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Section 22 Economics

22.1 Introduction

The purpose of this section is to present economic impacts and benefits associated with the Alpha Coal Project (Rail) (herein referred to as the Project). An economic impact study was undertaken by Economic Associates Pty Ltd. The full report is presented in Volume 6, Appendix L.

This section provides an assessment of economic values for a local area consisting of Barcaldine Statistical Local Area (SLA), Jericho SLA, Belyando SLA, Nebo SLA and Bowen SLA, being the five SLAs crossed by the Project. Of these, Barcaldine and Jericho SLAs are located in the Galilee Basin while Nebo and Belyando SLAs include part of the Bowen Basin. Barcaldine and Jericho SLAs also form part of the Central West Statistical District (SD) with Belyando SLA, Nebo SLA and Bowen SLA being within the Mackay SD.

Values examined include employment, industry and business activity, value adding and household income.

This section evaluates potential economic impacts and benefits of the project including those arising from:

- construction and capital expenditure impacts; and
- operating and ongoing expenditure impacts.

22.2 Description of Existing Economic Profile

22.2.1 Socio-Economic Characteristics

Baseline demographic profiles have been developed for the local and regional study areas. These are presented in Volume 3, Section 20 of this EIS.

22.2.2 Labour Force and Employment

The labour force in the five SLAs directly affected by the project was estimated to be 17,299 workers in 2009-2010, with 39% on the Bowen SLA and 41% in the Belyando SLA. Annual average growth rates in the labour force since 2001/02 in each of the five SLAs range from 0.6% in Barcaldine SLA to 1.9% in Nebo SLA, below the Queensland average of 3%. From 2008/09 to 2009/10, the labour force in each of the SLAs and in the statistical districts of Central West and Mackay all reduced by 0.1-0.2%, against a Queensland wide growth of 1.7%.

Unemployment rates in Barcaldine, Belyando, Nebo and Jericho SLAs are all well below the Queensland average, ranging from 1.3% to 2.4% in 2009/10, against a Queensland average of 5.8%. The unemployment rate for Bowen SLA is slightly higher than the state average, at 7.6% in 2009/10. This higher unemployment rate may reflect reduced job opportunities in Bowen and Collinsville, but may also reflect a tendency for unemployed people to relocate to coastal areas, or possibly a high proportion of semi-retired or seasonal workers.

Unemployment rates across Queensland have increased in 2008/09 and 2009/10, probably associated with the global financial crisis. Unemployment rates in the study area have also risen over the same period, but at lower rates than for Queensland as a whole.

Labour force participation, being the proportion of the total population over 15 who are either employed or actively seeking employment, is well above the state average for Barcaldine, Belyando, Nebo and Jericho SLAs while Bowen SLA labour force participation rate is slightly below the state average.

Agriculture, forestry and fishing is the dominant sector of employment in Belyando, Bowen, Jericho and Barcaldine SLAs, while mining is the dominant sector of employment in Nebo (refer Table 22-1).

Table 22-1: Employment by industry sector (2006)

	Nebo SLA	Belyando SLA	Bowen SLA	Jericho SLA	Barcaldine SLA	Qld
Agriculture, forestry & fishing	12%	9%	22%	50%	33%	3.4%
Mining	33%	38%	7%	1%	1%	1.9%
Manufacturing	3%	2%	5%	3%	2%	8.9%
Electricity, gas, water & waste services	0.5%	1%	1%	0.0%	1%	1.2%
Construction	7%	6%	7%	4%	6%	10.1%
Wholesale trade	2%	3%	4%	2%	2%	3.3%
Retail trade	5%	8%	11%	5%	7%	12.3%
Accommodation & food services	11%	6%	7%	2%	4%	7.2%
Transport, postal & warehousing	7%	4%	6%	5%	6%	5.5%
Information media & telecommunications	0.0%	0.3%	1%	0.0%	0%	1.7%
Financial & insurance services	0.5%	1%	1%	1%	0%	2.8%
Rental, hiring & real estate services	0.5%	1%	1%	0%	1%	2.6%
Professional, scientific & technical services	1%	2%	2%	1%	2%	6.1%
Administrative & support services	1%	2%	2%	0.0%	0.4%	3.3%
Public administration & safety	4%	3%	4%	10%	12%	6.2%
Education & training	5%	6%	6%	6%	7%	7.7%
Health care & social assistance	2%	5%	8%	7%	9%	9.6%
Arts & recreation services	0.0%	0.3%	0%	0.0%	1%	1.9%
Other services	2%	3%	3%	3%	2%	4.4%
Inadequately described/Not stated	4%	2%	3%	2%	3%	0.0%

22.2.3 Business and Economic Activity

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 (which are also the most populous of the five SLAs). Agriculture, forestry and fishing were the dominant business type in all regions, accounting for 34.6% to 76.9% of all businesses.

Data from 2007 shows that the majority of businesses in the study area are either sole traders (non-employing businesses) or businesses employing less than 20 employees. There were 21 businesses identified in the five 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.

Table 22-2 shows that “agriculture, forestry and fishing” businesses dominate in each of the SLAs. The proportion of mining businesses exceeds the state average in Belyando, Nebo and Bowen SLAs, with no mining businesses reported in Barcaldine and Jericho SLAs in 2007.

Table 22-2: Number of businesses by industry sector, June 2007

	Barcaldine SLA	Jericho SLA	Belyando SLA	Nebo SLA	Bowen SLA	Qld
Agriculture, Forestry and Fishing	51.4%	76.9%	41.8%	58.1%	34.6%	11.6%
Mining	0.0%	0.0%	1.5%	5.4%	0.8%	0.4%
Manufacturing	4.3%	3.1%	5.4%	4.1%	4.1%	5.3%
Electricity, Gas & Water Supply	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Construction	10.0%	3.1%	9.6%	9.5%	10.9%	17.7%
Wholesale Trade	4.3%	1.5%	2.4%	2.7%	2.6%	4.0%
Retail Trade	5.7%	4.6%	8.4%	6.8%	12.4%	11.0%
Accom, Cafes & Restaurants	4.3%	3.1%	3.0%	1.4%	6.2%	2.7%
Transport & Storage	4.3%	4.6%	7.2%	0.0%	5.7%	5.9%
Communications Services	0.0%	1.5%	0.6%	0.0%	0.8%	1.2%
Finance & Insurance	0.0%	0.0%	2.7%	4.1%	3.1%	5.7%
Property & Business Services	8.6%	1.5%	12.8%	5.4%	13.4%	24.3%
Education	0.0%	0.0%	0.3%	0.0%	0.3%	0.8%
Health & Community Services	1.4%	0.0%	1.5%	1.4%	2.6%	4.3%
Cultural & Recreational Services	2.9%	0.0%	1.2%	1.4%	0.8%	2.1%
Personal & Other Services	2.9%	0.0%	1.8%	0.0%	1.8%	3.0%
Total	210	195	1,005	222	1,161	389,775

Source: Australian Bureau of Statistics (2007)

Bowen is identified as being a particularly important area for food crop production. In 2005-06, there were 6,307 ha of land in Bowen SLA used for growing vegetables for human consumption, including:

- French and runner beans: 1,680 ha or 40.4% of Queensland production area;
- tomatoes: 1,433 ha or 52.7% of Queensland production area;

- capsicums and chillies: 897 ha or 43.9% of Queensland production area;
- sweet corn: 733 ha or 21.3% of Queensland production area;
- watermelons: 574 ha or 21.3% of Queensland production area;
- rock and cantaloupe melons: 388 ha or 29.4% of Queensland production area;
- pumpkins: 238 ha or 7.0% of Queensland production area;
- honeydews: 162 ha or 50.8% of Queensland production area;
- eggplant: 128 ha or 40.1% of Queensland production area; and
- cucumbers: 53 ha or 16.3% of Queensland production area (refer Volume 6, Appendix L).

Livestock related production is also important in the region, with key activities as follows:

- in the Central West SD (which includes Jericho and Barcaldine SLAs), 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);
- in Mackay SD (which includes Belyando, Bowen and Nebo SLAs), 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);
- 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);
- 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 \$10.77 million in Barcaldine SLA and \$53.34 million in Jericho SLA;
 - Mackay SD: \$279.38 million or 6.8% of Queensland production by value, including \$91.07 million in Belyando SLA, \$48.82 million in Bowen SLA and \$34.28 million in Nebo SLA; and
 - in all regions slaughtered cattle and calves accounted for the majority of the total value of slaughtered livestock.

The economic impact assessment also identified a range of major projects being undertaken along the Project, within Bowen, Belyando, Jericho, Nebo and Barcaldine SLA. 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.

22.2.4 Tourism and Temporary Accommodation

Data indicates that tourism accommodation is limited in the immediate vicinity of the project. Room occupancy rates were examined for three tourism regions (TRs), Outback, Mackay and Whitsunday, between March 2005 to March 2010. Occupancy rates were as follows for the period examined:

- Mackay TR:
 - occupancy rates for hotels, motels and serviced apartments fluctuated between 58.8% (March quarter 2010) and 83.1% (September quarter 2008); and
 - average occupancy rates for caravan sites was 60.3%.
- Whitsunday TR:
 - occupancy rates for hotel / motel rooms and serviced apartments was 46.4% (March quarter 2010) and 68.8% (September quarter 2008);
 - average occupancy rates for caravan sites was 49.4%;
 - average occupancy rates for holiday flats, units & houses was 61.3%; and
 - average occupancy rate for hostel beds was 62.6%.
- Outback TR:
 - occupancy rates for hotels, motels and serviced apartments fluctuated between 37.7% (March quarter 2005) and 65.7% (September quarter 2008); and
 - average occupancy rates for caravan sites was 36.7%.

Average numbers of vacant rooms or beds per night in each region were as follows:

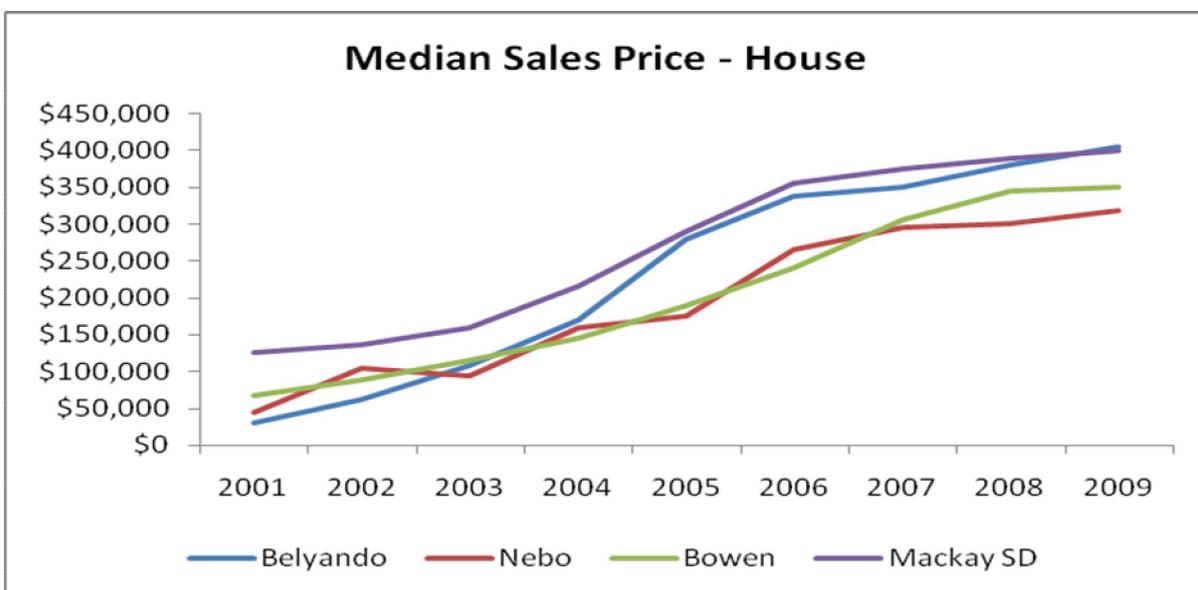
- Mackay TR:
 - 612 vacant hotel / motel rooms and serviced apartments; and
 - 739 vacancies at caravan sites.
- Whitsunday TR:
 - 1264 vacant hotel / motel rooms and serviced apartments;
 - 894 vacancies at caravan sites;
 - 67 vacant holiday flats, units & houses; and
 - 585 vacant hostel beds.
- Outback TR:
 - 960 vacant hotel / motel rooms and serviced apartments; and
 - 1966 vacancies at caravan sites.

22.2.5 Real Estate

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 22-1 shows the median sale price for houses in Mackay SD between 2001 and 2009.

Figure 22-1: Median sale price, Houses, Belyando SLA, Nebo SLA, Bowen SLA, Mackay SD, 2001 to 2009



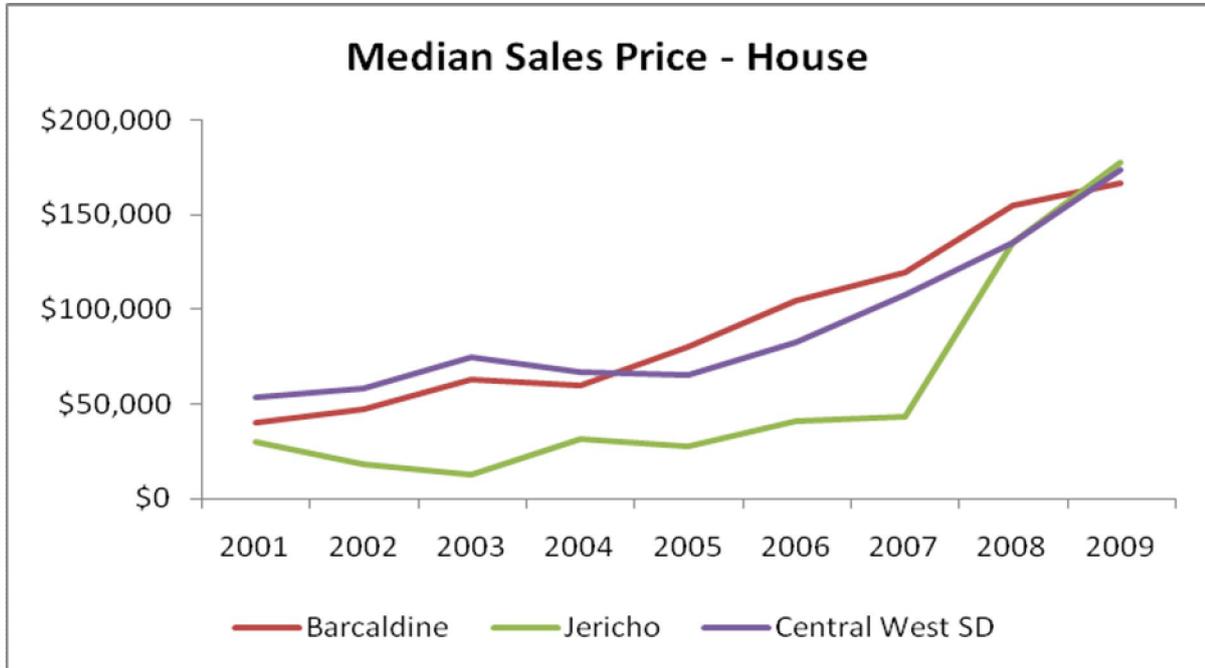
Note 1: The data was collected in June 2010\

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

Source: Property Data Solutions (2010)

House prices remain lower in Barcaldine and Jericho compared to Belyando, Bowen and Nebo. 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. Trends in median house prices in Central West SD and Barcaldine and Jericho SLAs are shown in Figure 22-2.

Figure 22-2: 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)

Units and townhouses form a small proportion of the overall housing stock. 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.

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.

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 median sale price of commercial property in Mackay SD increased from \$275 per m² 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%).

The median sale price for commercial property in Central West SD increased from \$102 per m² in 2001 to \$421 per m² 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.

In contrast to steady price increases in median sale prices for residential and commercial properties, sale prices of industrial properties have fluctuated significantly over the same period, although this may reflect the smaller number of industrial properties changing hands. The median sale price of industrial property in Mackay SD increased from \$63 per m² in 2002 to \$303 per m² 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.

The median sale price of industrial property fluctuated from year to year between 2001 and 2009 in the Central West SD, peaking in 2008 at \$67 per m² and a low of \$1 per m² in 2001. Due to insufficient data for Barcaldine SLA and Jericho SLA, a meaningful comparison could not be made.

22.3 Economic Assessment

22.3.1 Approach

Economic impact assessment allows the effects of project related expenditure during construction and operation on the overall economy. The assessment can be carried out to examine impacts on household income, employment and general economic activity. Economic impacts are often described as direct and indirect. Direct impacts relate to the initial effect of project related expenditure, for example direct employment on the project and purchase of goods and services by the Project. However, as the economy consists of a range of complex interactions, indirect or induced effects must also be considered. For example:

- businesses contracted to provide goods and services for the project may themselves require additional employees and equipment to meet demands. This leads these businesses to add staff, and to purchase new equipment, services or other items which then provides business to other businesses; and
- increased household income, or increased security of income, can lead to household spending more money on purchases and services, thus stimulating other economic sectors such as retail, manufacturing, tourism, property and financial areas. This can lead to increased employment in these sectors which in turn leads to further economic activity.

The net result can be quite considerable indirect employment and economic growth well beyond that directly associated with the Project. These effects can be estimated using data on the Australian and Queensland economy which describes the multiplier effects as follows:

- 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.

Type 1 and Type 2 multipliers are calculated for impact measures as follows:

- output (or consumption);
- household income;
- employment full-time equivalent (FTEs); and
- value added.

Multipliers are incorporated into input-output tables which are used to which describe inter-industry transactions for a given region. National input-output tables for 2005-06¹ 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. These tables were used for this assessment. The input-output tables include up to 109 industry sectors identified in the input-output tables for each of the four impact measures.

The extent of the total impact for each of these measures 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.

The economic assessment is carried out for both the construction stage, in which capital investments are undertaken, and the operation phase, in which ongoing purchases are made to support operations.

Monetary values are in Australian dollars unless otherwise specified. Overseas expenditure is not included in the input-output analysis as this has no effect on the Australian economy.

22.3.2 Construction and Capital Impacts

22.3.2.1 Construction Costs

Total construction expenditure is estimated at \$2.8 billion, with an additional \$US157 for purchase of locomotives overseas. Expenditure within Australia for construction and capital items is broken down by year as follows:

- 2010 \$3.7 million
- 2011 \$616 million
- 2012 \$935 million
- 2013 \$854 million
- 2014 \$133 million
- 2015 \$92 million
- 2016 \$58 million
- 2017 \$59 million

¹ ABS (2009) Australian National Accounts: Input-Output Tables Catalogue No. 5209.0.55.001

- 2018 \$58 million
- 2019 \$5 million.

These amounts represent direct expenditure within Australia. Approximately 80% of expenditure will occur within Queensland, with the remaining occurring across Australia. A detailed breakdown of these costs is provided in Section 5.2 of Volume 6, Appendix L.

22.3.2.2 Output or Consumption Effects

Output or consumption effects refer to the direct goods and services purchased by the Project, and the flow on goods and services purchased in other sectors relating to the direct effects.

Overall, the economic outcome of the Project relating to output and consumption effects is estimated at \$5.99 billion in Queensland and \$7.26 billion across Australia (refer Table 22-3).

Table 22-3: Construction output/consumption effects (\$M)

	Queensland	Rest of Australia	Australia
Direct	2295.11	503.05	2798.15
Indirect	3699.53	762.44	4461.94
Total	5994.63	1265.47	7260.10
Direct	2295.11	503.05	2798.15
Indirect	3699.53	762.44	4461.94
Total	5994.63	1265.47	7260.10

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

- in 2011, total output (or consumption) impacts of construction and capital works associated with the 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 Project are captured by Queensland;
- in 2012, total output (or consumption) impacts of construction and capital works associated with the 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 Project are captured interstate, with the majority attributed to the manufacturing sector (\$116.21 million); and
- in 2013, total output (or consumption) impacts of construction and capital works associated with the 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 Project are captured interstate, with the majority attributed to the manufacturing sector (\$216.04 million).

The output (or consumption) effects of the construction and capital works associated with the Alpha Coal Project (Rail) are further detailed in Section 5.2 of Volume 6, Appendix L.

22.3.2.3 Household Income Effects

Household income effects relate to direct and indirect impacts of the project on household income. Overall, the economic outcome of the Project relating to household income effects is estimated at \$1.3 billion in Queensland and \$1.6 billion across Australia (refer Table 22-4).

Table 22-4: Construction household income Effects (\$M)

	Queensland	Rest of Australia	Australia
Direct	353.68	143.42	497.09
Indirect	964.79	179.62	1144.41
Total	1318.46	323.04	1641.49

Again, 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 as follows.

- in 2011, total household income impacts of construction and capital works associated with the 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 Project are captured by Queensland;
- in 2012, total household income impacts of construction and capital works associated with the 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 Project are captured interstate, with the majority attributed to the manufacturing sector (\$30.35 million); and
- in 2013, total household income impacts of construction and capital works associated with the 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 Project are captured interstate, with the majority attributed to the manufacturing sector (\$56.42 million).

The household income effects of the construction and capital works associated with the Project are further detailed in Section 5.2 of Volume 6, Appendix L.

22.3.2.4 Employment Effects

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

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

Overall, the economic outcome of the Project relating to employment effects is estimated at 20,700 full time equivalent jobs within Queensland and 23,900 full time equivalent jobs across Australia (refer Table 22-5).

Table 22-5: Construction employment effects (FTEs)

	Queensland	Rest of Australia	Australia
Direct	5752	725	6482
Indirect	14915	2481	17396
Total	20672	3206	23877

The majority of employment related to the construction and capital expenditure of the Project 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 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 as follows:

- in 2011, total employment impacts of construction and capital works associated with the 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 Project in 2011 are anticipated to be within Queensland;
- in 2012, total employment impacts of construction and capital works associated with the 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 Project in 2012 are anticipated to be interstate, with the majority within the manufacturing sector (243 full time equivalent positions); and
- in 2013, total employment impacts of construction and capital works associated with the 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 Project 2013 are anticipated to be interstate, with the majority within the manufacturing sector (452 full time equivalent positions).

The employment effects of the construction and capital works associated with the Project are further detailed in Section 5.2 of Volume 6, Appendix L.

22.3.2.5 Value Added Effects

Value added effects refer to the difference between the sale price of a product or service and the cost of materials and outside services to produce it; in crude terms, the profit made on transactions.

Overall, the economic outcome of the Project relating to value added effects is estimated at \$2.3 billion in Queensland and \$2.8 billion across Australia (refer Table 22-6).

Table 22-6: Construction value added effects (\$M)

	Queensland	Rest of Australia	Australia
Direct	671.01	190.41	861.4
Indirect	1638.76	292.98	1931.72
Total	2309.75	483.38	2793.13

The value added impacts of construction and capital works associated with the 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 as follows:

- in 2011, total value added impacts of construction and capital works associated with the 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 Project are attributed to Queensland;
- in 2012, total value added impacts of construction and capital works associated with the 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); and
- in 2013, total value added impacts of construction and capital works associated with the 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).

The value added effects of the construction and capital works associated with the Project are further detailed in Section 5.2 of Volume 6, Appendix L.

22.3.3 Operating and 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. Operating costs increase rapidly from commencement of operation in 2013 when annual operating costs are estimated at \$34 million, to costs of \$196 million in 2018, after construction works are completed. Operating costs peak at \$221 million in 2023 and between 2024 and 2042, Project operating costs are anticipated to range between \$196 million and \$223 million per annum.

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 Project is likely to result in major stimulus to the manufacturing sector of Queensland. Ongoing and operating expenses are anticipated to occur entirely within Queensland.

Further detail on operating costs is provided in Section 5.3 of Volume 6, Appendix L.

Table 22-7: Economic impacts of ongoing and operating expenditure of the Alpha Coal Project (Rail)

	Total (2013 – 2042)	Average Annual	Peak (2023)
Output (\$M)			
Direct	13021	434	515
Indirect	7352	245	293
Total	20373	679	808
Household Income (\$M)			
Direct	4043	135	155
Indirect	2061	69	81
Total	6105	203	236
Employment (FTEs)			
Direct	40457	1349	1,622
Indirect	24661	822	1,004
Total	65118	2171	2,626

	Total (2013 – 2042)	Average Annual	Peak (2023)
Value Added (\$M)			
Direct	6158	205	239
Indirect	3504	117	139
Total	9661	322	377

22.3.4 Opportunity Costs

A formal opportunity cost analysis of the lost agricultural income potentially arising from construction of a rail line across agricultural properties has not been undertaken on the basis that the overall proportion of impact compared to total productive area available is low.

HPPL is negotiating Landholder Compensation Packages with landholders to address economic impacts on properties.

22.3.5 Labour Shortages

The construction of the Project will represent a major stimulus to the regional economy, generating significant demand for labour. While increased employment is generally seen as a positive outcome, unemployment levels in the Project area are generally very low and the size of the labour force is small. Increased demand for labour is likely to result in a significant tightening of the labour market, and possibly increased local labour costs.

The construction workforce is intended to be recruited from across Australia and be employed on a fly in/fly out (FIFO) basis, where workers return to their homes when not on roster. This is a common arrangement for large construction projects, particularly outside major population centres. Thus, while there will be some opportunities for locals to gain employment on the project, the project will not be dependent on the local labour market.

During operation, the workforce will be split into two components:

- a conventional workforce that will operate the railway system and undertake maintenance activities on rolling stock, signalling and other facilities. These activities will occur at the marshalling yards and maintenance yards at Abbot Point and it is anticipated that this component of the workforce would reside in Bowen and surrounds on a full time basis; and
- a rostered workforce, operating on a fly in/fly out basis that will undertake track maintenance and be accommodated at one of three permanent construction camps (Alpha, Eaglefield and Salisbury Plains) when on roster. This workforce may be recruited from across Australia, although it is more likely that these workers will be permanently based in major regional centres in Queensland such as Townsville and Mackay.

These arrangements will overcome the small labour market in the area, and should minimise local effects of labour market tightening.

22.4 Equitable Distribution of Benefits

While the overall economic and employment benefits of the Project are significant and positive, it is important to ensure that these are evenly distributed across Queensland and Australian society. In

particular, communities which bear impacts of projects will also be able to participate in the economic and employment benefits.

The Queensland Government has the following policies in place which seek to encourage local participation in major government funded projects or projects that are recipients of significant Queensland Government contributions:

- 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).

While these policies only formally apply to typically apply to the Queensland Government departments; recipients of Queensland Government building construction grants and contractors who successfully tender for Queensland Government projects, HPPL intends to draw on these policies in relation to:

- structured training opportunities;
- participation in construction and operation by trainees and indigenous workers; and
- participation in construction and operation by local suppliers and contractors.

HPPL will set targets for participation of apprentices, trainees and Indigenous people in employment opportunities, and will also encourage contractors to adopt these targets.

Although a strong need for additional jobs in the Project area has not been identified, HPPL will work with local governments and chambers of commerce to maximise opportunities for local businesses through development of 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;
- provide mechanisms for performance measurement, reporting and feedback in relation to local procurement;
- 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.

22.5 Conclusions

The economic impact assessment has identified that the Project represents a significant project within a state and national context and that benefits may also be realised for local businesses. Adverse impacts may relate to increased competition for labour within Barcaldine and Isaac Regional Councils as well as reduced agricultural productivity and associated income for farmers. Both of these impacts can be managed through strategies adopted by the Proponent, namely a largely fly in/fly out workforce and Landholder Compensation Packages.

The project will facilitate the export of up to 60 Mtpa of coal from the Alpha Coal Project (Mine) and other mining developments within the Galilee Basin.

The construction phase of the project is likely to result in a major stimulus to the Queensland economy, with actual construction expenditure within Australia estimated at 2.8 billion. This expenditure is expected to result in direct and indirect economic stimulation in Australia of \$11.7 billion, with 82% of this retained in Queensland. Direct and indirect employment is estimated as 20,600 FTE jobs in Queensland and 23,900 across Australia.

Annual average expenditure during the operations phase is estimated at \$190 million, with operations extending from 2013 to 2042 and all expenditure taking place in Queensland. This expenditure will result in:

- annual average direct and indirect economic stimulation of \$1.2 billion
- total direct and indirect economic stimulation of \$38 billion
- employment generation of an average of 2,171 FTE jobs over the life of the project.