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# Alpha Coal Project (Coal Railway) Economic Impact Study

## Report

July 2010

# Alpha Coal Project (Coal Railway) Economic Impact Draft Report

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# TABLE OF CONTENTS

## EXECUTIVE SUMMARY

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	Disclaimer	1
<b>2</b>	<b>SOCIO-ECONOMIC PROFILE</b>	<b>2</b>
2.1	Population Projections	6
2.2	Major Projects	6
2.3	Summary	20
<b>3</b>	<b>EMPLOYMENT AND ENTERPRISE ACTIVITY WITHIN THE COAL RAILWAY STUDY AREA</b>	<b>21</b>
3.1	Workforce Size	21
3.2	Unemployment Rate	21
3.3	Labour Force Participation Rate	22
3.4	Enterprise Activity	22
3.4.1	Number of Businesses	22
3.5	Agricultural Activity	27
3.5.1	Horticulture	27
3.5.2	Cropping	30
3.5.3	Livestock	31
3.5.4	Summary of Agricultural Activity	35
3.6	Summary	35
<b>4</b>	<b>AVAILABILITY OF ACCOMMODATION AND HOUSING WITHIN THE COAL RAILWAY STUDY AREA</b>	<b>36</b>
4.1	Commercial Accommodation in Outback TR, Mackay TR & Whitsunday TR	36
4.2	Mackay SD Housing Market	41
4.2.1	Houses	41
4.2.2	Units and Townhouses	43
4.2.3	Commercial	45
4.2.4	Industrial	47
4.3	Central West SD Housing Market	49
4.3.1	Houses	49
4.3.2	Units and Townhouses	51
4.3.3	Commercial	53
4.3.4	Industrial	55
4.4	Summary	56
<b>5</b>	<b>ECONOMIC ASSESSMENT OF PROJECT IMPACTS</b>	<b>58</b>
5.1	Economic Impact Assessment	58
5.1.1	Limitations of the Input-Output Approach	59
5.2	Construction and Capital Impacts	60
5.3	Operating & Ongoing Costs	74
5.4	Opportunity Cost of the Alpha Coal Project (Railway)	87
<b>6</b>	<b>ECONOMIC DEVELOPMENT STRATEGIES</b>	<b>88</b>

6.1	Strategies for Local Participation	88
6.1.1	Training & Skills Development	88
6.1.2	Indigenous Employment	88
6.1.3	Local Industry Participation	88
6.2	Strategies to Mitigate Disruption to Local Economy	89
<b>7</b>	<b>SUMMARY</b>	<b>90</b>
<b>8</b>	<b>REFERENCES</b>	<b>91</b>

## LIST OF TABLES & FIGURES

Table E.1: Construction and capital expenditure for Alpha Coal Railway, 2010-2019 (\$M) xi	
Table E.2: Economic impacts of capital and construction expenditure for the Alpha Coal Project (Railway), 2010-2014	xiii
Table E.3: Economic impacts of capital and construction expenditure for the Alpha Coal Project (Railway), 2015-2019	xiii
Table E.4: Operating and ongoing expenditure for Alpha Coal Railway, 2013-2026 (\$M) xv	
Table E.5: Operating and ongoing expenditure for Alpha Coal Railway, 2027-2042 (\$M) xv	
Table E.6: Economic impacts of ongoing and operating expenditure of the Alpha Coal Project (Railway), 2013-2026	xvii
Table E.7: Economic impacts of ongoing and operating expenditure of the Alpha Coal Project (Railway), 2027-2042	xvii
Table 2.1: Socio-Economic Profile, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 1996 to 2006	4
Table 2.2: Population Projections, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2010 to 2031	6
Table 2.3: Major Projects within Central West SD and Mackay SD, 2008	8
Table 3.1: Labour Force Size, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2001-02 to 2009-10	21
Table 3.2: Unemployment Rate, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2001-02 to 2009-10	22
Table 3.3: Labour Force Participation Rate, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2001-02 to 2009-10	22
Table 3.4: Number of Businesses, Barcaldine SLA, June 2007	23
Table 3.5: Number of Businesses, Jericho SLA, June 2007	23
Table 3.6: Number of Businesses, Belyando SLA, June 2007	24
Table 3.7: Number of Businesses, Nebo SLA, June 2007	25
Table 3.8: Number of Businesses, Bowen SLA, June 2007	25
Table 3.9: Number of Businesses, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, June 2007	26
Table 3.10: Fruit (Area), Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06	27
Table 3.11: Fruit (Production), Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06	27
Table 3.12: Fruit (Value), Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06	28
Table 3.13: Vegetables for Human Consumption (Area) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06	28
Table 3.14: Vegetables for Human Consumption (Production) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06	29
Table 3.15: Vegetables for Human Consumption (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06	30
Table 3.16: Crops (Area) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06	30
Table 3.17: Crops (Production) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06	31



Table 3.18: Crops (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06	31
Table 3.19: Livestock (Production) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06	33
Table 3.20: Livestock Slaughtered (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06	34
Table 3.21: Livestock Products (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06	34
Table 4.1: Summary of Tourism Establishments, Outback TR, Mackay TR, Whitsunday TR and Queensland, March Quarter 2010	36
Table 4.2: Occupancy Rate Trends, Mackay TR, Whitsunday TR, Outback TR & Queensland, Mar Q 05 to Mar Q 10	38
Table 4.3: Average Vacancies per Nights, Mackay TR, Whitsunday TR & Outback TR, Mar Q 05 to Mar Q 10	40
Figure 4.1: Volume of House Sales, Belyando SLA, Nebo SLA, Bowen SLA and Mackay SD, 2001 to 2009	41
Figure 4.2: Median Sale Price, Houses, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009	42
Figure 4.3: Volume of Unit and Townhouse Sales, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009	43
Figure 4.4: Median Sale Price, Units and Townhouses, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009	44
Figure 4.5: Volume of Commercial Sales, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009	45
Figure 4.6: Median Sale Price, Commercial Property, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, Houses, 2001 to 2009	46
Figure 4.7: Volume of Industrial Property Sales, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009	47
Figure 4.8: Median Sale Price, Industrial Property, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009	48
Figure 4.9: Volume of House Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009	49
Figure 4.10: Median Sale Price, Houses, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009	50
Figure 4.11: Volume of Unit and Townhouse Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009	51
Figure 4.12: Median Sale Price, Units and Townhouses, Central West SD, 2001 to 2009	52
Figure 4.13: Volume of Commercial Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009	53
Figure 4.14: Median Sale Price, Commercial Property, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009	54
Figure 4.15: Volume of Industrial Land Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009	55
Figure 4.16: Median Sale Price, Industrial, Central West SD, 2001 to 2009	56
Table 5.1: Measures of Economic Impact	59
Table 5.2: Construction and capital expenditure for Alpha Coal Railway, 2010-2019 (\$M)	61
Table 5.3: Distribution of output or consumption effects of Alpha Coal Railway construction, 2010-2014 (\$M)	66

Table 5.4: Distribution of output or consumption effects of Alpha Coal Railway construction, 2015-2019 (\$M)	67
Table 5.5: Distribution of household income effects of Alpha Coal Railway construction, 2010-2014 (\$M)	68
Table 5.6: Distribution of household income effects of Alpha Coal Railway construction, 2015-2019 (\$M)	69
Table 5.7: Distribution of employment effects of Alpha Coal Railway construction, 2010-2014 (FTEs)	70
Table 5.8: Distribution of employment effects of Alpha Coal Railway construction, 2015-2019 (FTEs)	71
Table 5.9: Distribution of value added effects of Alpha Coal Railway construction, 2010-2014 (\$M)	72
Table 5.10: Distribution of value added effects of Alpha Coal Railway construction, 2015-2019 (\$M)	73
Table 5.11: Operating and ongoing expenditure for Alpha Coal Railway, 2013-2026 (\$M) 75	
Table 5.12: Operating and ongoing expenditure for Alpha Coal Railway, 2027-2042 (\$M) 75	
Table 5.13: Distribution of output or consumption effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (\$M)	79
Table 5.14: Distribution of output or consumption effects of Alpha Coal Railway operating and ongoing expenditure, 2026-2042 (\$M)	80
Table 5.15: Distribution of household income effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (\$M)	81
Table 5.16: Distribution of household income effects of Alpha Coal Railway operating and ongoing expenditure, 2026-2042 (\$M)	82
Table 5.17: Distribution of employment effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (FTEs)	83
Table 5.18: Distribution of employment effects of Alpha Coal Railway operating and ongoing expenditure, 2027-2042 (FTEs)	84
Table 5.19: Distribution of value added effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (\$M)	85
Table 5.20: Distribution of value added effects of Alpha Coal Railway operating and ongoing expenditure, 2027-2042 (\$M)	86

# EXECUTIVE SUMMARY

## Introduction

Hancock Prospecting Pty Ltd (HPPL) proposes to establish a 30 Mtpa thermal coal mine in the Galilee Basin to the north of Alpha. The project involves the construction of an open cut coal mine and processing plant, mine-to-port railway to Abbot Point and a coal export terminal.

This report pertains to the economic impact of the construction of the coal railway. Separate assessments have been prepared for the mine and coal export terminal.

Economic Associates Pty Ltd was commissioned by GHD Pty Ltd to prepare an economic impact assessment of the proposed Alpha Coal (Rail) Project.

This report provides an assessment of regional economic values including:

- Regional and sub-regional population analysis (historic and projected);
- Regional and sub-regional employment and labour force analysis (by industry, occupation, participation rate and unemployment), skills and training;
- Demographic profile (age, family structure, income);
- Analysis of industrial activity and significance (e.g. number of employing and non-employing businesses by industry);
- Enterprise activity (business type and number). This would include a description of large scale industrial projects and their effects in the region;
- Analysis of residential, commercial and industrial property markets; and
- Availability and capacity of commercial accommodation to meet the accommodation needs of the construction and operational workforce.

The assessment of regional economic values identifies the following areas of interest:

- Barcaldine Statistical Local Area (SLA), Jericho SLA, Belyando SLA, Nebo SLA and Bowen SLA (local level);
- Central West Statistical Division (SD) and Mackay SD (regional)<sup>1</sup>;
- Queensland (state); and
- Australia (national).

The report also includes an economic impact assessment of the Alpha Coal (Rail) Project based on:

- Construction and capital expenditure impacts; and
- Operating and ongoing expenditure impacts.

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<sup>1</sup> The assessment of commercial accommodation uses the Outback Tourism Region (TR) as the regional boundary.

## Economic Overview

The socio-economic profile highlighted that Belyando SLA had a relatively young population compared to the other coal railway SLAs, with a higher average age recorded in Barcaldine SLA and Jericho SLA. The average household size was particularly high in Nebo SLA in 2006 at 4.8 persons per household, likely reflecting a relatively high incidence of group households.

The incidence of household ownership varied considerably throughout the coal railway SLAs, and was highest in Barcaldine SLA, Jericho SLA and Bowen SLA. Belyando SLA and Nebo SLA both recorded household ownership levels significantly below the state average.

In 2006, the unemployment rate was particularly low in Belyando SLA and Nebo SLA, with each region recording an unemployment rate below 2%.

In Jericho SLA, agriculture, forestry & fishing was the dominant industry of employment, with mining the key employer in both Belyando SLA and Nebo SLA.

Between 2010 and 2031, Belyando SLA and Nebo SLA are anticipated to record a population growth rate exceeding regional and state averages. On the other hand, the population of Barcaldine SLA and Jericho SLA are expected to remain relatively stable in this period.

Within the coal railway SLAs there were approximately 41 major projects completed, committed, under investigation or under construction, including:

- \$6.7 billion of mining projects;
- \$5.7 billion of Ports and Airports project;
- \$5.6 billion of industry, manufacturing and mineral processing projects;
- \$1.8 billion of energy projects;
- \$655 million of water projects;
- \$120 million of rail transport projects; and
- \$45 million of tourism, property development and major retail projects.

## Employment and Economic Activity in the Regional Economy

Over the past nine years to 2009-10, within the coal railway SLAs, Nebo SLA and Belyando SLA recorded the highest rate of growth in labour force size. Bowen SLA was the only SLA within the coal railway SLAs to consistently record an unemployment rate above the state average. The unemployment rate was particularly low in Belyando SLA and Nebo SLA, and has remained below 2% in both regions for the past five years.

There were an estimated 2,793 businesses in the coal railway SLAs as of June 2007, with the majority of businesses located within Bowen SLA and Belyando SLA. Agriculture, forestry & fishing was the dominant business type in all regions, accounting for 34.6% to 76.9% of all businesses. There were 21 businesses identified in the coal railway SLAs which employed 200 or more workers, including fifteen in the agriculture, forestry & fishing sector, six in the manufacturing sector, three in the accommodation, cafe & restaurant sector and three in the health & community service sector.

Within the coal railway SLAs, Bowen SLA was most significant in terms of horticultural production, with mangoes, tomatoes, capsicum & chillies, French & runner beans, eggplants and honeydews each accounting for over 40% of Queensland production by value.

### Availability of Accommodation and Housing in the Regional Economy

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Mackay TR ranged between:

- 369-973 vacant hotel / motel rooms and serviced apartments; and
- 339-1,245 vacancies at caravan sites

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Whitsunday TR ranged between:

- 923-1,646 vacant hotel / motel rooms and serviced apartments;
- 440-1,264 vacancies at caravan sites;
- 30-103 vacant holiday flats, units & houses; and
- 471-727 vacant hostel beds.

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Outback TR ranged between:

- 705-1,245 vacant hotel / motel rooms and serviced apartments; and
- 1,345-2,459 vacancies at caravan sites.

Belyando SLA, Nebo SLA and Bowen SLA did not account for a significant proportion of property sales within Mackay SD. In the 2001 to 2009 period, Belyando SLA achieved median house prices similar to the Mackay SD, whereas Nebo SLA and Bowen SLA recorded prices consistently below the regional average. Commercial property prices in Belyando SLA, Nebo SLA and Bowen SLA were typically lower than in Mackay SD.

Barcaldine SLA and Jericho SLA did not account for a significant proportion of property sales within the Central West SD. In the 2001 to 2009 period, Barcaldine SLA recorded median property prices similar to the Central West SD average.

### Economic Assessment

The purpose of this stage of the analysis is to understand the scale of the proposed development's economic impact and effect relative to the size of the Queensland economy. The economic assessment will entail an economic impact assessment to estimate the scale of output, income, employment and value added impacts of the project on the Queensland economy, identification of the project's opportunity cost and the cumulative impacts of major projects within the region.

Economic impact assessment is used to estimate the direct and indirect impacts of a particular economic stimulus or activity, in this case, expenditure related to the construction and operation of the Alpha Coal Railway. The economic impact analysis is based on input-output tables which describe inter-industry transactions for a given region. National input-output tables for 2005-06<sup>2</sup>

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<sup>2</sup> ABS (2009) Australian National Accounts: Input-Output Tables Catalogue No. 5209.0.55.001

are prepared by the Australian Bureau of Statistics based on the Australian National Accounts. Queensland tables are then imputed using Queensland State Accounts and Census data.

The total economic impact of a particular stimulus or activity comprises the following effects:

- Direct or initial effect: being the stimulus for the economic impact, typically described as the change in sales or contribution to final demand by the stimulus or activity;
- Flow on effects, comprising production-induced effects and consumption-induced effects, these being:
  - First-round production effects: being those purchases of inputs required from other industry sectors in the economy to produce the additional output generated by the stimulus or activity;
  - Industrial support production effects: being those second, third and subsequent-round industrial flow on effects stimulated by the purchases made in the first round; and
  - Consumption induced effects: being those purchases made by households upon receiving additional income from labour payments stemming from the production of additional output generated by the stimulus or activity under assessment.

The extent of these impacts can be represented by multipliers calculated in aggregate for various regional, state or national economies. There are commonly four multipliers used to measure impact - output, income, employment and value added.

Two sets of the above multipliers can be generated, namely:

- Type 1 Multipliers, which estimate the direct and production induced impacts of a stimulus or activity; and
- Type 2 Multipliers, which estimate the direct, production induced and consumption induced impacts of a stimulus or activity.

Project purchases and expenditure by year and type of expenditure are allocated against up to 109 industry sectors identified in the input-output tables for each of the impact measures, which include:

- Output (or consumption);
- Household income;
- Employment (FTEs); and
- Value Added.

The extent of the total impact for each of these measured will be distributed across a broad range of industry sectors. The allocation of project expenditures to industry sectors is based on the nature of the activity, as opposed to the nature of the enterprises involved in the transaction.

### **Construction and Capital Impacts**

Table E.1 below provides a detailed breakdown of construction and capital costs associated with the Alpha Coal Railway project. Construction and capital works associated with the Alpha Coal

Railway are anticipated to commence in 2010 and be completed in 2019<sup>3</sup>. Capital imports are largely limited to the purchase of locomotives and have an estimated value of US\$157.38 million. Imports do not stimulate the domestic economy and are hence not dealt with any further.

Construction and capital works between 2010 and 2019 are anticipated to cost approximately \$2,8 million, with the majority of expenditure anticipated to be incurred 2011-2013.

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<sup>3</sup> Replacement capital works are dealt with in the economic impact assessment of ongoing and operational expenditure.

**Table E.1: Construction and capital expenditure for Alpha Coal Railway, 2010-2019 (\$M)**

Expenditure Item	Origin	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
<u>Below Rail Capital Costs</u>												
<u>Construction Costs</u>												
Embankments & Cuttings	Qld	-	116.35	232.71	232.71	-	-	-	-	-	-	581.76
Drainage, Culverts, Embankment Protection	Qld	-	13.54	27.09	27.09	-	-	-	-	-	-	67.71
Roads and Crossings	Qld	-	-	11.06	16.60	-	-	-	-	-	-	27.66
Tracklaying Supply	Qld	-	116.96	155.94	116.96	-	-	-	-	-	-	389.85
Tracklaying	Qld	-	-	31.45	125.81	-	-	-	-	-	-	157.26
Bridges and Causeways	Qld	-	182.47	228.09	45.62	-	-	-	-	-	-	456.18
Sub Total	-	-	429.32	686.34	564.77	-	-	-	-	-	-	1,680.43
<u>Signaling and Communications</u>												
Signaling	Qld	-	-	-	26.07	-	-	-	-	-	-	26.07
Communications	Qld	-	-	16.78	67.13	-	-	-	-	-	-	83.91
Sub Total	-	-	-	16.78	93.20	-	-	-	-	-	-	109.98
<u>Construction Facilities</u>												
Temporary Structure, Services and Utilities	Qld	-	34.56	11.52	-	-	-	-	-	-	-	46.08
Minor Equipment	Qld	-	10.31	-	-	-	-	-	-	-	-	10.31
Construction Camps	Qld	-	86.85	28.95	-	-	-	-	-	-	-	115.80
Sub Total	-	-	131.72	40.47	-	-	-	-	-	-	-	172.19
<u>Extra Passing Loops + KC Rail Loop</u>												
Passing Loops for 30MT to 60MT	Qld	-	-	-	-	-	5.00	5.00	5.00	5.00	5.00	25.00
KC Rail Loop	Qld	-	-	-	-	19.84	29.76	-	-	-	-	49.60
Sub Total	-	-	-	-	-	19.84	34.76	5.00	5.00	5.00	5.00	74.60
<u>Owners Costs</u>												
Land Acquisition	Qld	3.70	0.60	45.40	-	-	-	-	-	-	-	49.70
Long Service Leave Levy	Qld	-	4.50	6.00	4.50	-	-	-	-	-	-	15.00
Setup Costs	Qld	-	9.68	-	-	-	-	-	-	-	-	9.68
Sub Total	-	3.70	14.78	51.40	4.50	-	-	-	-	-	-	74.38
<u>Yard</u>												
Yard	Qld	-	39.70	79.41	79.41	-	-	-	-	-	-	198.52
Sub Total	-	-	39.70	79.41	79.41	-	-	-	-	-	-	198.52
Total Below Rail Capital Costs	-	3.70	615.53	874.40	741.88	19.84	34.76	5.00	5.00	5.00	5.00	2,310.11
<u>Above Rail Capital Costs</u>												
Locomotives	Aus	-	-	1.75	2.10	2.45	1.40	1.05	1.05	1.05	-	10.85
Wagons	Aus	-	-	55.57	107.16	108.05	52.48	51.82	52.48	52.04	-	479.59
Shunt Locomotives	Aus	-	-	3.15	3.15	3.15	3.15	-	-	-	-	12.60
Total	-	-	-	60.47	112.41	113.65	57.03	52.87	53.53	53.09	-	503.04
Total Domestic Capital Spend	-	3.70	615.53	934.86	854.29	133.49	91.79	57.87	58.53	58.09	5.00	2,813.14
Capital Imports	-	-	-	-	-	-	-	-	-	-	-	-
Locomotives	\$US	-	-	25.38	30.46	35.54	20.31	15.23	15.23	15.23	-	157.38



Tables E.2 and E.3 summarise the direct and indirect economic impacts of the construction and capital expenditure for the Alpha Coal Project (Railway), in terms of output, household income, employment and value added.

Tables E.2 and E.3 indicate that the most significant economic impacts of construction and capital expenditure associated with the Alpha Coal (Rail) Project will arise between 2011 and 2013. The cumulative economic impacts accruing between 2011 and 2013 account for over 85% of the construction and capital expenditure impacts of the project.

The most significant impacts are anticipated to arise in 2012 with national impacts of approximately:

- \$2,399.32 million in additional output (or consumption), including \$928.86 million of direct impacts;
- \$524.84 million in additional household income, including \$143.99 million of direct impacts;
- 7,996 full time equivalent positions, including 2,144 direct full time equivalent positions; and
- \$931.37 million in additional value added, including \$285.39 million of direct impacts.

For the same year, state level impacts arising from the project are anticipated to account for approximately:

- \$2,247.20 million in additional output (or consumption), including \$868.40 million of direct impacts;
- \$486.01 million in additional household income, including \$126.75 million of direct impacts;
- 7,610 full time equivalent positions, including 2,056 direct full time equivalent positions; and
- \$873.26 million in additional value added, including \$262.51 million of direct impacts.

**Table E.2: Economic impacts of capital and construction expenditure for the Alpha Coal Project (Railway), 2010-2014**

	Qld	2010 Inter- state	Aust	Qld	2011 Inter- state	Aust	Qld	2012 Inter- state	Aust	Qld	2013 Inter- state	Aust	Qld	2014 Inter- state	Aust
<b>Output (\$M)</b>															
Direct	3.70	0.00	3.70	611.03	0.00	611.03	868.40	60.47	928.86	737.38	112.41	849.79	19.84	113.65	133.49
Indirect	1.03	0.00	1.03	1,005.20	0.00	1,005.20	1,378.81	91.65	1,470.45	1,184.84	170.38	1,355.22	34.48	172.25	206.72
<b>Total</b>	<b>4.73</b>	<b>0.00</b>	<b>4.73</b>	<b>1,616.23</b>	<b>0.00</b>	<b>1,616.23</b>	<b>2,247.20</b>	<b>152.11</b>	<b>2,399.32</b>	<b>1,922.22</b>	<b>282.79</b>	<b>2,205.01</b>	<b>54.32</b>	<b>285.89</b>	<b>340.21</b>
<b>Household Income (\$M)</b>															
Direct	0.00	0.00	0.00	91.57	0.00	91.57	126.75	17.24	143.99	128.81	32.05	160.86	1.74	32.40	34.14
Indirect	0.28	0.00	0.28	261.71	0.00	261.71	359.27	21.59	380.86	311.01	40.14	351.15	8.65	40.58	49.23
<b>Total</b>	<b>0.28</b>	<b>0.00</b>	<b>0.28</b>	<b>353.28</b>	<b>0.00</b>	<b>353.28</b>	<b>486.01</b>	<b>38.83</b>	<b>524.84</b>	<b>439.82</b>	<b>72.19</b>	<b>512.01</b>	<b>10.39</b>	<b>72.98</b>	<b>83.37</b>
<b>Employment (FTEs)</b>															
Direct	4	0	4	1,497	0	1,497	2,056	87	2,144	1,997	162	2,160	53	164	217
Indirect	0	0	0	4,041	0	4,041	5,554	298	5,852	4,778	554	5,332	145	561	705
<b>Total</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>5,538</b>	<b>0</b>	<b>5,538</b>	<b>7,610</b>	<b>385</b>	<b>7,996</b>	<b>6,775</b>	<b>717</b>	<b>7,491</b>	<b>198</b>	<b>724</b>	<b>922</b>
<b>Value Added (\$M)</b>															
Direct	2.86	0.00	2.86	172.91	0.00	172.91	262.51	22.89	285.39	216.47	42.55	259.02	4.32	43.02	47.34
Indirect	0.54	0.00	0.54	444.53	0.00	444.53	610.76	35.22	645.97	526.10	65.47	591.57	15.11	66.19	81.30
<b>Total</b>	<b>3.40</b>	<b>0.00</b>	<b>3.40</b>	<b>617.43</b>	<b>0.00</b>	<b>617.43</b>	<b>873.26</b>	<b>58.10</b>	<b>931.37</b>	<b>742.57</b>	<b>108.02</b>	<b>850.59</b>	<b>19.44</b>	<b>109.21</b>	<b>128.64</b>

**Table E.3: Economic impacts of capital and construction expenditure for the Alpha Coal Project (Railway), 2015-2019**

	Qld	2015 Inter- state	Aust	Qld	2016 Inter- state	Aust	Qld	2017 Inter- state	Aust	Qld	2018 Inter- state	Aust	Qld	2019 Inter- state	Aust
<b>Output (\$M)</b>															
Direct	34.76	57.03	91.79	5.00	52.87	57.87	5.00	53.53	58.53	5.00	53.09	58.09	5.00	0.00	5.00
Indirect	60.41	86.44	146.84	8.69	80.13	88.82	8.69	81.13	89.82	8.69	80.46	89.15	8.69	0.00	8.69
<b>Total</b>	<b>95.17</b>	<b>143.47</b>	<b>238.63</b>	<b>13.69</b>	<b>133.00</b>	<b>146.69</b>	<b>13.69</b>	<b>134.66</b>	<b>148.35</b>	<b>13.69</b>	<b>133.55</b>	<b>147.24</b>	<b>13.69</b>	<b>0.00</b>	<b>13.69</b>
<b>Household Income (\$M)</b>															
Direct	3.05	16.26	19.31	0.44	15.07	15.51	0.44	15.26	15.70	0.44	15.14	15.57	0.44	0.00	0.44
Indirect	15.15	20.36	35.51	2.18	18.88	21.06	2.18	19.11	21.29	2.18	18.96	21.14	2.18	0.00	2.18
<b>Total</b>	<b>18.20</b>	<b>36.62</b>	<b>54.82</b>	<b>2.62</b>	<b>33.95</b>	<b>36.57</b>	<b>2.62</b>	<b>34.38</b>	<b>36.99</b>	<b>2.62</b>	<b>34.09</b>	<b>36.71</b>	<b>2.62</b>	<b>0.00</b>	<b>2.62</b>
<b>Employment (FTEs)</b>															
Direct	93	82	176	13	76	90	13	77	91	13	77	90	13	0	13
Indirect	253	281	535	36	261	297	36	264	300	36	262	298	36	0	36
<b>Total</b>	<b>347</b>	<b>364</b>	<b>710</b>	<b>50</b>	<b>337</b>	<b>387</b>	<b>50</b>	<b>341</b>	<b>391</b>	<b>50</b>	<b>338</b>	<b>388</b>	<b>50</b>	<b>0</b>	<b>50</b>
<b>Value Added (\$M)</b>															
Direct	7.58	21.59	29.16	1.09	20.01	21.10	1.09	20.26	21.35	1.09	20.09	21.18	1.09	0.00	1.09
Indirect	26.48	33.21	59.69	3.81	30.79	34.60	3.81	31.18	34.98	3.81	30.92	34.73	3.81	0.00	3.81
<b>Total</b>	<b>34.05</b>	<b>54.80</b>	<b>88.85</b>	<b>4.90</b>	<b>50.80</b>	<b>55.70</b>	<b>4.90</b>	<b>51.44</b>	<b>56.34</b>	<b>4.90</b>	<b>51.01</b>	<b>55.91</b>	<b>4.90</b>	<b>0.00</b>	<b>4.90</b>

### **Operating & Ongoing Costs**

Operating costs are anticipated to commence in 2013 and run through to 2042. HPPL is anticipated to expend approximately \$5,681.08 million in operating expenses throughout the life of the project. The most significant cost items in terms of total operating costs include:

- Fuel: 31% of total operating costs;
- Wagon maintenance: 17% of total operating costs;
- Locomotive maintenance: 15% of total operating costs; and
- Track maintenance: 13% of total operating costs.

The composition of project operating costs indicates that the operation of the Alpha Coal (Rail) Project is likely to result in major stimulus to the manufacturing sector of Queensland.

These costs are anticipated to increase from \$33.96 million per annum in 2013 to \$220.52 million in 2023. Between 2024 and 2042, project operating costs are anticipated to range between \$196.29 million and \$222.58 million per annum.

Table E.4 and Table E.5 below summarise operating costs associated with the Alpha Coal Project (Railway). Ongoing and operating expenses relating to the Alpha Coal (Rail) Project are anticipated to occur entirely within Queensland.

**Table E.4: Operating and ongoing expenditure for Alpha Coal Railway, 2013-2026 (\$M)**

Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Below Rail Operating &amp; Ongoing Costs</b>														
Track Maintenance	7.38	14.54	21.71	24.05	24.61	25.69	26.50	26.88	26.81	26.43	26.75	26.50	26.54	26.67
Signals Maintenance	2.03	4.00	5.97	6.61	6.77	7.06	7.28	7.39	7.37	7.27	7.35	7.29	7.30	7.33
Communications Maintenance	1.51	2.97	4.43	4.90	5.02	5.24	5.40	5.48	5.47	5.39	5.46	5.40	5.41	5.44
Spares - Track & Signals	2.13	2.13	2.13	2.36	2.41	2.52	2.60	2.64	2.63	2.59	2.62	2.60	2.60	2.61
Infrastructure Maintenance	0.43	0.85	1.27	1.41	1.44	1.51	1.55	1.58	1.57	1.55	1.57	1.55	1.56	1.56
Structures Maintenance	-	0.50	1.00	1.11	1.13	1.18	1.22	1.24	1.23	1.22	1.23	1.22	1.22	1.23
Yard	-	-	-	-	-	11.00	-	-	-	-	18.85	11.00	-	-
Sub Total	13.48	24.99	36.50	40.44	41.39	54.20	44.56	45.20	45.08	44.44	63.84	55.57	44.63	44.85
<b>Above Rail Operating &amp; Ongoing Costs</b>														
Locomotives Maintenance	4.57	10.41	16.75	24.19	25.41	28.50	31.01	31.83	31.68	30.86	31.56	31.02	31.11	31.38
Wagon Maintenance	3.91	11.65	19.02	27.13	28.13	31.82	35.01	35.67	35.54	34.88	35.45	35.02	35.07	35.29
Fuel	6.76	20.27	32.56	47.96	51.43	58.08	63.06	65.42	64.97	62.62	64.63	63.09	63.33	64.12
Labour	2.40	3.60	6.00	8.40	8.40	9.60	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80
Yard & Facilities Maintenance	0.43	1.09	1.79	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
Business Overheads	2.41	6.03	9.94	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06
Sub Total	20.49	53.04	86.07	121.91	127.61	142.24	154.12	157.96	157.22	153.40	156.68	154.16	154.55	155.83
<b>Total Operating &amp; Ongoing Costs</b>	<b>33.96</b>	<b>78.03</b>	<b>122.57</b>	<b>162.35</b>	<b>169.00</b>	<b>196.44</b>	<b>198.68</b>	<b>203.16</b>	<b>202.30</b>	<b>197.84</b>	<b>220.52</b>	<b>209.73</b>	<b>199.18</b>	<b>200.68</b>

**Table E.5: Operating and ongoing expenditure for Alpha Coal Railway, 2027-2042 (\$M)**

Costs	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
<b>Below Rail Operating &amp; Ongoing Costs</b>																	
Track Maintenance	26.30	26.66	26.58	26.50	26.56	26.85	26.83	26.93	27.03	26.93	27.13	27.13	26.75	26.92	26.46	26.24	758.86
Signals Maintenance	7.23	7.33	7.31	7.29	7.30	7.38	7.38	7.40	7.43	7.40	7.46	7.46	7.35	7.40	7.27	7.22	208.62
Communications Maintenance	5.36	5.44	5.42	5.41	5.42	5.48	5.47	5.49	5.51	5.49	5.53	5.53	5.46	5.49	5.40	5.35	154.77
Spares - Track & Signals	2.58	2.61	2.61	2.60	2.60	2.63	2.63	2.64	2.65	2.64	2.66	2.66	2.62	2.64	2.59	2.57	76.50
Infrastructure Maintenance	1.54	1.56	1.56	1.56	1.56	1.58	1.57	1.58	1.59	1.58	1.59	1.59	1.57	1.58	1.55	1.54	44.53
Structures Maintenance	1.21	1.23	1.22	1.22	1.22	1.24	1.24	1.24	1.25	1.24	1.25	1.25	1.23	1.24	1.22	1.21	34.45
Yard	-	-	-	11.00	-	-	6.71	18.85	-	11.00	-	2.90	-	-	-	12.00	103.31
Sub Total	44.22	44.83	44.70	55.57	44.67	45.15	51.84	64.14	45.45	56.29	45.63	48.53	44.98	45.27	44.50	56.13	1,381.05
<b>Above Rail Operating &amp; Ongoing Costs</b>																	
Locomotives Maintenance	30.58	31.36	31.19	31.03	31.16	31.76	31.73	31.94	32.15	31.95	32.39	32.42	31.55	31.92	30.93	30.47	864.83
Wagon Maintenance	34.65	35.27	35.14	35.02	35.12	35.61	35.59	35.75	35.91	35.75	36.12	36.15	35.44	35.73	34.94	34.57	970.35
Fuel	61.81	64.05	63.56	63.10	63.47	65.21	65.13	65.72	66.33	65.75	67.01	67.12	64.60	65.68	62.83	61.50	1,761.17
Labour	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	297.60
Yard & Facilities Maintenance	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	62.03
Business Overheads	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	344.05
Sub Total	152.07	155.71	154.93	154.18	154.78	157.62	157.49	158.45	159.43	158.48	160.56	160.73	156.63	158.37	153.74	151.58	4,300.03
<b>Total Operating &amp; Ongoing Costs</b>	<b>196.29</b>	<b>200.54</b>	<b>199.63</b>	<b>209.75</b>	<b>199.46</b>	<b>202.76</b>	<b>209.32</b>	<b>222.58</b>	<b>204.88</b>	<b>214.77</b>	<b>206.18</b>	<b>209.26</b>	<b>201.61</b>	<b>203.65</b>	<b>198.24</b>	<b>207.71</b>	<b>5,681.08</b>

Tables E.6 and E.7 below provide detailed summaries of the direct and indirect output (or consumption), household income, employment and value added impacts of the operating expenditure associated with the Alpha Coal Project (Railway).

Ongoing and operating expenditure associated with the Alpha Coal (Rail) Project is anticipated to increase throughout the life of the project. During the first year of operation, the economic impacts of ongoing and operating expenditure on the Alpha Coal (Rail) Project are anticipated to be approximately:

- \$76.95 million in additional output (or consumption), including \$33.96 million in direct impacts;
- \$24.79 million in additional household income, including \$12.47 million in direct impacts;
- 243 full time equivalent positions, including 97 direct full time equivalent positions; and
- \$36.63 million in additional value added, including \$16.33 million in direct impacts.

By 2026, economic impacts of ongoing and operating expenditure on the Alpha Coal (Rail) Project are anticipated to be approximately:

- \$713.56 million in additional output (or consumption), including \$457.12 million in direct impacts;
- \$215.36 million in additional household income, including \$143.22 million in direct impacts;
- 2,268 full time equivalent positions, including 1,414 direct full time equivalent positions; and
- \$340.06 million in additional value added, including \$217.54 million in direct impacts.

By 2042 (the final year of the project), economic impacts of ongoing and operating expenditure on the Alpha Coal (Rail) Project are anticipated to be approximately:

- \$749.50 million in additional output (or consumption), including \$478.61 million in direct impacts;
- \$221.74 million in additional household income, including \$146.12 million in direct impacts;
- 2,420 full time equivalent positions, including 1,499 direct full time equivalent positions; and
- \$352.45 million in additional value added, including \$223.91 million in direct impacts.

**Table E.6: Economic impacts of ongoing and operating expenditure of the Alpha Coal Project (Railway), 2013-2026**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Output (\$M)</b>														
Direct	33.96	177.43	282.94	369.28	388.68	452.31	458.87	462.80	465.01	450.62	515.18	484.90	462.15	457.12
Indirect	42.99	99.40	158.73	206.93	218.05	255.87	257.71	259.64	261.07	252.78	293.02	274.34	259.65	256.44
Total	76.95	276.82	441.67	576.21	606.73	708.18	716.58	722.45	726.08	703.41	808.20	759.25	721.80	713.56
<b>Household Income (\$M)</b>														
Direct	12.47	56.46	89.45	116.46	121.94	138.29	143.27	144.92	145.26	141.29	154.70	148.13	144.09	143.22
Indirect	12.32	28.23	44.86	58.39	61.31	71.45	72.31	73.02	73.29	71.14	81.28	76.54	72.78	72.14
Total	24.79	84.69	134.31	174.85	183.25	209.74	215.58	217.94	218.55	212.43	235.99	224.67	216.87	215.36
<b>Employment (FTEs)</b>														
Direct	97	556	885	1,151	1,210	1,419	1,419	1,431	1,438	1,394	1,622	1,517	1,429	1,414
Indirect	146	335	533	693	729	870	858	865	869	843	1,004	930	864	855
Total	243	891	1,419	1,843	1,939	2,290	2,277	2,296	2,307	2,237	2,626	2,447	2,293	2,268
<b>Value Added (\$M)</b>														
Direct	16.33	84.41	134.35	175.84	184.74	211.73	217.92	220.23	220.98	214.46	238.76	227.06	219.32	217.54
Indirect	20.30	47.20	75.38	98.63	103.99	121.43	123.05	124.09	124.72	120.74	138.69	130.28	123.96	122.53
Total	36.63	131.62	209.72	274.47	288.72	333.16	340.96	344.32	345.70	335.20	377.45	357.34	343.28	340.06

**Table E.7: Economic impacts of ongoing and operating expenditure of the Alpha Coal Project (Railway), 2027-2042**

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
<b>Output (\$M)</b>																
Direct	451.26	456.81	461.03	482.81	458.50	461.90	484.11	517.86	470.93	494.33	478.18	478.07	465.57	463.92	455.72	478.61
Indirect	253.33	256.27	258.93	273.07	257.41	259.13	273.14	294.44	264.41	279.55	268.68	268.81	261.48	260.27	255.84	270.89
Total	704.59	713.07	719.96	755.88	715.91	721.03	757.25	812.30	735.33	773.88	746.86	746.88	727.05	724.19	711.56	749.50
<b>Household Income (\$M)</b>																
Direct	141.16	143.13	143.91	147.67	143.32	144.65	148.99	155.66	147.03	151.10	148.87	148.63	145.27	145.25	142.49	146.12
Indirect	71.17	72.09	72.65	76.25	72.29	72.88	76.33	81.73	74.20	78.03	75.25	75.41	73.34	73.19	71.86	75.62
Total	212.33	215.22	216.56	223.92	215.61	217.53	225.32	237.39	221.23	229.13	224.13	224.03	218.62	218.44	214.35	221.74
<b>Employment (FTEs)</b>																
Direct	1,396	1,413	1,426	1,510	1,418	1,429	1,507	1,630	1,456	1,545	1,478	1,483	1,440	1,435	1,410	1,499
Indirect	844	854	862	927	857	863	919	1,009	880	948	894	900	870	867	852	921
Total	2,240	2,267	2,288	2,437	2,275	2,292	2,427	2,639	2,336	2,493	2,372	2,382	2,310	2,302	2,262	2,420
<b>Value Added (\$M)</b>																
Direct	214.46	217.39	218.94	226.22	217.90	219.80	227.89	240.18	223.78	231.67	226.91	226.54	221.09	220.76	216.58	223.91
Indirect	120.94	122.44	123.64	129.69	122.93	123.84	130.04	139.41	126.35	132.86	128.37	128.32	124.89	124.40	122.17	128.54
Total	335.41	339.83	342.58	355.91	340.83	343.64	357.93	379.59	350.13	364.53	355.28	354.86	345.98	345.15	338.74	352.45

## Strategies to Mitigate Impacts

There are a number of Queensland Government policies which seek to encourage local participation in major government funded projects or projects that are recipients of significant Queensland Government contributions. These policies include:

- Queensland Government Building and Construction Contracts Structured Training Policy (the 10 percent policy);
- Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects (the 20 percent policy); and
- Local Industry Policy (Department of Employment, Economic Development and Innovation, 2008).

These policies typically apply to the following groups:

- Queensland Government departments;
- Recipients of building construction grants; and
- Contractors who successfully tender for Queensland Government projects.

While HPPL does not belong to one of the above groups, HPPL will provide opportunities for:

- Structured training;
- Participation in construction and operation by trainees and indigenous workers; and
- Participation in construction and operation by local suppliers and contractors.

HPPL will set the following targets for participation of apprentices and trainees and Indigenous people:

- Encourage and provide opportunities for up-skilling of employees.
- Provide opportunities for local Indigenous employment;
- Encourage contractors to allocate a reasonable percentage of contracted work hours to apprentices and trainees; and
- Encourage contractors to allocate a reasonable percentage of contracted work hours from surrounding indigenous communities.

HPPL will develop a *Local Industry Participation Plan*. The Local Industry Participation Plan will:

- Provide details of competitive local suppliers that will be invited to tender for contract work associated with the mine construction and operation;
- Provide mechanisms for the provision of project information to local industry in an equitable and timely manner, including in-region project briefings for the procurement of contract services;
- Outline appropriate design and procurement strategies to provide equitable access to local industry; and
- Provide mechanisms for performance measurement, reporting and feedback in relation to local procurement.

The construction of the Alpha Coal (Rail) Project will represent a major stimulus to the regional economy, generating significant demand for labour. The significant demand for labour resulting from the construction of the project would result in a significant tightening of the local labour market. The unemployment rate within the railway corridor and in nearby communities is generally significantly below the state average unemployment rate. Labour force participation rates across the railway corridor are similar to the state average, although labour force participation in some communities is lower than the state average (Barcaldine, Nebo and Bowen) and above the state average in others (Belyando and Jericho). The size of the local labour forces is small relative to those of major provincial cities like Townsville, Mackay and Rockhampton. Hence the capacity for the local economies along the railway corridor to provide sufficient labour to meet the needs of the construction phase of the Alpha Coal (Railway) is limited.

Significant labour market tightening in the local economies would place significant upward pressure on wages, thus creating localised inflation. To reduce the potential for this to arise HPPL propose to establish five project villages along the railway corridor. These villages would be located:

- Alpha Coal Mine;
- near the Gregory Highway;
- near Eaglefield;
- near Collinsville; and
- near Salisbury Plains.

These project villages would accommodate up to approximately 500 to 700 personnel. These personnel will include a range of drive-in-drive-out (DIDO), fly-in-fly-out (FIFO) and bus-in-bus-out (BIBO) workers.

The establishment of project villages will also reduce the extent of impacts on the commercial accommodation sector, within which there is insufficient accommodation stock to house the projected construction workforce.

The operation employment of the Alpha Coal (Rail) Project is estimated to be 225 workers. As such, the operation is unlikely to have material impacts on the local labour or accommodation markets.

## Summary

The Alpha Coal (Rail) Project represents a significant project within a local, state and national context. The project will facilitate the export of up to 30 Mtpa of coal from the Alpha Coal (Mine) Project.

The construction phase of the project is likely to result in a major stimulus to the Queensland economy. Project purchases will result in broadly distributed stimuli across various industry sectors. The purchase of materials, locomotives and wagons will result in a major stimulus to the manufacturing sector. The actual construction workforce is to reach approximately:

- 600 workers in 2011;
- 2,500 workers in 2012;
- 1,050 workers in 2013; and



- 120 workers in 2014.

Approximately 225 workers will operate the railway. However, significant flow on employment is anticipated throughout the economy throughout the construction and operational phases of the project.

The capacity of the local economy to meet the employment demand resulting from the project is limited. As such, HPPL will establish a number of project villages along the railway corridor to accommodate the construction workforce.

# 1 INTRODUCTION

Hancock Prospecting Pty Ltd (HPPL) proposes to establish a 30 Mtpa thermal coal mine in the Galilee Basin to the north of Alpha. The project involves the construction of an open cut coal mine and processing plant, mine-to-port railway to Abbot Point and a coal export terminal.

This report pertains to the economic impact of the construction of the coal railway. Separate assessments have been prepared for the mine and coal export terminal.

Economic Associates Pty Ltd was commissioned by GHD Pty Ltd to prepare an economic impact assessment of the proposed Alpha Coal Project (Railway).

This report provides an assessment of regional economic values including:

- Regional and sub-regional population analysis (historic and projected);
- Regional and sub-regional employment and labour force analysis (by industry, occupation, participation rate and unemployment), skills and training;
- Demographic profile (age, family structure, income);
- Analysis of industrial activity and significance (e.g. number of employing and non-employing businesses by industry);
- Enterprise activity (business type and number). This would include a description of large scale industrial projects and their effects in the region;
- Analysis of residential, commercial and industrial property markets; and
- Availability and capacity of commercial accommodation to meet the accommodation needs of the construction and operational workforce.

The assessment of regional economic values identifies the following areas of interest:

- Barcaldine SLA, Jericho SLA, Belyando SLA, Nebo SLA and Bowen SLA (local level);
- Central West Statistical Division (SD) and Mackay SD (regional)<sup>4</sup>;
- Queensland (state); and
- National.

The report also includes an economic impact assessment of the Alpha Coal (Rail) Project based on:

- Construction and capital expenditure impacts; and
- Operating and ongoing expenditure impacts.

## 1.1 Disclaimer

Data contained in this report was drawn from publicly available sourced and from specialist advice from GHD Pty Ltd and Hancock Prospecting Pty Ltd (HPPL). While all due care has been taken in applying this data, Economic Associates Pty Ltd accepts no responsibility for the accuracy of data provided or sourced from third parties.

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<sup>4</sup> The assessment of commercial accommodation uses the Outback Tourism Region (TR) as the regional boundary.

## 2 SOCIO-ECONOMIC PROFILE

A socio-economic profile of Barcaldine SLA, Jericho SLA, Belyando SLA, Nebo SLA and Bowen SLA as at the 1996, 2001 and 2006 Census of Population and Housing, benchmarked against Central West SD, Mackay SD and Queensland is provided in Table 2.1. A number of key points can be drawn from this profile, these points being:

- At the time of the last Census, there was a low incidence of persons aged 65 and over in Belyando SLA (4.6%) and Nebo SLA (2.9%) and a relatively high incidence in Bowen SLA (16.9%) when compared with Mackay SD (10.7%) and Queensland (13.0%). In 2006, the incidence of 0-14 year olds in Nebo SLA was significantly lower than in the other coal railway study area SLAs, Central West SD, Mackay SD and Queensland. Between 1996 and 2006, all regions recorded an increase in the proportion of persons aged 45 years and over;
- The average age of residents in 2006 was lowest in Belyando SLA at 32.7 years and highest in Bowen SLA at 41.5 years, compared to 36.8 years in Mackay SD and 37.6 years in Queensland. Between 1996 and 2006, all regions recorded an increase in the average age of residents, with Nebo SLA and Bowen SLA recording a higher increase in average age (5.5 and 4.2 years respectively) than Mackay SD (2.7 years) and Queensland (2.1 years). Barcaldine SLA (3.4 years) recorded a lower increase in the average age than Central West SD (4.5 years);
- In 2006, Belyando SLA had a higher proportion of couple families with children (39.4%), relative to Mackay SD (31.4%) and Queensland (29.4%). Bowen SLA had a lower proportion of couple families with children (21.4%) than Mackay SD and Queensland. Nebo SLA recorded the lowest proportion of couple families without children (20.0%), single parent families (3.8%) and lone person households (14.5%);
- From 1996 to 2006, the average household size decreased in Barcaldine SLA, Jericho SLA, Bowen SLA, Central West SD, Mackay SD & Queensland and increased in Belyando SLA & Nebo SLA. In 2006, Barcaldine SLA and Jericho SLA recorded an average household size that was consistent with Central West SD (2.5 persons per household) and Queensland (2.6 persons per household). Belyando SLA (3.2 persons per household) and Nebo SLA (4.8 persons per household) both recorded an average household size higher than Mackay SD and Queensland;
- All regions have a relatively low incidence of households purchasing their home in 2006 when compared to Queensland. Between 2001 and 2006, Jericho SLA experienced a significant decline in the proportion of fully owned homes compared to Central West SD and Queensland. Belyando SLA, Nebo SLA and Bowen SLA also recorded significant declines in the proportion of fully owned homes, comparable to the Mackay SD and Queensland trend;
- At the time of the last Census, average household income was lowest in Central West SD at \$1,007 per week, which included Barcaldine SLA (\$981 per week) and Jericho SLA (\$976 per week). This was significantly below the average household income for Queensland of \$1,202 per week. The average household income in Belyando SLA (\$1,943 per week) and Nebo SLA (\$1,806 per week) was significantly higher than Mackay SD (\$1,344 per week) and Queensland;
- Average weekly rent payments in Jericho SLA (\$69) were below that of Central West SD (\$91) and Queensland (\$218). Average weekly rent payments in Belyando SLA (\$137), Nebo SLA

(\$67) and Bowen SLA (\$150) were below that of Mackay SD (\$191) and Queensland. Average monthly housing loan repayments in Jericho SLA (\$1,327) were higher than Central West SD (\$946) but lower than Queensland (\$1,475). Average monthly housing loan repayments in Belyando SLA (\$1,263), Nebo SLA (\$1,217) and Bowen SLA (\$1,122) were lower than Mackay SD (\$1,454) and Queensland;

- The unemployment rate in Jericho SLA (2.7%) was significantly lower than Central West SD (3.5%) and Queensland (4.8%). The unemployment rate in Bowen SLA (4.6%) was higher than Mackay SD (1.8%) but comparable to Queensland;
- In 2006, the proportion of workers employed on a full time basis in the coal railway study area SLAs was highest in Nebo SLA (83.4%) and lowest in Barcaldine SLA (65.4%). All regions recorded a higher incidence of full time workers than Queensland. In 1996 to 2006, the incidence of full time employment increased in Belyando SLA, Nebo SLA and Bowen SLA and decreased in Barcaldine SLA and Jericho SLA;
- In 2006, the incidence of residents with post-school qualifications in Barcaldine SLA (28.8%), Jericho SLA (26.4%), Nebo SLA (29.5%), Bowen SLA (26.1%), Central West SD (25.5%) and Mackay SD (33.9%) were below the state average (37.5%);
- In 1996, 2001 and 2006, Belyando SLA and Nebo SLA recorded the highest proportion of certificate holders relative to Queensland;
- At the time of the last Census, there was a lower incidence of lower white collar workers in all regions compared to Queensland. A higher incidence of upper white collar workers was recorded in Central West SD (35.7%) than Queensland (29.6%). A higher incidence of lower blue collar workers was recorded in all regions relative to Queensland;
- In 2006, the top three industries of employment in Central West SD were agriculture, forestry & fishing (28.3%), public administration & safety (12.5%) and retail trade (8%). The top three industries in Mackay SD were mining (11.3%), retail trade (10.6%) and construction (10.1%). Central West SD recorded a higher proportion of employment in agriculture, forestry & fishing and public administration & safety compared to Mackay SD and Queensland. Mackay SD recorded a higher proportion of employment in mining and accommodation and food services compared to Central West SD and Queensland; and
- At the time of the last Census, agriculture, forestry & fishing was the dominant industry of employment in Jericho SLA (47.8%). On the other hand, mining was the key industry of employment in Belyando SLA (37.9%) and Nebo SLA (43.3%).

**Table 2.1: Socio-Economic Profile, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 1996 to 2006**

	Barcardine SLA			Jericho SLA			Belyando SLA			Nebo SLA			Bowen SLA			Central West SD			Mackay SD			Queensland			
	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	
Population	1,841	1,763	1,811	964	1,024	916	10,723	9,869	11,779	2,459	2,526	4,346	14,179	13,436	14,123	14,258	14,556	13,371	137,535	140,078	160,486	3,319,186	3,585,639	3,973,960	
Ave. Annual Population Growth (%)	-	-0.9%	0.5%	-	1.2%	-2.2%	-	-1.6%	3.6%	-	0.5%	11.5%	-	-1.1%	1.0%	-	0.4%	-1.7%	-	0.4%	2.8%	-	1.6%	2.1%	
<b>Age Distribution</b>																									
0-14 years	23.1%	23.7%	22.1%	24.0%	23.9%	20.3%	27.3%	25.4%	22.5%	24.2%	20.7%	12.6%	21.2%	19.5%	17.4%	23.0%	21.6%	19.4%	23.7%	22.3%	20.7%	21.9%	21.3%	20.4%	
15-24 years	12.2%	10.9%	11.9%	10.6%	10.4%	9.0%	13.8%	12.5%	13.5%	11.9%	10.6%	10.9%	12.7%	11.1%	11.2%	12.6%	12.6%	11.1%	13.6%	12.8%	12.7%	14.8%	13.8%	13.6%	
25-34 years	15.8%	14.1%	9.7%	18.9%	17.3%	12.1%	17.7%	16.9%	18.6%	21.4%	21.0%	20.8%	14.0%	12.0%	11.0%	16.0%	14.3%	11.6%	15.9%	14.3%	13.9%	15.2%	14.2%	13.3%	
35-44 years	14.3%	13.9%	13.5%	14.4%	14.1%	16.3%	18.5%	17.4%	17.8%	20.5%	21.1%	24.0%	14.8%	14.5%	13.1%	14.2%	14.5%	13.5%	16.3%	15.9%	15.7%	15.0%	14.9%	14.6%	
45-54 years	11.3%	11.5%	12.2%	12.3%	12.3%	14.4%	13.8%	15.2%	14.5%	14.0%	15.2%	20.2%	13.0%	14.6%	15.2%	12.0%	13.1%	13.6%	12.8%	14.3%	14.9%	12.7%	13.7%	13.7%	
55-64 years	9.9%	11.9%	12.6%	10.4%	10.6%	15.6%	5.2%	6.9%	8.5%	4.8%	6.3%	8.8%	10.1%	12.0%	15.3%	10.0%	11.4%	14.6%	8.2%	9.8%	11.3%	8.4%	9.7%	11.4%	
65+ years	13.4%	14.0%	18.0%	9.4%	11.3%	12.3%	3.7%	5.5%	4.6%	3.2%	5.1%	2.9%	14.3%	16.3%	16.9%	12.3%	12.5%	16.2%	9.5%	10.6%	10.7%	12.0%	12.4%	13.0%	
Average age (years)	36.0	37.0	39.4	34.4	35.5	39.1	30.2	32.3	32.7	30.9	33.4	36.4	37.3	39.7	41.5	35.6	36.8	40.1	34.1	35.8	36.8	35.5	36.6	37.6	
<b>Household Type (% of dwellings)</b>																									
Couple families with children	35.7%	30.0%	25.2%	35.7%	30.0%	25.2%	48.6%	40.1%	39.4%	50.9%	37.9%	30.3%	28.7%	25.3%	21.4%	35.2%	29.8%	25.3%	37.0%	32.7%	31.4%	33.7%	30.7%	29.4%	
Couple families without children	21.9%	22.3%	23.2%	21.9%	22.3%	23.2%	21.5%	23.4%	23.3%	21.6%	25.1%	20.0%	24.3%	24.7%	25.1%	21.3%	22.7%	23.0%	24.4%	24.6%	25.8%	25.0%	25.3%	26.0%	
Single parent family	6.6%	6.7%	8.2%	6.6%	6.7%	8.2%	5.9%	5.7%	5.5%	2.8%	3.6%	3.8%	7.8%	7.7%	7.3%	6.2%	6.5%	7.3%	8.4%	9.0%	8.1%	9.9%	10.8%	10.5%	
Lone person households	24.8%	22.2%	23.4%	24.8%	22.2%	23.4%	16.8%	18.4%	17.1%	15.3%	17.9%	14.5%	21.6%	22.5%	22.1%	22.7%	22.2%	23.3%	18.8%	20.0%	18.1%	20.6%	21.8%	21.0%	
Average household size	2.9	2.6	2.5	2.7	2.9	2.4	3.1	2.9	3.2	3.5	3.6	4.8	2.6	2.5	2.5	2.9	2.7	2.5	2.9	2.7	2.8	2.8	2.6	2.6	
<b>Household Finances</b>																									
% of households fully owning home	46.9%	46.4%	44.0%	50.4%	53.8%	47.1%	26.7%	35.8%	27.8%	18.6%	20.9%	13.1%	43.4%	44.1%	37.9%	46.6%	46.0%	42.9%	37.8%	37.8%	31.1%	38.7%	36.6%	30.4%	
% of households purchasing home	16.3%	14.3%	20.3%	11.2%	9.5%	16.2%	21.6%	16.6%	19.8%	6.9%	6.9%	7.3%	13.7%	15.0%	19.3%	12.1%	12.0%	17.2%	20.0%	21.9%	28.1%	29.0%	25.8%	31.4%	
% of households renting	29.0%	29.8%	27.7%	31.1%	28.7%	27.9%	48.4%	39.6%	43.7%	72.5%	63.1%	56.9%	35.7%	32.9%	28.9%	33.3%	32.8%	30.9%	36.9%	33.1%	30.2%	31.8%	31.6%	30.0%	
Average weekly household income	-	\$864	\$981	-	\$785	\$976	-	\$1,324	\$1,943	-	\$1,259	\$1,806	-	\$778	\$1,020	-	\$883	\$1,007	-	-	\$915	\$1,344	-	\$905	\$1,202
Average weekly family income (all households)	\$795	\$1,092	\$1,335	\$663	\$1,072	\$1,306	\$1,591	\$1,680	\$2,151	\$1,324	\$1,646	\$2,108	\$796	\$1,028	\$1,354	\$784	\$1,179	\$1,354	\$1,001	\$1,178	\$1,652	\$918	\$1,175	\$1,499	
Average monthly housing loan repayment	\$643	\$575	\$917	\$549	\$566	\$1,327	\$424	\$477	\$1,263	\$513	\$940	\$1,217	\$736	\$793	\$1,122	\$709	\$788	\$946	\$816	\$921	\$1,454	\$870	\$977	\$1,475	
Average weekly rent payment	\$62	\$68	\$88	\$46	\$50	\$69	\$51	\$77	\$137	\$34	\$54	\$67	\$90	\$113	\$150	\$66	\$74	\$91	\$98	\$125	\$191	\$130	\$154	\$218	
<b>Labour Market</b>																									
Full time employment (% labour force)	69.8%	68.1%	65.4%	84.4%	74.6%	76.3%	70.7%	69.7%	72.2%	77.1%	78.5%	83.4%	63.6%	62.3%	65.5%	65.6%	62.4%	67.0%	70.7%	69.7%	72.2%	61.4%	58.9%	61.8%	
Part-time employment (% labour force)	19.9%	22.7%	25.8%	12.7%	14.3%	16.7%	17.5%	19.6%	19.1%	14.4%	14.1%	9.7%	22.1%	23.4%	23.6%	20.9%	23.1%	22.7%	17.5%	19.6%	19.1%	24.1%	26.3%	27.3%	
Total employment (% labour force)	95.5%	96.2%	95.5%	97.7%	96.5%	97.3%	95.1%	95.9%	98.2%	97.1%	97.6%	98.4%	90.4%	92.5%	95.4%	92.1%	92.6%	96.5%	95.1%	95.9%	98.2%	90.3%	91.7%	95.2%	
Unemployment rate (% labour force)	4.5%	3.8%	4.5%	2.3%	3.5%	2.7%	4.9%	4.1%	1.8%	2.9%	2.4%	1.6%	9.6%	7.5%	4.6%	7.9%	7.4%	3.5%	4.9%	4.1%	1.8%	9.7%	8.3%	4.8%	
Participation rate (% of population > 15 years)	71.0%	72.2%	70.3%	72.6%	77.3%	78.3%	75.5%	73.2%	74.8%	78.7%	76.3%	60.9%	70.1%	67.9%	65.6%	71.5%	70.2%	70.7%	75.5%	73.2%	74.8%	70.7%	70.5%	71.3%	
<b>Qualifications</b>																									
% of persons with a non-school qualification	22.2%	24.0%	28.8%	14.5%	18.7%	26.4%	27.5%	30.7%	36.5%	30.3%	29.9%	29.5%	20.9%	23.4%	26.1%	21.1%	25.3%	25.5%	26.4%	29.7%	33.9%	27.6%	32.3%	37.5%	
% of persons with Bachelor or higher	6.4%	8.3%	7.7%	3.4%	6.0%	5.1%	5.7%	7.1%	9.0%	5.5%	5.7%	5.5%	4.4%	4.5%	5.3%	5.7%	7.4%	8.5%	5.8%	7.0%	8.1%	8.6%	10.8%	13.1%	
% of persons with Diploma	5.0%	4.5%	5.5%	4.1%	3.5%	3.7%	3.3%	3.2%	3.8%	3.1%	2.2%	2.8%	3.4%	3.5%	3.8%	4.9%	4.6%	5.8%	4.5%	4.2%	4.8%	5.4%	5.5%	6.6%	
% of persons with Certificate	10.7%	11.2%	15.6%	7.0%	9.2%	17.7%	18.5%	20.4%	23.7%	21.8%	21.9%	21.2%	13.1%	15.4%	17.0%	10.4%	13.3%	17.1%	16.1%	18.5%	21.0%	13.6%	16.0%	17.8%	
<b>Occupation</b>																									
<b>Upper White Collar</b>																									
Managers	21.0%	20.4%	20.3%	41.8%	39.6%	36.7%	11.6%	13.0%	11.0%	12.3%	12.4%	10.3%	14.0%	14.7%	13.7%	27.7%	26.0%	25.1%	14.1%	14.0%	12.4%	13.3%	12.9%	12.4%	
Professionals	12.8%	14.6%	12.9%	5.8%	7.1%	7.0%	7.7%	10.2%	11.0%	7.9%	7.3%	7.6%	7.7%	7.8%	7.6%	9.9%	10.1%	10.7%	11.1%	12.0%	11.9%	15.3%	16.4%	17.2%	
Subtotal	33.7%	35.0%	33.2%	47.6%	46.7%	43.8%	19.3%	23.2%	22.1%	20.2%	19.7%	17.9%	21.7%	22.4%	21.2%	37.6%	36.0%	35.7%	25.2%	26.0%	24.3%	28.6%	29.3%	29.6%	
<b>Lower White Collar</b>																									
Community & Personal Service Workers	8.2%	7.9%	9.9%	3.9%	5.2%	6.4%	4.6%	4.9%	4.6%	3.9%	3.7%	3.1%	5.5%	7.2%	6.9%	6.8%	6.9%	8.6%	6.6%	7.1%	7.0%	8.1%	8.9%	9.1%	
Clerical and Admin Workers	12.9%	9.8%	11.8%	5.2%	5.2%	5.4%	7.8%	7.4%	7.9%	6.0%	4.7%	6.2%	8.2%	8.9%	8.3%	9.0%	8.5%	9.2%	11.8%	11.7%	11.8%	15.3%	15.0%	14.8%	
Sales Workers	6.1%	6.2%	6.1%	3.5%	2.7%	3.8%	5.2%	5.9%	5.4%	2.2%	2.5%	2.1%	7.0%	7.1%	7.5%	4.6%	4.6%	5.2%	8.4%	9.1%	8.7%	10.2%	10.7%	10.3%	
Subtotal	27.2%	23.8%	27.8%	12.6%	13.1%	15.7%	17.7%	18.2%	17.8%	12.0%	10.9%	11.4%	20.7%	23.3%	22.7%	20.4%	20.1%	23.1%	26.8%	27.9%	27.6%	33.6%	34.7%	34.2%	
<b>Upper Blue Collar</b>																									
Technicians & Trades Workers	16.1%	16.2%	15.7%	7.8%	6.8%	9.6%	22.9%	21.1%	23.0%	22.7%	19.5%	25.5%	12.1%	11.8%	14.3%	13.6%	14.1%	13.2%	18.0%	17.0%	19.3%	15.6%	14.7%	15.3%	
Subtotal	16.1%	16.2%	15.7%	7.8%	6.8%	9.6%	22.9%	21.1%	23.0%	22.7%	19.5%	25.5%	12.1%	11.8%	14.3%	13.6%	14.1%	13.2%	18.0%	17.0%	19.3%	15.6%	14.7%	15.3%	
<b>Lower Blue Collar</b>																									
Machinery Operators & Drivers	7.3%	7.1%	4.5%	8.7%	7.9%	9.0%	26.1%	24.5%	23.7%	29.2%	33.1%	29.8%	11.0%	11.6%	13.2%	8.5%	8.1%	7.4%	13.7%	13.4%	13.6%	8.3%	7.8%	7.2%	
Labourers	13.9%	17.4%	17.6%	21.6%	23.2%	20.7%	11.4%	11.4%	11.5%	13.1%	15.4%	14.1%	31.7%	28.8%	26.										

	Barcaldine SLA			Jericho SLA			Belyando SLA			Nebo SLA			Bowen SLA			Central West SD			Mackay SD			Queensland		
	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006
Transport, postal & warehousing	7.6%	5.7%	7.1%	9.3%	7.6%	5.0%	3.5%	4.5%	3.7%	8.3%	8.8%	4.8%	6.0%	5.8%	6.0%	5.4%	4.8%	4.3%	7.0%	6.6%	5.9%	5.1%	5.2%	5.1%
Information media & telecommunications	1.1%	0.8%	0.4%	0.9%	0.0%	1.2%	0.4%	0.4%	0.3%	0.0%	0.4%	0.1%	1.0%	0.6%	0.5%	1.1%	0.9%	0.8%	1.3%	1.0%	0.7%	2.1%	1.9%	1.4%
Financial & insurance services	1.6%	0.4%	0.0%	0.6%	0.6%	0.6%	1.0%	1.1%	0.7%	0.7%	0.4%	0.4%	1.3%	1.3%	1.1%	1.5%	0.9%	1.0%	2.1%	1.8%	1.6%	3.0%	2.8%	2.9%
Rental, hiring & real estate services	0.6%	1.4%	0.5%	0.6%	0.0%	0.6%	1.1%	0.8%	1.2%	0.4%	0.6%	0.7%	0.7%	0.9%	0.9%	0.6%	0.7%	0.7%	1.5%	1.6%	1.8%	2.0%	2.0%	2.1%
Professional, scientific & technical services	3.6%	3.3%	3.9%	1.9%	0.6%	0.0%	1.5%	2.4%	2.2%	0.9%	2.3%	3.6%	2.0%	1.9%	2.0%	2.3%	1.7%	2.0%	3.3%	3.6%	4.0%	5.5%	5.4%	5.6%
Administrative & support services	0.9%	2.0%	1.4%	0.0%	0.6%	0.0%	1.1%	2.1%	1.9%	1.5%	2.0%	1.8%	1.4%	1.5%	2.1%	1.3%	1.8%	1.2%	1.9%	2.6%	2.4%	2.7%	3.2%	3.0%
Public administration & safety	13.1%	6.8%	12.6%	8.4%	6.4%	8.2%	2.7%	2.6%	2.4%	2.8%	2.4%	2.3%	3.3%	3.9%	3.5%	9.7%	7.7%	12.5%	3.1%	3.3%	3.7%	6.3%	6.2%	6.7%
Education & training	8.0%	8.5%	9.3%	5.6%	4.7%	5.8%	5.3%	5.9%	5.0%	3.8%	3.5%	2.7%	5.5%	6.1%	5.3%	7.5%	7.0%	7.3%	6.0%	6.6%	5.8%	7.5%	8.0%	7.6%

Source: Australian Bureau of Statistics (2006)

## 2.1 Population Projections

The population of Central West SD is projected to increase from 12,330 persons in 2010 to 13,580 persons in 2031 or by approximately 0.5% per annum. The population of Mackay SD is projected to increase from 179,741 persons in 2010 to 255,614 persons by 2031 or by approximately 1.7% per annum. The working age population (persons aged 15 to 64 years) in Central West SD is anticipated to increase by 0.4% per annum from 7,669 persons in 2009 to 8,408 persons in 2031. The working age population in Mackay SD is expected to increase by 1.4% per annum from 124,256 persons in 2010 to 165,210 persons in 2031.

The rate of both total population growth and working population growth in Barcaldine SLA and Jericho SLA are anticipated to lag growth rates for Central West SD and Queensland. The rate of total population growth and working population growth in Belyando SLA and Nebo SLA are expected to exceed growth rates for Mackay SD and Queensland, while Bowen SLA is expected to lag Mackay SD and Queensland.

Table 2.2 shows the population projections for the total and 15-64 populations in Barcaldine SLA, Jericho SLA, Belyando SLA, Nebo SLA and Bowen SLA, benchmarked against Central West SD, Mackay SD and Queensland.

**Table 2.2: Population Projections, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2010 to 2031**

	2010	2011	2016	2021	2026	2031	Ave. Ann Growth 2009-31
<b>Total Population</b>							
Barcaldine SLA	1,726	1,729	1,736	1,733	1,726	1,709	0.0%
Jericho SLA	982	984	990	997	1,004	1,011	0.1%
Belyando SLA	12,206	12,485	14,137	15,674	16,976	18,479	2.0%
Nebo SLA	3,183	3,325	3,976	4,581	5,034	5,427	2.6%
Bowen SLA	13,964	14,179	15,127	16,050	16,962	17,862	1.2%
Central West SD	12,330	12,279	12,570	11,814	13,142	13,580	0.5%
Mackay SD	179,741	185,103	211,289	231,658	244,941	255,614	1.7%
Queensland	4,468,101	4,567,713	5,040,325	5,478,715	5,884,439	6,273,885	1.6%
<b>15-64 Population</b>							
Barcaldine SLA	1,105	1,114	1,142	1,154	1,137	1,103	0.0%
Jericho SLA	737	743	756	758	742	717	-0.1%
Belyando SLA	9,388	9,726	11,369	13,048	14,703	16,179	2.6%
Nebo SLA	1,645	1,688	1,881	2,062	2,223	2,394	1.8%
Bowen SLA	9,054	9,172	9,471	9,419	9,164	9,169	0.1%
Central West SD	7,669	7,725	7,990	8,079	8,204	8,408	0.4%
Mackay SD	124,256	127,936	143,955	154,834	160,690	165,210	1.4%
Queensland	3,013,486	3,072,544	3,326,612	3,540,104	7,474,162	3,889,397	1.2%

Source: Department of Infrastructure and Planning (2008a)

## 2.2 Major Projects

Within the Coal Railway study area there were approximately 41 major projects completed, committed, under investigation or under construction, including:

- \$6.7 billion of mining projects;
- \$5.7 billion of Ports and Airports project;
- \$5.6 billion of industry, manufacturing and mineral processing projects;
- \$1.8 billion of energy projects;
- \$655 million of water projects;

- \$120 million of rail transport projects; and
- \$45 million of tourism, property development and major retail projects.

Within Mackay SD (outside the study area) there were approximately 66 projects including 35 tourism, property development and major retail projects (\$5.2 billion). The majority of tourism, property development and major retail projects were located in Mackay (21 projects) and Whitsunday (12 projects).

Significant projects within the study area include the Abbot Point State Development Area, Abbot Point Coal Terminal, Chalco–Aurukun Bauxite Mine and Port Development, and East Coast Alumina Refinery and the Clermont Coal Mine Project.

The Abbot Point State Development Area (\$5.0 billion) proposes the recognition of more than 6,000 hectares as a state development area. A development scheme prepared by the Coordinator-General has been prepared to manage land use in the Abbot Point State Development Area and was approved by the Governor-in-Council on 19 June 2008. The development scheme will plan for the establishment of industrial development, infrastructure corridors and essential services in a coordinated manner, recognising the environment, cultural heritage and the community<sup>5</sup>. The Chalco–Aurukun Bauxite Mine and Port Development includes developing the Aurukun bauxite resource and constructing an alumina refinery at Bowen, Abbot Point within the Abbot Point State Development Area. The Aurukun mine could produce more than 6 Mt per year of bauxite, and an associated refinery could produce more than 2 Mt per year of alumina.

There are a number of upgrade and expansions planned and completed for the Abbot Point Coal Terminal with a total value of approximately \$5.1 billion. The port is situated about 25 kilometres north of Bowen, and is owned by the North Queensland Bulk Ports Corporation Limited (NQBP). The Abbot Point Coal Terminal comprises a rail in-loading facility, coal handling and stockpile areas, and a single trestle jetty and conveyor connected to a berth and shiploader, located 2.75 km off-shore. The terminal is being expanded with the addition of a second wharf and shiploader as well as an additional onshore stockyard and machines.

Coal is supplied to Abbot Point by rail from Newlands, Collinsville and Sonoma mines. In addition, small quantities of coal may be brought north on the coastal rail line from the Goonyella system for export. The port terminal is operated by Abbot Point Bulk Coal Pty Ltd, a subsidiary of Xstrata Coal Queensland Pty Ltd, under contract from NQBP.

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<sup>5</sup> Department of Infrastructure and Planning



**Table 2.3: Major Projects within Central West SD and Mackay SD, 2008**

Project	Location	Est. Cost	Developer	Timetable	Details
<b>Within Coal Rail Study Area</b>					
Galilee Coal Project (Hancock)	Galilee Coal Basin, Central Queensland	Not available	Hancock Prospecting Pty Ltd	Not available	Establishment of a mine in the Galilee Coal Basin, Central Queensland, to provide thermal coal to international export markets. A new rail connection will be required to deliver the product to the coast for export.
Galilee Coal Project (Waratah)	38 km north-west of Alpha	Not available	Waratah Coal Inc.	Construction in 2010. Coal exports in 2012	Construction of a coal mine near Alpha, a new coal export terminal and a 500 km, interconnecting rail line. The initial export target is 25 Mt per year.
Bowen Basin (Broadlea)—Reinforcement of Supply	Moranbah	\$30M	Ergon Energy	To be completed in September 2010	The project includes the construction of a new line and substation to cater for load growth in the Moranbah area.
Broadlea-Mallawa to Wotonga Duplication (Qld Government Project)	Goonyella System	\$88M	Queensland Rail	Completed in 2009-10	The project involved the duplication of track between Broadlea and Wotonga.
Burdekin to Moranbah Water Pipeline	Gorge Weir, Burdekin River to Moranbah, and locations south and east of Moranbah	\$270M	Sun Water with the six foundation users	Stage 1 completed in December 2006. Stage 2 completed in July 2007	The project included the construction of a new 218km water pipeline from Gorge Weir near Burdekin Falls Dam to Moranbah to meet the water requirements of new and existing coal mines in the northern Bowen Basin.
Burdekin-Moranbah Water Pipeline—Electricity Infrastructure for Sunwater	Moranbah	\$34M	Ergon Energy	Completed in December 2007	The project included development of the infrastructure associated with the water main from Burdekin to Moranbah.
Carborough Downs Longwall Project	15 km east of Moranbah and 150 km south west of Mackay	\$450M	Carborough Downs JV-Vale (80 per cent). Nippon Steel, Posco, JFE and Tata Steel (5 per cent each)	Completion end of 2009	The project includes the expansion of an existing Carborough Downs mine through the introduction of the underground coal mine longwall method and associated installations.
Caval Ridge Coal Project (part of the Bowen Basin Coal Growth Project)	10 km south of Moranbah and north of the Peak Downs Highway	Not available	BHP Billiton and Mitsubishi Development Pty Ltd	First coal to be mined in 2011	The proposed Caval Ridge open-cut coal mine area lies within the northern-most part of the Peak Downs mining lease. The company plans to produce up to 5.5 Mt per year of high-quality, hard coking coal from seams within the Moranbah Coal Measures for export via the Hay Point Coal Terminal.
Central Queensland Gas Pipeline	Moranbah to Gladstone, Central Queensland	\$400M	Arrow Energy and AGL Energy (joint venture)	Gas marketing, design and engineering activities are underway to determine the viability and timing of commercial investment decisions.	The project includes the construction of an underground, high-pressure, 400-km pipeline to transport coal seam methane (natural gas) from coal mining regions in northern Bowen Basin to customers in Gladstone and also to connect with South East Queensland's existing gas pipeline network.
Clermont Coal Mine Project	12 km from Clermont and 11 km south-east	\$950M	Rio Tinto Coal Australia	Will become operational in 2010	A new open-cut mine to produce thermal coal for export at an annual rate of 12 Mt. The mine is a conventional truck-shovel operation supported by an in-

Project	Location	Est. Cost	Developer	Timetable	Details
	of Blair Athol Mine				pit crushing-conveying system.
Coppabella Yard Upgrade (Qld Government Project)	Goonyella System	\$32M	Queensland Rail	Completed in 2008-09	The project included the upgrade of rail infrastructure in the Coppabella Yard.
Daunia Coal Project (part of the Bowen Basin Coal Growth Project)	25 km east-south-east of Moranbah	Not available	BHP Billiton and Mitsubishi Development Pty Ltd	Coal production to start in 2010	The proposed Daunia open-cut coal mine area lies within mining leases 1781 and 70115, and east of the Poitrel Mine. The company plans to produce up to 4 Mt per year of semi-hard coking coal and PCI coal from seams within the Rangal Coal Measures for export via the Hay Point Coal Terminal. The mine life is expected to be about 21 years.
Eagle Downs Coal Mine Project	25 km south-east of Moranbah	\$620M	Bowen Central Coal Joint Venture, comprising Bowen Central Coal Pty Ltd and Aquila Coal Pty Ltd	Production to start in 2012	This project will establish a new greenfields, underground, longwall coal mine to produce up to 7 Mt per year of hard coking coal. The coal would be exported from the coal seams of the Moranbah Coal Measures, which lie to the east and down dip of the Peak Downs Mine. In November 2007, the joint venture lodged an application for mining lease 70389 which covers approximately 4550 ha. The product coal from an on-site coal handling and preparation plant will be transported by unit trains to Abbot Point Coal Terminal for export, via the existing Norwich Park Branch railway and the Northern Missing Link. The mine is expected to operate for more than 30 years.
Ellensfield Coal Mine	Between Coppabella and Moranbah	\$600M	Joint venture of Nebo Central Coal Pty Ltd and CVRD Australia (CQ) Pty Ltd	Construction to start in 2011	This project proposes an underground, longwall coal mine to produce up to 4.7 Mt per year of washed coking and thermal coal products to export for between 20 and 30 years. The mine would use underground, longwall methods to extract the coal from the Leichhardt seam of the Rangal Coal Measures. The company will initially establish a small open-cut mine from which the underground mine will be developed, and then extend open-cut operations into the western lease area.
Grosvenor Coal Project	7 km north of Moranbah	\$700M	Anglo Coal (Grosvenor) Pty Ltd, a subsidiary of Anglo Coal Australia Pty Ltd	Long wall mining planned to start in 2012	This project will develop a new greenfields, underground, longwall coal mine on the Goonyella Middle Seam of the Moranbah Coal Measures. The mine will produce approximately 4.5 Mt per year of hard coking coal that will be transported by rail to the Dalrymple Bay Coal Terminal for export.
Integrated Isaac Plains Project	17 km south-east of Moranbah	\$103M	Isaac Plains Coal Management Pty Limited on behalf of the beneficial owners Aquila Resources Limited (50 per cent) and Vale Australia Pty Ltd (50 per cent)	Not available	This project will extend the existing Isaac Plains Coal Mine by opening new pits in the southern part of Exploration Permit for Coal 755 and an adjoining area to the west. The overall run-of-mine coal production will increase from the current 2 Mt per year to approximately 4 Mt per year for about 15 years. The run-of-mine coal from Isaac Plains South, the expansion area, will be transported by truck north across the Isaac River and through an underpass of the Peak Downs Highway to the existing coal handling and preparation plant. The washed coal products, comprising coking and thermal coal, will be transported by rail to Dalrymple Bay Coal Terminal for export.
Lenton Coal Project	50 km north-north-east of Moranbah	Not available	New Hope Corporation	Not available	On 26 June 2008, New Hope Corporation was granted mining lease 70337, which covers the Lenton coal deposit, adjacent to the north-west boundary

Project	Location	Est. Cost	Developer	Timetable	Details
			Limited		of the Burton mine. The company is also exploring the adjacent areas (EPC766), targeting both open-cut and underground resources in the Rangal Coal Measures. Products are likely to include a range of coking, thermal and PCI coals, subject to coal preparation options that are yet to be determined.
Moranbah Ammonium Nitrate Plant	4.5 km north west of Moranbah	\$570M	Incitec Pivot	Production expected to start in 2011	The Moranbah plant will produce ammonia gas and nitric acid as inputs to the plant outputs of ammonium nitrate emulsion (viscous liquid) and prill (solid) to service the rapidly expanding demand for explosives from mining industries throughout Queensland and New South Wales.
Moranbah North Gas Power Unit	North west of Moranbah	\$60M	Anglo Coal-Energy Developments	Completed in late 2008	The Moranbah North Gas Power Unit will generate 45 MW per year.
Olive Downs Coal Project	21 km south of Coppabella	\$50M	Macarthur Coal Limited	Not available	This project will develop an open-cut mine to produce metallurgical and thermal coal from seams in the Rangal Coal Measures. Mining lease applications 70354 and 70355 have been lodged over the initial open-cut mine area and the proposed haul road for transporting the run-of-mine coal to the washery at the group's Moorvale Mine, located about 15 km north. The mine will produce a range of product types including coking coal, low-volatile PCI coal and high-energy thermal coal for the export market. The Dalrymple Bay Coal Terminal at Hay Point is the nearest coal export facility.
Abbot Point Coal Terminal: Stockyard System Upgrade	Port of Abbot Point, 25 km north of Bowen	\$68M	Ports Corporation of Queensland	To be completed by end of 2009	The project is part of the X50 expansion and includes stockyard system upgrade, new stockpile area and new stacker/reclaimer.
Abbot Point Coal Terminal: X50 Expansion	Port of Abbot Point, 25 km north of Bowen	\$818M	Ports Corporation of Queensland	Expected completion in late 2010	The Abbot Point Coal Terminal X50 expansion would effectively increase existing capacity to 50 Mt per year and duplicate existing terminal infrastructure in stages: rail loop and dump station, inloading and outloading conveyor stream, berth, shiploader, and stockyard capacity.
Abbot Point Coal Terminal—X110 Expansion	Port of Abbot Point, 25 km north of Bowen	\$4,000M	Ports Corporation of Queensland	Possible start of infrastructure development in 2010, to be completed in 2014	The proposed expansion would upgrade the capacity of the terminal in stages to a throughput of 110 Mt per annum of coal. Implementation is dependent on the continuing high international demand for coal. The first stage to be undertaken would be the capital dredging of berths, followed by development of infrastructure both onshore and at the wharf structure.
Abbot Point Coal Terminal—X21 Expansion (formerly Stage 2)	Port of Abbot Point, 25 km north of Bowen	\$116M	Ports Corporation of Queensland	Completed in October 2007	The project involved the expansion of port facilities to lift coal export capacity from 13 to 21 Mt per year, and potentially to 25 Mt per year. The expansion primarily comprises additional stockyard area and construction of a new stacker/reclaimer.
Abbot Point Coal Terminal—X25 Expansion (formerly Stage 2)	Port of Abbot Point, 25 km north of Bowen	\$95M	Ports Corporation of Queensland	Completed in 2009	The X25 expansion will extend Abbot Point's coal export capacity to 25 Mt per year from 21 Mt per year. Works include upgrade of onshore and offshore conveyor and fit out of rail inloader 2.
Abbot Point State Development Area (Qld Government Project)	Abbot Point, 25 km north of Bowen	\$5,000M	Department of Infrastructure and Planning	To be completed in 2012	The project proposes the recognition of more than 6000 ha as a state development area. A draft management scheme has been developed specifying industrial area for large-scale industrial projects.

Project	Location	Est. Cost	Developer	Timetable	Details
Bowen Marina	Bowen	\$600M	Jag Marine Group & Asset Loan Co.	Stage 1 completed in first quarter 2008	The project includes the transformation of the existing boat harbour into a new facility including a residential village, tavern, retail precinct, offices, new floating berths, and a specialised marine industrial area.
Chalco-Aurukun Bauxite Mine and Port Development, and East Coast Alumina Refinery	Cape York and Abbot Point (Bowen)	\$2,930M	Chalco (Aluminum Corporation of China Limited)	Operation to be started in 2012	This project includes developing the Aurukun bauxite resource and constructing an alumina refinery at Bowen, Abbot Point. The Aurukun mine could produce more than 6 Mt per year of bauxite, and an associated refinery could produce more than 2 Mt per year of alumina.
Goonyella to Abbot Point Expansion Rail Project (Old Government Project)	North Goonyella to Newlands	Not available	Queensland Rail	Construction of the Northern Missing Link (69 km of rail line) is planned for completion by 2010.	The project includes the construction of Northern Missing Link rail line between North Goonyella and Newlands will be the first part of the project. Other upgrades of the rail line between Newlands and Abbot Point, and the Pring rail yard will be planned for subsequent completion.
Guthalungra Prawn Farm	Guthalungra via Bowen	\$40M	Pacific Reef Fisheries (Bowen) Pty Ltd	The environmental impact statement has been approved. The Coordinator-General's report has been completed, awaiting the development approvals	This project includes a 260 ha of grow-out ponds, a seafood processing facility and support infrastructure. When fully operational, prawn production will be 1600 t per year.
Mount Carlton	45 km north-west of Collinsville	\$62M	Conquest Mining Limited	Feasibility study started in 2008	The project comprises the Mount Carlton, Mount Carlton Western Lodes, Herbert Creek and the Silver Hills gold, silver and copper prospects. The discovery of the blind, flat-lying Silver Hills deposit in 2006 has substantially upgraded the resource base and the project has the potential to comprise at least four open cuts, which will feed into a central plant. Feasibility studies, including metallurgical testing, are being carried out.
Sonoma Coal Mine	Collinsville	\$200M	Sonoma Coal Joint Venture	The first export shipment occurred in February 2008	The project comprised greenfield development of surface coal mine and coal handling preparation plant. The production capacity is about 2 Mt per year of mainly coking coal with some thermal and PCI coal to be exported via the Abbot Point Coal Terminal.
Strathmore to Bowen 132 kV Transmission Line and Bowen North Substation	Central Queensland	\$83M	Powerlink Queensland	To be completed in 2010-11	The project includes the construction of a 132 kV transmission line between the existing Strathmore Substation and a new substation at Bowen North to ensure a secure and reliable supply of high voltage electricity to the Bowen region.
The Australia Resort and Hotel	Herbert St, Bowen	\$45M	OzzyConnect	Currently at concept stage	This project is in early design stages. It is envisaged that the development will be four storeys with underground car park and recreational facilities, such as a resort pool, spa, restaurant and cafés.
Urannah Dam	South-east of Collinsville	\$300M	SunWater	Not available	The project is for proposed water storage infrastructure, which could provide up to 150 000 ML per year.
Water for Bowen and	Weir (Burdekin River)	\$85M	SunWater	Possible completion	Water for Bowen

Project	Location	Est. Cost	Developer	Timetable	Details
Extension to Proserpine (Old Government Project)	to the Bowen area			2011	<p>The proposed project aims to supply a nominal 60 000 ML per year of water for industrial and agricultural uses in the Bowen region via a new pipeline and channel system extending 130 km south of the Burdekin River to Bowen. Stage 1 pre-feasibility studies were completed in late 2005. SunWater has started Stage 2 of the project, which involves undertaking detailed engineering studies, finalising the alignment of the channel and pipeline system, preparing an environmental impact statement, developing a Cultural Heritage Management Plan and developing a business case.</p> <p>Water for Proserpine</p> <p>This project aims to improve the reliability of urban water supplies in the Whitsunday region. SunWater will consider all feasible options to improve the reliability of the water supply and assess timelines for each option. One option is to develop a new pipeline system to extend the Water for Bowen scheme 50 km to Proserpine.</p>
Broadsound to Nebo 275 kV Transmission Line (Central Queensland-North Queensland Reinforcement Stage One)	Central Queensland	\$115.7M	Powerlink Queensland	Completed in 2008	The project included the construction of a new 275 kV transmission line between the existing Broadsound and Nebo Substations as the first stage of a three-stage project to reinforce high voltage electricity supply to North Queensland.
Nebo to Pioneer Valley 132 kV Transmission Line	Central Queensland	\$63.5M	Powerlink Queensland	Completed in February 2008	The project included the construction of a new 132 kV transmission line between Powerlink's Nebo and Pioneer Valley substations to help ensure a reliable high voltage electricity supply to Mackay and surrounding areas.
Nebo to Queensland Rail Bolingbroke 132 kV Transmission Line	Central Queensland	\$43.8M	Powerlink Queensland	Completed in mid 2009	The project included the construction of a new 132 kV transmission line from the Nebo substation to a proposed new Queensland Rail substation at Bolingbroke.
Nebo to Strathmore 275 kV Transmission Line (Central Queensland-North Queensland Reinforcement Stage 2)	Central Queensland	\$145.4M	Powerlink Queensland	Completed in mid 2009	The project consists of the proposed construction of a 275 kV transmission line between the existing Nebo and Strathmore substations as the second stage of a three-stage project to reinforce high voltage electricity supply to north Queensland.
Moranbah and Nebo Power Stations	Moranbah and Nebo	\$800M	Transfield Services Limited	To be completed in 2015	The project includes constructing a 120MW, gas-fired, intermediate power station at Moranbah and a 300MW gas-fired, peaking power station near Nebo.
<b>Within Mackay SD</b> Connors River Dam and Associated Pipelines (Old Government Project)	Connors River near Mount Bridget approximately 235 km north west of Rockhampton	\$116.5M	SunWater is the designated proponent for the project for the feasibility investigations up to the development of a	Possible completion 2012-13	<p>The project includes the development of Connors River Dam at Mount Bridget was a recommendation arising from the Central Queensland Regional Water Supply Strategy. The 150 000 ML capacity dam (and associated pipeline developments) is to supply water to coal mines and communities within the northern Bowen Basin over the medium to long term.</p> <p>The dam construction type has yet to be determined but will be either roller compacted concrete, central earth core rockfill, concrete faced rockfill or a</p>

Project	Location	Est. Cost	Developer	Timetable	Details
			business case		<p>combination of these types. Other features of the project include:</p> <ul style="list-style-type: none"> <li>• yields of up to 56 400 ML per year of high-priority water, based on full supply levels of approximately 168.4 m based and a maximum storage of 336 000 ML (these figures will be further refined during the environmental impact statement process)</li> <li>• at least one water distribution pipeline from the storage west to the northern Bowen Basin, with ultimate discharge location likely to be in the vicinity of Moranbah</li> <li>• fishways and water outlets (fish migration and water release).</li> </ul>
Lake Lindsay Coal Project	25 km south of Middlemount	\$674M	Anglo Coal Australia Pty Ltd and Mitsui Coal Holdings Pty Ltd	Construction started in mid 2006 and the first coal was mined in the latter part of that year	A new open-cut mine has been developed on the Lake Lindsay coal deposit of the Rangal Coal Measures, about 25 km south-east of German Creek Mine. Lake Lindsay mine will produce approximately 4 Mt per year of saleable metallurgical and thermal coal products for the export market. A new coal preparation plant for the project is under construction adjacent to the German Creek mine rail load-out facility. Initially, conventional truck-and-shovel techniques are to be used to remove overburden and mine coal. Draglines could be integrated into the operation later.
Lake Vermont Mine	18 km north-east of Dysart	\$200M	Lake Vermont Resources	To be finished in 2013	<p>The construction of a hard coking coal mine including a coal handling and preparation plan (CHPP), industrial area, rail spur line and pre-mine development at Lake Vermon.</p> <p>Lake Vermont Coal Mine is a new open-cut operation that will produce about 4 Mt per year of coking and PCI coal products for the export market. Coal production is planned to start by the first quarter of 2009 and initially the saleable coal will be transported by Queensland Rail to the Port of Gladstone for export. The Lake Vermont Coal joint venture is seeking additional coal export capacity at the Dalrymple Bay Coal Terminal near Mackay and is considering other potential options, including the Abbot Point coal terminal and the proposed coal terminal at Wiggins Island.</p>
Middlemount Coal Project	6 km south-west of Middlemount	\$150M	Middlemount Coal Pty Ltd, an incorporated joint venture between Macarthur Coal Ltd and Noble Group Ltd	Commercial production started in late 2008	A new open cut mine to produce metallurgued coal for export. The joint venture partners are currently developing a bulk sample pit within mineral development licence 282 to extract 0.36 Mt of run-of-mine coal for test purposes with various customers. Mining operations are performed by Leighton Contracting. Sedgman Limited will construct a coal handling and preparation plant following the grant of the mining lease. The mine will produce about 2 Mt per year of low-volatile, PCI coal and semi-hard coking coal products for the export market.
New Saraji	25 km north of Dysart	\$30M	BHP Billiton Mitsubishi Alliance	In November 2007, the company lodged an application for mining lease 70383	The New Saraji deposit, which lies to the east of the BHP Billiton Mitsubishi Alliance (BMA) Saraji open-cut coal mine, contains large resources of hard coking coal in seams of the Moranbah Coal Measures. The seams of most interest are the Dysart, the overlying Harrow Creek Seam and 'P' Seam, which may be accessed by underground mining methods. Exploration work is continuing and a conceptual mine plan has been devised. The product coal will be transported by rail approximately 220 km to the Dalrymple Bay Coal

Project	Location	Est. Cost	Developer	Timetable	Details
					Terminal for export. BMA purchased the project from New Hope Corporate in July 2008.
Alfred Street	Alfred Street, Mackay	\$65.8M	MassLand	Not available	The project includes the construction of a mixed-use development including retail shops, commercial offices and a 166-room hotel on Alfred Street, Mackay.
Azucar	Gregory Street, Mackay	\$40M		Completed in May 2009	The project included the construction of a residential development in the Mackay central business district incorporating one, two and three bedroom apartments.
Biodiesel Plant	Mackay Harbour	\$50M	Queensland Biodiesel	Production started in 2008.	The Biodiesel Plant will produce 60 million L of clean green fuel per year in Stage 1, and increase to 180 litres once Stage 3 is completed. The plant will be powered by sugar cane bagasse rather than coal.
Bluewater Trail including Bluewater Lagoon	Mackay	\$32M	Mackay Regional Council	Completed in 2009	Comprises four stages including development of the Pioneer Promenade, three-tiered aquatic lagoon, Bluewater Quay (a large public open space with play facilities, a roofed market structure and links to the river via boardwalks).
Bowen Range Estate Q	Greenmount Road, Mackay	\$72M	MassLand	Not available	The project includes the development of a master planned estate comprising of 240 residential lots, an aged-care facility, 24 000 m <sup>2</sup> of prime bulky goods, and a retail-convenience hub.
Caneland Central Expansion	Mackay	\$210M	Lend Lease	Construction started in May 2010	The project includes the expansion of the existing major retail centre including high grade retail, forecourt dining and compatible entertainment uses.
Central Park	Paget	\$30M	JTM (Queensland) on behalf of Mackay Regional Council	Stage 2 completed mid 2007. Stage 3 completed late 2007	The project involved the development of an industrial subdivision in Paget Industrial Estate in three stages to meet the growing demands from businesses servicing the Bowen Basin coalfields.
Dalrymple Bay Coal Terminal: Third Loop (Qld Government Project)	South of Mackay	\$109M	Queensland Rail	Completed in 2009-10	The project includes the construction of a third Loop at the Dalrymple Bay Coal Terminal.
Energy Supply Mackay Northern Suburbs	Mackay	\$40.6M	Ergon Energy	Completed in 2009	The project reinforced energy supply to the Mackay northern suburbs, which involved building a new substation at Glenella.
Forgan Bridge Replacement (Qld Government Project)	Forgan Bridge, Mackay	\$127.9M	Department of Main Roads	To be completed in May 2010	The project includes the duplication and replacement of the Forgan Bridge over the Pioneer River, on the Mackay - Slade Point Rd.
Gordon Street Mixed-Use Development	Site bounded by Gordon Street, Tennyson Street and Park Street, Mackay	\$30M	Pointglen Developments Pty Ltd	Development applications lodged with the Mackay Regional Council. Stage 1 (office building) expected to start in 2010.	The project includes building a staged, mixed-use development of multi-dwelling residential, commercial offices, a hotel and retail.

Project	Location	Est. Cost	Developer	Timetable	Details
Hastings Deering Complex	Paget, Mackay	\$50M	FKP Property Group	Completed in 2008	The project includes the construction of a new workshop including a repair shed, heavy industrial work shed and parts shed, with a total site area of 8 ha.
Hospital Bridge Replacement (Qld Government Project)	Hospital Bridge, Mackay	\$33.6M	Department of Main Roads	Completed in 2009	The existing Hospital Bridge in Mackay was replaced on a new alignment, including construction of associated approaches along Lagoon St.
Industroplex	Paget, South Mackay	\$84M	FKP Property Group	To be completed by 2013	Industroplex is a master-planned industrial precinct in one of the largest industrial developments in Mackay. Zoned industry (high impact), which permits 24 hour, 7 days a week operation. Industroplex features purpose-built facilities and vacant, serviced industrial lots.
Lanai Apartments	River Street, Mackay	\$45M	Chamos Group	Completed in 2008	The Lanai Apartments development included 80 luxury apartments in a resort setting with views of the Pioneer River.
Leichhardt on River	River Street, Mackay	\$35M	Martinek Holdings	Not available	The project includes the construction of an 11-story mixed-use development, comprising dual-key units, residential apartments and ground-level dining.
Mackay Gateway Business Park	Corner Connors Road and Archibald Street, Mackay	\$30M	Evolve Property Group, Investec Group	Completed in 2008	The project includes the development of a 2.132 ha site into a light-industrial business park. Total lettable area will be 11 500 m <sup>2</sup> .
Mackay Q	Homebush Road	\$117M	MassLand	Not available	The project incorporated 340 000 m <sup>2</sup> of prime industrial land development.
Mackay Sugar Cogeneration	Racecourse Mill, Mackay	\$110M	Mackay Sugar Cooperative Association Limited	Commissioning in 2011	The project involves a new bagasse-fired, 150 tonnes per hour boiler, and 36-MW turbo-alternator exporting approximately 27 MW into the Mackay grid.
Mackay Water Recycling Project	Mackay	\$150M	Mackay Regional Council (Mackay Water)	Construction completed in 2008	Decommissioning of the Mount Bassett Wastewater Treatment Plant, developing the new Mackay Southern Water Recycling Facility, and upgrading the Mackay Northern Water Recycling Facility at Bucasia.
North Mackay (Glenella)—Reinforcement of Supply	North Mackay	\$118M	Ergon Energy	Not available	The project includes the construction of line and substation into north Mackay area.
Northern Beaches Central, Stage 2	Mackay	\$32M	Cardno Epell Olsen	To be completed in September 2010	The project involves an extension to the existing shopping centre.
Ocean Isles	Shoal Point	\$100M	GT and LM Cox	Both developments approved	The project includes a beachside development of 3.9 ha and a lakeside development of 3.8 ha comprising a mixture of apartments, villas, boutique retail and office space, and residential lots.
Plantation Palms	Northern Beaches	\$1,500M	Xcel Properties	Stage 1 completed in July 2008. Entire development over a 10-year period.	Plantation Palms is a multi-staged development of 2,000 homes. Sixty per cent of the site is set aside for natural landscape.
Rivage	River Street West,	\$35M	Martinek Pty Ltd	Completed in Late	The project comprised the construction of a 10-storey apartment building,



Project	Location	Est. Cost	Developer	Timetable	Details
	Mackay			2007	with a ground floor café and 57 apartments overlooking parkland and the Pioneer River.
River and Nelson streets	Corner River and Nelson Streets, Mackay	\$40M	GMW Group Pty Ltd	Construction started in 2008	The development features 112 apartments and ground-level retail and dining.
Riverside Car Park Redevelopment	River St, Mackay	\$80M	Mackay Regional Council	Expression of interest in early 2008	The development includes building a major waterfront, mixed-use development which includes a vertical urban village with a major public parking facility.
Shoal Point Waters	Shoal Point	\$220M	Pointglen Developments Pty Ltd	To be completed over 10 years	The project includes a small tourism precinct with commercial facilities and high- and low-density residential developments.
SkillsTech Australia, Mackay Trade Training Centre (Old Government Project)	Mackay	\$45.4M	Department of Education, Training and the Arts	To be completed in 2009-10	The project includes the construction of a new trade training facility to improve and increase delivery of training for the engineering, electrical, construction and automotive industries.
Tempo Lifestyles, Bucasia Beach Resort and Spa	Mackay	\$51M	John Archer Consulting	Not available	The development comprises 37 beach houses, and a resort and spa.
The Beach	Far Beach, East Mackay	\$200M	Pacific Coast Developments and NoonBreeze	Stage 1 completed in late 2007	The Beach is a four-stage development with stage 1 including 33 lot subdivisions and two residential and resort-style buildings.
The Pier Residences	6 River Street, Mackay	\$87M	Graham, David and Brian Caracciolo	Project approved but delayed	Two residential towers of eight and five storeys on the banks of the Pioneer River. The complex will comprise 52 luxury apartments and two penthouse suites with pools, and feature ground-level retail and dining venues on a public boardwalk.
Orchid Valley Residential Estate	Marian	\$36M	Morvale Developments Pty Ltd	Stage 1 and 2 completed. Consultants engaged to complete development application for Stage 3	Orchid Valley is a seventy-eight lot residential estate.
Hail Creek Construction (Old Government Project)	Goonyella Branch	\$96M	Queensland Rail	To be completed in 2010-11	The project includes the construction of the infrastructure works associated with the Hail Creek coalmine.
Dalrymple Bay Coal Terminal Expansion—Stage 7	Hay Point	\$1,300M	Babcock and Brown Infrastructure	Completed late 2008	Stage 7 involved a three-phase expansion of the terminal to take capacity from 60 Mt per year to 85 Mt per year by 2009. It includes construction of a third in-loading and out-loading stream, including a third ship-loader and a fourth berth; upgrading of the existing coal handling equipment; and an increase in stockpile capacity. Work also involved separate construction of a third rail loop by Queensland Rail (\$83 million) and queuing tracks.

Project	Location	Est. Cost	Developer	Timetable	Details
Dalrymple Bay-Hay Point—Electricity Infrastructure	Hay Point	\$72M	Ergon Energy	Completed in 2009	The project included new infrastructure associated with the coal expansion at Dalrymple Bay.
Industry East Q	Louisa Creek Road	\$57.2M	MassLand	Not available	The project involves the development of a heavy-industrial park consisting of 44 ha of prime industry including hardstand, adjoining Hay Point Coal Terminal.
Jilalan Rail Yard Upgrade (Qld Government Project)	Near Sarina, North Queensland	\$500M	Queensland Rail in conjunction with Coal Stream Alliance—Jilalan	To be completed in 2009-10	<p>The project will deliver improved rail infrastructure to the Jilalan Rail Yard:</p> <ul style="list-style-type: none"> <li>• two new bypass tracks</li> <li>• two provisioning tracks</li> <li>• a provisioning facility</li> <li>• a wagon maintenance facility</li> <li>• modifications to the existing yard.</li> </ul> <p>The expanded facility will be capable of servicing the 130 megatonnes per year coal transport capacity required for the upgraded port facilities at Hay Point-Dalrymple Bay.</p>
Airlie Beach (Jubilee Pocket Substation)—Reinforcement of Supply	Airlie Beach	\$32M	Ergon Energy	Started in 2009	The project involves the construction of a new zone substation at Airlie Beach.
Dent Island Golf Course Resort	Dent Island, Whitsundays	\$85M	Hamilton West Pty Ltd	Initial facilities opened in late 2008.	The initial two-and-a-half year phase will involve construction of an 18-hole, international standard golf course, major infrastructure and some accommodation units.
Double Cone Resort	Airlie Beach	\$30M	Ulysses	Completed in 2007	The project included the construction of 46 one-, two- and three-bedroom apartments.
Funnel Bay	Airlie Beach	\$500M	Resort Corp Pty Ltd	Project has been approved. Infrastructure completed in mid 2008. Expected construction start and completion to be announced.	The project includes the construction of 400 apartments and a resort with 200 rooms. The project will incorporate a number of retail restaurant outlets available both to the resort and to the public, as well as convenience shopping.
Furfural Plant—Proserpine Mill	Proserpine Mill	\$30M	Proserpine Co-operative Sugar Milling Association	Completed in 2009	The construction of a plant to produce furfural (a polymer plastic) from mill waste.
Hook Island Wilderness Resort Redevelopment	Hook Island, Whitsundays	\$50M	Laguna Island Adventures Pty Ltd	Undergoing environmental impact statement process	Redeveloping the resort to include day facilities such as a restaurant, shop and pool, 60 eco cabins and an eco-lodge with 40 units; 20 eco-tents, an upgraded underwater observatory and jetty, a helipad, an educational facility and a dive centre.
Peppers Coral Coast Resort	Airlie Beach	\$140M	Latitude Development Group	Completed in 2009	The five star resort on 2.3 ha will comprise 121 apartments, 11 penthouses, a conference centre (theatre style), retail shops, a tavern and landscaped pool areas. The conference centre will accommodate up to 100 people in one- to

Project	Location	Est. Cost	Developer	Timetable	Details
					three-bedroom suites and four-bedroom villas. It also offers catered packages for corporate events.
PGA Whitsunday	Airlie Beach	\$700M	Links Living Limited	To be completed in 2019	The project includes the development of a 2500 mixed-density dwellings, including a hotel, apartments, residential allotments and a golf course.
Port of Airlie Marina Development	Airlie Beach	\$450M	Meridien AB Pty Ltd	To be completed by late 2010	Development of a 300-berth marina, ferry and cruise terminal, public boat ramp, pedestrian mall and village square, retail and commercial space, 140 resort apartments, 356 residential apartments and up to 14 detached homes.
Qualia (formerly North Point)	Hamilton Island	\$75M	Hamilton Island Enterprises	Stage 1 completed in August 2007. Stage 2 completed in August 2008	The projected included the construction of a six-star resort with 50 luxurious one-bedroom pavilions
Shute Harbour Marina Project	Shute Harbour on the Whitsunday Coast	\$250M	Shute Harbour Marina Development Pty Ltd c/- Port Binnli Pty Ltd	Subject to approvals and financing. The project could start in 2009 with resort construction. The marina will be constructed progressively.	The Shute Harbour Marina Project is a development of an integrated, 669-berth marina— a commercial precinct comprising a 109-suite tourist resort and a 117-lot residential community.
Tempo Lifestyles Airlie Beach	Mount Whitsunday Estate, Airlie Beach	\$51M	Archer Consulting	Not available	Tempo Lifestyles Airlie Beach includes the development of 50 luxury homes with views across Port of Airlie. Facility plans include a health and recreation centre with gym, spa, sauna and lap pool. It also includes access to a skippered motor yacht and a modern business centre.
View Whitsunday	Cannonvale	\$65M	MST Investment Corporation Ltd	Started in 2007	View Whitsunday consists of a selection of two and three bedroom stand-alone villas and 26 duplex, two-bedroom apartments (total of 52 apartments).
Whisper Bay	Airlie Beach	\$102M	Rory O'Brien Developments	Completed in 2008	Whisper Bay includes the development of 98 three-bedroom study villas and apartments, and six four-bedroom super penthouses. Many of the homes will have their own swimming pool and two community pools will service the other residents.
Whitsunday Aviation Village Estate (WAVE)	South of Proserpine	\$75M	Links Living Pty Ltd	Construction of houses started in November 2008	Whitsunday Aviation Village Estate will include fifty-seven hangar homes for small aircraft owners, asphalt-sealed runway, taxiways, a commercial precinct, and conference and meeting facilities.
Whitsunday International Airport	Whitsunday Region	\$50M	Queensland Government	Not available	This project involves upgrading one of the regional airports to cater for domestic and international flights. The current options are Whitsunday Coast Airport and Laguna Whitsunday Airport.
Whitsunday Shores	24 km south of Bowen	\$32M	Aspen Group/NPRG	Stage 2 residential development land purchased in 2006.	Whitsunday Shores is a residential estate of 669 lots including country club, retail precinct, retirement village and 18 hole golf course.

Project	Location	Est. Cost	Developer	Timetable	Details
Lilyvale to Blackwater 132 kV Transmission Line	Central Queensland	\$43.9M	Powerlink Queensland	Completed in October 2007	The project involved the construction of a new 132 kV transmission line between Powerlink's existing Lilyvale and Blackwater Substations to reinforce the high voltage electricity supply to inland Central Queensland.
Secondary System Refurbishment of Queensland Rail Supply Substation	Central Queensland	\$35M	Powerlink Queensland	Completed in February 2008	The project included the refurbishment of Static VAR Compensators to ensure a reliable high voltage electricity supply to the Queensland Rail network.
Strathmore Static VAR Compensator	Central Queensland	\$55M	Powerlink Queensland	Completed in October 2007	The project included the installation of a second 275/132 kV Static VAR Compensator at Strathmore Substation to increase supply capability to North and Far North Queensland.
Strathmore to Ross 275 kV Transmission Line (Central Queensland-North Queensland Reinforcement Stage Three)	Central and North Queensland	\$218M	Powerlink Queensland	To be completed in 2010-11	The project includes the construction of a 275 kV transmission line between the existing Strathmore and Ross substations as part of a three-stage project to reinforce high voltage electricity supply to North Queensland.
High Production Plain-Line Grinder and Switch and Cross Grinder (Old Government Project)	Overseas	\$35M	Queensland Rail	To be completed in 2009-10	The project includes the procurement of two rail grinding machines

Source: Department of Infrastructure and Planning (2008b)

## 2.3 Summary

The socio-economic profile highlighted that Belyando SLA had a relatively young population compared to the other coal railway SLAs, with a higher average age recorded in Barcaldine SLA and Jericho SLA. The average household size was particularly high in Nebo SLA in 2006 at 4.8 persons per household, likely reflecting a relatively high incidence of group households.

The incidence of household ownership varied considerably throughout the coal railway SLAs, and was highest in Barcaldine SLA, Jericho SLA and Bowen SLA. Belyando SLA and Nebo SLA both recorded household ownership levels significantly below the state average.

In 2006, the unemployment rate was particularly low in Belyando SLA and Nebo SLA, with each region recording an unemployment rate below 2%.

In Jericho SLA, agriculture, forestry & fishing was the dominant industry of employment, with mining the key employer in both Belyando SLA and Nebo SLA.

Between 2010 and 2031, Belyando SLA and Nebo SLA are anticipated to record a population growth rate exceeding regional and state averages. On the other hand, the population of Barcaldine SLA and Jericho SLA are expected to remain relatively stable in this period.

Within the coal railway SLAs there were approximately 41 major projects completed, committed, under investigation or under construction, including:

- \$6.7 billion of mining projects;
- \$5.7 billion of Ports and Airports project;
- \$5.6 billion of industry, manufacturing and mineral processing projects;
- \$1.8 billion of energy projects;
- \$655 million of water projects;
- \$120 million of rail transport projects; and
- \$45 million of tourism, property development and major retail projects.

## 3 EMPLOYMENT AND ENTERPRISE ACTIVITY WITHIN THE COAL RAILWAY STUDY AREA

### 3.1 Workforce Size

The size of the labour force in Central West SD increased from 7,722 persons in 2001-02 to 9,083 persons in 2006-07, before decreasing to 7,858 persons in 2009-10. The size of the labour force in Mackay SD increased from 72,504 persons in 2001-02 to 96,618 persons in 2009-10. The size of the labour force peaked in 2006-07 in Barcaldine SLA (1,054 persons), Jericho SLA (704 persons) and Bowen SLA (7,030 persons), and peaked in 2008-09 in Belyando SLA (7,133 persons) and Nebo SLA (1,596 persons)

Table 3.1 provides a summary of the labour force size in the coal railway SLAs between 2001-02 and 2009-10.

**Table 3.1: Labour Force Size, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2001-02 to 2009-10**

	Barcaldine SLA	Jericho SLA	Belyando SLA	Nebo SLA	Bowen SLA	Central West SD	Mackay SD	Queensland
2001-02	936	567	6,187	1,368	6,226	7,722	72,504	1,875,400
2002-03	949	609	5,723	1,287	6,416	8,086	74,161	1,922,297
2003-04	962	642	5,631	1,209	6,415	8,311	75,586	1,967,824
2004-05	1,019	680	5,965	1,281	6,796	8,805	80,079	2,048,774
2005-06	1,047	699	6,128	1,316	6,982	9,046	82,264	2,109,754
2006-07	1,054	704	6,171	1,325	7,030	9,083	82,834	2,196,407
2007-08	995	651	6,818	1,511	6,928	8,061	89,986	2,263,618
2008-09	986	640	7,133	1,596	6,977	7,858	93,618	2,329,919
2009-10	983	639	7,121	1,594	6,962	7,841	93,434	2,370,300
Ave. Ann. Chg, 2001-02 to 2009- 10	0.6%	1.5%	1.8%	1.9%	1.4%	0.2%	3.2%	3.0%
Ave. Ann. Chg, 2008-09 to 2009- 10	-0.2%	-0.2%	-0.2%	-0.1%	-0.2%	-0.2%	-0.2%	1.7%

Source: Department of Employment and Workplace Relations (various years)

### 3.2 Unemployment Rate

Over the nine year period to 2009-10, the unemployment rate in Queensland decreased at a faster rate of 0.3% per annum than the coal railway SLAs. In the most recent year (2009-10) all regions recorded an increase in the unemployment rate, however not as significant as the increase in Queensland rate.

Over the last nine years to 2009-10, the coal railway SLAs have consistently recorded unemployment rates below the state average. Unemployment rates were particularly low in Belyando SLA and Nebo SLA.

Table 3.2 summarises the unemployment rate in Barcaldine SLA, Jericho SLA, Belyando SLA, Nebo SLA and Bowen SLA between 2001-02 and 2009-10.

**Table 3.2: Unemployment Rate, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2001-02 to 2009-10**

	Barcaldi ne SLA	Jericho SLA	Belyand o SLA	Nebo SLA	Bowen SLA	Central West SD	Mackay SD	Queens land
2001-02	2.6%	3.1%	2.5%	1.1%	9.1%	3.2%	6.8%	7.9%
2002-03	2.3%	2.8%	2.7%	1.0%	8.8%	3.3%	6.8%	7.1%
2003-04	2.5%	1.6%	2.8%	1.3%	8.8%	2.9%	6.7%	6.2%
2004-05	1.8%	2.6%	2.1%	0.9%	8.1%	2.1%	5.2%	4.9%
2005-06	1.8%	2.0%	1.3%	0.6%	6.4%	1.7%	3.7%	5.0%
2006-07	1.6%	2.1%	1.1%	0.2%	5.5%	1.6%	3.0%	4.0%
2007-08	1.7%	1.4%	0.9%	0.5%	6.1%	2.1%	2.9%	3.7%
2008-09	2.3%	1.7%	1.0%	1.1%	7.3%	2.8%	3.6%	4.4%
2009-10	2.8%	2.1%	1.3%	1.4%	7.6%	3.4%	4.4%	5.8%
Ave. Ann. Chg, 2001-02 to 2009-10	0.0%	-0.1%	-0.1%	0.0%	-0.2%	0.0%	-0.3%	-0.3%
Ave. Ann. Chg, 2008-09 to 2009-10	0.6%	0.5%	0.3%	0.3%	0.4%	0.7%	0.9%	1.3%

Note 1: The average annual change figures in this table represent the average annual percentage point change in the unemployment rate.

Note 2: 2009-10 figures are estimates only, as the June Quarter 2010 figures are yet to be released.

Source: Department of Employment and Workplace Relations (various years)

### 3.3 Labour Force Participation Rate

The average labour force participation rate between 2001-02 and 2009-10 was 75.1% in Barcaldine SLA, 80.8% in Jericho SLA, 76.2% in Belyando SLA, 72.1% in Nebo SLA and 63.9% in Bowen SLA. All coal railway SLAs (except Bowen SLA) recorded an average labour force participation rate above the state average (65.1%). The labour force participation rate was highest in 2006-07 in Barcaldine SLA (80.3%) and Jericho SLA (91.8%).

Table 3.3 summarises the labour force participation rate in the coal railway SLAs between 2001-01 and 2009-10.

**Table 3.3: Labour Force Participation Rate, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2001-02 to 2009-10**

	Barcaldine SLA	Jericho SLA	Belyando SLA	Nebo SLA	Bowen SLA	Central West SD	Mackay SD	Queenslan d
2001-02	70.4%	67.4%	82.2%	87.3%	63.1%	73.3%	67.3%	64.1%
2002-03	72.6%	73.7%	73.8%	79.9%	64.9%	77.7%	67.7%	63.9%
2003-04	74.0%	75.4%	72.0%	75.8%	64.4%	80.2%	67.6%	63.8%
2004-05	78.1%	78.6%	74.9%	81.4%	68.1%	84.7%	69.6%	64.9%
2005-06	78.8%	90.7%	73.8%	62.9%	65.9%	91.6%	65.6%	64.8%
2006-07	80.3%	91.8%	73.0%	62.3%	64.8%	92.5%	64.5%	65.8%
2007-08	75.9%	85.0%	78.9%	67.3%	62.1%	82.3%	67.9%	66.0%
2008-09	73.5%	82.3%	79.6%	67.4%	61.7%	79.3%	67.7%	66.5%
2009-10	72.6%	81.9%	77.5%	64.5%	60.2%	79.0%	65.4%	66.0%
Average	75.1%	80.8%	76.2%	72.1%	63.9%	82.3%	67.0%	65.1%

Note: 2009-10 figures are estimates only, as the June Quarter 2010 figures are yet to be released.

Source: Department of Employment and Workplace Relations (various years), ABS (2010)

### 3.4 Enterprise Activity

#### 3.4.1 Number of Businesses

Within Barcaldine SLA there were an estimated 210 businesses as at June 2007, comprising of 108 employing businesses and 102 businesses operating as sole traders. In June 2007, the most significant industries in Barcaldine in terms of the number of businesses were agriculture forestry

& fishing (108 businesses). construction (21 businesses) and property & business services (18 businesses). The majority of employing businesses had less than 20 employees (96 businesses).

Table 3.4 summarises the number of businesses by size in Barcaldine SLA as at June 2007.

**Table 3.4: Number of Businesses, Barcaldine SLA, June 2007**

	Number of Employees			Total Employing Businesses	Non Employing Businesses	Total Businesses
	1-19	20-199	200+			
Agriculture, Forestry and Fishing	33	9	0	42	66	108
Mining	0	0	0	0	0	0
Manufacturing	3	0	0	3	6	9
Electricity, Gas & Water Supply	0	0	0	0	0	0
Construction	15	0	0	15	6	21
Wholesale Trade	6	0	0	6	3	9
Retail Trade	9	0	0	9	3	12
Accom, Cafes & Restaurants	6	3	0	9	0	9
Transport & Storage	6	0	0	6	3	9
Communications Services	0	0	0	0	0	0
Finance & Insurance	0	0	0	0	0	0
Property & Business Services	9	0	0	9	9	18
Education	0	0	0	0	0	0
Health & Community Services	0	0	0	0	3	3
Cultural & Recreational Services	6	0	0	6	0	6
Personal & Other Services	3	0	0	3	3	6
<b>Total</b>	<b>96</b>	<b>12</b>	<b>0</b>	<b>108</b>	<b>102</b>	<b>210</b>

Source: Australian Bureau of Statistics (2007)

Within Jericho there were an estimated 195 businesses as at June 2007, consisting of 69 employing businesses and 126 businesses operating as sole traders. In June 2007, the most significant industries in Jericho SLA in terms of the number of businesses was agriculture, forestry & fishing (150 businesses). All employing businesses in Jericho had less 20 employees.

Table 3.5 summarises the number of businesses by size in Jericho SLA as at June 2007.

**Table 3.5: Number of Businesses, Jericho SLA, June 2007**

	Number of Employees			Total Employing Businesses	Non Employing Businesses	Total Businesses
	1-19	20-199	200+			
Agriculture, Forestry and Fishing	45	0	0	45	105	150
Mining	0	0	0	0	0	0
Manufacturing	6	0	0	6	0	6
Electricity, Gas & Water Supply	0	0	0	0	0	0
Construction	3	0	0	3	3	6
Wholesale Trade	0	0	0	0	3	3
Retail Trade	3	0	0	3	6	9
Accom, Cafes & Restaurants	6	0	0	6	0	6
Transport & Storage	3	0	0	3	6	9
Communications Services	3	0	0	3	0	3
Finance & Insurance	0	0	0	0	0	0
Property & Business Services	0	0	0	0	3	3
Education	0	0	0	0	0	0
Health & Community Services	0	0	0	0	0	0
Cultural & Recreational Services	0	0	0	0	0	0
Personal & Other Services	0	0	0	0	0	0
<b>Total</b>	<b>69</b>	<b>0</b>	<b>0</b>	<b>69</b>	<b>126</b>	<b>195</b>



Source: Australian Bureau of Statistics (2007b)

Within Belyando SLA there were an estimated 1,005 businesses as at June 2007, comprising of 438 employing businesses and 567 businesses operating as sole traders. In June 2007, the most significant industries in Belyando in terms of the number of businesses were agriculture, forestry & fishing (420 businesses), property & business services (129 businesses) and construction (96 businesses). The majority of employing businesses had less than 20 employees (396 businesses), with only six employing over 200 staff.

Table 3.6 summarises the number of businesses by size in Belyando SLA as at June 2007.

**Table 3.6: Number of Businesses, Belyando SLA, June 2007**

	Number of Employees			Total Employing Businesses	Non Employing Businesses	Total Businesses
	1-19	20-199	200+			
Agriculture, Forestry and Fishing	141	0	0	141	279	420
Mining	9	0	0	9	6	15
Manufacturing	27	3	6	36	18	54
Electricity, Gas & Water Supply	0	0	0	0	0	0
Construction	48	3	0	51	45	96
Wholesale Trade	9	0	0	9	15	24
Retail Trade	42	12	0	54	30	84
Accom, Cafes & Restaurants	12	9	0	21	9	30
Transport & Storage	39	3	0	42	30	72
Communications Services	6	0	0	6	0	6
Finance & Insurance	6	0	0	6	21	27
Property & Business Services	30	3	0	33	96	129
Education	0	0	0	0	3	3
Health & Community Services	9	0	0	9	6	15
Cultural & Recreational Services	6	3	0	9	3	12
Personal & Other Services	12	0	0	12	6	18
<b>Total</b>	<b>396</b>	<b>36</b>	<b>6</b>	<b>438</b>	<b>567</b>	<b>1,005</b>

Source: Australian Bureau of Statistics (2007)

Within Nebo SLA there were an estimated 222 businesses as at June 2007, comprising of 75 employing businesses and 147 businesses operating as sole traders. In June 2007, the most significant industries in Nebo SLA in terms of the number of businesses were agriculture, forestry & fishing (129 businesses) and construction (21 businesses). The majority of employing businesses had less than 20 employees (60 businesses).

Table 3.7 summarises the number of businesses by size in Nebo SLA as at June 2007.

**Table 3.7: Number of Businesses, Nebo SLA, June 2007**

	Number of Employees				Total Employing Businesses	Non Employing Businesses	Total Businesses
	1-19	20-199	200+				
Agriculture, Forestry and Fishing	24	6	0	30	99	129	
Mining	6	0	0	6	6	12	
Manufacturing	6	0	0	6	3	9	
Electricity, Gas & Water Supply	0	0	0	0	0	0	
Construction	6	0	0	6	15	21	
Wholesale Trade	0	0	0	0	6	6	
Retail Trade	9	6	0	15	0	15	
Accom, Cafes & Restaurants	0	3	0	3	0	3	
Transport & Storage	0	0	0	0	0	0	
Communications Services	0	0	0	0	0	0	
Finance & Insurance	0	0	0	0	9	9	
Property & Business Services	6	0	0	6	6	12	
Education	0	0	0	0	0	0	
Health & Community Services	0	0	0	0	3	3	
Cultural & Recreational Services	3	0	0	3	0	3	
Personal & Other Services	0	0	0	0	0	0	
<b>Total</b>	<b>60</b>	<b>15</b>	<b>0</b>	<b>75</b>	<b>147</b>	<b>222</b>	

Source: Australian Bureau of Statistics (2007)

Within Bowen SLA there were an estimated 1,161 businesses as at June 2007, comprising of 525 employing businesses and 636 businesses operating as sole traders. In June 2007, the most significant industries in Bowen SLA in terms of the number of the businesses were agriculture, forestry & fishing (402 businesses), property & business services (156 businesses) and retail trade (144 businesses). The majority of employing businesses had less than 20 employees (372 businesses), with 21 businesses employing over 200 staff.

Table 3.8 summarises the number of businesses by size in Bowen SLA as at June 2007.

**Table 3.8: Number of Businesses, Bowen SLA, June 2007**

	Number of Employees				Total Employing Businesses	Non Employing Businesses	Total Businesses
	1-19	20-199	200+				
Agriculture, Forestry and Fishing	90	60	15	165	237	402	
Mining	6	3	0	9	0	9	
Manufacturing	21	0	0	21	27	48	
Electricity, Gas & Water Supply	0	0	0	0	0	0	
Construction	51	3	0	54	72	126	
Wholesale Trade	6	6	0	12	18	30	
Retail Trade	72	15	0	87	57	144	
Accom, Cafes & Restaurants	24	15	3	42	30	72	
Transport & Storage	27	12	0	39	27	66	
Communications Services	6	0	0	6	3	9	
Finance & Insurance	0	0	0	0	36	36	
Property & Business Services	42	15	0	57	99	156	

	Number of Employees				Total Employing Businesses	Non Employing Businesses	Total Businesses
	1-19	20-199	200+				
Education	3	0	0	3	0	3	
Health & Community Services	9	3	3	15	15	30	
Cultural & Recreational Services	3	0	0	3	6	9	
Personal & Other Services	12	0	0	12	9	21	
<b>Total</b>	<b>372</b>	<b>132</b>	<b>21</b>	<b>525</b>	<b>636</b>	<b>1,161</b>	

Source: Australian Bureau of Statistics (2007)

The incidence of agriculture, forestry and retail trade enterprises was higher in the coal railway SLAs than Queensland. The incidences of construction and property & business services enterprises were lower in all coal railway SLAs relative to Queensland.

Table 3.9 summarises the number of businesses in Aramac SLA, Barcaldine SLA, Jericho SLA, Belyando SLA, Nebo SLA, Bowen SLA and Queensland.

**Table 3.9: Number of Businesses, Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, June 2007**

	Barcaldine SLA	Jericho SLA	Belyando SLA	Nebo SLA	Bowen SLA	Central West SD	Mackay SD	Queensland
Agriculture, Forestry and Fishing	51.4%	76.9%	41.8%	58.1%	34.6%	58.8%	23.3%	11.6%
Mining	0.0%	0.0%	1.5%	5.4%	0.8%	0.9%	1.6%	0.4%
Manufacturing	4.3%	3.1%	5.4%	4.1%	4.1%	1.8%	4.5%	5.3%
Electricity, Gas & Water Supply	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Construction	10.0%	3.1%	9.6%	9.5%	10.9%	7.6%	16.8%	17.7%
Wholesale Trade	4.3%	1.5%	2.4%	2.7%	2.6%	3.0%	2.5%	4.0%
Retail Trade	5.7%	4.6%	8.4%	6.8%	12.4%	8.1%	10.4%	11.0%
Accom, Cafes & Restaurants	4.3%	3.1%	3.0%	1.4%	6.2%	3.0%	3.6%	2.7%
Transport & Storage	4.3%	4.6%	7.2%	0.0%	5.7%	4.0%	6.4%	5.9%
Communications Services	0.0%	1.5%	0.6%	0.0%	0.8%	1.2%	0.8%	1.2%
Finance & Insurance	0.0%	0.0%	2.7%	4.1%	3.1%	0.6%	4.4%	5.7%
Property & Business Services	8.6%	1.5%	12.8%	5.4%	13.4%	6.3%	18.0%	24.3%
Education	0.0%	0.0%	0.3%	0.0%	0.3%	0.1%	0.9%	0.8%
Health & Community Services	1.4%	0.0%	1.5%	1.4%	2.6%	1.3%	2.8%	4.3%
Cultural & Recreational Services	2.9%	0.0%	1.2%	1.4%	0.8%	1.6%	1.3%	2.1%
Personal & Other Services	2.9%	0.0%	1.8%	0.0%	1.8%	1.5%	2.6%	3.0%
<b>Total</b>	<b>210</b>	<b>195</b>	<b>1,005</b>	<b>222</b>	<b>1,161</b>	<b>2,010</b>	<b>14,778</b>	<b>389,775</b>

Source: Australian Bureau of Statistics (2007)

## 3.5 Agricultural Activity

### 3.5.1 Horticulture

#### Nurseries, Cut Flowers and Cultivated Turf

Within the study area, Bowen SLA was the only region with land cultivated for nurseries, cut flowers and cultivated turf. In 2005-06, there was approximately 22 hectares of land in Bowen SLA occupied by nurseries, accounting for 64.7% of the area in Mackay SD and 1.9% of the area in Queensland. The value of nurseries in Bowen SLA in 2005-06 was \$2.53 million.

#### Fruit (Area)

Fruit is not a significant commodity within the study area with limited or no land occupied by fruit in the Barcaldine, Jericho, Belyando and Nebo SLAs. In Bowen SLA, the major fruit crops in 2005-06 were mangoes and lemons and limes. The number of mango trees in Bowen SLA increased from 104,180 trees in 2000-01 to 130,591 trees in 2005-06, accounting for 10.5% of Queensland production area in 2005-06.

**Table 3.10: Fruit (Area), Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06**

Commodity	Bowen SLA				Central West SD				Mackay SD				Queensland	
	2000-01		2005-06		2000-01		2005-06		2000-01		2005-06		2000-01	2005-06
	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	ha
Mangoes (n)	100,199	8.5%	122,247	9.9%	5	0.0%	4	0.0%	104,180	8.8%	130,591	10.5%	1,178,337	1,238,303
Lemons and limes (n)	124	0.1%	1,928	0.7%	5	0.0%	11	0.0%	634	0.3%	2,450	0.9%	189,815	281,102
Total area (ha)	-	-	635	1.1%	-	-	4	0.0%	-	-	887	1.6%	-	56,403

Source: Australian Bureau of Statistics (2006-07)

#### Fruit (Production)

The volume of mangoes produced in Bowen SLA increased from 2,594 tonnes in 2000-01 to 3,270 tonnes in 2005-06, accounting for 13.0% of Queensland production.

**Table 3.11: Fruit (Production), Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06**

Commodity	Bowen SLA				Central West SD				Mackay SD				Queensland	
	2000-01		2005-06		2000-01		2005-06		2000-01		2005-06		2000-01	2005-06
	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	t
Mangoes	2,594	9.2%	3,270	13.0%	0	0.0%	0	0.0%	2,613	9.3%	3,343	13.3%	28,233	25,125
Lemons and limes	0	0.0%	27	0.2%	0	0.0%	0	0.0%	12	0.1%	32	0.3%	9,401	12,459
Total production	2,594	0.4%	3,309	0.7%	194	0.0%	3	0.0%	5,944	1.0%	3,870	0.8%	584,566	505,861

Source: Australian Bureau of Statistics (2006-07)

#### Fruit (Value)

The total value of fruit production in Central West SD in 2005-06 was less than \$10,000. In 2005-06, the value of mangoes in Bowen SLA was \$7.55 million, or 13.0% of Queensland production by value.

**Table 3.12: Fruit (Value), Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06**

Commodity	Bowen SLA		Central West SD		Mackay SD		Queensland
	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m
Mangoes	7.55	13.0%	-	-	7.72	13.3%	57.99
Limes	0.08	1.0%	-	-	0.09	1.2%	8.11
Other	0.09	0.0%	-	-	2.02	0.2%	844.66
<b>Total</b>	<b>7.72</b>	<b>0.8%</b>	<b>-</b>	<b>-</b>	<b>9.83</b>	<b>1.1%</b>	<b>910.77</b>

Source: Australian Bureau of Statistics (2006-07)

### Vegetables for Human Consumption (Area)

Vegetables for human consumption is not a significant commodity within the study area with limited or no land occupied by vegetables for human consumption in the Barcaldine, Jericho, Belyando and Nebo SLAs. In 2005-06, there were 178 hectares of land occupied by sweet corn in Central West SD.

Within Mackay SD, the majority of vegetables for human consumption were located within Bowen SLA. In 2005-06, there were 6,307 hectares of land in Bowen SLA occupied by vegetables for human consumption, including:

- French and runner beans: 1,680 hectares or 40.4% of Queensland production area;
- Tomatoes: 1,433 hectares or 52.7% of Queensland production area;
- Capsicums and chillies: 897 hectares or 43.9% of Queensland production area;
- Sweet corn: 733 hectares or 21.3% of Queensland production area;
- Watermelons: 574 hectares or 21.3% of Queensland production area;
- Rock and cantaloupe melons: 388 hectares or 29.4% of Queensland production area;
- Pumpkins: 238 hectares or 7.0% of Queensland production area;
- Honeydews: 162 hectares or 50.8% of Queensland production area;
- Eggplant: 128 hectares or 40.1% of Queensland production area; and
- Cucumbers: 53 hectares or 16.3% of Queensland production area.

**Table 3.13: Vegetables for Human Consumption (Area) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06**

Commodity	Bowen SLA				Central West SD				Mackay SD				Queensland	
	2000-01		2005-06		2000-01		2005-06		2000-01		2005-06		2000-01	2005-06
	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	ha
French and runner beans	1,370	38.7%	1,680	40.4%	0	0.0%	0	0.0%	1,372	38.8%	1,682	40.5%	3,538	4,158
Tomatoes	1,624	57.1%	1,433	52.7%	0	0.0%	0	0.0%	1,624	57.1%	1,434	52.8%	2,843	2,717
Capsicums and chillies	1,035	50.7%	897	43.9%	1	0.0%	0	0.0%	1,038	50.8%	897	43.9%	2,043	2,044
Sweet corn	470	20.7%	733	21.3%	0	0.0%	178	5.2%	470	20.7%	733	21.3%	2,274	3,441
Watermelons	372	12.1%	574	21.3%	0	0.0%	0	0.0%	372	12.1%	588	21.9%	3,065	2,691
Rock and cantaloupe melons	311	20.5%	388	29.4%	0	0.0%	0	0.0%	311	20.5%	388	29.4%	1,515	1,320
Pumpkins	209	4.6%	238	7.0%	0	0.0%	0	0.0%	246	5.4%	260	7.6%	4,576	3,401
Honeydews	-	-	162	50.8%	-	-	0	0.0%	-	-	162	50.8%	-	319
Eggplant	-	-	128	40.1%	-	-	0	0.0%	-	-	128	40.1%	-	319
Cucumbers	-	-	53	16.3%	-	-	0	0.0%	-	-	54	16.6%	-	326
Other	18	0.1%	21	0.1%	3	0.0%	0	0.0%	32	0.2%	52	0.3%	13,789	16,386
<b>Total area</b>	<b>5,409</b>	<b>16.1%</b>	<b>6,307</b>	<b>17.0%</b>	<b>4</b>	<b>0.0%</b>	<b>178</b>	<b>0.5%</b>	<b>5,465</b>	<b>16.2%</b>	<b>6,378</b>	<b>17.2%</b>	<b>33,643</b>	<b>37,122</b>

Source: Australian Bureau of Statistics (2006-07)

## Vegetables for Human Consumption (Production)

The volume of vegetables for human consumption in Bowen SLA increased from 97,551 tonnes in 2000-01 to 131,415 tonnes in 2005-06, accounting for 17.6% of Queensland production by value in 2005-06. In 2005-06, the most significant vegetables for human consumption commodities in Bowen SLA were:

- Tomatoes: 56,617 tonnes or 52.1% of Queensland production by volume;
- Capsicums and chillies: 23,092 tonnes or 44.1% of Queensland production by volume;
- Watermelons: 16,622 tonnes or 22.6% of Queensland production by volume;
- Rock and cantaloupe melons: 9,600 tonnes or 29.7% of Queensland production by volume;
- French and runner beans: 9,410 tonnes or 47.7% of Queensland production by volume;
- Pumpkins: 4,592 tonnes or 9.7% of Queensland production by volume;
- Sweet corn: 4,733 tonnes or 16.9% of Queensland production by volume;
- Honeydews: 3,287 tonnes or 44.4% of Queensland production by volume;
- Eggplant: 2,669 tonnes or 42.2% of Queensland production by volume; and
- Cucumbers: 750 tonnes or 7.4% of Queensland production by volume.

In 2005-06, there was 1,554 tonnes of sweet corn produced in Central West SD,

**Table 3.14: Vegetables for Human Consumption (Production) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06**

Commodity	Bowen SLA				Central West SD				Mackay SD				Queensland	
	2000-01		2005-06		2000-01		2005-06		2000-01		2005-06		2000-01	2005-06
	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	t
Tomatoes	43,378	40.5%	56,617	52.1%	0	0.0%	0	0.0%	43,407	40.6%	56,624	52.1%	106,999	108,672
Capsicums and chillies	22,251	60.4%	23,092	44.1%	24	0.1%	0	0.0%	22,251	60.4%	23,092	44.1%	36,853	52,352
Watermelons	7,696	12.4%	16,622	22.6%	0	0.0%	0	0.0%	7,696	12.4%	16,868	23.0%	61,834	73,446
Rock and cantaloupe melons	6,363	20.4%	9,600	29.7%	0	0.0%	0	0.0%	6,363	20.4%	9,600	29.7%	31,129	32,374
French and runner beans	5,856	36.0%	9,410	47.7%	0	0.0%	0	0.0%	5,859	36.0%	9,412	47.7%	16,284	19,712
Pumpkins	5,028	10.0%	4,592	9.7%	0	0.0%	0	0.0%	5,355	10.7%	4,793	10.2%	50,166	47,161
Sweet corn	6,650	25.1%	4,733	16.9%	0	0.0%	1,554	5.5%	6,655	25.2%	4,733	16.9%	26,447	28,014
Honeydews	-	-	3,287	44.4%	-	-	0	0.0%	-	-	3,287	44.4%	-	7,405
Eggplant	-	-	2,669	42.2%	-	-	0	0.0%	-	-	2,669	42.2%	-	6,332
Cucumbers	-	-	750	7.4%	-	-	0	0.0%	-	-	797	7.8%	-	10,196
Other	329	0.1%	42	0.0%	5	0.0%	0	0.0%	536	0.2%	590	0.2%	278,028	360,530
<b>Total</b>	<b>97,551</b>	<b>16.1%</b>	<b>131,415</b>	<b>17.6%</b>	<b>29</b>	<b>0.0%</b>	<b>1,554</b>	<b>0.2%</b>	<b>98,122</b>	<b>16.1%</b>	<b>132,466</b>	<b>17.8%</b>	<b>607,740</b>	<b>746,194</b>

Source: Australian Bureau of Statistics (2006-07)

## Vegetables for Human Consumption (Value)

The value of vegetables for human consumption in 2005-06 was \$2.26 million in Central West SD (0.2% of Queensland production by value) and \$210.16 million in Mackay SD (22.2% of Queensland production by value). In Bowen SLA, the value of vegetables for human consumption in 2005-06 was \$207.43 million (21.9% of Queensland production by value), including:

- Tomatoes: \$74.38 million or 51.2% of Queensland production by value;
- Capsicums and chillies: \$63.53 million or 45.8% of Queensland production by value;
- French and runner beans: \$30.19 million or 48.8% of Queensland production by value;

- Rock and cantaloupe melons: \$10.54 million or 29.7% of Queensland production by value;
- Watermelons: \$8.86 million or 22.6% of Queensland production by volume;
- Sweet corn: \$6.74 million or 18.7% of Queensland production by value;
- Eggplant: \$4.22 million or 42.2% of Queensland production by value;
- Honeydews: \$3.64 million or 44.4% of Queensland production by value;
- Pumpkins: \$3.25 million or 9.7% of Queensland production by value; and
- Cucumbers: \$1.60 million or 7.0% of Queensland production by value.

**Table 3.15: Vegetables for Human Consumption (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06**

Commodity	Bowen SLA		Central West SD		Mackay SD		Queensland
	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m
Tomatoes	74.38	51.2%	0.00	0.0%	74.39	51.2%	145.17
Capsicums (excluding chillies)	63.53	45.8%	0.00	0.0%	63.53	45.8%	138.60
French and Runner beans	30.19	48.8%	0.00	0.0%	30.20	48.8%	61.89
Rock and cantaloupe melons	10.54	29.7%	0.00	0.0%	10.54	29.7%	35.53
Watermelons	8.86	22.6%	0.00	0.0%	8.99	23.0%	39.15
Sweet corn	6.74	18.7%	2.26	6.3%	6.74	18.7%	36.01
Eggplant	4.22	42.2%	0.00	0.0%	4.22	42.2%	10.00
Honeydews	3.64	44.4%	0.00	0.0%	3.64	44.4%	8.20
Pumpkins	3.25	9.7%	0.00	0.0%	3.40	10.2%	33.42
Cucumber	1.60	7.0%	0.00	0.0%	1.70	7.4%	22.90
Other	0.48	0.1%	0.00	0.0%	2.81	0.7%	414.15
<b>Total value</b>	<b>207.43</b>	<b>21.9%</b>	<b>2.26</b>	<b>0.2%</b>	<b>210.16</b>	<b>22.2%</b>	<b>945.03</b>

Source: Australian Bureau of Statistics (2006-07)

## 3.5.2 Cropping

### Crops (Area)

Crop commodities were not significant within the study area with limited to no crop commodities located within Barcaldine, Jericho, Bowen and Nebo SLAs. In Belyando SLA the most significant crops in terms of area were cereals for grain (53,091 hectares or 3.7% of Queensland production by area), legumes for grain (4,052 hectares or 6.9% of Queensland production by area) and oilseeds (1,769 hectares or 10.3% of Queensland production by area). Between 2000-01 and 2005-06, the area of land occupied by cereals for grain and oilseeds decreased significantly in Belyando SLA.

**Table 3.16: Crops (Area) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06**

Commodity	Belyando SLA				Central West SD				Mackay SD				Queensland	
	2000-01		2005-06		2000-01		2005-06		2000-01		2005-06		2000-01	2005-06
	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	% of QLD	ha	ha
Cereals for grain	122,695	7.7%	53,091	3.7%	650	0.0%	3,115	0.2%	159,864	10.0%	76,217	5.4%	1,591,444	1,416,623
Legumes for grain	3,389	2.4%	4,052	6.9%	0	0.0%	178	0.3%	4,398	3.1%	4,275	7.3%	141,071	58,598
Oilseeds	16,120	20.4%	1,769	10.3%	0	0.0%	0	0.0%	16,732	21.1%	2,006	11.6%	79,194	17,222
Cotton	3,426	1.9%	917	0.7%	0	0.0%	0	0.0%	4,730	2.6%	917	0.7%	184,547	129,729
Hay	563	0.8%	503	0.4%	422	0.6%	3,377	2.8%	974	1.4%	3,221	2.6%	68,988	122,031
Sugar cane	0	0.0%	46	0.0%	746	0.2%	0	0.0%	147,501	29.8%	140,169	31.0%	494,540	452,485

Source: Australian Bureau of Statistics (2006-07)

## Crops (Production)

In 2005-06, there were 47,874 tonnes of cereals for grain and 1,551 tonnes of oilseeds produced in Belyando SLA accounting for 1.9% and 6.9% of Queensland production respectively. The volume of crop commodities produced in Belyando SLA decreased significantly between 2000-01 and 2005-06. Sugar cane and hay were the only crop commodities in Belyando SLA to record an increase in production between 2000-01 and 2005-06.

**Table 3.17: Crops (Production) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06**

Commodity	Belyando SLA				Central West SD				Mackay SD				Queensland	
	2000-01		2005-06		2000-01		2005-06		2000-01		2005-06		2000-01	2005-06
	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	% of QLD	t	t
Cereals for grain	286,392	10.9%	47,874	1.9%	445	0.0%	2,821	0.1%	375,139	14.3%	78,787	3.1%	2,618,260	2,559,786
Sugar cane	0	0.0%	3,463	0.0%	63,333	0.2%	0	0.0%	6,842,828	25.8%	10,274,306	29.4%	26,561,933	34,955,101
Legumes for grain	3,926	4.1%	1,780	3.3%	0	0.0%	400	0.7%	4,759	4.9%	2,071	3.8%	96,728	54,375
Hay	687	0.4%	1,752	0.3%	1,877	1.1%	6,105	1.1%	2,664	1.6%	16,584	3.0%	166,287	559,641
Oilseeds	12,785	17.5%	1,551	6.9%	0	0.0%	0	0.0%	13,295	18.2%	1,770	7.8%	73,182	22,553
Cotton	4,388	0.6%	1,024	0.2%	0	0.0%	0	0.0%	8,966	1.2%	1,024	0.2%	741,632	547,935

Source: Australian Bureau of Statistics (2006-07)

## Crops (Value)

In 2005-06, cereals for grain was the most significant crop commodity in Belyando SLA (\$8.49 million or 1.9% of Queensland production by value). Other crop commodities within Belyando SLA recorded a value of less than \$1 million.

**Table 3.18: Crops (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06**

Commodity	Belyando SLA		Central West SD		Mackay SD		Queensland
	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m
Cereals for grain	8.49	1.9%	0.50	0.1%	13.34	2.9%	454.73
Legumes for grain	0.71	3.5%	0.12	0.6%	0.82	4.1%	20.11
Cotton	0.60	0.2%	0.00	0.0%	0.60	0.2%	358.69
Oilseeds	0.57	6.7%	0.00	0.0%	0.65	7.7%	8.39
Hay	0.36	0.3%	1.25	1.1%	3.40	3.0%	114.73
Sugar cane	0.10	0.0%	0.00	0.0%	287.68	29.4%	978.74

Source: Australian Bureau of Statistics (2006-07)

## 3.5.3 Livestock

### Livestock (Production)

In Central West SD, the most significant livestock commodities were meat cattle (1.26 million head or 11.1% of Queensland production), sheep (excluding lambs) (1.51 million sheep or 42.2% of Queensland production) and lambs (370,590 lambs or 41.2% of Queensland production). Within Central West SD, Barcaldine SLA recorded 31,068 meat cattle, 88,859 sheep and 23,780 lambs while Jericho SLA recorded 239,210 meat cattle.

In Mackay SD, the most significant livestock commodities were meat cattle (1.22 million head or 10.8% of Queensland production), chickens layers (72,466 chickens or 2.1% of Queensland production) and eggs produced for human consumption (1.01 million dozen eggs or 1.8% of Queensland production). Within Mackay SD, there were 450,386 meat cattle in Belyando SLA, 221,248 head in Bowen SLA and 158,830 head in Nebo SLA. In 2005-06, Bowen SLA recorded 24,000 chickens -layers producing 250,000 dozen eggs.



Between 2000-01 and 2005-06, there was a decline in the number of livestock in Central West SD with the number of sheep and lambs almost halving. In Mackay SD, there was an increase in the number of meat cattle but a decline in the number of chickens-layers.

**Table 3.19: Livestock (Production) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2000-01 and 2005-06**

Commodity	Barcardine SLA		Jericho SLA		Belyando SLA		Bowen SLA		Nebo SLA		Central West SD		Mackay SD		Queensland	
	2000-01	2005-06	2000-01	2005-06	2000-01	2005-06	2000-01	2005-06	2000-01	2005-06	2000-01	2005-06	2000-01	2005-06	2000-01	2005-06
<b>Number</b>																
Meat cattle	59,528	31,068	261,191	239,210	327,999	450,386	315,382	221,248	179,902	158,830	1,410,600	1,255,689	1,191,159	1,223,539	11,087,566	11,353,920
Milk cattle	27	0	0	0	0	14	87	0	0	0	568	0	4,295	1,965	288,276	193,601
Chickens - Meat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,378,351	9,982,009
Chickens - Layers	16	0	13	0	48	605	14,192	24,000	0	0	200	39	122,287	72,466	3,225,788	3,463,913
Eggs <sup>1</sup> (doz.)	277	0	0	0	0	6,220	210,564	250,000	0	0	2,762	708	1,575,874	1,014,595	38,526,301	57,712,574
Pigs n.e.c. (eg suckers, weaners, growers etc.)	0	0	0	0	16	42	8,718	13,668	0	0	0	0	9,358	14,346	524,674	609,064
Pigs - Breeding sows and gilts	0	0	2	0	16	25	1,455	2,658	1	0	2	0	1,626	2,802	68,694	79,381
Sheep (excluding Lambs)	290,130	88,859	9,095	618	0	118	0	0	4	0	3,082,862	1,505,958	4	290	7,192,356	3,566,294
Lambs	64,384	23,780	0	0	0	7	0	0	0	0	655,180	370,590	0	13	1,467,714	899,419
Sales of horses	-	59	-	94	-	42	-	46	-	70	-	1,053	-	6,973	-	37,803
Sales of goats	-	25	-	271	-	281	-	0	-	0	-	18,495	-	281	-	97,192
<b>% of QLD</b>																
Meat cattle	0.5%	0.3%	2.4%	2.1%	3.0%	4.0%	2.8%	1.9%	1.6%	1.4%	12.7%	11.1%	10.7%	10.8%	100.0%	100.0%
Milk cattle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	1.5%	1.0%	100.0%	100.0%
Chickens - Meat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Chickens - Layers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.7%	0.0%	0.0%	0.0%	0.0%	3.8%	2.1%	100.0%	100.0%
Eggs doz.)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	4.1%	1.8%	100.0%	100.0%
Pigs n.e.c. (eg suckers, weaners, growers etc.)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	2.2%	0.0%	0.0%	0.0%	0.0%	1.8%	2.4%	100.0%	100.0%
Pigs - Breeding sows and gilts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	3.3%	0.0%	0.0%	0.0%	0.0%	2.4%	3.5%	100.0%	100.0%
Sheep (excluding Lambs)	4.0%	2.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	42.9%	42.2%	0.0%	0.0%	100.0%	100.0%
Lambs	4.4%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	44.6%	41.2%	0.0%	0.0%	100.0%	100.0%
Sales of horses	-	0.2%	-	0.2%	-	0.1%	-	0.1%	-	0.2%	-	2.8%	-	18.4%	-	100.0%
Sales of goats	-	0.0%	-	0.3%	-	0.3%	-	0.0%	-	0.0%	-	19.0%	-	0.3%	-	100.0%

Note 1: produced for human consumption  
Source: Australian Bureau of Statistics (2006-07)

## Livestock Slaughtered (Value)

In 2005-06, the total value of slaughtered livestock was:

- Central West SD: \$330.02 million or 8.0% of Queensland production by value, including:
  - Barcaldine SLA: \$10.77 million; and
  - Jericho SLA: \$53.34 million;
- Mackay SD: \$279.38 million or 6.8% of Queensland production by value, including:
  - Belyando SLA: \$91.07 million;
  - Bowen SLA: \$48.82 million; and
  - Nebo SLA: \$34.28 million.

In all regions slaughtered cattle and calves accounted for the majority of the total value of slaughtered livestock.

**Table 3.20: Livestock Slaughtered (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06**

Commodity	Cattle and Calves		Pigs		Sheep and Lambs		Other		Total	
	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD
Barcaldine SLA	9.19	0.3%	0.00	0.0%	1.58	3.2%	0.00	0.0%	10.77	0.3%
Jericho SLA	53.29	1.5%	0.00	0.0%	0.00	0.0%	0.05	0.0%	53.34	1.3%
Belyando SLA	90.98	2.5%	0.04	0.0%	0.00	0.0%	0.05	0.0%	91.07	2.2%
Bowen SLA	41.07	1.1%	7.71	3.3%	0.00	0.0%	0.04	0.0%	48.82	1.2%
Nebo SLA	34.28	1.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	34.28	0.8%
Central West SD	306.12	8.5%	0.00	0.0%	20.79	42.6%	3.11	1.3%	330.02	8.0%
Mackay SD	271.26	7.5%	7.98	3.5%	0.00	0.0%	0.15	14.5%	279.38	6.8%
Queensland	3,606.68		230.37		48.75		239.36		4,125.16	

Source: Australian Bureau of Statistics (2006-07)

## Livestock Products (Value)

The total value of livestock products in 2005-06 was \$3.96 million in Mackay SD and \$44.88 million in Central West SD. Within Central West SD, the most significant livestock product in terms of value was wool (\$44.87 million or 42.2% of Queensland production by value).

**Table 3.21: Livestock Products (Value) Coal Railway Study Area SLAs, Central West SD, Mackay SD and Queensland, 2005-06**

Commodity	Milk		Eggs		Wool		Total Value	
	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD
Barcaldine SLA	0.00	0.0%	0.00	0.0%	2.65	2.5%	2.65	0.6%
Jericho SLA	0.00	0.0%	0.00	0.0%	0.02	0.0%	0.02	0.0%
Belyando SLA	0.02	0.0%	0.01	0.0%	0.00	0.0%	0.04	0.0%
Bowen SLA	0.00	0.0%	0.39	0.4%	0.00	0.0%	0.39	0.1%
Nebo SLA	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Central West SD	0.00	0.0%	0.00	0.1%	44.87	42.2%	44.88	10.8%
Mackay SD	2.35	1.1%	1.60	1.8%	0.01	0.0%	3.96	1.0%
Queensland	218.44		91.07		106.29		415.80	

Note 1: produced for human consumption

Source: Australian Bureau of Statistics (2006-07)

### 3.5.4 Summary of Agricultural Activity

Within the study area horticulture and cropping were not major agricultural industries with the exceptions of Bowen SLA (horticulture) and Belyando SLA (cropping). Livestock commodities were recorded in all regions with major commodities including meat cattle, sheep and chicken layers.

The value of horticulture, cropping and livestock commodities in the study area did not contribute significantly to the Queensland production by value in 2005-06, with the exception of vegetables for human consumption commodities within Bowen SLA. In Bowen SLA, the most significant vegetables for human consumption commodities in 2005-06 were:

- Tomatoes: \$74.38 million or 51.2% of Queensland production by value;
- Capsicums and chillies: \$63.53 million or 45.8% of Queensland production by value;
- French and runner beans: \$30.19 million or 48.8% of Queensland production by value;
- Rock and cantaloupe melons: \$10.54 million or 29.7% of Queensland production by value;
- Watermelons: \$8.86 million or 22.6% of Queensland production by volume;
- Sweet corn: \$6.74 million or 18.7% of Queensland production by value;
- Eggplant: \$4.22 million or 42.2% of Queensland production by value;
- Honeydews: \$3.64 million or 44.4% of Queensland production by value;
- Pumpkins: \$3.25 million or 9.7% of Queensland production by value; and
- Cucumbers: \$1.60 million or 7.0% of Queensland production by value.

## 3.6 Summary

Over the past nine years to 2009-10, within the coal railway SLAs, Nebo SLA and Belyando SLA recorded the highest rate of growth in labour force size. Bowen SLA was the only SLA within the coal railway SLAs to consistently record an unemployment rate above the state average. The unemployment rate was particularly low in Belyando SLA and Nebo SLA, and has remained below 2% in both regions for the past five years.

There were an estimated 2,793 businesses in the coal railway SLAs as of June 2007, with the majority of businesses located within Bowen SLA and Belyando SLA. Agriculture, forestry & fishing was the dominant business type in all regions, accounting for 34.6% to 76.9% of all businesses. There were 21 businesses identified in the coal railway SLAs which employed 200 or more workers, including fifteen in the agriculture, forestry & fishing sector, six in the manufacturing sector, three in the accommodation, cafe & restaurant sector and three in the health & community service sector.

Within the coal railway SLAs, Bowen SLA was most significant in terms of horticultural production, with tomatoes, capsicum & chillies, French & runner beans, eggplants and honeydews each accounting for over 40% of Queensland production by value.

## 4 AVAILABILITY OF ACCOMMODATION AND HOUSING WITHIN THE COAL RAILWAY STUDY AREA

The following assessment of the accommodation and housing markets relates to:

- Stock and availability of commercial accommodation, including:
  - Hotel and motel rooms and serviced apartments;
  - Caravan park sites;
  - Holiday flats, units and houses;
  - Hostels; and
- Sales of houses, units and townhouses, commercial and industrial.

The Tourist Accommodation, Small Area Data, Queensland publication (ABS 2010b) identifies limited tourism establishments within the coal railway study area, particularly in the Central West SD. As a proxy, tourism data has been reported for the Outback TR, Mackay TR and Whitsunday TR.

### 4.1 Commercial Accommodation in Outback TR, Mackay TR & Whitsunday TR

In Outback TR as of the March Quarter 2010 there were 73 hotels, motels & serviced apartments with five or more rooms, 19 caravan parks, one hostel and no holiday flats, units and houses. In Mackay TR there were 70 hotels, motels & serviced apartments with five or more rooms, 12 caravan parks, one hostel and no holiday flats, units and houses. In Whitsunday TR there were 51 hotels, motels & serviced apartments with five or more rooms, 16 caravan parks, 158 holiday flats, units and houses and nine hostels.

Table 4.1 below provides a summary of the tourism establishments in Outback TR, Mackay TR and Whitsunday TR in the March Quarter 2010.

**Table 4.1: Summary of Tourism Establishments, Outback TR, Mackay TR, Whitsunday TR and Queensland, March Quarter 2010**

	Hotels, Motels & Serviced Apartments <sup>1</sup>		Caravan Parks		Holiday Flats, Units & Houses	Hostels	
	No.	Rooms	No.	Total Capacity	No.	No.	Bed Spaces
Outback TR	73	1,513	19	2,282	n.a.	1	n.a.
Mackay TR	70	2,362	12	1,626	n.a.	1	n.a.
Whitsunday TR	51	3,071	16	1,564	158	9	1,298
Queensland	1,554	65,690	318	38,371	13,544	107	13,424

Note 1: Establishments with five or more rooms  
Source: Australian Bureau of Statistics (various years)

The room occupancy rate of hotels, motels & serviced apartments with five or more rooms in Mackay TR fluctuated between 58.8% (March Quarter 2010) and 83.1% (September Quarter 2008), Whitsunday TR fluctuated between 46.4% (March Quarter 2010) and 68.8% (September Quarter 2006) and Outback TR fluctuated between 37.7% (March Quarter 2005) and 65.7% (September Quarter 2008). Over the past four years occupancy rates for hotels, motels & serviced apartments in Mackay TR were typically higher than the Queensland average, while occupancy rates in Whitsunday TR and Outback TR were typically lower than the Queensland average.

The average site occupancy rate between March Quarter 2005 and March Quarter 2010 was 60.3% in Mackay TR, 49.4% in Whitsunday TR and 36.7% in Outback TR. The occupancy rate in the Mackay TR was higher than the Queensland average while Whitsunday TR and Outback recorded lower occupancy rates than the state average.

The average room occupancy rate of holiday flats, units & houses over the period March Quarter 2005 to March Quarter 2010 in Whitsunday TR (61.3%) was marginally higher than the state average (60.6%). Data for Mackay TR and Outback TR was unavailable.

The average bed occupancy rate of hostels over the March Quarter 2005 to March Quarter 2010 period in Whitsunday (62.6%) was higher than the Queensland average (55.6%). Data for Mackay TR and Outback TR was unavailable.

**Table 4.2: Occupancy Rate Trends, Mackay TR, Whitsunday TR, Outback TR & Queensland, Mar Q 05 to Mar Q 10**

	Mackay TR				Whitsunday TR				Outback TR				Queensland			
	Hotels, Motels & Serviced Apartments <sup>1</sup> (room occupancy)	Caravan Parks (site occupancy)	Holiday Flats, Units & Houses (unit occupancy)	Hostels (bed occupancy)	Hotels, Motels & Serviced Apartments <sup>1</sup> (room occupancy)	Caravan Parks (site occupancy)	Holiday Flats, Units & Houses (unit occupancy)	Hostels (bed occupancy)	Hotels, Motels & Serviced Apartments <sup>1</sup> (room occupancy)	Caravan Parks (site occupancy)	Holiday Flats, Units & Houses (unit occupancy)	Hostels (bed occupancy)	Hotels, Motels & Serviced Apartments <sup>1</sup> (room occupancy)	Caravan Parks (site occupancy)	Holiday Flats, Units & Houses (unit occupancy)	Hostels (bed occupancy)
Mar Q 05	59.5%	39.3%	n.a.	n.a.	59.5%	36.0%	55.2%	62.7%	39.7%	17.8%	n.a.	n.a.	61.0%	49.8%	62.3%	54.6%
Jun Q 05	64.9%	51.2%	n.a.	n.a.	53.6%	50.9%	57.9%	68.6%	55.0%	45.1%	n.a.	n.a.	61.3%	55.5%	53.7%	54.6%
Sep Q 05	71.1%	57.0%	n.a.	n.a.	67.3%	65.0%	70.9%	60.9%	61.6%	51.9%	n.a.	n.a.	71.3%	65.7%	70.1%	55.8%
Dec Q 05	72.4%	49.9%	n.a.	n.a.	66.5%	43.9%	60.7%	62.5%	49.7%	21.0%	n.a.	n.a.	66.8%	51.1%	66.2%	51.6%
Mar Q 06	68.9%	46.8%	n.a.	n.a.	61.2%	32.8%	55.1%	63.1%	42.9%	20.7%	n.a.	n.a.	62.8%	47.1%	63.1%	56.6%
Jun Q 06	73.5%	52.1%	n.a.	n.a.	54.2%	50.2%	53.5%	69.1%	59.8%	42.7%	n.a.	n.a.	62.4%	55.8%	51.8%	53.9%
Sep Q 06	79.6%	58.1%	n.a.	n.a.	68.8%	71.3%	72.7%	68.6%	64.0%	50.6%	n.a.	n.a.	72.5%	65.1%	68.5%	58.8%
Dec Q 06	75.1%	52.3%	n.a.	n.a.	68.2%	46.3%	68.5%	68.7%	49.6%	19.4%	n.a.	n.a.	68.4%	51.7%	65.2%	55.3%
Mar Q 07	66.0%	49.8%	n.a.	n.a.	58.7%	30.8%	55.0%	63.0%	43.7%	21.1%	n.a.	n.a.	64.0%	49.4%	62.2%	52.8%
Jun Q 07	71.5%	63.1%	n.a.	n.a.	55.3%	53.7%	63.5%	67.7%	58.0%	47.8%	n.a.	n.a.	62.4%	58.8%	52.7%	56.5%
Sep Q 07	79.2%	76.4%	n.a.	n.a.	65.9%	73.2%	82.6%	63.2%	64.3%	57.8%	n.a.	n.a.	71.7%	67.9%	66.6%	57.3%
Dec Q 07	77.0%	66.9%	n.a.	n.a.	66.4%	48.1%	71.6%	65.0%	50.8%	27.9%	n.a.	n.a.	67.4%	54.7%	65.9%	55.0%
Mar Q 08	68.9%	51.6%	n.a.	n.a.	53.6%	32.4%	52.2%	50.7%	43.8%	22.6%	n.a.	n.a.	60.6%	49.4%	60.9%	53.0%
Jun Q 08	78.1%	67.2%	n.a.	n.a.	48.7%	48.0%	53.6%	65.4%	61.5%	50.9%	n.a.	n.a.	60.9%	58.3%	51.1%	58.2%
Sep Q 08	83.1%	81.0%	n.a.	n.a.	57.5%	68.2%	73.2%	67.2%	65.7%	54.2%	n.a.	n.a.	68.9%	68.1%	64.6%	60.8%
Dec Q 08	76.6%	68.2%	n.a.	n.a.	59.6%	46.3%	68.3%	65.8%	51.6%	29.1%	n.a.	n.a.	64.8%	54.7%	62.6%	57.0%
Mar Q 09	66.8%	64.4%	n.a.	n.a.	46.8%	31.3%	47.9%	55.2%	43.3%	22.1%	n.a.	n.a.	57.8%	49.8%	58.2%	54.9%
Jun Q 09	67.8%	70.4%	n.a.	n.a.	45.3%	52.9%	46.0%	61.3%	55.7%	48.4%	n.a.	n.a.	57.3%	58.1%	49.4%	58.6%
Sep Q 09	72.4%	72.0%	n.a.	n.a.	57.1%	73.8%	68.0%	62.5%	63.1%	59.2%	n.a.	n.a.	66.7%	68.1%	62.2%	57.0%
Dec Q 09	67.0%	64.0%	n.a.	n.a.	57.0%	43.9%	64.3%	54.6%	49.0%	31.6%	n.a.	n.a.	63.2%	54.4%	60.6%	53.8%
Mar Q 10	58.8%	63.8%	n.a.	n.a.	46.4%	38.2%	46.0%	48.2%	41.0%	28.3%	n.a.	n.a.	56.6%	48.4%	55.0%	50.9%
Ave. Mar Q 05 to Mar Q 10	71.3%	60.3%	n.a.	n.a.	58.0%	49.4%	61.3%	62.6%	53.0%	36.7%	n.a.	n.a.	64.2%	56.3%	60.6%	55.6%

Note: The occupancy rate for caravan parks represents the site occupancy rate.

Note 1: Establishments with five or more rooms

Source: Australian Bureau of Statistics (various years)

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Mackay TR ranged between:

- 369-973 vacant hotel / motel rooms and serviced apartments; and
- 339-1,245 vacancies at caravan sites.

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Whitsunday TR ranged between:

- 923-1,646 vacant hotel / motel rooms and serviced apartments;
- 440-1,264 vacancies at caravan sites;
- 30-103 vacant holiday flats, units & houses; and
- 471-727 vacant hostel beds.

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Outback TR ranged between:

- 705-1,245 vacant hotel / motel rooms and serviced apartments; and
- 1,345-2,459 vacancies at caravan sites.

Table 4.3 below provides a summary of the average number of vacant rooms / beds per night in Mackay TR, Whitsunday TR and Outback TR between March Quarter 2005 and March Quarter 2010.



**Table 4.3: Average Vacancies per Nights, Mackay TR, Whitsunday TR & Outback TR, Mar Q 05 to Mar Q 10**

	Mackay TR				Whitsunday TR				Outback TR			
	Hotels, Motels & Serviced Apartments (vacant rooms)	Caravan Parks (vacant sites)	Holiday Flats, Units & Houses (vacant units)	Hostels (vacant beds)	Hotels, Motels & Serviced Apartments (vacant rooms)	Caravan Parks (vacant sites)	Holiday Flats, Units & Houses (vacant units)	Hostels (vacant beds)	Hotels, Motels & Serviced Apartments (vacant rooms)	Caravan Parks (vacant sites)	Holiday Flats, Units & Houses (vacant units)	Hostels (vacant beds)
Mar Q 05	804	1,245	n.a.	n.a.	1,165	1,151	76	645	1,245	2,406	n.a.	n.a.
Jun Q 05	677	1,020	n.a.	n.a.	1,364	889	68	540	932	1,699	n.a.	n.a.
Sep Q 05	571	896	n.a.	n.a.	963	649	47	709	800	1,485	n.a.	n.a.
Dec Q 05	544	902	n.a.	n.a.	990	1,033	64	678	1,053	2,425	n.a.	n.a.
Mar Q 06	628	972	n.a.	n.a.	1,137	1,240	70	568	1,195	2,459	n.a.	n.a.
Jun Q 06	542	913	n.a.	n.a.	1,352	932	74	471	846	1,805	n.a.	n.a.
Sep Q 06	412	815	n.a.	n.a.	923	540	43	484	742	1,555	n.a.	n.a.
Dec Q 06	515	964	n.a.	n.a.	950	981	49	500	1,040	2,533	n.a.	n.a.
Mar Q 07	734	993	n.a.	n.a.	1,236	1,264	77	571	1,156	2,450	n.a.	n.a.
Jun Q 07	612	680	n.a.	n.a.	1,336	834	62	496	872	1,682	n.a.	n.a.
Sep Q 07	447	414	n.a.	n.a.	1,017	486	30	567	741	1,343	n.a.	n.a.
Dec Q 07	495	615	n.a.	n.a.	1,003	946	50	540	1,018	2,296	n.a.	n.a.
Mar Q 08	676	863	n.a.	n.a.	1,390	1,180	91	757	1,169	2,471	n.a.	n.a.
Jun Q 08	478	586	n.a.	n.a.	1,556	900	90	533	799	1,575	n.a.	n.a.
Sep Q 08	369	339	n.a.	n.a.	1,303	553	52	507	705	1,491	n.a.	n.a.
Dec Q 08	515	578	n.a.	n.a.	1,252	944	61	535	998	2,297	n.a.	n.a.
Mar Q 09	728	615	n.a.	n.a.	1,645	1,139	100	687	1,195	2,455	n.a.	n.a.
Jun Q 09	709	486	n.a.	n.a.	1,692	795	103	570	933	1,677	n.a.	n.a.
Sep Q 09	646	454	n.a.	n.a.	1,316	440	57	531	765	1,346	n.a.	n.a.
Dec Q 09	777	582	n.a.	n.a.	1,318	916	62	727	1,059	2,202	n.a.	n.a.
Mar Q 10	973	589	n.a.	n.a.	1,646	967	85	672	893	1,636	n.a.	n.a.
<b>Ave. Mar Q 05 to Mar Q 10</b>	<b>612</b>	<b>739</b>	<b>n.a.</b>	<b>n.a.</b>	<b>1,264</b>	<b>894</b>	<b>67</b>	<b>585</b>	<b>960</b>	<b>1,966</b>	<b>n.a.</b>	<b>n.a.</b>

Note: The occupancy rate for caravan parks represents the site occupancy rate.

Note 1: Establishments with five or more rooms

Source: Australian Bureau of Statistics (various years)

## 4.2 Mackay SD Housing Market

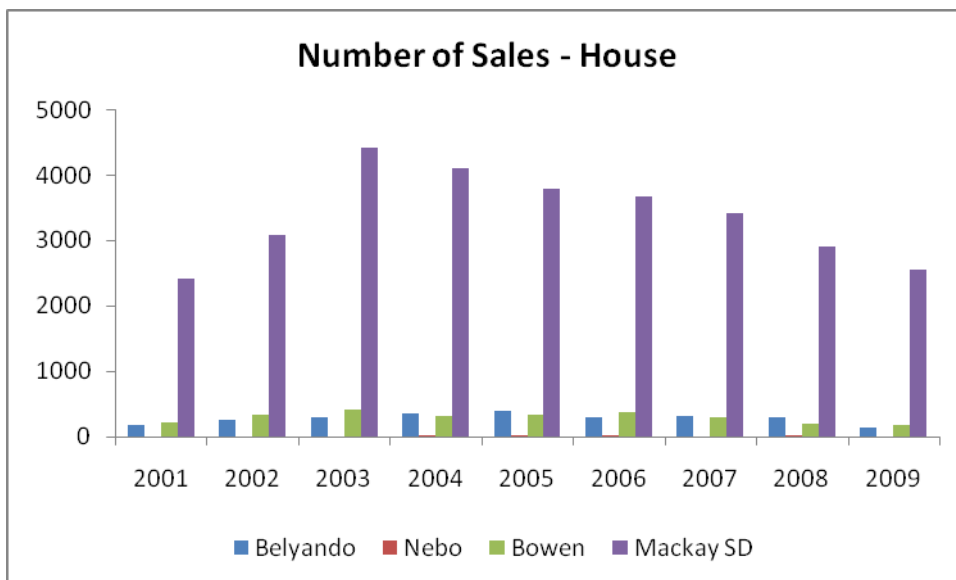
### 4.2.1 Houses

#### Volume of Sales

Within Mackay SD, the volume of house sales fluctuated significantly between 2001 and 2009, peaking in 2003 with 4,404 sales. The number of house sales trended downward between 2003 and 2009. The majority of house sales in Mackay SD were outside the coal railway SLAs in Mackay SD.

Figure 4.1 below shows the volume of house sales in Belyando SLA, Nebo SLA, Bowen SLA and Mackay SD between 2001 to 2009.

**Figure 4.1: Volume of House Sales, Belyando SLA, Nebo SLA, Bowen SLA and Mackay SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

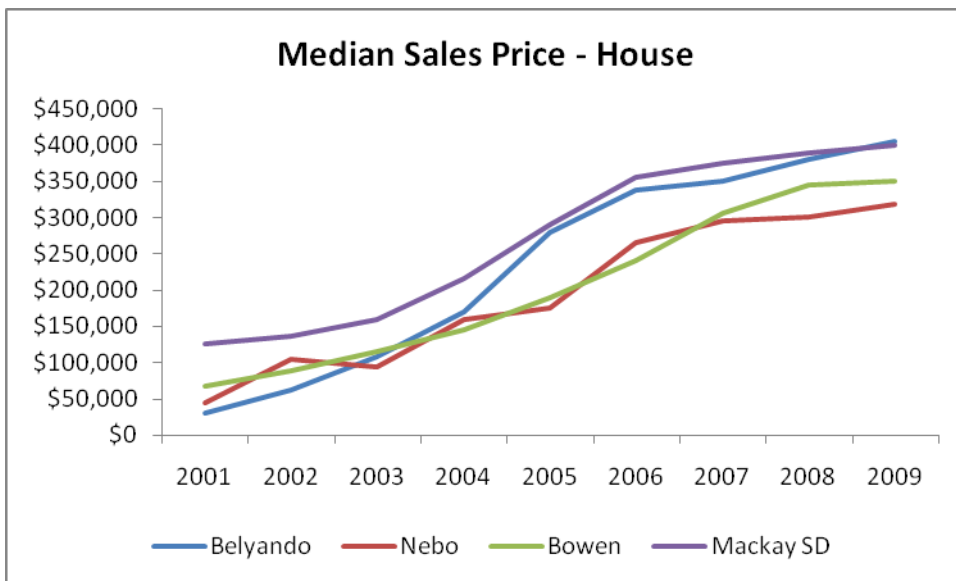
Source: Property Data Solutions (2010)

### Median Sale Price

The median sale price of houses in Mackay SD increased from \$125,000 in 2001 to \$400,000 in 2009. The average annual growth rate of the median sale price of houses was considerably higher between 2003 and 2006 (41.6% per annum) than between 2001 and 2009 (27.5% per annum). Modest increases in the median sales price were recorded in 2002, 2008 and 2009. From 2001 to 2004, the median house price in Belyando SLA, Nebo SLA and Bowen SLA was lower than Mackay SD. From 2004 to 2009, Belyando SLA recorded a similar median sales price than Mackay SD, while median prices in Nebo SLA and Bowen SLA remained below Mackay SD.

Figure 4.2 shows the median sale price for houses in Mackay SD between 2001 and 2009.

**Figure 4.2: Median Sale Price, Houses, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

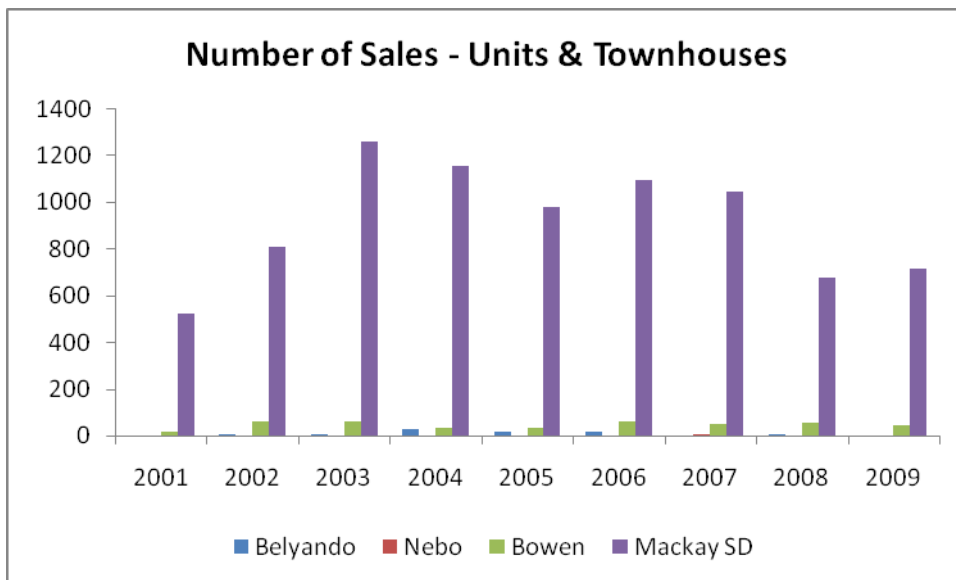
## 4.2.2 Units and Townhouses

### Volume of Sales

The volume of unit and townhouse sales within Mackay SD was significantly lower than the volume of house sales in the 2001 to 2009 period. In Mackay SD the volume of unit and townhouse sales ranged from 522 sales in 2001 to 1,258 sales in 2003. In 2003, 2004, 2006 and 2007, the volume of unit and townhouse sales was also particularly strong relative to the long term average of 906 sales (1,258, 1,152, 1,090 and 1,041 sales respectively). The majority of unit and townhouse sales in Mackay SD were outside the coal railway SLAs in Mackay SD.

Figure 4.3 shows the volume of unit and townhouse sales in Belyando SLA, Nebo SLA, Bowen SLA and Mackay SD between 2001 and 2009.

**Figure 4.3: Volume of Unit and Townhouse Sales, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

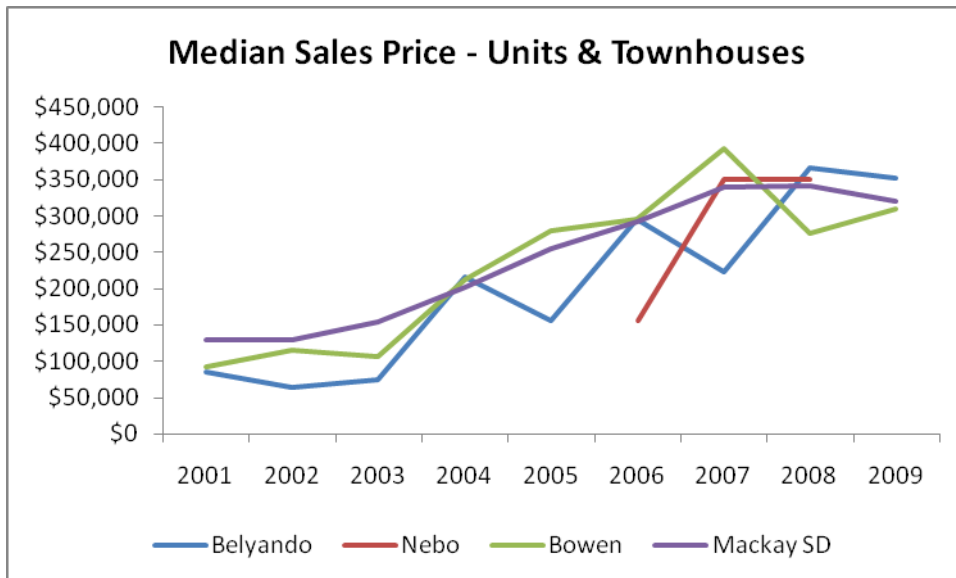
Source: Property Data Solutions (2010)

## Median Sale Price

The median sales price of unit and townhouses in Mackay SD increased from \$130,000 in 2001 to \$319,500 in 2009. The average annual growth rate of the medium sale price of houses was significantly higher from 2001 to 2006 (25.0% per annum) than between 2001 to 2009 (18.2% per annum). A modest decrease in the medium sales price was recorded in 2009. From 2001 to 2003 the median sale price of units and townhouses in Belyando SLA, Nebo SLA and Bowen SLA were lower than Mackay SD. Between 2003 and 2009, median sale prices in Bowen SLA fluctuated higher and lower than the Mackay SD average.

Figure 4.4 shows the median sale price of units and townhouses in Mackay SD between 2001 and 2009.

**Figure 4.4: Median Sale Price, Units and Townhouses, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

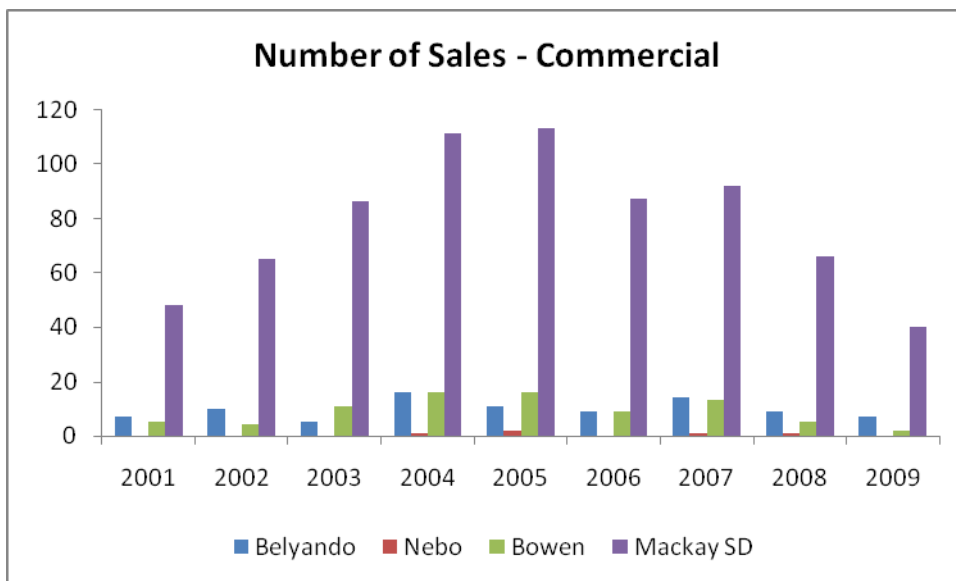
### 4.2.3 Commercial

#### Volume of Sales

The volume of commercial property sales in Mackay SD consistently increased between 2001 and 2005, with sales volumes peaking at 113 sales in 2005. The growth in commercial property sales between 2001 and 2005 was 34% per annum, while the decline in commercial property sales between 2005 and 2009 occurred at 16% per annum.

Figure 4.5 below shows the volume of house sales in Mackay SD between 2001 and 2009.

**Figure 4.5: Volume of Commercial Sales, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

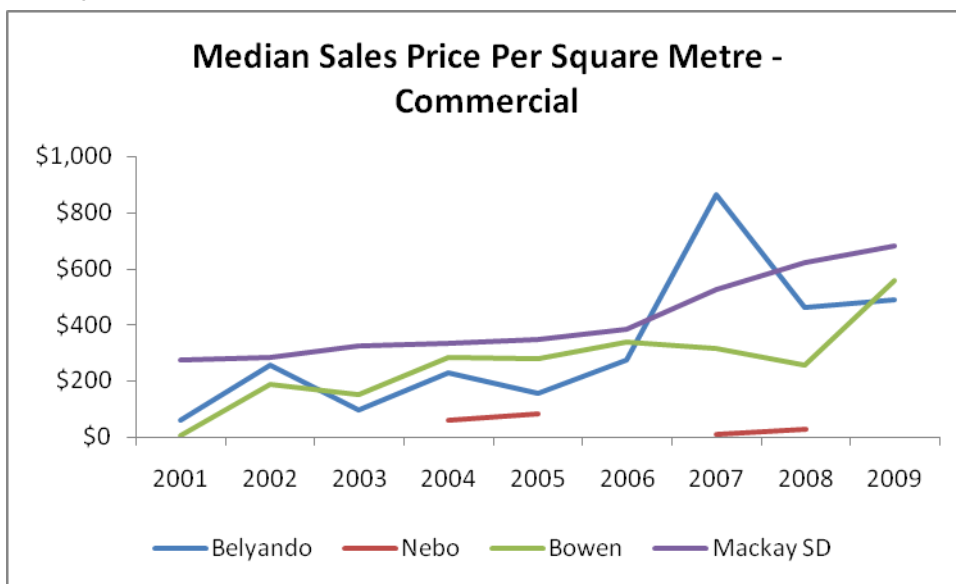
Source: Property Data Solutions (2010)

## Median Sale Price

The median sale price of commercial property in Mackay SD increased from \$275 per square metre in 2001 to \$680 per square in 2009. The average annual growth rate of the median sale price of commercial property was significantly higher between 2006 and 2009 (26% per annum) than between 2001 and 2006 (7.8% per annum). From 2006 to 2007 there was a substantial increase in the median sales price of commercial property (approximately 38%).

Figure 4.6 shows the median sale price for commercial property in Mackay SD between 2001 and 2009.

**Figure 4.6: Median Sale Price, Commercial Property, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, Houses, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

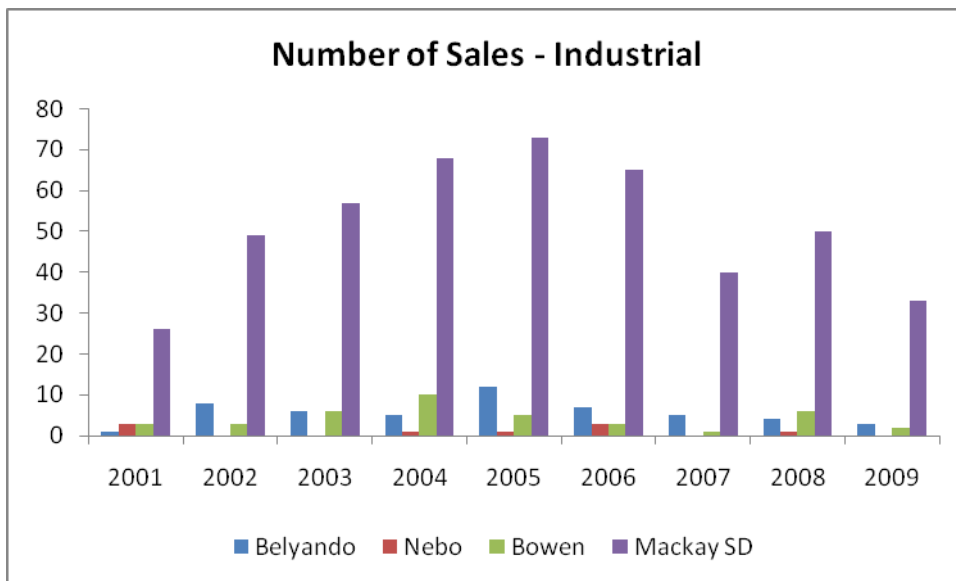
Source: Property Data Solutions (2010)

## 4.2.4 Industrial

### Volume of Sales

Within Mackay SD, the volume of industrial property sales fluctuated significantly between 2001 and 2009, peaking in 2005 at 73 sales. The number of industrial property sales recorded significant growth from 2001 to 2005, which was followed by a period of decline between 2005 and 2009.

**Figure 4.7: Volume of Industrial Property Sales, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

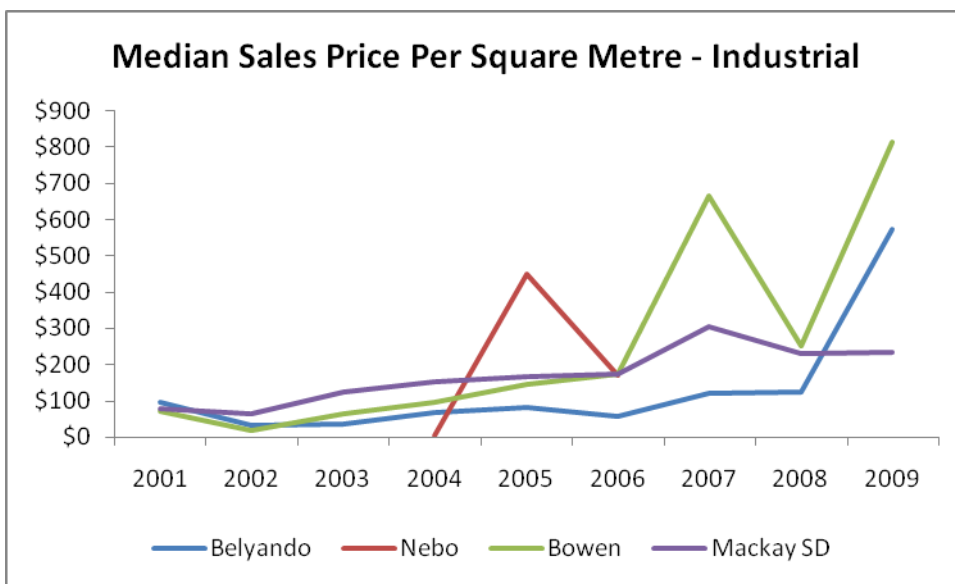


## Median Sale Price

The median sale price of industrial property in Mackay SD increased from \$63 per square metre in 2002 to \$303 per square metre in 2007. The average annual growth rate of the median sale price of industrial property was significantly higher between 2006 and 2007 (77% per annum) than between 2001 and 2006 (24% per annum). Modest decreases in the median sales price were recorded in 2008 and 2009.

Figure 4.8 shows the median sales price for industrial property in Mackay SD between 2001 and 2009.

**Figure 4.8: Median Sale Price, Industrial Property , Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

## 4.3 Central West SD Housing Market

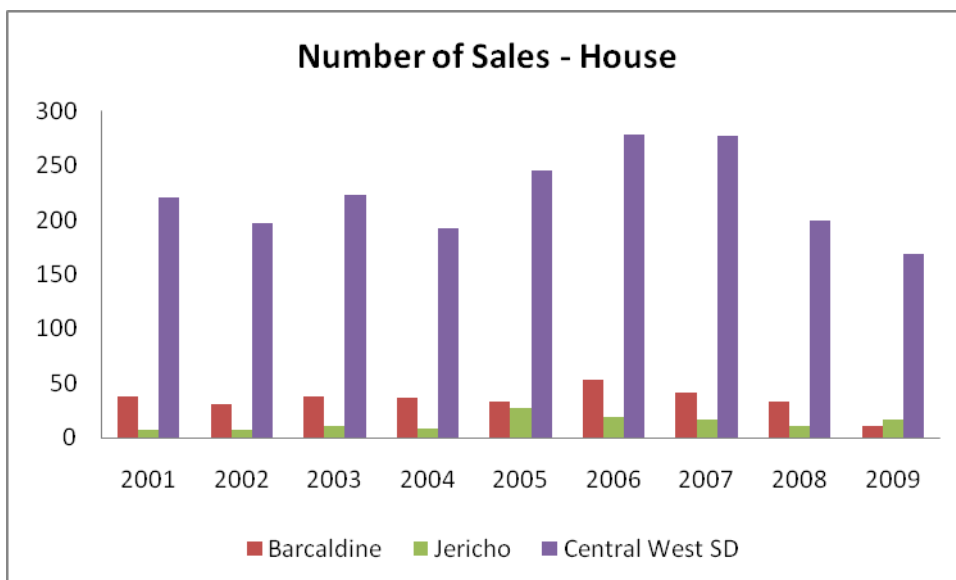
### 4.3.1 Houses

#### Volume of Sales

Within Central West SD, the volume of houses sales fluctuated year to year between 2001 and 2009, peaking in 2006 with 278 sales. The number of house sales rose consistently from 2004 to 2007, however to tapered off to levels significantly below the 10 year average in 2008 and 2009. Barcaldine SLA and Jericho SLA were not key sales localities within the Central West SD.

Figure 4.9 below shows the volume of house sales in Central West SD between 2001 and 2009

**Figure 4.9: Volume of House Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

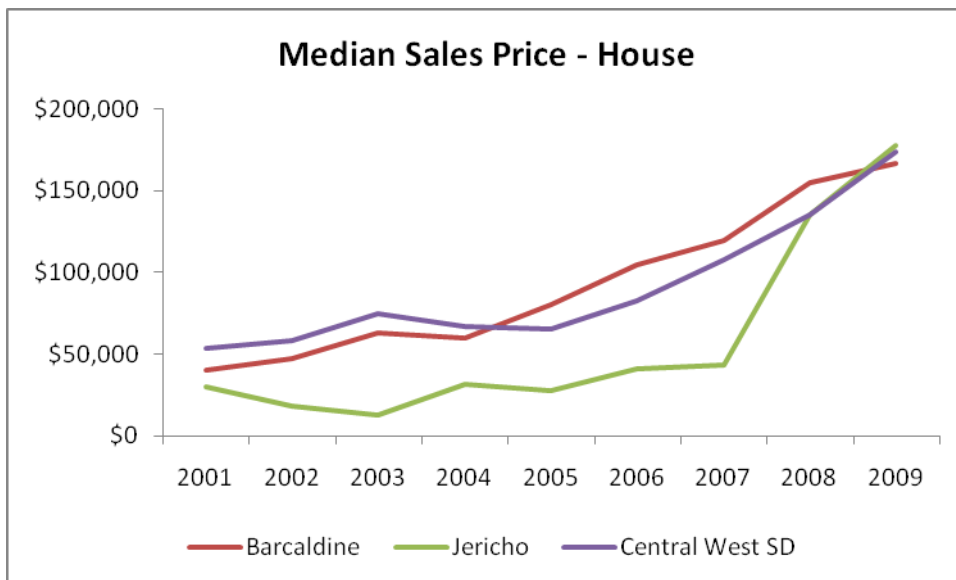
Source: Property Data Solutions (2010)

## Median Sale Price

The median sale price of houses in Central West SD increased from \$53,500 in 2001 to \$173,500 in 2009. The average annual growth rate of the median sale price of houses was significantly higher between 2005 and 2009 (41.7% per annum) than between 2001 to 2005 (4.4% per annum). From 2005 to 2006 there was a substantial increase in the median sale price of houses (approximately 27%). Modest decreases in the median sales price were recorded in 2004 and 2005. Between 2001 and 2007 median sale price of houses in Jericho SLA were significantly lower than Central West SD. Between 2001 and 2004 the median sale price of houses in Barcaldine SLA were marginally lower than Central West SD, while from 2005 to 2009 the median price in Barcaldine SLA was marginally higher than Central West SD.

Figure 4.10 shows the median sale price for houses in Central West SD between 2001 and 2009

**Figure 4.10: Median Sale Price, Houses, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

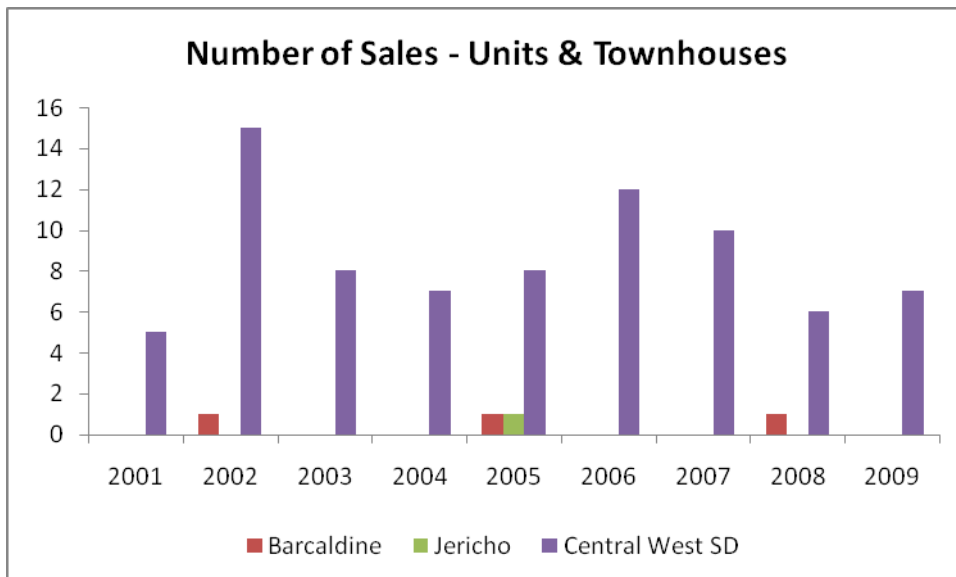
## 4.3.2 Units and Townhouses

### Volume of Sales

The volume of unit and townhouse sales within Central West SD was significantly lower than the volume of house sales in the 2001 to 2009 period. In Central West SD the volume of unit and townhouse sales ranged from five sales in 2001 to 15 sales in 2002. Since the peak in 2002, sales were down approximately 47% the following year and have yet to recover to 2002 levels. Barcaldine SLA and Jericho SLA were not key sales localities within Central West SD.

Figure 4.11 shows the volume of unit and townhouse sales in Central West SD between 2001 and 2009.

**Figure 4.11: Volume of Unit and Townhouse Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

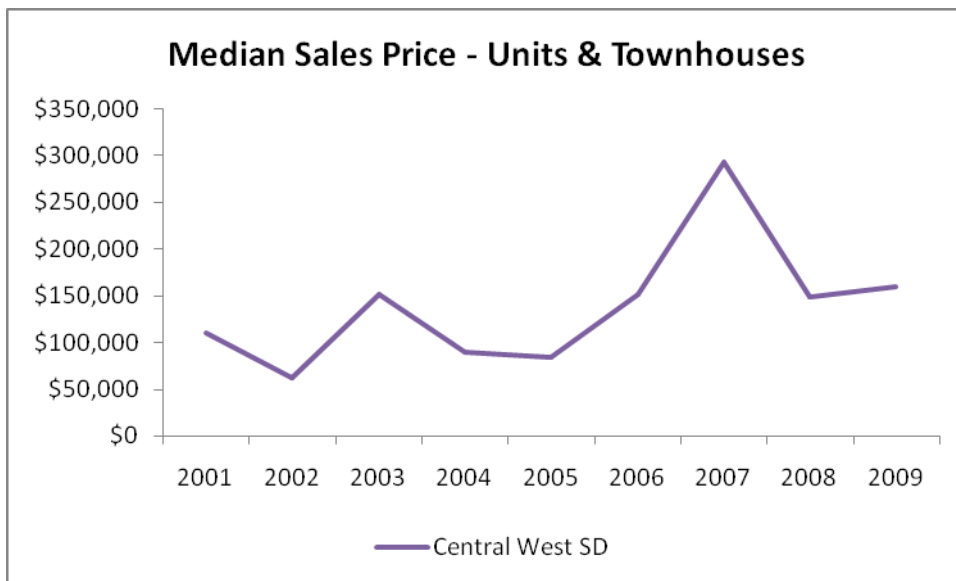
Source: Property Data Solutions (2010)

## Median Sale Price

The median sale price of units and townhouses increased from \$62,500 in 2002 to peak at \$292,500 in 2007, before falling in 2009 to \$160,000. There was a significant increase in the median sale price of units and townhouses in 2006, which was followed by a significant fall in 2007. Price decreases were recorded in 2003, 2004 and 2007. Due to insufficient sales data in Barcaldine SLA and Jericho SLA a meaningful comparison could not be made.

Figure 4.12 shows the median price of units and townhouses in Central West SD between 2001 and 2009.

**Figure 4.12: Median Sale Price, Units and Townhouses, Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

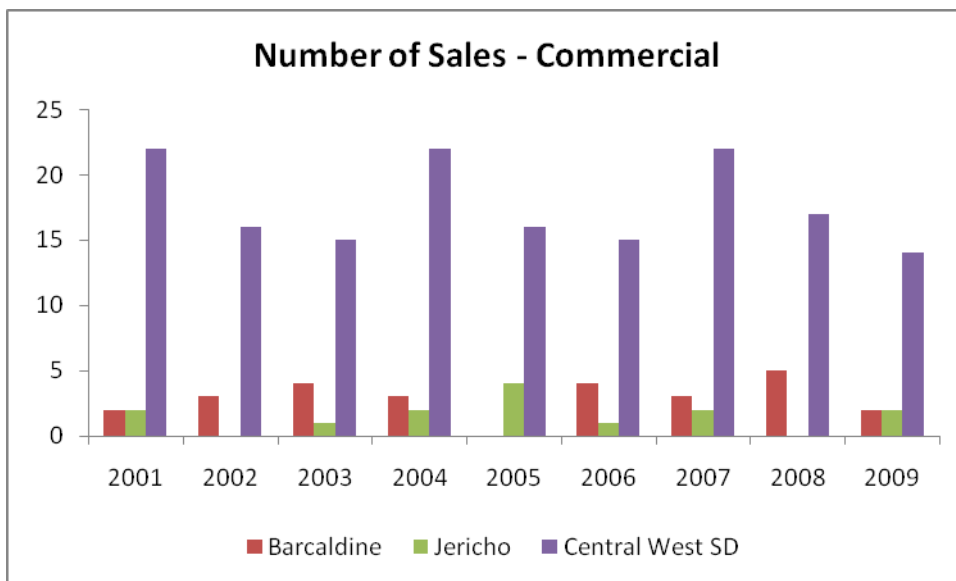
### 4.3.3 Commercial

#### Volume of Sales

Within Central West SD, the volume of commercial sales fluctuated considerably between 2001 and 2009, peaking in 2001 of 22 sales, and again reaching this peak in 2004 and 2007. In the data sample, the volume of commercial sales tended to follow a cycle where sales peaked every three years.

Figure 4.13 below shows the volume of house sales in Central West SD between 2001 and 2009.

**Figure 4.13: Volume of Commercial Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

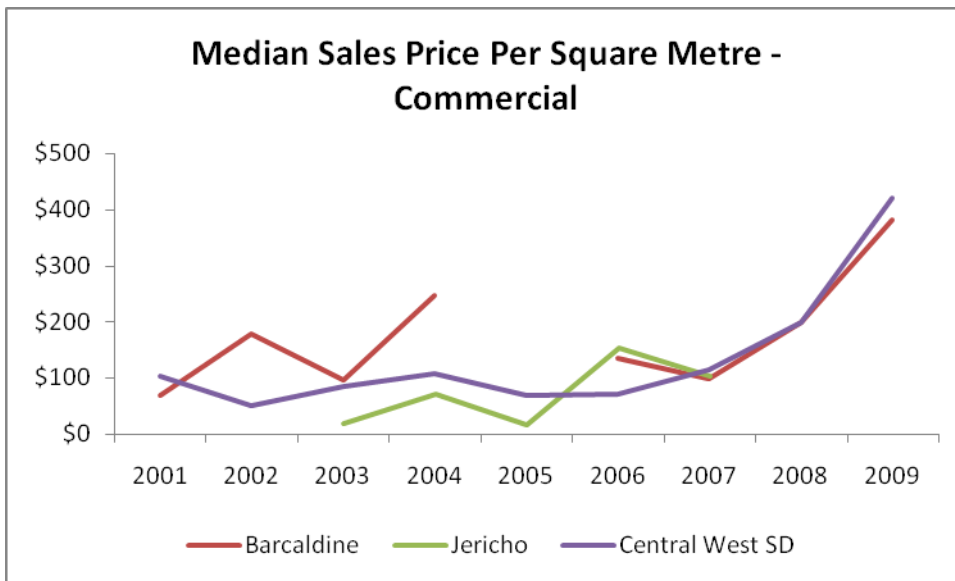
Source: Property Data Solutions (2010)

## Median Sale Price

The median sale price for commercial property in Central West SD increased from \$102 per square metre in 2001 to \$421 per square metre in 2009. The average annual growth rate of the median sale price of commercial property was significantly higher between 2006 and 2009 (167% per annum) than between 2001 and 2006 (-6.3% per annum). Decreases in median sales price were recorded in 2002 and 2005.

Figure 4.14 shows the median sale price for houses in Central West SD between 2001 and 2009.

**Figure 4.14: Median Sale Price, Commercial Property, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

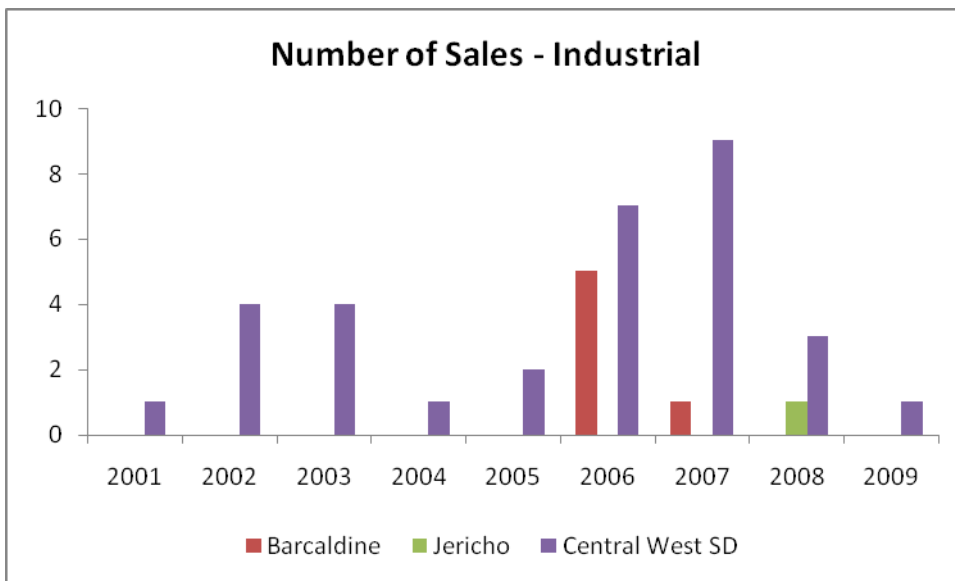
### 4.3.4 Industrial

#### Volume of Sales

Within Central West SD, the volume of industrial property sales fluctuated significantly between 2001 and 2009, however sales have been in single figures, peaking in 2007 at nine sales.

Figure 4.15 below shows the volume of house sales in Central West SD between 2001 and 2009.

**Figure 4.15: Volume of Industrial Land Sales, Barcaldine SLA, Jericho SLA and Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

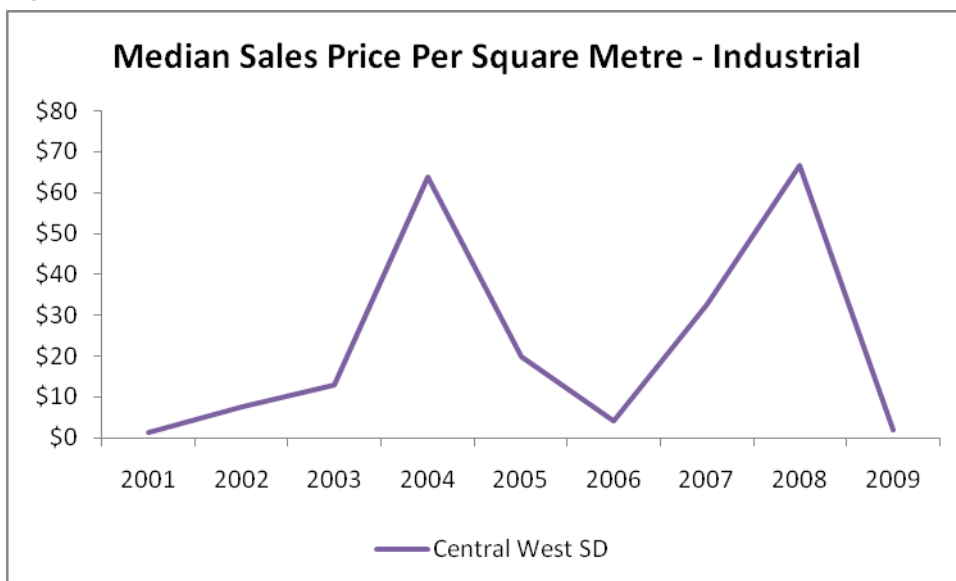


## Median Sale Price

The median sale price of industrial property fluctuated from year to year between 2001 and 2009, peaking in 2008 at \$67 per square metre and a low of \$1 per square metre in 2001. Due to insufficient data for Barcaldine SLA and Jericho SLA, a meaningful comparison could not be made.

Figure 4.16 shows the median sale price for industrial property between 2001 and 2009.

**Figure 4.16: Median Sale Price, Industrial, Central West SD, 2001 to 2009**



Note 1: The data was collected in June 2010

Note 2: Data is for the year ended 31st December of each year

Source: Property Data Solutions (2010)

## 4.4 Summary

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Mackay TR ranged between:

- 369-973 vacant hotel / motel rooms and serviced apartments; and
- 339-1,245 vacancies at caravan sites

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Whitsunday TR ranged between:

- 923-1,646 vacant hotel / motel rooms and serviced apartments;
- 440-1,264 vacancies at caravan sites;
- 30-103 vacant holiday flats, units & houses; and
- 471-727 vacant hostel beds.

Over the March Quarter 2005 to the March Quarter 2010 period the average number of vacant rooms / beds per night in Outback TR ranged between:

- 705-1,245 vacant hotel / motel rooms and serviced apartments; and

- 1,345-2,459 vacancies at caravan sites.

Belyando SLA, Nebo SLA and Bowen SLA did not account for a significant proportion of property sales within Mackay SD. In the 2001 to 2009 period, Belyando SLA achieved median house prices similar to the Mackay SD, whereas Nebo SLA and Bowen SLA recorded prices consistently below the regional average. Commercial property prices in Belyando SLA, Nebo SLA and Bowen SLA were typically lower than in Mackay SD.

Barcaldine SLA and Jericho SLA did not account for a significant proportion of property sales within the Central West SD. In the 2001 to 2009 period, Barcaldine SLA recorded median property prices similar to the Central West SD average.

## 5 ECONOMIC ASSESSMENT OF PROJECT IMPACTS

The purpose of this stage of the analysis is to understand the scale of the proposed development's economic impact and effect relative to the size of the Queensland economy. The economic assessment will entail an economic impact assessment to estimate the scale of output, income, employment and value added impacts of the project on the Queensland economy, identification of the project's opportunity cost and the cumulative impacts of major projects within the region.

### 5.1 Economic Impact Assessment

Economic impact assessment is used to estimate the direct and indirect impacts of a particular economic stimulus or activity, in this case the construction and operation of the Alpha Coal Railway. The economic impact analysis is based on input-output tables which describe inter-industry transactions for a given region. National input-output tables for 2005-06<sup>6</sup> are prepared by the Australian Bureau of Statistics based on the Australian National Accounts. Queensland tables are then imputed using Queensland State Accounts and Census data.

The total economic impact of a particular stimulus or activity comprises the following effects:

- Direct or initial effect: being the stimulus for the economic impact, typically described as the change in sales or contribution to final demand by the stimulus or activity;
- Flow on effects, comprising production-induced effects and consumption-induced effects, these being:
  - First-round production effects: being those purchases of inputs required from other industry sectors in the economy to produce the additional output generated by the stimulus or activity;
  - Industrial support production effects: being those second, third and subsequent-round industrial flow on effects stimulated by the purchases made in the first round; and
  - Consumption induced effects: being those purchases made by households upon receiving additional income from labour payments stemming from the production of additional output generated by the stimulus or activity under assessment.

The extent of these impacts can be represented by multipliers calculated in aggregate for various regional, state or national economies. There are commonly four multipliers used to measure impact - output, income, employment and value added.

Two sets of the above multipliers can be generated, namely:

- Type 1 Multipliers, which estimate the direct and production induced impacts of a stimulus or activity; and
- Type 2 Multipliers, which estimate the direct, production induced and consumption induced impacts of a stimulus or activity.

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<sup>6</sup> ABS (2009) Australian National Accounts: Input-Output Tables Catalogue No. 5209.0.55.001

Type 1 Multipliers would be used in the analysis of the Alpha Coal Railway. Queensland Treasury’s preference is for use of only Type 1 Multipliers, given that Type 2 Multipliers typically overstate the extent of consumption-induced impacts of any given stimulus or activity.

It is also important to note that value added is the measure of economic impact resulting from a stimulus that is preferred by economists.

Table 5.1 below describes the various impact measures used in economic impact assessment.

**Table 5.1: Measures of Economic Impact**

Impact Measure	Description
Output	The output impact measures the increase in gross sales throughout the entire economy by aggregating all individual transactions (direct and indirect) resulting from the economic stimulus. The output impact provides an indication of the degree of structural dependence between sectors of the economy. However, output impacts are regarded as overstating the impact on the economy as they count all goods and services used in one stage of production as an input to later stages of production, hence counting their contribution more than once.
Household income	The household income impact measures the additional wages, salaries and supplements paid to households associated with the industry under consideration and with other industries benefiting from the stimulus to the economy. It is important to note that the input-output tables on which this analysis is based relate to 2005-06. The input-output tables represent the structural dependence of industry sectors within the regional economy. Since 2005-06 there may have been changes in the composition of real wages. While the input-output tables have been augmented to reflect changes in relative incomes between industries, they have not been augmented such that they reflect relative differences between regions on an inter-industry basis.
Employment	The employment impact measures the number of full time equivalent (FTE) positions for one year created directly and indirectly by the stimulus <sup>7</sup> . However, the short-term response to increased demand may be that existing employees work overtime. Consequently, actual levels of employment generated (in terms of persons employed) will tend to be lower than those estimated by the input-output analysis. This short-term employment response (of working additional overtime) will be more prevalent where the demand stimulus is likely to be temporary and short lived, or where there is limited spare capacity in the economy (that is, when the economy is at or near full employment).
Value added	The value added or Gross Regional Product (GRP) impact measures only the net activity at each stage of production resulting from a stimulus. GRP is defined as the addition of consumption, investment and government expenditure, plus net exports (exports minus imports) from a region. The value added (or GRP) impact is the preferred measure for the assessment of contribution to the economy from a stimulus or impact, and as such should be used to describe the net impact of the event.

Source: Jensen, R. & West, G. (2001)

### 5.1.1 Limitations of the Input-Output Approach

The input-output approach has a number of limitations, which may result in overestimation of impacts. Some of the limitations of the input-output approach include:

- The absence of capacity constraints such that the supply of each good is perfectly elastic, implying that each industry can supply whatever quantity is demanded of it and there are no budget constraints;

<sup>7</sup> Therefore, if impacts are to be spread over a number of years, the FTE estimate (which relates to the annual equivalent) should be divided by the number of years over which the impact will be spread (in the absence of a clearly defined staging program) to provide an indicative ongoing employment estimate over the life of the impact.

- The assumed linearity and homogeneity of the input function, which implies constant returns to scale and no substitution between inputs. This occurs because the approach assumes inputs purchased by each industry are a function only of the level of output of that industry;
- Each commodity, or type of commodity, is supplied by a single industry sector, implying there is only one method used to produce each commodity and each sector has only a single primary output;
- Multipliers are derived from the 2005-06 Input-Output tables and reflect the structural dependence of the economy at that time. These tables have been augmented to reflect broad level structural change across the national economy by industry sector. The Queensland tables prepared for this analysis reflect regional variation from the national tables as at 2006. As such, the tables do not reflect any intensification or deterioration in regional competitive advantage in specific industry sector that may have occurred since 2005-06;
- The assumption that the economy is in equilibrium at given prices and that the economy is not subject to other external influences; and
- The additivity assumption suggests the total effect of carrying on several types of production is the sum of the separate effects, which is not a true reflection of economic systems.

The economic impact analysis contained in this report presents results which are indicative of the scale of the economic impact resulting from the proposed project.

## 5.2 Construction and Capital Impacts

Table 5.2 below provides a detailed breakdown of construction and capital costs associated with the Alpha Coal Railway project. Construction and capital works associated with the Alpha Coal (Rail) Project are anticipated to commence in 2010 and be completed in 2019<sup>8</sup>. Capital imports are largely limited to the purchase of locomotives and have an estimated value of US\$157.38 million. Imports do not stimulate the domestic economy and are hence not dealt with any further.

Construction and capital works between 2010 and 2019 are anticipated to cost approximately \$2,8 million, with the majority of expenditure anticipated to be incurred 2011 and 2013.

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<sup>8</sup> Replacement capital works are dealt with in the economic impact assessment of ongoing and operational expenditure.

**Table 5.2: Construction and capital expenditure for Alpha Coal Railway, 2010-2019 (\$M)**

Expenditure Item	Origin	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
<u>Below Rail Capital Costs</u>												
<u>Construction Costs</u>												
Embankments & Cuttings	Qld	-	116.35	232.71	232.71	-	-	-	-	-	-	581.76
Drainage, Culverts, Embankment Protection	Qld	-	13.54	27.09	27.09	-	-	-	-	-	-	67.71
Roads and Crossings	Qld	-	-	11.06	16.60	-	-	-	-	-	-	27.66
Tracklaying Supply	Qld	-	116.96	155.94	116.96	-	-	-	-	-	-	389.85
Tracklaying	Qld	-	-	31.45	125.81	-	-	-	-	-	-	157.26
Bridges and Causeways	Qld	-	182.47	228.09	45.62	-	-	-	-	-	-	456.18
Sub Total	-	-	429.32	686.34	564.77	-	-	-	-	-	-	1,680.43
<u>Signaling and Communications</u>												
Signaling	Qld	-	-	-	26.07	-	-	-	-	-	-	26.07
Communications	Qld	-	-	16.78	67.13	-	-	-	-	-	-	83.91
Sub Total	-	-	-	16.78	93.20	-	-	-	-	-	-	109.98
<u>Construction Facilities</u>												
Temporary Structure, Services and Utilities	Qld	-	34.56	11.52	-	-	-	-	-	-	-	46.08
Minor Equipment	Qld	-	10.31	-	-	-	-	-	-	-	-	10.31
Construction Camps	Qld	-	86.85	28.95	-	-	-	-	-	-	-	115.80
Sub Total	-	-	131.72	40.47	-	-	-	-	-	-	-	172.19
<u>Extra Passing Loops + KC Rail Loop</u>												
Passing Loops for 30MT to 60MT	Qld	-	-	-	-	-	5.00	5.00	5.00	5.00	5.00	25.00
KC Rail Loop	Qld	-	-	-	-	19.84	29.76	-	-	-	-	49.60
Sub Total	-	-	-	-	-	19.84	34.76	5.00	5.00	5.00	5.00	74.60
<u>Owners Costs</u>												
Land Acquisition	Qld	3.70	0.60	45.40	-	-	-	-	-	-	-	49.70
Long Service Leave Levy	Qld	-	4.50	6.00	4.50	-	-	-	-	-	-	15.00
Setup Costs	Qld	-	9.68	-	-	-	-	-	-	-	-	9.68
Sub Total	-	3.70	14.78	51.40	4.50	-	-	-	-	-	-	74.38
<u>Yard</u>												
Yard	Qld	-	39.70	79.41	79.41	-	-	-	-	-	-	198.52
Sub Total	-	-	39.70	79.41	79.41	-	-	-	-	-	-	198.52
Total Below Rail Capital Costs	-	3.70	615.53	874.40	741.88	19.84	34.76	5.00	5.00	5.00	5.00	2,310.11
<u>Above Rail Capital Costs</u>												
Locomotives	Aus	-	-	1.75	2.10	2.45	1.40	1.05	1.05	1.05	-	10.85
Wagons	Aus	-	-	55.57	107.16	108.05	52.48	51.82	52.48	52.04	-	479.59
Shunt Locomotives	Aus	-	-	3.15	3.15	3.15	3.15	-	-	-	-	12.60
Total	-	-	-	60.47	112.41	113.65	57.03	52.87	53.53	53.09	-	503.04
Total Domestic Capital Spend	-	3.70	615.53	934.86	854.29	133.49	91.79	57.87	58.53	58.09	5.00	2,813.14
Capital Imports												
Locomotives	\$US	-	-	25.38	30.46	35.54	20.31	15.23	15.23	15.23	-	157.38

Project purchases by year and type of expenditure (summarised in Table 5.2 above) are allocated against up to 109 industry sectors identified in the input-output tables for each of the impact measures, which include:

- Output (or consumption);
- Household income;
- Employment (FTEs); and
- Value Added.

The extent of the total impact for each of these measured will be distributed across a broad range of industry sectors.

The allocation of project purchases to industry sectors is based on the nature of the activity, as opposed to the nature of the enterprises involved in the transaction. For example, earthworks activities are defined by the ABS as ‘construction trade services’, although the firm undertaking the earthworks may be a ‘mining’ company. Similarly, the construction of roads or other forms of infrastructure is defined by the ABS as ‘other construction’. The rationale for allocating purchases based on the type of activity is that the inputs to support a particular project purchase will be determined by the activity, rather than the entity undertaking the activity.

The origin of domestic project purchases is classified as either Queensland or interstate. Project purchases occurring within Queensland are assigned to industry sectors in Queensland input-output tables, while interstate purchases are assigned to national input-output tables.

### Output or Consumption Effects

The output (or consumption) effects of the construction and capital works associated with the Alpha Coal (Rail) Project are detailed in Tables 5.3 and 5.4 below.

Approximately 86% of total output (or consumption) effects of the construction and capital works associated with the Alpha Coal (Rail) Project are anticipated to rise in the 2011-2013 period.

In 2011, total output (or consumption) impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$1,616.23 million, comprising \$611.03 million in direct output (or consumption) effects and \$1,005.20 million in indirect output (or consumption) effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$449.42 million and \$691.11 million respectively. In 2011, all output and consumption effects resulting from the Alpha Coal (Rail) Project are captured by Queensland.

In 2012, total output (or consumption) impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$2,399.32 million, comprising \$928.86 million in direct output (or consumption) effects and \$1,470.45 million in indirect output (or consumption) effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$727.36 million and \$952.13 million respectively. An estimated \$152.11 million or 6.3% of total output (or consumption) effects of the Alpha Coal (Rail) Project are captured interstate, with the majority attributed to the manufacturing sector (\$116.21 million).

In 2013, total output (or consumption) impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$2,205.01 million, comprising \$849.79 million in direct output (or consumption) effects and \$1,355.22 million in indirect output (or consumption) effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$807.66 million and \$775.02 million respectively. An estimated \$282.79 million or 12.8% of total output (or consumption) effects of the Alpha Coal (Rail) Project are captured interstate, with the majority attributed to the manufacturing sector (\$216.04 million).

### Household Income Effects

The household income impacts of construction and capital works associated with the Alpha Coal (Rail) Project are detailed in Tables 5.5 and 5.6 below. The most significant household income impacts associated with these works are anticipated to arise in the 2011-2013 period. These three years account for approximately 85% of household income effects resulting from the project.

In 2011, total household income impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$353.28 million, comprising \$91.57 million in direct household income effects and \$261.71 million in indirect household income effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$147.44 million and \$70.69 million respectively. In 2011, all household income effects resulting from the Alpha Coal (Rail) Project are captured by Queensland.

In 2012, total household income impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$524.84 million, comprising \$143.99 million in direct household income effects and \$380.86 million in indirect household income effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$232.87 million and \$97.56 million respectively. An estimated \$38.83 million or 7.4% of total output (or consumption) effects of the Alpha Coal (Rail) Project are captured interstate, with the majority attributed to the manufacturing sector (\$30.35 million).

In 2013, total household income impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$512.01 million, comprising \$160.86 million in direct household income effects and \$351.15 million in indirect household income effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$254.55 million and \$79.57 million respectively. An estimated \$72.19 million or 14.1% of total output (or consumption) effects of the Alpha Coal (Rail) Project are captured interstate, with the majority attributed to the manufacturing sector (\$56.42 million).

### Employment Effects

Actual construction employment for the Alpha Coal (Rail) Project is estimated to reach approximately:

- 600 workers in 2011;
- 2,500 workers in 2012;
- 1,050 workers in 2013; and



- 120 workers in 2014.

The majority of employment related to the construction and capital expenditure of the Alpha Coal (Railway) is anticipated to arise in the 2011-2013 period, with employment to peak at 7,996 direct and indirect full time equivalent positions Australia wide in 2012.

The total employment impacts of construction and capital works associated with the Alpha Coal (Rail) Project are detailed in Tables 5.7 and 5.8 below. The most significant employment impacts associated with these works are anticipated to arise in the 2011-2013 period. These three years account for approximately 88% of employment effects resulting from the project.

In 2011, total employment impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately 5,538 full time equivalent positions, comprising direct employment effects of 1,497 full time equivalent positions and indirect employment effects of 4,041 full time equivalent positions. Employment effects are anticipated to be most significant in the manufacturing and construction sectors, where construction and capital expenditure is anticipated to generate 1,203 full time equivalent positions and 2,550 full time equivalent positions respectively. All full time equivalent positions created as a result of the Alpha Coal (Rail) Project in 2011 are anticipated to be within Queensland.

In 2012, total employment impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately 7,996 full time equivalent positions, comprising direct employment effects of 2,144 full time equivalent positions and indirect employment effects of 5,852 full time equivalent positions. Employment effects are anticipated to be most significant in the manufacturing and construction sectors, where construction and capital expenditure is anticipated to generate 1,885 full time equivalent positions and 3,519 full time equivalent positions respectively. An estimated 385 full time equivalent positions (or 4.8% of full time equivalent positions) created as a result of the Alpha Coal (Rail) Project in 2012 are anticipated to be interstate, with the majority within the manufacturing sector (243 full time equivalent positions).

In 2013, total employment impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately 7,491 full time equivalent positions, comprising direct employment effects of 2,160 full time equivalent positions and indirect employment effects of 5,332 full time equivalent positions. Employment effects are anticipated to be most significant in the manufacturing and construction sectors, where construction and capital expenditure is anticipated to generate 2,215 full time equivalent positions and 2,870 full time equivalent positions respectively. An estimated 717 full time equivalent positions (or 9.6% of full time equivalent positions) created as a result of the Alpha Coal (Rail) Project in 2013 are anticipated to be interstate, with the majority within the manufacturing sector (452 full time equivalent positions).

### Value Added Effects

The value added impacts of construction and capital works associated with the Alpha Coal (Rail) Project are detailed in Tables 5.9 and 5.10 below. The most significant value added impacts associated with these works are anticipated to arise in the 2011-2013 period. These three years account for approximately 86% of value added effects resulting from the project.

In 2011, total value added impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$617.43 million, comprising \$172.91 million

in direct value added effects and \$444.53 million in indirect value added effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$191.57 million and \$172.26 million respectively. In 2011, all value added effects as a result of the Alpha Coal (Rail) Project are attributed to Queensland.

In 2012, total value added impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$931.37 million, comprising \$285.39 million in direct value added effects and \$645.97 million in indirect value added effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$303.95 million and \$237.59 million respectively. In 2012, an estimated \$58.10 million or 6.2% of total value added effects are attributed interstate, with the majority within the manufacturing sector (\$41.29 million).

In 2013, total value added impacts of construction and capital works associated with the Alpha Coal (Rail) Project are estimated to be approximately \$850.59 million, comprising \$259.02 million in direct value added effects and \$591.57 million in indirect value added effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$332.27 million and \$193.65 million respectively. In 2013, an estimated \$108.02 million or 12.7% of total value added effects are attributed interstate, with the majority within the manufacturing sector (\$76.76 million).

**Table 5.3: Distribution of output or consumption effects of Alpha Coal Railway construction, 2010-2014 (\$M)**

	Qld	2010 Inter- state	Aust	Qld	2011 Inter- state	Aust	Qld	2012 Inter- state	Aust	Qld	2013 Inter- state	Aust	Qld	2014 Inter- state	Aust
Agriculture, Forestry & Fishing	0.00	0.00	0.00	5.62	0.00	5.62	7.71	0.44	8.15	6.78	0.83	7.60	0.20	0.84	1.04
Mining	0.03	0.00	0.03	55.19	0.00	55.19	75.53	4.77	80.30	66.28	8.87	75.14	1.83	8.97	10.80
Manufacturing	0.16	0.00	0.16	449.42	0.00	449.42	611.15	116.21	727.36	591.62	216.04	807.66	8.88	218.41	227.28
Electricity, Gas, Water & Waste Services	0.01	0.00	0.01	9.26	0.00	9.26	12.81	1.94	14.76	11.99	3.61	15.60	0.31	3.65	3.96
Construction	0.14	0.00	0.14	691.11	0.00	691.11	950.06	2.07	952.13	771.18	3.84	775.02	28.72	3.88	32.60
Wholesale Trade	0.02	0.00	0.02	41.03	0.00	41.03	56.20	5.64	61.85	53.92	10.49	64.41	1.31	10.61	11.91
Retail Trade	0.04	0.00	0.04	10.66	0.00	10.66	14.86	0.86	15.72	12.71	1.60	14.31	0.39	1.62	2.00
Accommodation & Food Services	0.01	0.00	0.01	8.73	0.00	8.73	12.06	0.91	12.96	11.51	1.69	13.20	0.29	1.70	2.00
Transport, Postal & Warehousing	0.03	0.00	0.03	51.54	0.00	51.54	70.47	4.21	74.69	61.12	7.83	68.95	1.82	7.92	9.74
Information Media and Telecommunications	0.01	0.00	0.01	12.20	0.00	12.20	16.79	1.55	18.34	14.82	2.88	17.70	0.44	2.91	3.35
Financial & Insurance Services	0.31	0.00	0.31	41.46	0.00	41.46	59.34	2.35	61.69	47.73	4.36	52.09	1.53	4.41	5.94
Rental, Hiring & Real Estate Services	0.17	0.00	0.17	88.01	0.00	88.01	120.30	3.11	123.42	100.70	5.79	106.48	3.30	5.85	9.15
Professional, Scientific & Technical Services	0.01	0.00	0.01	29.96	0.00	29.96	41.53	2.28	43.81	38.63	4.24	42.87	1.13	4.29	5.42
Administrative & Support Services	0.07	0.00	0.07	89.42	0.00	89.42	122.58	4.57	127.15	106.48	8.49	114.97	3.35	8.58	11.94
Public Administration & Safety	0.00	0.00	0.00	1.91	0.00	1.91	2.61	0.30	2.91	2.22	0.56	2.77	0.07	0.56	0.64
Education & Training	0.00	0.00	0.00	2.93	0.00	2.93	4.07	0.31	4.38	3.88	0.57	4.45	0.10	0.58	0.68
Health Care & Social Assistance	0.00	0.00	0.00	0.29	0.00	0.29	0.37	0.03	0.40	0.34	0.05	0.39	0.01	0.05	0.06
Arts & Recreation Services	0.01	0.00	0.01	14.93	0.00	14.93	20.23	0.52	20.75	17.74	0.97	18.71	0.55	0.98	1.53
Other Services	0.00	0.00	0.00	2.27	0.00	2.27	3.11	0.04	3.15	2.59	0.08	2.67	0.09	0.08	0.17
Ownership of Dwellings	3.70	0.00	3.70	10.28	0.00	10.28	45.40	0.00	45.40	0.00	0.00	0.00	0.00	0.00	0.00
Direct	3.70	0.00	3.70	611.03	0.00	611.03	868.40	60.47	928.86	737.38	112.41	849.79	19.84	113.65	133.49
Indirect	1.03	0.00	1.03	1,005.20	0.00	1,005.20	1,378.81	91.65	1,470.45	1,184.84	170.38	1,355.22	34.48	172.25	206.72
<b>Total</b>	<b>4.73</b>	<b>0.00</b>	<b>4.73</b>	<b>1,616.23</b>	<b>0.00</b>	<b>1,616.23</b>	<b>2,247.20</b>	<b>152.11</b>	<b>2,399.32</b>	<b>1,922.22</b>	<b>282.79</b>	<b>2,205.01</b>	<b>54.32</b>	<b>285.89</b>	<b>340.21</b>

**Table 5.4: Distribution of output or consumption effects of Alpha Coal Railway construction, 2015-2019 (\$M)**

	Qld	2015 Inter- state	Aust	Qld	2016 Inter- state	Aust	Qld	2017 Inter- state	Aust	Qld	2018 Inter- state	Aust	Qld	2019 Inter- state	Aust
Agriculture, Forestry & Fishing	0.35	0.42	0.77	0.05	0.39	0.44	0.05	0.39	0.44	0.05	0.39	0.44	0.05	0.00	0.05
Mining	3.21	4.50	7.71	0.46	4.17	4.63	0.46	4.22	4.68	0.46	4.19	4.65	0.46	0.00	0.46
Manufacturing	15.55	109.60	125.15	2.24	101.60	103.84	2.24	102.87	105.11	2.24	102.03	104.26	2.24	0.00	2.24
Electricity, Gas, Water & Waste Services	0.54	1.83	2.38	0.08	1.70	1.78	0.08	1.72	1.80	0.08	1.71	1.79	0.08	0.00	0.08
Construction	50.32	1.95	52.27	7.24	1.81	9.04	7.24	1.83	9.07	7.24	1.81	9.05	7.24	0.00	7.24
Wholesale Trade	2.29	5.32	7.61	0.33	4.93	5.26	0.33	5.00	5.32	0.33	4.95	5.28	0.33	0.00	0.33
Retail Trade	0.68	0.81	1.49	0.10	0.75	0.85	0.10	0.76	0.86	0.10	0.75	0.85	0.10	0.00	0.10
Accommodation & Food Services	0.51	0.86	1.37	0.07	0.79	0.87	0.07	0.80	0.88	0.07	0.80	0.87	0.07	0.00	0.07
Transport, Postal & Warehousing	3.19	3.97	7.17	0.46	3.68	4.14	0.46	3.73	4.19	0.46	3.70	4.16	0.46	0.00	0.46
Information Media and Telecommunications	0.77	1.46	2.23	0.11	1.35	1.46	0.11	1.37	1.48	0.11	1.36	1.47	0.11	0.00	0.11
Financial & Insurance Services	2.69	2.21	4.90	0.39	2.05	2.44	0.39	2.08	2.46	0.39	2.06	2.45	0.39	0.00	0.39
Rental, Hiring & Real Estate Services	5.78	2.94	8.71	0.83	2.72	3.55	0.83	2.76	3.59	0.83	2.73	3.56	0.83	0.00	0.83
Professional, Scientific & Technical Services	1.98	2.15	4.13	0.28	2.00	2.28	0.28	2.02	2.30	0.28	2.00	2.29	0.28	0.00	0.28
Administrative & Support Services	5.87	4.31	10.18	0.84	3.99	4.84	0.84	4.04	4.89	0.84	4.01	4.85	0.84	0.00	0.84
Public Administration & Safety	0.13	0.28	0.41	0.02	0.26	0.28	0.02	0.27	0.28	0.02	0.26	0.28	0.02	0.00	0.02
Education & Training	0.17	0.29	0.47	0.03	0.27	0.30	0.03	0.27	0.30	0.03	0.27	0.30	0.03	0.00	0.03
Health Care & Social Assistance	0.02	0.03	0.04	0.00	0.02	0.03	0.00	0.02	0.03	0.00	0.02	0.03	0.00	0.00	0.00
Arts & Recreation Services	0.96	0.49	1.46	0.14	0.46	0.59	0.14	0.46	0.60	0.14	0.46	0.60	0.14	0.00	0.14
Other Services	0.16	0.04	0.20	0.02	0.04	0.06	0.02	0.04	0.06	0.02	0.04	0.06	0.02	0.00	0.02
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>34.76</b>	<b>57.03</b>	<b>91.79</b>	<b>5.00</b>	<b>52.87</b>	<b>57.87</b>	<b>5.00</b>	<b>53.53</b>	<b>58.53</b>	<b>5.00</b>	<b>53.09</b>	<b>58.09</b>	<b>5.00</b>	<b>0.00</b>	<b>5.00</b>
<b>Indirect</b>	<b>60.41</b>	<b>86.44</b>	<b>146.84</b>	<b>8.69</b>	<b>80.13</b>	<b>88.82</b>	<b>8.69</b>	<b>81.13</b>	<b>89.82</b>	<b>8.69</b>	<b>80.46</b>	<b>89.15</b>	<b>8.69</b>	<b>0.00</b>	<b>8.69</b>
<b>Total</b>	<b>95.17</b>	<b>143.47</b>	<b>238.63</b>	<b>13.69</b>	<b>133.00</b>	<b>146.69</b>	<b>13.69</b>	<b>134.66</b>	<b>148.35</b>	<b>13.69</b>	<b>133.55</b>	<b>147.24</b>	<b>13.69</b>	<b>0.00</b>	<b>13.69</b>

**Table 5.5: Distribution of household income effects of Alpha Coal Railway construction, 2010-2014 (\$M)**

	2010			2011			2012			2013			2014		
	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust
Agriculture, Forestry & Fishing	0.00	0.00	0.00	0.64	0.00	0.64	0.87	0.07	0.94	0.76	0.13	0.89	0.02	0.13	0.16
Mining	0.00	0.00	0.00	5.00	0.00	5.00	6.84	0.50	7.34	5.97	0.94	6.91	0.17	0.95	1.11
Manufacturing	0.05	0.00	0.05	147.44	0.00	147.44	202.52	30.35	232.87	198.14	56.42	254.55	2.53	57.04	59.57
Electricity, Gas, Water & Waste Services	0.00	0.00	0.00	0.62	0.00	0.62	0.86	0.26	1.12	0.82	0.48	1.30	0.02	0.49	0.51
Construction	0.02	0.00	0.02	70.69	0.00	70.69	97.21	0.35	97.56	78.92	0.65	79.57	2.93	0.66	3.59
Wholesale Trade	0.01	0.00	0.01	10.59	0.00	10.59	14.52	1.43	15.95	13.99	2.66	16.65	0.33	2.69	3.02
Retail Trade	0.01	0.00	0.01	3.33	0.00	3.33	4.66	0.33	4.99	3.95	0.61	4.56	0.12	0.62	0.74
Accommodation & Food Services	0.00	0.00	0.00	1.82	0.00	1.82	2.51	0.21	2.72	2.40	0.39	2.79	0.06	0.40	0.46
Transport, Postal & Warehousing	0.01	0.00	0.01	18.86	0.00	18.86	25.80	0.92	26.72	22.42	1.71	24.13	0.67	1.73	2.40
Information Media and Telecommunications	0.00	0.00	0.00	1.69	0.00	1.69	2.33	0.25	2.58	2.06	0.46	2.51	0.06	0.46	0.52
Financial & Insurance Services	0.11	0.00	0.11	15.90	0.00	15.90	22.68	0.75	23.43	18.31	1.40	19.71	0.59	1.41	2.00
Rental, Hiring & Real Estate Services	0.03	0.00	0.03	16.67	0.00	16.67	22.79	0.44	23.23	19.07	0.82	19.89	0.62	0.83	1.45
Professional, Scientific & Technical Services	0.01	0.00	0.01	12.30	0.00	12.30	17.06	0.81	17.86	15.86	1.50	17.36	0.46	1.51	1.98
Administrative & Support Services	0.03	0.00	0.03	37.91	0.00	37.91	51.94	1.66	53.60	45.33	3.09	48.41	1.42	3.12	4.54
Public Administration & Safety	0.00	0.00	0.00	0.92	0.00	0.92	1.26	0.15	1.40	1.07	0.27	1.34	0.03	0.27	0.31
Education & Training	0.00	0.00	0.00	2.06	0.00	2.06	2.86	0.22	3.07	2.72	0.40	3.13	0.07	0.41	0.48
Health Care & Social Assistance	0.00	0.00	0.00	0.17	0.00	0.17	0.21	0.02	0.23	0.19	0.03	0.23	0.01	0.03	0.04
Arts & Recreation Services	0.00	0.00	0.00	3.63	0.00	3.63	4.96	0.10	5.06	4.41	0.19	4.60	0.14	0.19	0.33
Other Services	0.00	0.00	0.00	3.03	0.00	3.03	4.15	0.02	4.17	3.45	0.04	3.50	0.12	0.04	0.17
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>91.57</b>	<b>0.00</b>	<b>91.57</b>	<b>126.75</b>	<b>17.24</b>	<b>143.99</b>	<b>128.81</b>	<b>32.05</b>	<b>160.86</b>	<b>1.74</b>	<b>32.40</b>	<b>34.14</b>
<b>Indirect</b>	<b>0.28</b>	<b>0.00</b>	<b>0.28</b>	<b>261.71</b>	<b>0.00</b>	<b>261.71</b>	<b>359.27</b>	<b>21.59</b>	<b>380.86</b>	<b>311.01</b>	<b>40.14</b>	<b>351.15</b>	<b>8.65</b>	<b>40.58</b>	<b>49.23</b>
<b>Total</b>	<b>0.28</b>	<b>0.00</b>	<b>0.28</b>	<b>353.28</b>	<b>0.00</b>	<b>353.28</b>	<b>486.01</b>	<b>38.83</b>	<b>524.84</b>	<b>439.82</b>	<b>72.19</b>	<b>512.01</b>	<b>10.39</b>	<b>72.98</b>	<b>83.37</b>

**Table 5.6: Distribution of household income effects of Alpha Coal Railway construction, 2015-2019 (\$M)**

	2015			2016			2017			2018			2019		
	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust
Agriculture, Forestry & Fishing	0.04	0.07	0.11	0.01	0.06	0.07	0.01	0.06	0.07	0.01	0.06	0.07	0.01	0.00	0.01
Mining	0.29	0.48	0.77	0.04	0.44	0.48	0.04	0.45	0.49	0.04	0.44	0.49	0.04	0.00	0.04
Manufacturing	4.44	28.62	33.06	0.64	26.53	27.17	0.64	26.87	27.50	0.64	26.64	27.28	0.64	0.00	0.64
Electricity, Gas, Water & Waste Services	0.04	0.24	0.28	0.01	0.23	0.23	0.01	0.23	0.23	0.01	0.23	0.23	0.01	0.00	0.01
Construction	5.14	0.33	5.47	0.74	0.31	1.05	0.74	0.31	1.05	0.74	0.31	1.05	0.74	0.00	0.74
Wholesale Trade	0.59	1.35	1.93	0.08	1.25	1.33	0.08	1.26	1.35	0.08	1.25	1.34	0.08	0.00	0.08
Retail Trade	0.21	0.31	0.52	0.03	0.29	0.32	0.03	0.29	0.32	0.03	0.29	0.32	0.03	0.00	0.03
Accommodation & Food Services	0.11	0.20	0.31	0.02	0.18	0.20	0.02	0.19	0.20	0.02	0.19	0.20	0.02	0.00	0.02
Transport, Postal & Warehousing	1.17	0.87	2.04	0.17	0.80	0.97	0.17	0.81	0.98	0.17	0.81	0.98	0.17	0.00	0.17
Information Media and Telecommunications	0.11	0.23	0.34	0.02	0.22	0.23	0.02	0.22	0.23	0.02	0.22	0.23	0.02	0.00	0.02
Financial & Insurance Services	1.04	0.71	1.75	0.15	0.66	0.81	0.15	0.66	0.81	0.15	0.66	0.81	0.15	0.00	0.15
Rental, Hiring & Real Estate Services	1.09	0.42	1.51	0.16	0.39	0.54	0.16	0.39	0.55	0.16	0.39	0.54	0.16	0.00	0.16
Professional, Scientific & Technical Services	0.81	0.76	1.57	0.12	0.70	0.82	0.12	0.71	0.83	0.12	0.71	0.82	0.12	0.00	0.12
Administrative & Support Services	2.49	1.57	4.05	0.36	1.45	1.81	0.36	1.47	1.83	0.36	1.46	1.82	0.36	0.00	0.36
Public Administration & Safety	0.06	0.14	0.20	0.01	0.13	0.14	0.01	0.13	0.14	0.01	0.13	0.14	0.01	0.00	0.01
Education & Training	0.12	0.20	0.33	0.02	0.19	0.21	0.02	0.19	0.21	0.02	0.19	0.21	0.02	0.00	0.02
Health Care & Social Assistance	0.01	0.02	0.03	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.00	0.00
Arts & Recreation Services	0.24	0.10	0.33	0.03	0.09	0.12	0.03	0.09	0.12	0.03	0.09	0.12	0.03	0.00	0.03
Other Services	0.21	0.02	0.24	0.03	0.02	0.05	0.03	0.02	0.05	0.03	0.02	0.05	0.03	0.00	0.03
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>3.05</b>	<b>16.26</b>	<b>19.31</b>	<b>0.44</b>	<b>15.07</b>	<b>15.51</b>	<b>0.44</b>	<b>15.26</b>	<b>15.70</b>	<b>0.44</b>	<b>15.14</b>	<b>15.57</b>	<b>0.44</b>	<b>0.00</b>	<b>0.44</b>
<b>Indirect</b>	<b>15.15</b>	<b>20.36</b>	<b>35.51</b>	<b>2.18</b>	<b>18.88</b>	<b>21.06</b>	<b>2.18</b>	<b>19.11</b>	<b>21.29</b>	<b>2.18</b>	<b>18.96</b>	<b>21.14</b>	<b>2.18</b>	<b>0.00</b>	<b>2.18</b>
<b>Total</b>	<b>18.20</b>	<b>36.62</b>	<b>54.82</b>	<b>2.62</b>	<b>33.95</b>	<b>36.57</b>	<b>2.62</b>	<b>34.38</b>	<b>36.99</b>	<b>2.62</b>	<b>34.09</b>	<b>36.71</b>	<b>2.62</b>	<b>0.00</b>	<b>2.62</b>

**Table 5.7: Distribution of employment effects of Alpha Coal Railway construction, 2010-2014 (FTEs)**

	Qld	2010 Inter- state	Aust	Qld	2011 Inter- state	Aust	Qld	2012 Inter- state	Aust	Qld	2013 Inter- state	Aust	Qld	2014 Inter- state	Aust
Agriculture, Forestry & Fishing	0	0	0	36	0	36	49	3	52	43	5	48	1	5	7
Mining	0	0	0	60	0	60	82	6	88	72	11	83	2	11	13
Manufacturing	1	0	1	1,203	0	1,203	1,642	243	1,885	1,763	452	2,215	28	457	485
Electricity, Gas, Water & Waste Services	0	0	0	10	0	10	14	4	18	13	7	20	0	7	7
Construction	1	0	1	2,550	0	2,550	3,508	11	3,519	2,849	21	2,870	106	21	127
Wholesale Trade	0	0	0	143	0	143	195	21	217	188	39	228	5	40	44
Retail Trade	0	0	0	98	0	98	137	10	147	116	19	135	4	19	23
Accommodation & Food Services	0	0	0	43	0	43	59	6	66	57	12	68	1	12	13
Transport, Postal & Warehousing	0	0	0	292	0	292	399	17	415	346	31	377	10	31	42
Information Media and Telecommunications	0	0	0	42	0	42	58	5	63	51	9	60	2	10	11
Financial & Insurance Services	1	0	1	138	0	138	199	7	207	160	14	174	5	14	19
Rental, Hiring & Real Estate Services	0	0	0	107	0	107	146	6	152	122	11	133	4	11	15
Professional, Scientific & Technical Services	0	0	0	185	0	185	256	14	269	238	25	263	7	26	33
Administrative & Support Services	0	0	0	474	0	474	650	23	674	566	44	609	18	44	62
Public Administration & Safety	0	0	0	13	0	13	18	2	20	15	4	19	1	4	4
Education & Training	0	0	0	33	0	33	45	3	49	43	6	50	1	6	8
Health Care & Social Assistance	0	0	0	2	0	2	2	0	3	2	1	3	0	1	1
Arts & Recreation Services	0	0	0	68	0	68	94	3	96	85	5	89	3	5	7
Other Services	0	0	0	41	0	41	57	0	57	47	1	48	2	1	2
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>1,497</b>	<b>0</b>	<b>1,497</b>	<b>2,056</b>	<b>87</b>	<b>2,144</b>	<b>1,997</b>	<b>162</b>	<b>2,160</b>	<b>53</b>	<b>164</b>	<b>217</b>
<b>Indirect</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,041</b>	<b>0</b>	<b>4,041</b>	<b>5,554</b>	<b>298</b>	<b>5,852</b>	<b>4,778</b>	<b>554</b>	<b>5,332</b>	<b>145</b>	<b>561</b>	<b>705</b>
<b>Total</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>5,538</b>	<b>0</b>	<b>5,538</b>	<b>7,610</b>	<b>385</b>	<b>7,996</b>	<b>6,775</b>	<b>717</b>	<b>7,491</b>	<b>198</b>	<b>724</b>	<b>922</b>

**Table 5.8: Distribution of employment effects of Alpha Coal Railway construction, 2015-2019 (FTEs)**

	2015			2016			2017			2018			2019		
	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust
Agriculture, Forestry & Fishing	2	3	5	0	3	3	0	3	3	0	3	3	0	0	0
Mining	3	6	9	0	5	6	0	5	6	0	5	6	0	0	0
Manufacturing	49	229	278	7	213	220	7	215	222	7	213	220	7	0	7
Electricity, Gas, Water & Waste Services	1	3	4	0	3	3	0	3	3	0	3	3	0	0	0
Construction	185	11	196	27	10	37	27	10	37	27	10	37	27	0	27
Wholesale Trade	8	20	28	1	18	20	1	19	20	1	19	20	1	0	1
Retail Trade	6	10	16	1	9	10	1	9	10	1	9	10	1	0	1
Accommodation & Food Services	3	6	9	0	6	6	0	6	6	0	6	6	0	0	0
Transport, Postal & Warehousing	18	16	34	3	15	17	3	15	17	3	15	17	3	0	3
Information Media and Telecommunications	3	5	7	0	4	5	0	5	5	0	4	5	0	0	0
Financial & Insurance Services	9	7	16	1	7	8	1	7	8	1	7	8	1	0	1
Rental, Hiring & Real Estate Services	7	5	12	1	5	6	1	5	6	1	5	6	1	0	1
Professional, Scientific & Technical Services	12	13	25	2	12	14	2	12	14	2	12	14	2	0	2
Administrative & Support Services	31	22	53	4	20	25	4	21	25	4	21	25	4	0	4
Public Administration & Safety	1	2	3	0	2	2	0	2	2	0	2	2	0	0	0
Education & Training	2	3	5	0	3	3	0	3	3	0	3	3	0	0	0
Health Care & Social Assistance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arts & Recreation Services	5	2	7	1	2	3	1	2	3	1	2	3	1	0	1
Other Services	3	0	3	0	0	1	0	0	1	0	0	1	0	0	0
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>93</b>	<b>82</b>	<b>176</b>	<b>13</b>	<b>76</b>	<b>90</b>	<b>13</b>	<b>77</b>	<b>91</b>	<b>13</b>	<b>77</b>	<b>90</b>	<b>13</b>	<b>0</b>	<b>13</b>
<b>Indirect</b>	<b>253</b>	<b>281</b>	<b>535</b>	<b>36</b>	<b>261</b>	<b>297</b>	<b>36</b>	<b>264</b>	<b>300</b>	<b>36</b>	<b>262</b>	<b>298</b>	<b>36</b>	<b>0</b>	<b>36</b>
<b>Total</b>	<b>347</b>	<b>364</b>	<b>710</b>	<b>50</b>	<b>337</b>	<b>387</b>	<b>50</b>	<b>341</b>	<b>391</b>	<b>50</b>	<b>338</b>	<b>388</b>	<b>50</b>	<b>0</b>	<b>50</b>



**Table 5.9: Distribution of value added effects of Alpha Coal Railway construction, 2010-2014 (\$M)**

	Qld	2010 Inter- state	Aust	Qld	2011 Inter- state	Aust	Qld	2012 Inter- state	Aust	Qld	2013 Inter- state	Aust	Qld	2014 Inter- state	Aust
Agriculture, Forestry & Fishing	0.00	0.00	0.00	2.86	0.00	2.86	3.93	0.25	4.17	3.45	0.46	3.91	0.10	0.46	0.57
Mining	0.02	0.00	0.02	39.71	0.00	39.71	54.35	3.07	57.42	47.56	5.71	53.26	1.33	5.77	7.10
Manufacturing	0.06	0.00	0.06	191.57	0.00	191.57	262.66	41.29	303.95	255.51	76.76	332.27	3.46	77.60	81.06
Electricity, Gas, Water & Waste Services	0.00	0.00	0.00	4.10	0.00	4.10	5.67	0.93	6.60	5.27	1.72	6.99	0.14	1.74	1.88
Construction	0.04	0.00	0.04	172.26	0.00	172.26	236.87	0.72	237.59	192.31	1.35	193.65	7.14	1.36	8.50
Wholesale Trade	0.01	0.00	0.01	16.27	0.00	16.27	22.31	2.24	24.55	21.53	4.16	25.69	0.51	4.20	4.72
Retail Trade	0.02	0.00	0.02	4.32	0.00	4.32	6.06	0.42	6.48	5.14	0.78	5.92	0.16	0.79	0.94
Accommodation & Food Services	0.00	0.00	0.00	3.09	0.00	3.09	4.27	0.34	4.61	4.08	0.64	4.71	0.10	0.65	0.75
Transport, Postal & Warehousing	0.01	0.00	0.01	27.82	0.00	27.82	38.04	1.65	39.69	33.00	3.06	36.06	0.98	3.10	4.08
Information Media and Telecommunications	0.00	0.00	0.00	5.15	0.00	5.15	7.08	0.68	7.77	6.25	1.27	7.52	0.19	1.29	1.47
Financial & Insurance Services	0.23	0.00	0.23	27.18	0.00	27.18	39.09	1.44	40.53	31.37	2.68	34.05	1.00	2.71	3.71
Rental, Hiring & Real Estate Services	0.08	0.00	0.08	40.23	0.00	40.23	54.99	1.27	56.27	46.03	2.37	48.40	1.51	2.40	3.90
Professional, Scientific & Technical Services	0.01	0.00	0.01	15.42	0.00	15.42	21.38	1.04	22.42	19.89	1.94	21.82	0.58	1.96	2.54
Administrative & Support Services	0.04	0.00	0.04	47.40	0.00	47.40	64.95	2.14	67.09	56.64	3.99	60.62	1.78	4.03	5.81
Public Administration & Safety	0.00	0.00	0.00	1.03	0.00	1.03	1.41	0.16	1.57	1.20	0.30	1.50	0.04	0.31	0.35
Education & Training	0.00	0.00	0.00	2.23	0.00	2.23	3.09	0.23	3.32	2.94	0.44	3.38	0.08	0.44	0.52
Health Care & Social Assistance	0.00	0.00	0.00	0.20	0.00	0.20	0.26	0.02	0.28	0.23	0.04	0.27	0.01	0.04	0.05
Arts & Recreation Services	0.00	0.00	0.00	5.49	0.00	5.49	7.47	0.17	7.64	6.61	0.31	6.93	0.20	0.32	0.52
Other Services	0.00	0.00	0.00	3.14	0.00	3.14	4.29	0.03	4.32	3.57	0.05	3.62	0.13	0.05	0.17
Ownership of Dwellings	2.86	0.00	2.86	7.95	0.00	7.95	35.10	0.00	35.10	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>2.86</b>	<b>0.00</b>	<b>2.86</b>	<b>172.91</b>	<b>0.00</b>	<b>172.91</b>	<b>262.51</b>	<b>22.89</b>	<b>285.39</b>	<b>216.47</b>	<b>42.55</b>	<b>259.02</b>	<b>4.32</b>	<b>43.02</b>	<b>47.34</b>
<b>Indirect</b>	<b>0.54</b>	<b>0.00</b>	<b>0.54</b>	<b>444.53</b>	<b>0.00</b>	<b>444.53</b>	<b>610.76</b>	<b>35.22</b>	<b>645.97</b>	<b>526.10</b>	<b>65.47</b>	<b>591.57</b>	<b>15.11</b>	<b>66.19</b>	<b>81.30</b>
<b>Total</b>	<b>3.40</b>	<b>0.00</b>	<b>3.40</b>	<b>617.43</b>	<b>0.00</b>	<b>617.43</b>	<b>873.26</b>	<b>58.10</b>	<b>931.37</b>	<b>742.57</b>	<b>108.02</b>	<b>850.59</b>	<b>19.44</b>	<b>109.21</b>	<b>128.64</b>

**Table 5.10: Distribution of value added effects of Alpha Coal Railway construction, 2015-2019 (\$M)**

	2015			2016			2017			2018			2019		
	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust	Qld	Inter-state	Aust
Agriculture, Forestry & Fishing	0.18	0.23	0.41	0.03	0.22	0.24	0.03	0.22	0.24	0.03	0.22	0.24	0.03	0.00	0.03
Mining	2.34	2.90	5.23	0.34	2.68	3.02	0.34	2.72	3.05	0.34	2.69	3.03	0.34	0.00	0.34
Manufacturing	6.06	38.94	45.00	0.87	36.10	36.97	0.87	36.55	37.42	0.87	36.25	37.12	0.87	0.00	0.87
Electricity, Gas, Water & Waste Services	0.24	0.87	1.12	0.03	0.81	0.84	0.03	0.82	0.85	0.03	0.81	0.85	0.03	0.00	0.03
Construction	12.52	0.68	13.20	1.80	0.63	2.43	1.80	0.64	2.44	1.80	0.64	2.44	1.80	0.00	1.80
Wholesale Trade	0.90	2.11	3.01	0.13	1.96	2.08	0.13	1.98	2.11	0.13	1.96	2.09	0.13	0.00	0.13
Retail Trade	0.27	0.40	0.67	0.04	0.37	0.41	0.04	0.37	0.41	0.04	0.37	0.41	0.04	0.00	0.04
Accommodation & Food Services	0.18	0.32	0.50	0.03	0.30	0.33	0.03	0.30	0.33	0.03	0.30	0.33	0.03	0.00	0.03
Transport, Postal & Warehousing	1.72	1.55	3.28	0.25	1.44	1.69	0.25	1.46	1.71	0.25	1.45	1.70	0.25	0.00	0.25
Information Media and Telecommunications	0.32	0.65	0.97	0.05	0.60	0.65	0.05	0.61	0.65	0.05	0.60	0.65	0.05	0.00	0.05
Financial & Insurance Services	1.75	1.36	3.11	0.25	1.26	1.51	0.25	1.28	1.53	0.25	1.27	1.52	0.25	0.00	0.25
Rental, Hiring & Real Estate Services	2.64	1.20	3.84	0.38	1.11	1.49	0.38	1.13	1.51	0.38	1.12	1.50	0.38	0.00	0.38
Professional, Scientific & Technical Services	1.02	0.98	2.00	0.15	0.91	1.06	0.15	0.92	1.07	0.15	0.92	1.06	0.15	0.00	0.15
Administrative & Support Services	3.11	2.02	5.13	0.45	1.88	2.32	0.45	1.90	2.35	0.45	1.88	2.33	0.45	0.00	0.45
Public Administration & Safety	0.07	0.15	0.22	0.01	0.14	0.15	0.01	0.14	0.15	0.01	0.14	0.15	0.01	0.00	0.01
Education & Training	0.13	0.22	0.35	0.02	0.21	0.22	0.02	0.21	0.23	0.02	0.21	0.22	0.02	0.00	0.02
Health Care & Social Assistance	0.01	0.02	0.03	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.00	0.00
Arts & Recreation Services	0.36	0.16	0.52	0.05	0.15	0.20	0.05	0.15	0.20	0.05	0.15	0.20	0.05	0.00	0.05
Other Services	0.22	0.02	0.24	0.03	0.02	0.05	0.03	0.02	0.05	0.03	0.02	0.05	0.03	0.00	0.03
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>7.58</b>	<b>21.59</b>	<b>29.16</b>	<b>1.09</b>	<b>20.01</b>	<b>21.10</b>	<b>1.09</b>	<b>20.26</b>	<b>21.35</b>	<b>1.09</b>	<b>20.09</b>	<b>21.18</b>	<b>1.09</b>	<b>0.00</b>	<b>1.09</b>
<b>Indirect</b>	<b>26.48</b>	<b>33.21</b>	<b>59.69</b>	<b>3.81</b>	<b>30.79</b>	<b>34.60</b>	<b>3.81</b>	<b>31.18</b>	<b>34.98</b>	<b>3.81</b>	<b>30.92</b>	<b>34.73</b>	<b>3.81</b>	<b>0.00</b>	<b>3.81</b>
<b>Total</b>	<b>34.05</b>	<b>54.80</b>	<b>88.85</b>	<b>4.90</b>	<b>50.80</b>	<b>55.70</b>	<b>4.90</b>	<b>51.44</b>	<b>56.34</b>	<b>4.90</b>	<b>51.01</b>	<b>55.91</b>	<b>4.90</b>	<b>0.00</b>	<b>4.90</b>

### 5.3 Operating & Ongoing Costs

Operating costs are anticipated to commence in 2013 and run through to 2042. HPPL is anticipated to expend approximately \$5,681.08 million in operating expenses throughout the life of the project. The most significant cost items in terms of total operating costs include:

- Fuel: 31% of total operating costs;
- Wagon maintenance: 17% of total operating costs;
- Locomotive maintenance: 15% of total operating costs; and
- Track maintenance: 13% of total operating costs.

The composition of project operating costs indicates that the operation of the Alpha Coal (Rail) Project is likely to result in major stimulus to the manufacturing sector of Queensland.

These costs are anticipated to increase from \$33.96 million per annum in 2013 to \$220.52 million in 2023. Between 2024 and 2042, project operating costs are anticipated to range between \$196.29 million and \$222.58 million per annum.

Table 5.11 and Table 5.12 below summarise operating costs associated with the Alpha Coal (Rail) Project for selected years.

As with construction and capital expenditure, operating expenditure by year and type of expenditure are allocated against up to 109 industry sectors identified in the input-output tables for each of the impact measures, which include:

- Output (or consumption);
- Household income;
- Employment (FTEs); and
- Value Added.

The extent of the total impact for each of these measured will be distributed across a broad range of industry sectors.

The allocation of project operating expenses to industry sectors is based on the nature of the activity, as opposed to the nature of the enterprises involved in the transaction.

Tables 5.13 to 5.20 provide detailed summaries of the direct and indirect output (or consumption), household income, employment and value added impacts of the operating expenditure associated with the Alpha Coal Project (Railway).

**Table 5.11: Operating and ongoing expenditure for Alpha Coal Railway, 2013-2026 (\$M)**

Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Below Rail Operating &amp; Ongoing Costs</b>														
Track Maintenance	7.38	14.54	21.71	24.05	24.61	25.69	26.50	26.88	26.81	26.43	26.75	26.50	26.54	26.67
Signals Maintenance	2.03	4.00	5.97	6.61	6.77	7.06	7.28	7.39	7.37	7.27	7.35	7.29	7.30	7.33
Communications Maintenance	1.51	2.97	4.43	4.90	5.02	5.24	5.40	5.48	5.47	5.39	5.46	5.40	5.41	5.44
Spares - Track & Signals	2.13	2.13	2.13	2.36	2.41	2.52	2.60	2.64	2.63	2.59	2.62	2.60	2.60	2.61
Infrastructure Maintenance	0.43	0.85	1.27	1.41	1.44	1.51	1.55	1.58	1.57	1.55	1.57	1.55	1.56	1.56
Structures Maintenance	-	0.50	1.00	1.11	1.13	1.18	1.22	1.24	1.23	1.22	1.23	1.22	1.22	1.23
Yard	-	-	-	-	-	11.00	-	-	-	-	18.85	11.00	-	-
Sub Total	13.48	24.99	36.50	40.44	41.39	54.20	44.56	45.20	45.08	44.44	63.84	55.57	44.63	44.85
<b>Above Rail Operating &amp; Ongoing Costs</b>														
Locomotives Maintenance	4.57	10.41	16.75	24.19	25.41	28.50	31.01	31.83	31.68	30.86	31.56	31.02	31.11	31.38
Wagon Maintenance	3.91	11.65	19.02	27.13	28.13	31.82	35.01	35.67	35.54	34.88	35.45	35.02	35.07	35.29
Fuel	6.76	20.27	32.56	47.96	51.43	58.08	63.06	65.42	64.97	62.62	64.63	63.09	63.33	64.12
Labour	2.40	3.60	6.00	8.40	8.40	9.60	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80
Yard & Facilities Maintenance	0.43	1.09	1.79	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
Business Overheads	2.41	6.03	9.94	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06
Sub Total	20.49	53.04	86.07	121.91	127.61	142.24	154.12	157.96	157.22	153.40	156.68	154.16	154.55	155.83
<b>Total Operating &amp; Ongoing Costs</b>	<b>33.96</b>	<b>78.03</b>	<b>122.57</b>	<b>162.35</b>	<b>169.00</b>	<b>196.44</b>	<b>198.68</b>	<b>203.16</b>	<b>202.30</b>	<b>197.84</b>	<b>220.52</b>	<b>209.73</b>	<b>199.18</b>	<b>200.68</b>

**Table 5.12: Operating and ongoing expenditure for Alpha Coal Railway, 2027-2042 (\$M)**

Costs	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
<b>Below Rail Operating &amp; Ongoing Costs</b>																	
Track Maintenance	26.30	26.66	26.58	26.50	26.56	26.85	26.83	26.93	27.03	26.93	27.13	27.13	26.75	26.92	26.46	26.24	758.86
Signals Maintenance	7.23	7.33	7.31	7.29	7.30	7.38	7.38	7.40	7.43	7.40	7.46	7.46	7.35	7.40	7.27	7.22	208.62
Communications Maintenance	5.36	5.44	5.42	5.41	5.42	5.48	5.47	5.49	5.51	5.49	5.53	5.53	5.46	5.49	5.40	5.35	154.77
Spares - Track & Signals	2.58	2.61	2.61	2.60	2.60	2.63	2.63	2.64	2.65	2.64	2.66	2.66	2.62	2.64	2.59	2.57	76.50
Infrastructure Maintenance	1.54	1.56	1.56	1.56	1.56	1.58	1.57	1.58	1.59	1.58	1.59	1.59	1.57	1.58	1.55	1.54	44.53
Structures Maintenance	1.21	1.23	1.22	1.22	1.22	1.24	1.24	1.24	1.25	1.24	1.25	1.25	1.23	1.24	1.22	1.21	34.45
Yard	-	-	-	11.00	-	-	6.71	18.85	-	11.00	-	2.90	-	-	-	12.00	103.31
Sub Total	44.22	44.83	44.70	55.57	44.67	45.15	51.84	64.14	45.45	56.29	45.63	48.53	44.98	45.27	44.50	56.13	1,381.05
<b>Above Rail Operating &amp; Ongoing Costs</b>																	
Locomotives Maintenance	30.58	31.36	31.19	31.03	31.16	31.76	31.73	31.94	32.15	31.95	32.39	32.42	31.55	31.92	30.93	30.47	864.83
Wagon Maintenance	34.65	35.27	35.14	35.02	35.12	35.61	35.59	35.75	35.91	35.75	36.12	36.15	35.44	35.73	34.94	34.57	970.35
Fuel	61.81	64.05	63.56	63.10	63.47	65.21	65.13	65.72	66.33	65.75	67.01	67.12	64.60	65.68	62.83	61.50	1,761.17
Labour	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	297.60
Yard & Facilities Maintenance	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	62.03
Business Overheads	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	344.05
Sub Total	152.07	155.71	154.93	154.18	154.78	157.62	157.49	158.45	159.43	158.48	160.56	160.73	156.63	158.37	153.74	151.58	4,300.03
<b>Total Operating &amp; Ongoing Costs</b>	<b>196.29</b>	<b>200.54</b>	<b>199.63</b>	<b>209.75</b>	<b>199.46</b>	<b>202.76</b>	<b>209.32</b>	<b>222.58</b>	<b>204.88</b>	<b>214.77</b>	<b>206.18</b>	<b>209.26</b>	<b>201.61</b>	<b>203.65</b>	<b>198.24</b>	<b>207.71</b>	<b>5,681.08</b>

## Output or Consumption Effects

The output (or consumption) impacts of operating expenditure associated with the Alpha Coal (Rail) Project are detailed in Tables 5.13 and 5.14 below. As stated previously, the economic impacts resulting from operating expenditure increase in the 2013 to 2023 period and remain relatively stable between 2024 and 2042.

In the first year of operation (2013), total output (or consumption) impacts of operating expenditure associated with the Alpha Coal (Rail) Project are estimated to be approximately \$76.95 million, comprising \$33.96 million in direct output (or consumption) effects and \$42.99 million in indirect output (or consumption) effects. At this stage of the project the manufacturing sector is the most significantly stimulated sector as a result of project operating expenditure with impacts of \$40.88 million. These impacts are associated with the purchase of various consumable items.

By 2026, total output (or consumption) impacts of operating expenditure associated with the Alpha Coal (Rail) Project are estimated to increase to approximately \$713.56 million, comprising \$457.12 million in direct output (or consumption) effects and \$256.44 million in indirect output (or consumption) effects. The most significantly impacted sectors at this stage of the project include manufacturing (impacts of \$217.36 million) and wholesale trade (impacts of \$77.01 million).

The manufacturing sector is significantly stimulated by the purchase of fuel and other consumable items along with the purchase and maintenance of major equipment. The wholesale trade sector is stimulated by various fleet purchases.

In 2042, total output (or consumption) impacts of operating expenditure associated with the Alpha Coal (Rail) Project are estimated at \$749.50 million, comprising \$478.61 million in direct output (or consumption) effects and \$270.89 million in indirect output (or consumption) effects. The most significantly impacted sectors at this stage of the project are manufacturing (\$218.01 million) and wholesale trade (\$74.88 million).

## Household Income Effects

The household impacts of operating expenditure associated with the Alpha Coal (Rail) Project are detailed in Tables 5.15 and 5.16 below.

In the first year of operation (2013), total household income effects associated with the Alpha Coal (Rail) Project are estimated to be approximately \$24.79 million, comprising \$12.47 million in direct output and \$12.32 million in indirect output. Manufacturing is the most stimulated sector, accounting for \$14.95 million or 60.3% of total household income effects.

By 2026, total household income effects associated with the Alpha Coal (Rail) Project are estimated to be \$215.36 million, comprising \$143.22 million of direct impacts and \$72.14 million of indirect impacts. The manufacturing and wholesale trade sectors are the most stimulated at this stage of the project, recording household income effects of \$79.46 million and \$20.69 million respectively.

In the final year of operation (2042), total household income effects associated with the Alpha Coal (Rail) Project are estimated at \$221.74 million, comprising \$146.12 million of direct impacts and \$75.62 million of indirect impacts. The manufacturing and wholesale trade sectors are the

most stimulated at this stage of the project, recording household income effects of \$79.27 million and \$20.11 million respectively.

### Employment Effects

Operational employment of the railway is anticipated to be between 50 to 60 operational workers per annum. However, employment effects of the project will be significantly greater than this due to maintenance and purchase of consumables.

The employment impacts of operating expenditure associated with the Alpha Coal (Rail) Project are detailed in Tables 5.17 and 5.18 below.

In the first year of operation (2013), employment impacts are estimated at 243 full time equivalent positions, comprising 97 direct full time equivalent positions and 146 indirect full time equivalent positions. The manufacturing sector is anticipated to account for 106 full time equivalent positions or 43.6% of total employment.

By 2026, employment impacts of operating expenditure associated with the Alpha Coal (Rail) Project are estimated to be 2,268 full time equivalent positions, comprising 1,414 direct full time equivalent positions and 855 indirect full time equivalent positions. In 2026, the manufacturing (524 full time equivalent positions) and wholesale trade (278 full time equivalent positions) sectors are anticipated to account for approximately 35% of full time equivalent positions created as a result of operating expenditure associated with the Alpha Coal Project (Railway).

In the final year of operation (2042), employment impacts of operating expenditure associated with the Alpha Coal (Rail) Project area anticipated to be 2,420 full time equivalent positions, comprising 1,499 direct full time equivalent positions and 921 indirect full time equivalent positions. In 2042, the manufacturing (529 full time equivalent positions) and wholesale trade (271 full time equivalent positions) sectors are anticipated to account for approximately 33% of full time equivalent positions created as a result of operating expenditure associated with the Alpha Coal Project (Railway).

### Value Added Effects

The value added impacts of operating expenditure associated with the Alpha Coal (Rail) Project area detailed in Tables 5.19 and 5.20 below.

In the first year of operation (2013), value added impacts of operating expenditure associated with the Alpha Coal (Rail) Project are estimated at \$36.63 million, comprising \$16.33 million of direct effects and \$20.30 million of indirect effects. In 2013, approximately 50% of value added effects are attributable to the manufacturing sector.

By 2026, value added impacts of operating expenditure associated with the Alpha Coal (Rail) Project are estimated at \$340.06 million, comprising \$217.54 million in direct effects and \$122.53 million in indirect effects. The most significantly impacted sectors at this stage of the project include manufacturing (impacts of \$99.92 million) and wholesale trade (impacts of \$32.20 million).

In the final year of operation (2042), value added impacts of operating expenditure associated with the Alpha Coal (Rail) Project are estimated at \$352.45 million, comprising \$233.91 million of direct effects and \$128.54 million of indirect effects. The most significantly impacted sectors at

this stage of the project include manufacturing (impacts of \$99.85 million) and wholesale trade (impacts of \$31.28 million).

**Table 5.13: Distribution of output or consumption effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (\$M)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Agriculture, Forestry & Fishing	0.26	0.62	0.99	1.31	1.38	1.61	1.62	1.65	1.65	1.60	1.83	1.72	1.63	1.62
Mining	3.73	9.26	15.11	20.15	21.68	24.58	26.12	26.14	26.46	25.28	28.10	26.68	26.44	25.74
Manufacturing	40.88	88.94	140.00	177.40	186.22	206.08	219.17	219.74	221.35	214.66	229.19	221.68	220.88	217.36
Electricity, Gas, Water & Waste Services	0.54	1.20	1.94	2.45	2.61	2.96	3.08	3.04	3.10	2.97	3.39	3.19	3.13	3.01
Construction	3.03	7.51	12.31	15.37	15.92	32.87	18.04	18.17	18.23	17.82	45.47	33.86	18.13	18.01
Wholesale Trade	9.14	25.49	40.75	58.46	62.45	70.75	76.00	78.47	78.07	75.34	78.94	76.64	76.35	77.01
Retail Trade	0.48	1.15	1.84	2.45	2.59	3.04	3.07	3.10	3.11	3.01	3.47	3.26	3.09	3.06
Accommodation & Food Services	0.62	1.45	2.30	3.00	3.15	3.57	3.68	3.72	3.73	3.62	4.00	3.81	3.70	3.67
Transport, Postal & Warehousing	5.01	10.02	16.37	22.20	23.11	26.62	28.33	28.47	28.59	27.91	30.26	29.13	28.49	28.21
Information Media and Telecommunications	0.60	1.46	2.32	3.11	3.28	3.83	3.88	3.95	3.95	3.83	4.35	4.10	3.91	3.89
Financial & Insurance Services	1.45	3.43	5.51	7.30	7.69	9.23	9.08	9.20	9.22	8.94	10.65	9.87	9.14	9.08
Rental, Hiring & Real Estate Services	3.49	8.45	13.82	18.28	19.46	22.89	23.13	23.17	23.41	22.50	26.46	24.62	23.38	22.86
Professional, Scientific & Technical Services	1.08	2.36	3.69	4.69	4.92	5.92	5.70	5.75	5.77	5.60	6.83	6.28	5.74	5.68
Administrative & Support Services	5.64	13.72	22.22	28.21	29.09	32.40	32.06	32.29	32.36	31.72	35.48	33.76	32.20	32.02
Public Administration & Safety	0.06	0.14	0.22	0.29	0.30	0.37	0.36	0.36	0.36	0.35	0.43	0.39	0.36	0.35
Education & Training	0.18	0.41	0.65	0.83	0.87	0.98	1.00	1.00	1.01	0.98	1.10	1.05	1.01	0.99
Health Care & Social Assistance	0.01	0.03	0.05	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.08	0.08
Arts & Recreation Services	0.71	1.71	2.75	3.58	3.74	4.32	4.30	4.35	4.36	4.24	4.87	4.58	4.33	4.30
Other Services	0.03	0.07	0.11	0.14	0.14	0.20	0.16	0.17	0.17	0.16	0.25	0.21	0.16	0.16
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>33.96</b>	<b>177.43</b>	<b>282.94</b>	<b>369.28</b>	<b>388.68</b>	<b>452.31</b>	<b>458.87</b>	<b>462.80</b>	<b>465.01</b>	<b>450.62</b>	<b>515.18</b>	<b>484.90</b>	<b>462.15</b>	<b>457.12</b>
<b>Indirect</b>	<b>42.99</b>	<b>99.40</b>	<b>158.73</b>	<b>206.93</b>	<b>218.05</b>	<b>255.87</b>	<b>257.71</b>	<b>259.64</b>	<b>261.07</b>	<b>252.78</b>	<b>293.02</b>	<b>274.34</b>	<b>259.65</b>	<b>256.44</b>
<b>Total</b>	<b>76.95</b>	<b>276.82</b>	<b>441.67</b>	<b>576.21</b>	<b>606.73</b>	<b>708.18</b>	<b>716.58</b>	<b>722.45</b>	<b>726.08</b>	<b>703.41</b>	<b>808.20</b>	<b>759.25</b>	<b>721.80</b>	<b>713.56</b>



**Table 5.14: Distribution of output or consumption effects of Alpha Coal Railway operating and ongoing expenditure, 2026-2042 (\$M)**

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Agriculture, Forestry & Fishing	1.60	1.62	1.63	1.72	1.62	1.64	1.72	1.85	1.67	1.76	1.69	1.70	1.65	1.65	1.61	1.70
Mining	25.50	25.72	26.27	26.44	26.01	26.07	27.13	28.21	26.88	27.25	27.56	26.92	26.59	26.22	25.81	26.05
Manufacturing	215.63	217.23	220.06	220.45	218.65	219.36	224.66	229.96	223.81	225.24	227.56	224.06	221.95	220.19	217.49	218.01
Electricity, Gas, Water & Waste Services	3.02	3.01	3.10	3.15	3.06	3.04	3.21	3.38	3.14	3.22	3.23	3.13	3.13	3.05	3.04	3.12
Construction	17.83	18.00	18.11	33.80	18.04	18.15	27.97	45.56	18.40	34.14	18.60	22.58	18.24	18.21	17.96	35.05
Wholesale Trade	74.54	76.93	76.56	76.59	76.40	78.24	78.70	80.11	79.60	79.56	80.47	80.56	77.72	78.76	75.68	74.88
Retail Trade	3.01	3.06	3.08	3.24	3.07	3.10	3.25	3.49	3.16	3.33	3.21	3.22	3.12	3.11	3.05	3.21
Accommodation & Food Services	3.62	3.67	3.69	3.80	3.68	3.71	3.84	4.02	3.78	3.89	3.83	3.83	3.73	3.73	3.65	3.76
Transport, Postal & Warehousing	27.97	28.19	28.43	29.02	28.30	28.42	29.24	30.37	28.86	29.54	29.22	29.07	28.63	28.52	28.17	28.80
Information Media and Telecommunications	3.82	3.89	3.90	4.09	3.89	3.94	4.11	4.39	4.01	4.21	4.06	4.08	3.95	3.96	3.86	4.05
Financial & Insurance Services	8.93	9.07	9.13	9.83	9.09	9.18	9.76	10.72	9.35	10.08	9.48	9.58	9.23	9.22	9.03	9.76
Rental, Hiring & Real Estate Services	22.66	22.84	23.25	24.44	23.05	23.12	24.57	26.55	23.73	25.08	24.25	24.06	23.50	23.23	22.90	24.23
Professional, Scientific & Technical Services	5.61	5.67	5.72	6.25	5.69	5.73	6.16	6.86	5.84	6.39	5.93	6.00	5.78	5.76	5.66	6.23
Administrative & Support Services	31.72	32.01	32.16	33.67	32.06	32.25	33.53	35.62	32.64	34.21	32.95	33.12	32.38	32.34	31.93	33.52
Public Administration & Safety	0.35	0.35	0.36	0.39	0.36	0.36	0.39	0.43	0.37	0.40	0.37	0.38	0.36	0.36	0.35	0.39
Education & Training	0.98	0.99	1.00	1.04	1.00	1.00	1.05	1.11	1.02	1.06	1.04	1.03	1.01	1.01	0.99	1.03
Health Care & Social Assistance	0.08	0.08	0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.09
Arts & Recreation Services	4.24	4.29	4.32	4.56	4.30	4.34	4.55	4.90	4.41	4.67	4.47	4.49	4.36	4.36	4.28	4.53
Other Services	0.16	0.16	0.16	0.21	0.16	0.16	0.20	0.25	0.17	0.22	0.17	0.18	0.17	0.17	0.16	0.22
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>451.26</b>	<b>456.81</b>	<b>461.03</b>	<b>482.81</b>	<b>458.50</b>	<b>461.90</b>	<b>484.11</b>	<b>517.86</b>	<b>470.93</b>	<b>494.33</b>	<b>478.18</b>	<b>478.07</b>	<b>465.57</b>	<b>463.92</b>	<b>455.72</b>	<b>478.61</b>
<b>Indirect</b>	<b>253.33</b>	<b>256.27</b>	<b>258.93</b>	<b>273.07</b>	<b>257.41</b>	<b>259.13</b>	<b>273.14</b>	<b>294.44</b>	<b>264.41</b>	<b>279.55</b>	<b>268.68</b>	<b>268.81</b>	<b>261.48</b>	<b>260.27</b>	<b>255.84</b>	<b>270.89</b>
<b>Total</b>	<b>704.59</b>	<b>713.07</b>	<b>719.96</b>	<b>755.88</b>	<b>715.91</b>	<b>721.03</b>	<b>757.25</b>	<b>812.30</b>	<b>735.33</b>	<b>773.88</b>	<b>746.86</b>	<b>746.88</b>	<b>727.05</b>	<b>724.19</b>	<b>711.56</b>	<b>749.50</b>

**Table 5.15: Distribution of household income effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (\$M)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Agriculture, Forestry & Fishing	0.03	0.06	0.09	0.12	0.13	0.15	0.15	0.16	0.16	0.15	0.18	0.17	0.15	0.15
Mining	0.30	0.74	1.22	1.59	1.72	1.95	2.08	2.06	2.09	1.99	2.24	2.12	2.11	2.03
Manufacturing	14.95	32.52	50.83	64.84	67.70	74.93	79.59	80.33	80.56	78.48	82.75	80.47	80.03	79.46
Electricity, Gas, Water & Waste Services	0.04	0.08	0.13	0.17	0.18	0.20	0.21	0.21	0.21	0.20	0.23	0.22	0.21	0.21
Construction	0.36	0.87	1.42	1.79	1.86	3.61	2.12	2.14	2.14	2.09	4.92	3.73	2.13	2.12
Wholesale Trade	2.45	6.84	10.94	15.70	16.77	19.00	20.42	21.08	20.98	20.24	21.19	20.58	20.51	20.69
Retail Trade	0.15	0.35	0.56	0.75	0.79	0.93	0.94	0.95	0.96	0.92	1.07	1.00	0.95	0.94
Accommodation & Food Services	0.13	0.30	0.48	0.63	0.66	0.74	0.77	0.78	0.78	0.75	0.83	0.79	0.77	0.77
Transport, Postal & Warehousing	1.68	3.43	5.59	7.56	7.89	9.09	9.64	9.69	9.73	9.49	10.34	9.93	9.70	9.59
Information Media and Telecommunications	0.08	0.20	0.32	0.43	0.45	0.53	0.54	0.55	0.55	0.53	0.60	0.57	0.54	0.54
Financial & Insurance Services	0.53	1.25	2.01	2.66	2.80	3.38	3.31	3.35	3.36	3.25	3.91	3.61	3.33	3.30
Rental, Hiring & Real Estate Services	0.66	1.60	2.62	3.46	3.69	4.34	4.38	4.39	4.43	4.26	5.01	4.66	4.43	4.33
Professional, Scientific & Technical Services	0.44	0.97	1.52	1.93	2.02	2.43	2.34	2.36	2.37	2.30	2.80	2.58	2.36	2.33
Administrative & Support Services	2.63	6.39	10.36	13.08	13.45	14.84	14.69	14.78	14.82	14.55	16.14	15.41	14.75	14.67
Public Administration & Safety	0.03	0.06	0.10	0.14	0.14	0.17	0.17	0.17	0.17	0.17	0.20	0.19	0.17	0.17
Education & Training	0.13	0.29	0.46	0.58	0.61	0.69	0.70	0.71	0.71	0.69	0.77	0.73	0.71	0.70
Health Care & Social Assistance	0.01	0.02	0.03	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Arts & Recreation Services	0.16	0.39	0.62	0.80	0.84	0.98	0.96	0.97	0.98	0.95	1.10	1.03	0.97	0.96
Other Services	0.04	0.09	0.14	0.18	0.19	0.27	0.22	0.22	0.22	0.22	0.34	0.28	0.22	0.22
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>12.47</b>	<b>56.46</b>	<b>89.45</b>	<b>116.46</b>	<b>121.94</b>	<b>138.29</b>	<b>143.27</b>	<b>144.92</b>	<b>145.26</b>	<b>141.29</b>	<b>154.70</b>	<b>148.13</b>	<b>144.09</b>	<b>143.22</b>
<b>Indirect</b>	<b>12.32</b>	<b>28.23</b>	<b>44.86</b>	<b>58.39</b>	<b>61.31</b>	<b>71.45</b>	<b>72.31</b>	<b>73.02</b>	<b>73.29</b>	<b>71.14</b>	<b>81.28</b>	<b>76.54</b>	<b>72.78</b>	<b>72.14</b>
<b>Total</b>	<b>24.79</b>	<b>84.69</b>	<b>134.31</b>	<b>174.85</b>	<b>183.25</b>	<b>209.74</b>	<b>215.58</b>	<b>217.94</b>	<b>218.55</b>	<b>212.43</b>	<b>235.99</b>	<b>224.67</b>	<b>216.87</b>	<b>215.36</b>

**Table 5.16: Distribution of household income effects of Alpha Coal Railway operating and ongoing expenditure, 2026-2042 (\$M)**

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Agriculture, Forestry & Fishing	0.15	0.15	0.15	0.17	0.15	0.16	0.16	0.18	0.16	0.17	0.16	0.16	0.16	0.16	0.15	0.16
Mining	2.02	2.02	2.09	2.09	2.06	2.05	2.15	2.25	2.13	2.16	2.19	2.12	2.11	2.06	2.05	2.07
Manufacturing	78.48	79.41	79.91	80.20	79.58	80.19	81.53	83.20	81.46	81.94	82.46	81.80	80.60	80.49	79.16	79.27
Electricity, Gas, Water & Waste Services	0.21	0.21	0.21	0.22	0.21	0.21	0.22	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.22
Construction	2.09	2.11	2.13	3.72	2.12	2.13	3.14	4.93	2.16	3.77	2.19	2.59	2.14	2.14	2.11	3.85
Wholesale Trade	20.03	20.67	20.57	20.57	20.53	21.02	21.14	21.51	21.39	21.37	21.62	21.65	20.88	21.16	20.33	20.11
Retail Trade	0.92	0.94	0.95	1.00	0.94	0.95	1.00	1.07	0.97	1.02	0.98	0.99	0.96	0.95	0.93	0.99
Accommodation & Food Services	0.75	0.77	0.77	0.79	0.77	0.77	0.80	0.84	0.79	0.81	0.80	0.80	0.78	0.78	0.76	0.78
Transport, Postal & Warehousing	9.51	9.59	9.67	9.89	9.63	9.67	9.97	10.38	9.83	10.08	9.95	9.90	9.75	9.70	9.58	9.81
Information Media and Telecommunications	0.53	0.54	0.54	0.57	0.54	0.55	0.57	0.61	0.56	0.58	0.56	0.57	0.55	0.55	0.54	0.56
Financial & Insurance Services	3.25	3.30	3.32	3.60	3.31	3.34	3.56	3.93	3.40	3.68	3.45	3.49	3.36	3.35	3.28	3.57
Rental, Hiring & Real Estate Services	4.29	4.33	4.40	4.63	4.37	4.38	4.65	5.03	4.50	4.75	4.59	4.56	4.45	4.40	4.34	4.59
Professional, Scientific & Technical Services	2.30	2.33	2.35	2.57	2.34	2.36	2.53	2.82	2.40	2.62	2.43	2.46	2.37	2.36	2.32	2.56
Administrative & Support Services	14.55	14.67	14.73	15.37	14.69	14.77	15.31	16.20	14.93	15.60	15.06	15.13	14.82	14.81	14.64	15.31
Public Administration & Safety	0.17	0.17	0.17	0.19	0.17	0.17	0.18	0.20	0.17	0.19	0.18	0.18	0.17	0.17	0.17	0.18
Education & Training	0.69	0.70	0.71	0.73	0.70	0.70	0.73	0.78	0.72	0.75	0.73	0.73	0.71	0.71	0.70	0.73
Health Care & Social Assistance	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Arts & Recreation Services	0.95	0.96	0.97	1.03	0.96	0.97	1.02	1.11	0.99	1.05	1.00	1.01	0.98	0.98	0.96	1.02
Other Services	0.22	0.22	0.22	0.28	0.22	0.22	0.26	0.34	0.22	0.29	0.23	0.24	0.22	0.22	0.22	0.29
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>141.16</b>	<b>143.13</b>	<b>143.91</b>	<b>147.67</b>	<b>143.32</b>	<b>144.65</b>	<b>148.99</b>	<b>155.66</b>	<b>147.03</b>	<b>151.10</b>	<b>148.87</b>	<b>148.63</b>	<b>145.27</b>	<b>145.25</b>	<b>142.49</b>	<b>146.12</b>
<b>Indirect</b>	<b>71.17</b>	<b>72.09</b>	<b>72.65</b>	<b>76.25</b>	<b>72.29</b>	<b>72.88</b>	<b>76.33</b>	<b>81.73</b>	<b>74.20</b>	<b>78.03</b>	<b>75.25</b>	<b>75.41</b>	<b>73.34</b>	<b>73.19</b>	<b>71.86</b>	<b>75.62</b>
<b>Total</b>	<b>212.33</b>	<b>215.22</b>	<b>216.56</b>	<b>223.92</b>	<b>215.61</b>	<b>217.53</b>	<b>225.32</b>	<b>237.39</b>	<b>221.23</b>	<b>229.13</b>	<b>224.13</b>	<b>224.03</b>	<b>218.62</b>	<b>218.44</b>	<b>214.35</b>	<b>221.74</b>

**Table 5.17: Distribution of employment effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (FTEs)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Agriculture, Forestry & Fishing	2	4	6	9	9	10	11	11	11	10	12	11	11	11
Mining	3	8	14	18	19	21	23	22	23	22	25	23	23	22
Manufacturing	106	222	346	431	453	502	530	530	535	517	560	539	535	524
Electricity, Gas, Water & Waste Services	1	1	2	3	3	3	3	3	3	3	4	3	3	3
Construction	14	35	57	72	75	139	86	87	87	85	187	144	86	86
Wholesale Trade	33	92	147	211	226	256	275	284	282	272	285	277	276	278
Retail Trade	4	10	17	22	23	27	28	28	28	27	31	29	28	28
Accommodation & Food Services	3	7	11	15	16	18	18	18	18	18	20	19	18	18
Transport, Postal & Warehousing	22	47	76	102	107	123	130	130	131	128	141	134	131	129
Information Media and Telecommunications	2	5	8	11	11	13	13	14	14	13	15	14	13	13
Financial & Insurance Services	5	12	19	26	27	32	32	32	32	31	37	34	32	32
Rental, Hiring & Real Estate Services	4	10	17	22	24	28	28	28	28	27	32	30	28	28
Professional, Scientific & Technical Services	7	15	23	29	30	36	35	35	36	34	42	39	35	35
Administrative & Support Services	31	75	121	153	158	175	174	175	175	172	192	183	174	173
Public Administration & Safety	0	1	1	2	2	2	2	2	2	2	3	3	2	2
Education & Training	2	5	7	9	10	11	11	11	11	11	12	12	11	11
Health Care & Social Assistance	0	0	0	0	0	1	1	1	1	1	1	1	1	1
Arts & Recreation Services	3	7	11	14	15	17	17	17	17	17	19	18	17	17
Other Services	1	1	2	2	3	4	3	3	3	3	5	4	3	3
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>97</b>	<b>556</b>	<b>885</b>	<b>1,151</b>	<b>1,210</b>	<b>1,419</b>	<b>1,419</b>	<b>1,431</b>	<b>1,438</b>	<b>1,394</b>	<b>1,622</b>	<b>1,517</b>	<b>1,429</b>	<b>1,414</b>
<b>Indirect</b>	<b>146</b>	<b>335</b>	<b>533</b>	<b>693</b>	<b>729</b>	<b>870</b>	<b>858</b>	<b>865</b>	<b>869</b>	<b>843</b>	<b>1,004</b>	<b>930</b>	<b>864</b>	<b>855</b>
<b>Total</b>	<b>243</b>	<b>891</b>	<b>1,419</b>	<b>1,843</b>	<b>1,939</b>	<b>2,290</b>	<b>2,277</b>	<b>2,296</b>	<b>2,307</b>	<b>2,237</b>	<b>2,626</b>	<b>2,447</b>	<b>2,293</b>	<b>2,268</b>

**Table 5.18: Distribution of employment effects of Alpha Coal Railway operating and ongoing expenditure, 2027-2042 (FTEs)**

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Agriculture, Forestry & Fishing	10	11	11	11	11	11	11	12	11	11	11	11	11	11	11	11
Mining	22	22	23	23	23	22	24	25	23	24	24	23	23	22	22	23
Manufacturing	521	524	533	535	528	529	545	561	541	546	551	541	537	531	526	529
Electricity, Gas, Water & Waste Services	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3
Construction	85	86	86	144	86	86	123	187	88	145	89	103	87	87	85	148
Wholesale Trade	270	278	277	277	276	283	284	289	288	288	291	291	281	285	274	271
Retail Trade	27	28	28	29	28	28	29	32	29	30	29	29	28	28	28	29
Accommodation & Food Services	18	18	18	19	18	18	19	20	19	19	19	19	18	18	18	18
Transport, Postal & Warehousing	128	129	130	134	130	130	135	141	133	137	135	134	131	131	129	133
Information Media and Telecommunications	13	13	13	14	13	14	14	15	14	14	14	14	14	14	13	14
Financial & Insurance Services	31	32	32	34	32	32	34	37	33	35	33	33	32	32	32	34
Rental, Hiring & Real Estate Services	27	28	28	30	28	28	30	32	29	30	29	29	28	28	28	29
Professional, Scientific & Technical Services	35	35	35	39	35	35	38	42	36	39	37	37	36	35	35	38
Administrative & Support Services	172	173	174	182	174	175	181	193	177	185	178	179	175	175	173	181
Public Administration & Safety	2	2	2	3	2	2	3	3	2	3	3	3	2	2	2	3
Education & Training	11	11	11	12	11	11	12	12	11	12	12	11	11	11	11	11
Health Care & Social Assistance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Arts & Recreation Services	17	17	17	18	17	17	18	20	17	18	17	18	17	17	17	18
Other Services	3	3	3	4	3	3	4	5	3	4	3	3	3	3	3	4
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>1,396</b>	<b>1,413</b>	<b>1,426</b>	<b>1,510</b>	<b>1,418</b>	<b>1,429</b>	<b>1,507</b>	<b>1,630</b>	<b>1,456</b>	<b>1,545</b>	<b>1,478</b>	<b>1,483</b>	<b>1,440</b>	<b>1,435</b>	<b>1,410</b>	<b>1,499</b>
<b>Indirect</b>	<b>844</b>	<b>854</b>	<b>862</b>	<b>927</b>	<b>857</b>	<b>863</b>	<b>919</b>	<b>1,009</b>	<b>880</b>	<b>948</b>	<b>894</b>	<b>900</b>	<b>870</b>	<b>867</b>	<b>852</b>	<b>921</b>
<b>Total</b>	<b>2,240</b>	<b>2,267</b>	<b>2,288</b>	<b>2,437</b>	<b>2,275</b>	<b>2,292</b>	<b>2,427</b>	<b>2,639</b>	<b>2,336</b>	<b>2,493</b>	<b>2,372</b>	<b>2,382</b>	<b>2,310</b>	<b>2,302</b>	<b>2,262</b>	<b>2,420</b>

**Table 5.19: Distribution of value added effects of Alpha Coal Railway operating and ongoing expenditure, 2013-2026 (\$M)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Agriculture, Forestry & Fishing	0.13	0.31	0.50	0.66	0.69	0.81	0.82	0.83	0.83	0.81	0.93	0.87	0.82	0.82
Mining	2.68	6.71	10.92	14.64	15.73	17.89	18.97	19.03	19.24	18.40	20.43	19.40	19.18	18.74
Manufacturing	18.77	40.87	63.99	81.53	85.23	94.38	100.23	101.01	101.41	98.68	104.42	101.39	100.84	99.92
Electricity, Gas, Water & Waste Services	0.24	0.53	0.85	1.08	1.15	1.30	1.36	1.34	1.36	1.31	1.49	1.40	1.37	1.32
Construction	0.86	2.10	3.43	4.32	4.48	8.75	5.11	5.15	5.17	5.05	11.94	9.04	5.14	5.10
Wholesale Trade	3.81	10.64	17.01	24.42	26.10	29.55	31.77	32.81	32.64	31.50	32.97	32.02	31.91	32.20
Retail Trade	0.20	0.47	0.75	1.00	1.05	1.23	1.25	1.26	1.27	1.22	1.41	1.32	1.25	1.24
Accommodation & Food Services	0.22	0.51	0.81	1.06	1.12	1.27	1.30	1.32	1.32	1.28	1.41	1.35	1.31	1.30
Transport, Postal & Warehousing	2.62	5.28	8.61	11.67	12.16	14.01	14.89	14.96	15.03	14.67	15.93	15.32	14.98	14.83
Information Media and Telecommunications	0.25	0.62	0.98	1.31	1.38	1.62	1.64	1.66	1.67	1.61	1.84	1.73	1.65	1.64
Financial & Insurance Services	0.99	2.36	3.78	5.00	5.27	6.30	6.23	6.31	6.33	6.13	7.25	6.74	6.27	6.22
Rental, Hiring & Real Estate Services	1.60	3.86	6.32	8.36	8.90	10.46	10.58	10.59	10.70	10.29	12.10	11.25	10.69	10.45
Professional, Scientific & Technical Services	0.55	1.21	1.90	2.42	2.54	3.05	2.93	2.96	2.97	2.88	3.52	3.23	2.95	2.92
Administrative & Support Services	3.23	7.86	12.75	16.11	16.57	18.31	18.13	18.24	18.29	17.95	19.94	19.03	18.20	18.11
Public Administration & Safety	0.03	0.07	0.12	0.15	0.16	0.20	0.19	0.19	0.19	0.19	0.23	0.21	0.19	0.19
Education & Training	0.14	0.31	0.49	0.63	0.66	0.75	0.76	0.76	0.77	0.74	0.84	0.79	0.76	0.75
Health Care & Social Assistance	0.01	0.02	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Arts & Recreation Services	0.25	0.60	0.96	1.24	1.30	1.51	1.50	1.51	1.52	1.47	1.71	1.60	1.50	1.49
Other Services	0.04	0.09	0.15	0.19	0.20	0.28	0.23	0.23	0.23	0.22	0.35	0.29	0.23	0.23
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>16.33</b>	<b>84.41</b>	<b>134.35</b>	<b>175.84</b>	<b>184.74</b>	<b>211.73</b>	<b>217.92</b>	<b>220.23</b>	<b>220.98</b>	<b>214.46</b>	<b>238.76</b>	<b>227.06</b>	<b>219.32</b>	<b>217.54</b>
<b>Indirect</b>	<b>20.30</b>	<b>47.20</b>	<b>75.38</b>	<b>98.63</b>	<b>103.99</b>	<b>121.43</b>	<b>123.05</b>	<b>124.09</b>	<b>124.72</b>	<b>120.74</b>	<b>138.69</b>	<b>130.28</b>	<b>123.96</b>	<b>122.53</b>
<b>Total</b>	<b>36.63</b>	<b>131.62</b>	<b>209.72</b>	<b>274.47</b>	<b>288.72</b>	<b>333.16</b>	<b>340.96</b>	<b>344.32</b>	<b>345.70</b>	<b>335.20</b>	<b>377.45</b>	<b>357.34</b>	<b>343.28</b>	<b>340.06</b>

**Table 5.20: Distribution of value added effects of Alpha Coal Railway operating and ongoing expenditure, 2027-2042 (\$M)**

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Agriculture, Forestry & Fishing	0.80	0.82	0.82	0.87	0.82	0.83	0.87	0.93	0.84	0.89	0.85	0.86	0.83	0.83	0.81	0.86
Mining	18.53	18.72	19.08	19.25	18.90	18.99	19.73	20.53	19.55	19.85	20.01	19.61	19.31	19.09	18.76	18.96
Manufacturing	98.78	99.86	100.64	101.00	100.17	100.84	102.72	104.94	102.53	103.19	103.90	102.90	101.51	101.22	99.64	99.85
Electricity, Gas, Water & Waste Services	1.33	1.32	1.36	1.39	1.34	1.34	1.41	1.49	1.38	1.42	1.42	1.38	1.37	1.34	1.34	1.38
Construction	5.05	5.10	5.13	9.02	5.11	5.14	7.59	11.97	5.22	9.12	5.28	6.26	5.17	5.16	5.09	9.33
Wholesale Trade	31.16	32.16	32.00	32.00	31.94	32.71	32.89	33.46	33.28	33.25	33.64	33.68	32.49	32.93	31.64	31.28
Retail Trade	1.22	1.24	1.25	1.32	1.25	1.26	1.32	1.42	1.28	1.35	1.30	1.31	1.27	1.26	1.24	1.30
Accommodation & Food Services	1.28	1.30	1.31	1.35	1.30	1.32	1.36	1.42	1.34	1.38	1.36	1.35	1.32	1.32	1.29	1.33
Transport, Postal & Warehousing	14.70	14.82	14.94	15.26	14.87	14.94	15.38	15.99	15.17	15.54	15.36	15.28	15.05	14.99	14.81	15.15
Information Media and Telecommunications	1.61	1.64	1.65	1.73	1.64	1.66	1.73	1.85	1.69	1.77	1.71	1.72	1.66	1.67	1.63	1.71
Financial & Insurance Services	6.13	6.22	6.26	6.71	6.23	6.29	6.67	7.30	6.41	6.88	6.51	6.56	6.33	6.32	6.19	6.66
Rental, Hiring & Real Estate Services	10.36	10.44	10.63	11.17	10.54	10.57	11.23	12.14	10.85	11.46	11.09	11.00	10.74	10.62	10.47	11.08
Professional, Scientific & Technical Services	2.89	2.92	2.95	3.22	2.93	2.95	3.17	3.53	3.01	3.29	3.05	3.09	2.97	2.96	2.91	3.21
Administrative & Support Services	17.95	18.10	18.18	18.98	18.13	18.22	18.91	20.01	18.43	19.26	18.60	18.68	18.29	18.27	18.06	18.90
Public Administration & Safety	0.19	0.19	0.19	0.21	0.19	0.19	0.21	0.23	0.20	0.21	0.20	0.20	0.19	0.19	0.19	0.21
Education & Training	0.75	0.75	0.76	0.79	0.76	0.76	0.79	0.84	0.78	0.81	0.79	0.78	0.77	0.76	0.75	0.78
Health Care & Social Assistance	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Arts & Recreation Services	1.47	1.49	1.50	1.59	1.50	1.51	1.59	1.72	1.53	1.63	1.55	1.56	1.52	1.51	1.49	1.58
Other Services	0.22	0.23	0.23	0.29	0.23	0.23	0.27	0.35	0.23	0.30	0.23	0.25	0.23	0.23	0.22	0.30
Ownership of Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Direct</b>	<b>214.46</b>	<b>217.39</b>	<b>218.94</b>	<b>226.22</b>	<b>217.90</b>	<b>219.80</b>	<b>227.89</b>	<b>240.18</b>	<b>223.78</b>	<b>231.67</b>	<b>226.91</b>	<b>226.54</b>	<b>221.09</b>	<b>220.76</b>	<b>216.58</b>	<b>223.91</b>
<b>Indirect</b>	<b>120.94</b>	<b>122.44</b>	<b>123.64</b>	<b>129.69</b>	<b>122.93</b>	<b>123.84</b>	<b>130.04</b>	<b>139.41</b>	<b>126.35</b>	<b>132.86</b>	<b>128.37</b>	<b>128.32</b>	<b>124.89</b>	<b>124.40</b>	<b>122.17</b>	<b>128.54</b>
<b>Total</b>	<b>335.41</b>	<b>339.83</b>	<b>342.58</b>	<b>355.91</b>	<b>340.83</b>	<b>343.64</b>	<b>357.93</b>	<b>379.59</b>	<b>350.13</b>	<b>364.53</b>	<b>355.28</b>	<b>354.86</b>	<b>345.98</b>	<b>345.15</b>	<b>338.74</b>	<b>352.45</b>

## 5.4 Opportunity Cost of the Alpha Coal Project (Railway)

In July 2010, the Department of Infrastructure and Planning declared the proposed railway corridor as an Infrastructure Facility of Significance, reflecting its importance to the region. HPPL is negotiating with landholders regarding mitigation and compensation as appropriate.

Advice from GHD Pty Ltd indicates that approximately 2,790 hectares of land will be sterilised as a result of the Alpha Coal Project (Railway), affecting approximately 40 property owners.

The corridor will run from the Alpha Coal mine to the Abbot Point Coal Export Terminal (approximately 495 km). The corridor will be approximately 60 metres wide. The land sterilised is predominantly used for cattle grazing.

The railway corridor will sever a number of properties, however given that the properties affected are largely grazing properties this severance is unlikely to result in major farm management impacts. The loss of cattle grazing land is unlikely to result in economic losses greater than the capitalisation of the productive value of the land lost. This value is reflected in the willingness to pay of farmers for the land, or the compensation those farmers are willing to accept.



## 6 ECONOMIC DEVELOPMENT STRATEGIES

### 6.1 Strategies for Local Participation

There are a number of Queensland Government policies which seek to encourage local participation in major government funded projects or projects that are recipients of significant Queensland Government contributions. These policies include:

- Queensland Government Building and Construction Contracts Structured Training Policy;
- Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects; and
- Local Industry Policy (Department of Employment, Economic Development and Innovation, 2008).

These policies typically apply to the following groups:

- Queensland Government departments;
- Recipients of building construction grants; and
- Contractors who successfully tender for Queensland Government projects.

While HPPL does not belong to one of the above groups, HPPL will provide opportunities for:

- Structured training;
- Participation in construction and operation by trainees and indigenous workers; and
- Participation in construction and operation by local suppliers and contractors.

#### 6.1.1 Training & Skills Development

HPPL will set the following training targets to achieve employment of apprentices and trainees:

- Encourage contractors to allocate a reasonable percentage of contracted work hours to apprentices and trainees; and
- Encourage and provide opportunities for up-skilling of employees.

#### 6.1.2 Indigenous Employment

HPPL will set the following Indigenous recruitment targets:

- Provided opportunities for employment of people from surrounding indigenous communities; and
- Encourage contractors to allocate a reasonable percentage of contracted hours to employees from surrounding indigenous communities.

#### 6.1.3 Local Industry Participation

HPPL will develop a *Local Industry Participation Plan*. The Local Industry Participation Plan will:

- Provide details of competitive local suppliers that will be invited to tender for contract work associated with the mine construction and operation;

- Provide mechanisms for the provision of project information to local industry in an equitable and timely manner, including in-region project briefings for the procurement of contract services;
- Outline appropriate design and procurement strategies to provide equitable access to local industry; and
- Provide mechanisms for performance measurement, reporting and feedback in relation to local procurement.

## 6.2 Strategies to Mitigate Disruption to Local Economy

The construction of the Alpha Coal (Rail) Project will represent a major stimulus to the regional economy, generating significant demand for labour. The significant demand for labour resulting from the construction of the project would result in a significant tightening of the local labour market. The unemployment rate within the railway corridor and in nearby communities is generally significantly below the state average unemployment rate. Labour force participation rates across the railway corridor are similar to the state average, although labour force participation in some communities is lower than the state average (Barcaldine, Nebo and Bowen) and above the state average in others (Belyando and Jericho). The size of the local labour forces is small relative to those of major provincial cities like Townsville, Mackay and Rockhampton. Hence the capacity for the local economies along the railway corridor to provide sufficient labour to meet the needs of the construction phase of the Alpha Coal (Railway) is limited.

Significant labour market tightening in the local economies would place significant upward pressure on wages, thus creating localised inflation. To reduce the potential for this to arise HPPL propose to establish five project villages along the railway corridor. These villages would be located at:

- Alpha Coal Mine;
- near Gregory Highway;
- near Eaglefield;
- near Collinsville; and
- near Salisbury Plains.

These project villages would accommodate up to approximately 500 to 700 personnel. These personnel will include a range of drive-in-drive-out (DIDO), fly-in-fly-out (FIFO) and bus-in-bus-out (BIBO) workers.

The establishment of project villages will also reduce the extent of impacts on the commercial accommodation sector, within which there is insufficient accommodation stock to house the projected construction workforce.

The operation employment of the Alpha Coal (Rail) Project is estimated to be approximately 225 workers. As such, the operation is unlikely to have material impacts on the local labour or accommodation markets.

## 7 SUMMARY

The Alpha Coal (Rail) Project represents a significant project within a local, state and national context. The project will facilitate the export of up to 60 Mtpa of coal from the Alpha Coal (Mine) Project and other coal mining activities in the Galilee Basin.

The construction phase of the project is likely to result in a major stimulus to the Queensland economy. Project purchases will result in broadly distributed stimuli across various industry sectors. The purchase of materials, locomotives and wagons will result in a major stimulus to the manufacturing sector. The actual construction workforce is to reach approximately:

- 600 workers in 2011;
- 2,500 workers in 2012;
- 1,050 workers in 2013; and
- 120 workers in 2014.

Approximately 225 workers will operate the railway. However, significant flow on employment is anticipated throughout the economy, throughout the construction and operational phases of the project.

The capacity of the local economy to meet the employment demand resulting from the project is limited. As such, HPPL will establish a number of project villages along the railway corridor to accommodate the construction workforce.

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