initiatives require the mining proponent to procure a certain precent of resources from specific resource pools therefore minimising any adverse distributional effects that may be felt as a result of the development.

3.5.2 Strategies for Employment and Local Participation

There are a number of Queensland Government policies that aim to increase and encourage the levels of local participation in the development. These strategies aim to mitigate the potential adverse impacts on the region. Table 3-15 outlines these strategies.

Table 3-15 Existing Government Strategies

Strategy	Objective
Indigenous Employment and Training Strategy 2008-2011 Queensland Department of Education, Training and Employment	The strategy focuses on achieving improved employment and training outcomes for Indigenous people by placing a particular emphasis on those individuals and communities that are locked into intergenerational unemployment due to multi-faceted social and life issues.

Strategy	Objective
Mackay, Isaac and Whitsunday Regional Plan 2011 - 2031 Department of State Development, Infrastructure and Planning	The strategy aims to manage regional growth and change while protecting and enhancing the quality of life in the region. The plan incorporates a comprehensive policy framework to guide decision-making for managing the region's growth until 2031.
Local Industry Policy Department of State Development, Infrastructure and Planning	The strategy aims to adhere to the 'Queensland first' philosophy and creating jobs for Queenslanders, jobs that are sustainable and which will assist in achieving a more highly skilled workforce in key industries and deliver on the Government's economic priorities. Objectives include; Promoting local industry's involvement in value-adding activities in Queensland; and Maximising employment and business growth in Queensland by expanding market opportunities for local industry.

In addition, Adani has identified the need for a Local Industry Participation Plan as part of the Social Impact Assessment (see Volume 1 Section 4). The Local Industry Participation Plan (LIPP) will be prepared in accordance with the Local Industry Policy – a fair go for local industry, updated October 2010 (LIP) and associated Guidelines. Adani will work with both Councils, Clermont Preferred Futures Group, and local businesses in conjunction with government agencies (Office of Advanced Manufacturing) and the Industry Capability Network (ICN) in developing the plan to provide robust, integrated and sustainable local business participation opportunities.

3.5.3 Land Values

Fundamentally, land values in the Isaac region will be determined by changes in the rate of growth of demand for land relative to changes in the rate of growth in the supply of land. Higher demand for land reflects increases in economic activity. The estimated increases in regional output, household consumption, incomes and employment outlined in the above sections suggest the construction and operation of the proposed Project will increase economic activity in the Isaac region. Whether the consequent increase in the demand for land (in response to higher economic activity) will translate into higher land values will depend on the amount and timing of new land made available (supplied) to the Isaac market. However, one particular aspect of the proposed project that is likely to have a mitigating impact on residential land values is distance of the Mine from Moranbah and Clermont, which necessitates the development of the Mine village.

All mine workers will be accommodated in the workers accommodation village which will relieve pressure on residential land demand and values. However, it is difficult to know the extent to which the Mine village will relieve this pressure.

Having noted this, the overall impact of the Project on land values is likely to be neutral – that is, it should not influence increases over the short term. In the medium to longer term (i.e. in five to ten years' time), the operation of the Project would not be expected to have any discernible impact on

residential and industrial property values. This reflects the likelihood of land supply eventually catching up to demand for land.

In terms of how the Project may impact commercial land values, the impacts are likely to be negligible. This reflects the absence of any discernible relationship linking mining sector activity to commercial property sector activity in regional areas.

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4. Conclusion and Summary

In summary, the economic baseline and assessment of impacts of the Project have identified the potential impacts to GRP/GSP, household income and employment levels. Construction of the Project (Mine) is expected to generate on average over the construction years $78.2 million per annum in direct and indirect impacts on the Mackay regions GRP, a considerable proportion of which will be direct benefits such as purchase of local materials or services. For the State as a whole, impacts on average over the construction period are estimated to be $203 million per year. The construction phase also provides considerable benefits to household income and employment. On average, construction will generate an additional 378 full time equivalent (fte) jobs per year within the Mackay region and 1,192 full time equivalent jobs for Queensland.

The operational phase of the Project (Mine) sees benefits that increase in line with production rates of coal. At the point of full production (60 Mtpa) total impacts on GRP, for that year, in the Mackay region reach an estimated total of $3,795 million and at a State level $4,169.7 million. Benefits to household incomes within the region will total $372.2 million and State wide $573.5 million. Employment levels locally will see an increase of 4,093 fte and State wide 6,789 fte.

Construction of the rail infrastructure is expected to generate on average over the construction years $145 million per annum in direct and indirect impacts on the Mackay regions GRP. For the State as whole, this is estimated to be $229 million per year. The construction phase also poses considerable benefits to household income and employment. On average construction will generate an additional 1,451 full time equivalent jobs within the Mackay region and 2,481 full time equivalent jobs for Queensland over the construction period. Benefits during the construction period will be felt most vigorously during years one and two.

The operational phase of the Project (Rail) sees impacts that increase in line with production rates of the Mine. At the point of full production (60 Mtpa) total impacts per year on GRP, for that year, in the Mackay region reach an estimated total of $176.6 million and at a State level $274.1 million. Benefits to household incomes within the region will total $107.2 million and State wide $157.9 million. Employment levels locally will see an increase in fte of 1,215 and State wide 2,025.

GRP is expected to see significant positive impacts at both a regional and State level. The Mackay region will see an increase in GRP, due to the development of the project of $166 million over the first 10 years of operation. Total economic impacts in 2025 will account for 1.6 per cent of the region's GRP as estimated in 2008-09. At a state level, it will contribute an additional $258.5 million over the same period. In the peak year, it will contribute 0.11 per cent to the State's 2009-10 GSP.

In conclusion, the potential of the Project to produce significant positive impacts on the local and State economies is substantial. In order to ensure the range and extent of positive impacts can be achieved, a number of measures to mitigate negative impacts will be put in place. Strategies such as an increase in local participation of regional and Queensland based industry as well as encouraging the participation and up-skilling of disadvantaged groups such as indigenous communities. Such strategies will require assessment frameworks to be developed that should include a mix of project specific indicators as well as quantitative statistics well proven in tracking the success of strategies and policies.

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5. References

ABS (2001) Census of Population and Housing, Basic Community Profile Table 26 - Second Release

ABS (2006) 2003/04 Household Expenditure Survey Summary Results, ABS Cat No. 6530.0, Canberra

ABS (2006a) 8731.0 Building Approvals, Canberra

ABS (2006b) Census of Population and Housing, Basic Community Profile Table 26

ABS (2007) 8731.0 Building Approvals, Canberra

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ABS (2010a) *2009/10 Australian National Accounts, State Accounts,* ABS Cat No. 5220.0, Canberra

ABS (2010b) *National Regional Profile, Isaac (R), 2005-2009*, ABS Cat No. 1379.0.55.001, Canberra

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OESR (2011) Queensland Regional Profiles: Isaac, Brisbane

REDC (2008) Isaac LGA Regional Economic Profile, Mackay

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REDC (2010) Isaac LGA Regional Economic Profile, Mackay

REDC (2011) Isaac Economic Snapshot, Mackay

Runge Limited (2011) Carmichael Macro-Conceptual Mining Study, Brisbane

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Appendix A

Cross Reference to Project Terms of Reference

Terms of Reference Requirement/Section Number	Section of this report
5.1.1 Describe the existing economy in which the Project is located and the economies materially impacted by the project:	
◗ a map illustrating the local and regional that could be potentially affected by the project	Section 1.2, Figure 1-1
◗ gross regional product or other appropriate measure of annual economic production	Section 2.4.1
◗ population	Section 2.2, Volume 4 Appendix F Social Impact Assessment
◗ labour force statistics	Section 2.5
◗ economic indicators, the regional economy's key industries and their contribution to regional economic income	Section 2.4
◗ relevant government programmes and policies that affect the project	Section 2.3, Volume 1 Section 1
◗ the key regional markets relevant to the project: – labour market – housing and land markets – construction services and building inputs market – regional competitive advantage and expected future growth.	Section 2.4
With regard to the region's key industries and factor prices, provide information on: ◗ current input costs (wage rates, building costs, housing rent etc.) ◗ land values in the region by type of use.	Section 2.4.9, 2.3.10, 2.5.3 and 2.4.11
5.1.2 The potential impacts should consider local, regional, state and national perspectives as appropriate to the scale of the project.	
Describe both the potential and direct economic impacts including:	Section 3.2
◗ estimated costs, if material, on industry and the community by assessing the following: property values; industry output; and employment	
◗ potential land severance issues as a result of proposed rail infrastructure and proposed mitigation measures (including rail crossings)	Section 0 and 3.3.3.7
◗ the indirect impacts likely to flow to other industries and economies from the development of the project (and the implications of the project for future development)	Section 3.2
◗ Include the volume of extractive materials to be used (particularly limited local resources) and any measures proposed to mitigate	Section 3.2.3

Terms of Reference Requirement/Section Number	Section of this report
identified impacts	
◗ the distributional effects of the proposal including proposals to mitigate any negative impact on disadvantaged groups	Section 3.5.1
◗ mitigation strategies to manage project impacts through relevant government policies and programmes	Section 3.4.3
The assessment of economic impacts should outline strategies for local participation, including:	
◗ strategies for assessing the cost effectiveness of sourcing local inputs from the regional economy during the construction, operation and rehabilitation of the project	Section 3.5.2
◗ employment strategies for local residents including members of Indigenous communities and people with a disability, including a skills assessment and recruitment and training programs to be offered	Section 3.5.2
Strategies responding to relevant government policy, relating to:	
◗ the level of training provided for construction contracts on Queensland Government building and construction contracts, with regard to the Queensland Government Building and Construction Contracts Structured Training Policy (the 10 per cent policy)	Section 3.5.2
◗ Indigenous employment opportunities, with regard to the Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects (the 20 per cent policy)	Section 3.5.2
◗ the use of locally sourced goods and services, with regard to the Queensland Department of State Development, Infrastructure and Planning Local Industry Policy.	Section 3.5.2
◗ the potential impact on extractive resource availability in the regions both during and after construction and any economic consequences for the regions	Section 3.2.3
Address the current and future management processes for adjacent properties that are likely to be impacted by the project during construction and/or operation. Mention the:	
◗ impact of the project on existing agricultural land uses and management practices (e.g. disruption to stockyards, fences, water points, sowing or harvesting of crops, movement of livestock, agricultural machinery and any loss of agricultural land).	Section 3.2.3.6 and 3.3.3.6
◗ range of measures required to mitigate real and potential disruptions to rural practices and management of properties	Section 3.4.3

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