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# Alpha Coal Project (Coal Mine) Economic Impact Study

## Final Report

September 2010



**ECONOMIC ASSOCIATES**

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## Final Report

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## ABBREVIATIONS

ABS	Australian Bureau of Statistics
A\$	Australian Dollars
EIS	Environmental Impact Statement
€	Euro
US\$	United States Dollars
HCPL	Hancock Coal Pty Ltd
Mtpa	Millions of tonnes per annum
MDL	Mining Development Licence
NTA	Native Title Agreement
RC	Regional Council
SD	Statistical Division
SLA	Statistical Local Area
TR	Tourism Region

# EXECUTIVE SUMMARY

## Introduction

Hancock Prospecting Pty Ltd (HPPL) proposes to establish a 30 million tonne per annum (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 Abbott Point and a coal export terminal.

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

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

This report provides an assessment of regional economic values and economic impact assessment.

## Economic Overview

The local and regional environments analysed were the Barcaldine Regional Council<sup>1</sup> (RC) and Central West statistical division (SD).

The socio-economic profile (ABS, 2006) highlights that the component statistical local areas (SLAs) of Barcaldine Regional Council are more mature relative to Queensland with a high incidence of lone person households. The region is characterised by a high incidence of home ownership but lower average household incomes. Agriculture, forestry & fishing are the dominant industry of employment in Aramac SLA and Jericho SLA but the incidence of employment in this sector (ABS, 2006) has declined since the 2001 Census.

The population of Barcaldine RC is projected to remain relatively stable until 2031, with Jericho SLA to record the highest growth rate of 0.1% per annum.

Over the past nine years, the size of the labour force has remained relatively steady throughout Barcaldine RC, with the labour force participation rate averaging 77.8%. The unemployment rate in all SLAs within Barcaldine RC has been consistently lower than the Queensland average (DEWR, various years).

There were a total of 567 businesses identified in Barcaldine RC as of June 2007, with Barcaldine SLA having the most with 210 businesses (ABS, 2007). Agriculture, forestry & fishing were the dominant business type across all SLAs within Barcaldine RC accounting for between 51.4% and 76.9% of total businesses. There were fifteen businesses identified within Barcaldine RC that employed over twenty persons with twelve agriculture, forestry & fishing businesses and three accommodation, cafes & restaurant businesses.

Livestock was the major agricultural activity in Barcaldine RC with the total value of livestock slaughtered estimated at \$97.01 million in 2005-06 (ABS, 2007). The majority of livestock slaughtered were cattle and calves accounting for \$93.40 million or 96.3% of total livestock

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<sup>1</sup> Detailed analysis based on statistical local areas were also conducted for Barcaldine Regional Council.



slaughtered. Horticulture and cropping were not identified as significant agricultural industries in Barcaldine RC.

Analysis contained in section 3 of this report suggests that the local and regional economic environments of the Barcaldine RC and Central West SD has improved considerably over the last five to ten years, with labour force participation increasing and unemployment rates decreasing. However livestock production, the region's most significant form of agricultural production, has experienced significant decline.

Agricultural production has traditionally been a foundation of the Barcaldine local economy. The region has faced challenging climatic conditions over the past five to ten years including drought and extreme flooding. In the future, agriculture will face growing competition for labour from mining. Furthermore, as the local and regional economies grow agriculture will face competition from the services sector.

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

The room occupancy rate of hotels, motels & serviced apartments with five or more rooms in Barcaldine RC fluctuated between 30.1% (March quarter 2005) and 57.2% (September quarter 2009) (ABS, various years). Over the past five years room occupancy rates for hotels, motels & serviced apartments in Barcaldine RC were generally lower than in the Outback tourism region (TR) and Queensland.

Data for the site occupancy rate of caravans in Barcaldine RC was unavailable due to the limited number of caravan parks. In the Outback TR, the site occupancy rate of caravans was highest in the September quarter 2009 at 59.2%. The average site occupancy rate over the past five years was 37.1% in the Outback TR, significantly below the Queensland average of 56.7%.

In Barcaldine RC, the average number of vacant rooms / beds per night ranged between:

- 39-67 vacant hotel / motel rooms and serviced apartments; and
- 33-77 vacancies at caravan sites.

The volume of house sales in Barcaldine RC accounted for approximately 25% to 32% of sales in Central West SD. The median price of house sales in Barcaldine RC was consistently below Central West SD.

There were four to eight commercial property sales per annum in Barcaldine RC with the median sales price fluctuating between \$64 per square metre and \$180 per square metre.

There was limited data in regards to unit & townhouse and industrial property sales in Barcaldine RC so it was difficult to determine the trend in prices over the past nine years.

### **Economic Assessment**

The purpose of economic impact assessment 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.

Table E.1 below describes the various impact measures used in economic impact assessment.

**Table E.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>2</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) Community Economic Analysis, Department of Primary Industries: Brisbane, Qld

### Construction and Capital Impacts

Construction and capital works associated with the Alpha Coal Project (Mine) will take place over a 33 year period finalising in 2045. HPPL will make significant foreign exchange Project purchases, equivalent to US\$204.51 million and €14.57 million. Australian currency Project purchases will be equivalent to A\$425.83 million. Foreign exchange Project purchases represent imports, which have no impact on the domestic economy. Only Project purchases made in Australia will impact the domestic economy. The analysis assumes that all domestic Project purchases are made within Queensland.

A detailed breakdown of Project purchases by country of origin, type of purchase and year of purchase is provided in Appendix A. A summary of total construction and capital costs across the life of the Project are summarised in Table E.2 below.

<sup>2</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.

**Table E.2: Total construction and capital costs for Alpha Coal Project (Mine) (\$M)**

	US\$ Component	Euro Component	A\$ Component
Drill & Blast	68.97	0.00	47.06
Draglines	375.88	0.00	1,284.47
Prestrip Fleets	1,080.72	102.15	456.77
Coal Mining Fleets	311.51	43.56	108.27
Ancillary Fleets	141.07	0.00	252.72
Processing Plant	66.98	0.00	769.90
Access Road	0.00	0.00	209.88
Dams and Diversions	0.00	0.00	293.74
Infrastructure & Power	0.00	0.00	294.89
Camp	0.00	0.00	328.56
Other Infrastructure	0.00	0.00	212.04
<b>Total Capital Costs</b>	<b>2,045.13</b>	<b>145.71</b>	<b>4,258.31</b>

#### *Output or Consumption Effects*

The output (or consumption) impacts of construction and capital works associated with the Alpha Coal Project (Mine) are outlined in Tables E.3 and E.4. The most significant output (or consumption) impacts associated with these works are anticipated to arise in 2014 and 2015. These two years account for approximately 31% of output (or consumption) effects resulting from the Project.

In 2014, total output (or consumption) impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$1,352.98 million, comprising \$512.39 million in direct output (or consumption) effects and \$840.59 million in indirect output (or consumption) effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$347.10 million and \$594.47 million respectively. The significant stimulus to the manufacturing sector is generated by major purchases of vehicle fleets required as part of the construction phase of the Project. The significant construction related impacts are generated by the significant expenditure on roads and other infrastructure items related to the Project.

In 2015, total output (or consumption) impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$1,832.74 million, comprising \$729.94 million in direct output (or consumption) effects and \$1,102.79 million in indirect output (or consumption) effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$710.58 million and \$569.95 million respectively.

#### *Household Income Effects*

The household income impacts of construction and capital works associated with the Alpha Coal Project (Mine) are outlined in Tables E.3 and E.4. The most significant household income impacts associated with these works are anticipated to arise in 2014 and 2015. These two years account for approximately 26% of household income effects resulting from the Project.

In 2014, total household income impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$294.30 million, comprising \$213.52 million in direct household income effects and \$80.78 million in indirect household income effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$113.56 million and \$60.76 million respectively.

In 2015, total household income impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$466.93 million, comprising \$285.43 million in direct household income effects and \$181.50 million in indirect household income effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$250.15 million and \$58.47 million respectively.

#### *Employment Effects*

The majority of construction employment is anticipated to arise during 2015, where on-site employment levels are anticipated to peak at approximately 1,350 workers in late 2015 and early 2016.

The total employment impacts of construction and capital expenditure associated with the Alpha Coal Project (Mine) are outlined in Tables E.3 and E.4. The most significant employment impacts associated with these works are anticipated to arise in 2014 and 2015. These two years account for approximately 30% of employment effects resulting from the Project.

In 2014, total employment impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately 5,100 full time equivalent positions, comprising direct employment effects of 3,448 full time equivalent positions and indirect employment effects of 1,652 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 1,327 full time equivalent positions and 2,191 full time equivalent positions respectively.

In 2015, total employment impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately 7,230 full time equivalent positions, comprising direct employment effects of 4,370 full time equivalent positions and indirect employment effects of 2,860 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 3,011 full time equivalent positions and 2,115 full time equivalent positions respectively.

#### *Value Added Effects*

The value added impacts of construction and capital works associated with the Alpha Coal Project (Mine) are outlined in Tables E.3 and E.4. The most significant value added impacts associated with these works are anticipated to arise in 2014 and 2015. These two years account for approximately 28% of value added effects resulting from the Project.

In 2014, total value added impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$512.45 million, comprising \$369.58 million in direct value added effects and \$142.87 million in indirect value added effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$147.35 million and \$148.08 million respectively.

In 2015, total value added impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$749.54 million, comprising \$487.35 million in direct value added effects and \$262.19 million in indirect value added effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$316.34 million and \$142.46 million respectively.

**Table E.3: Economic impact of construction and capital expenditure of the Alpha Coal Project (Mine), 2013-2029**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
<b>Output (\$M)</b>																	
Direct	263.11	512.39	729.94	237.87	279.18	121.92	226.66	36.71	52.69	8.22	188.79	190.02	6.41	12.79	176.22	186.35	10.21
Indirect	457.24	840.59	1,102.79	316.28	363.30	166.71	286.93	45.20	90.46	10.15	237.49	238.34	7.21	15.21	220.53	233.38	10.85
<b>Total</b>	<b>720.35</b>	<b>1,352.98</b>	<b>1,832.74</b>	<b>554.15</b>	<b>642.49</b>	<b>288.62</b>	<b>513.59</b>	<b>81.91</b>	<b>143.15</b>	<b>18.36</b>	<b>426.28</b>	<b>428.35</b>	<b>13.63</b>	<b>28.00</b>	<b>396.75</b>	<b>419.73</b>	<b>21.06</b>
<b>Household Income (\$M)</b>																	
Direct	114.66	213.52	285.43	82.59	97.45	44.02	77.40	11.94	22.73	2.50	64.13	63.79	1.87	3.90	59.79	62.79	2.86
Indirect	23.10	80.78	181.50	79.82	109.20	41.21	93.00	14.03	5.36	2.40	79.76	77.79	1.90	4.09	74.75	77.32	2.96
<b>Total</b>	<b>137.76</b>	<b>294.30</b>	<b>466.93</b>	<b>162.42</b>	<b>206.65</b>	<b>85.23</b>	<b>170.40</b>	<b>25.97</b>	<b>28.09</b>	<b>4.90</b>	<b>143.89</b>	<b>141.57</b>	<b>3.76</b>	<b>7.98</b>	<b>134.54</b>	<b>140.11</b>	<b>5.82</b>
<b>Employment (FTEs)</b>																	
Direct	1,917	3,448	4,370	1,165	1,337	630	1,041	159	378	34	854	850	25	53	795	836	38
Indirect	707	1,652	2,860	1,067	1,394	558	1,162	176	147	32	988	969	24	52	924	960	37
<b>Total</b>	<b>2,624</b>	<b>5,100</b>	<b>7,230</b>	<b>2,231</b>	<b>2,731</b>	<b>1,187</b>	<b>2,203</b>	<b>335</b>	<b>525</b>	<b>66</b>	<b>1,842</b>	<b>1,819</b>	<b>49</b>	<b>105</b>	<b>1,719</b>	<b>1,796</b>	<b>75</b>
<b>Value Added (\$M)</b>																	
Direct	200.41	369.58	487.35	144.76	162.36	74.46	128.58	20.94	39.70	5.10	106.95	108.64	3.37	7.28	98.69	105.60	4.93
Indirect	57.35	142.87	262.19	106.37	136.05	54.01	115.00	18.35	12.14	3.56	96.67	95.83	3.35	6.23	91.36	95.08	5.73
<b>Total</b>	<b>257.76</b>	<b>512.45</b>	<b>749.54</b>	<b>251.13</b>	<b>298.41</b>	<b>128.47</b>	<b>243.59</b>	<b>39.29</b>	<b>51.84</b>	<b>8.66</b>	<b>203.62</b>	<b>204.48</b>	<b>6.72</b>	<b>13.51</b>	<b>190.05</b>	<b>200.69</b>	<b>10.66</b>

**Table E.4: Economic impact of construction and capital expenditure of the Alpha Coal Project (Mine), 2030-2045**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
<b>Output (\$M)</b>																
Direct	181.61	62.40	212.11	27.05	39.10	197.11	44.86	19.30	14.56	29.30	52.31	76.01	16.26	8.85	21.74	0.21
Indirect	227.71	102.62	265.28	33.96	49.79	248.46	54.56	22.45	17.40	35.41	64.42	119.09	20.45	11.25	25.98	0.36
<b>Total</b>	<b>409.33</b>	<b>165.02</b>	<b>477.39</b>	<b>61.01</b>	<b>88.90</b>	<b>445.58</b>	<b>99.42</b>	<b>41.75</b>	<b>31.96</b>	<b>64.72</b>	<b>116.73</b>	<b>195.10</b>	<b>36.71</b>	<b>20.11</b>	<b>47.72</b>	<b>0.57</b>
<b>Household Income (\$M)</b>																
Direct	61.37	25.90	71.00	9.10	13.05	67.32	14.31	5.76	4.54	9.53	16.27	30.43	5.52	3.05	6.99	0.09
Indirect	75.89	8.94	86.46	11.06	14.40	83.48	16.36	6.00	5.00	11.43	17.13	14.63	6.78	3.73	8.32	0.02
<b>Total</b>	<b>137.25</b>	<b>34.84</b>	<b>157.45</b>	<b>20.16</b>	<b>27.46</b>	<b>150.79</b>	<b>30.66</b>	<b>11.76</b>	<b>9.54</b>	<b>20.95</b>	<b>33.40</b>	<b>45.06</b>	<b>12.30</b>	<b>6.78</b>	<b>15.31</b>	<b>0.11</b>
<b>Employment (FTEs)</b>																
Direct	817	420	946	122	178	898	192	77	61	127	220	480	74	41	93	2
Indirect	941	193	1,076	138	184	1,035	206	77	63	142	222	262	84	46	103	1
<b>Total</b>	<b>1,758</b>	<b>613</b>	<b>2,023</b>	<b>259</b>	<b>362</b>	<b>1,933</b>	<b>397</b>	<b>154</b>	<b>124</b>	<b>269</b>	<b>441</b>	<b>742</b>	<b>158</b>	<b>87</b>	<b>196</b>	<b>2</b>
<b>Value Added (\$M)</b>																
Direct	102.80	45.41	120.90	15.43	23.11	111.15	25.46	10.71	8.15	15.95	31.57	52.62	9.18	5.03	11.67	0.16
Indirect	92.89	16.79	107.25	13.67	18.59	101.37	22.37	9.62	7.30	15.40	23.92	24.22	8.33	4.51	11.55	0.05
<b>Total</b>	<b>195.69</b>	<b>62.20</b>	<b>228.15</b>	<b>29.10</b>	<b>41.70</b>	<b>212.52</b>	<b>47.83</b>	<b>20.34</b>	<b>15.44</b>	<b>31.35</b>	<b>55.49</b>	<b>76.84</b>	<b>17.51</b>	<b>9.54</b>	<b>23.21</b>	<b>0.20</b>

## Ongoing and Operating Impacts

Operating costs are anticipated to commence in 2013 and run through to 2045. HPPL is anticipated to expend approximately \$30,602.52 million in operating expenses throughout the life of the Project. The most significant cost items in terms of total operating costs include:

- Operating labour costs: 18% of total operating costs;
- Fuel and lubricant costs: 19% of total operating costs;
- Equipment maintenance consumables: 13% of total operating costs.

The composition of Project operating costs indicates that the operation of the Alpha Coal Project (Mine) is likely to result in major stimulus to the mining and manufacturing sectors of Queensland.

These costs are anticipated to gradually increase throughout the life of the Project from less than \$20 million per annum in the first two years of operation to:

- \$289.47 million in 2016;
- \$895.26 million in 2021;
- \$953.90 million in 2026;
- \$1,034.25 million in 2031;
- \$1,122.08 million in 2036;
- \$1,227.04 million in 2041; and
- \$1,476.93 million in 2045

### *Output or Consumption Impacts*

The output (or consumption) impacts of operating expenditure associated with the Alpha Coal Project (Mine) are outlined in Tables E.5 and E.6. As stated previously, the economic impacts resulting from operating expenditure increase from generally minimal impacts in the first two years of operation to significant impacts by 2019 after which impacts continue to increase until the final year of operation (2045).

In the first year of operation (2013), total output (or consumption) impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to be approximately \$28.55 million, comprising \$12.34 million in direct output (or consumption) effects and \$16.21 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 \$19.42 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 Project (Mine) are estimated to increase to approximately \$2,289.31 million, comprising \$953.90 million in direct output (or consumption) effects and \$1,335.40 million in indirect output (or consumption) effects.

In the final year of operation (2045), total output (or consumption) impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to



approximately \$3,509.62 million, comprising \$1,476.93 million in direct output (or consumption) effects and \$2,032.69 million in indirect output (or consumption) effects.

#### *Household Income Effects*

The household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are outlined in Tables E.5 and E.6. In the first year of operation (2013), total household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to be approximately \$7.67 million, comprising \$4.20 million in direct household income effects and \$3.47 million in indirect household income effects.

By 2029, total household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$431.46 million, comprising \$275.47 million in direct household income effects and \$155.98 million in indirect household income effects.

In the final year of operation (2045), total household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$645.53 million, comprising \$414.52 million in direct household income effects and \$231.01 million in indirect household income effects.

#### *Employment Effects*

Operational employment levels are expected to increase from approximately 340 workers in 2013 to approximately:

- 2,060 workers in 2016;
- 1,960 workers in 2021;
- 2,010 workers in 2026;
- 2,070 workers in 2031;
- 2,250 workers in 2036; and
- 2,380 workers in 2042.

The total employment impacts of operating expenditure associated with the Alpha Coal Project (Mine) are detailed in outlined in Tables E.5 and E.6.

In the first year of operation (2013), operating expenditure associated with the Alpha Coal Project (Mine) is estimated to support 92 full time equivalent positions, including 54 direct full time equivalent positions and 38 indirect full time equivalent positions.

By 2026, operating expenditure associated with the Alpha Coal Project (Mine) is estimated to support 5,487 full time equivalent positions, including 3,597 direct full time equivalent positions and 1,890 indirect full time equivalent positions.

In the final year of operation (2045), operating expenditure associated with the Alpha Coal Project (Mine) is estimated to support 8,338 full time equivalent positions, including 5,479 direct full time equivalent positions and 2,859 indirect full time equivalent positions.

#### *Value Added Effects*

The value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are outlined in Tables E.5 and E.6. As stated previously, the economic impacts resulting from

operating expenditure increase from generally minimal impacts in the first two years of operation to significant impacts by 2019 after which impacts continue to increase until the final year of operation (2045).

In the first year of operation (2013), total value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to be approximately \$12.85 million, comprising \$7.34 million in direct value added effects and \$5.52 million in indirect value added 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 \$8.08 million.

By 2026, total value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$1,149.02 million, comprising \$734.28 million in direct value added effects and \$414.77 million in indirect value added effects.

In the final year of operation (2045), total value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$1,770.63 million, comprising \$1,115.79 million in direct value added effects and \$654.84 million in indirect value added effects.



**Table E.5: Economic impact of ongoing and operating expenditure of the Alpha Coal Project (Mine), 2013-2029**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
<b>Output (\$M)</b>																		
Direct	12.34	17.67	94.98	289.47	511.69	681.55	818.85	902.56	895.26	894.56	967.99	976.60	964.88	953.90	1,018.54	951.87	971.51	
Indirect	16.21	20.26	114.30	391.26	729.13	968.84	1,174.83	1,296.70	1,259.06	1,262.65	1,385.49	1,383.59	1,352.57	1,335.40	1,431.60	1,322.11	1,345.35	
Total	28.55	37.93	209.28	680.73	1,240.82	1,650.39	1,993.68	2,199.26	2,154.32	2,157.21	2,353.48	2,360.19	2,317.45	2,289.31	2,450.14	2,273.98	2,316.85	
<b>Household Income (\$M)</b>																		
Direct	4.20	5.21	24.76	79.88	146.01	195.06	235.72	260.41	255.55	256.01	279.00	279.85	275.54	271.81	291.02	270.68	275.47	
Indirect	3.47	4.06	14.15	43.39	78.71	107.50	128.88	142.80	142.83	143.02	154.34	155.75	156.00	152.62	163.71	153.65	155.98	
Total	7.67	9.27	38.91	123.27	224.72	302.56	364.59	403.21	398.37	399.03	433.34	435.60	431.54	424.43	454.73	424.33	431.46	
<b>Employment (FTEs)</b>																		
Direct	54	67	323	1,063	1,931	2,578	3,113	3,438	3,378	3,384	3,686	3,700	3,647	3,597	3,852	3,588	3,650	
Indirect	38	45	170	536	979	1,334	1,602	1,775	1,771	1,773	1,916	1,932	1,931	1,890	2,028	1,900	1,929	
Total	92	112	493	1,599	2,910	3,912	4,715	5,213	5,148	5,157	5,602	5,632	5,578	5,487	5,880	5,487	5,579	
<b>Value Added (\$M)</b>																		
Direct	7.34	9.22	60.28	213.83	404.69	536.29	652.10	719.61	693.88	696.28	767.34	763.96	743.28	734.26	787.70	723.94	736.57	
Indirect	5.52	8.95	48.29	127.78	219.45	293.91	350.70	386.31	389.79	387.88	414.71	421.49	418.92	414.77	440.87	414.33	424.57	
Total	12.85	18.17	108.57	341.62	624.13	830.20	1,002.80	1,105.92	1,083.67	1,084.16	1,182.05	1,185.45	1,162.21	1,149.02	1,228.57	1,138.26	1,161.14	

**Table E.6: Economic impact of ongoing and operating expenditure of the Alpha Coal Project (Mine), 2030-2045**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
<b>Output (\$M)</b>																
Direct	984.92	1,034.25	1,026.68	1,076.23	1,066.97	1,109.28	1,122.08	1,155.11	1,127.46	1,138.55	1,182.23	1,227.04	1,278.43	1,286.39	1,385.77	1,476.93
Indirect	1,372.61	1,403.27	1,402.36	1,464.32	1,451.32	1,511.40	1,538.34	1,570.41	1,539.64	1,567.47	1,621.93	1,699.98	1,791.12	1,820.08	1,954.48	2,032.69
Total	2,357.53	2,437.52	2,429.03	2,540.55	2,518.29	2,620.68	2,660.42	2,725.52	2,667.10	2,706.02	2,804.16	2,927.02	3,069.55	3,106.47	3,340.25	3,509.62
<b>Household Income (\$M)</b>																
Direct	280.80	289.18	288.60	301.45	298.84	311.83	316.44	323.65	317.01	321.56	332.37	346.86	363.64	368.10	394.72	414.52
Indirect	159.26	163.65	163.31	170.59	168.82	178.62	179.99	183.49	179.67	181.33	185.98	192.91	201.10	202.59	215.72	231.01
Total	440.06	452.83	451.91	472.04	467.66	490.45	496.42	507.14	496.68	502.88	518.36	539.77	564.74	570.70	610.44	645.53
<b>Employment (FTEs)</b>																
Direct	3,722	3,833	3,826	3,996	3,962	4,137	4,196	4,290	4,203	4,261	4,401	4,590	4,809	4,867	5,214	5,479
Indirect	1,969	2,021	2,018	2,108	2,086	2,205	2,223	2,266	2,219	2,241	2,299	2,387	2,491	2,511	2,675	2,859
Total	5,691	5,854	5,843	6,104	6,049	6,342	6,419	6,556	6,422	6,501	6,701	6,977	7,300	7,378	7,889	8,338
<b>Value Added (\$M)</b>																
Direct	751.96	764.89	765.13	798.70	791.48	823.10	839.50	855.89	839.70	857.02	887.39	932.79	986.11	1,004.64	1,079.90	1,115.79
Indirect	426.96	460.08	453.29	477.22	472.67	489.83	493.15	512.20	497.46	499.42	521.46	537.24	555.07	553.67	600.70	654.84
Total	1,178.92	1,224.97	1,218.42	1,275.92	1,264.14	1,312.92	1,332.64	1,368.09	1,337.15	1,356.44	1,408.85	1,470.03	1,541.18	1,558.31	1,680.60	1,770.63

## Value of Coal Exports

The Alpha Coal Project (Mine) will produce approximately 856 million tonnes (Mt) of coal for export from Queensland throughout the life of the mine. The value of these exports to the Queensland economy will be approximately \$83.6 billion. Once fully operational the coal mine will produce approximately 30 Mtpa of coal exports, equating to a value of \$2.9 billion per annum.

## Opportunity Cost of the Project

Based on advice from the proponent the the mine site has an optimal stocking capacity of 13,430 head of cattle. In 2005-06, the cattle herd within Barcaldine Regional Council was approximately 86,700 head of cattle, which produced an annual slaughter value of approximately \$93.4 million, representing a slaughter value of approximately \$1,100 per head of cattle. Hence the annual slaughter value that the mine site could support is approximately the Project site could generate approximately \$14.8 million in annual agricultural output.

## Summary of Impacts

The Alpha Coal Project (Mine) represents a major potential stimulus to the regional, state and national economies. The Project will generate significant demand for labour in both development and operational phases.

A significant quantum of on-site employment is anticipated to be satisfied by fly-in-fly-out or drive-in-drive-out workers. However, a small proportion of the workforce is likely to choose to reside within the region. The demand for labour would not be exclusively limited to mine construction or operation. Mine-related expenditure will stimulate significant labour demand throughout Queensland.

The Project is likely to place pressure on local and regional labour and accommodation (both housing and commercial accommodation) markets. The local area and the region have experienced rising property costs associated with growing interest in the development of resource Projects within the Galilee Basin.

The Project will generate significant positive economic impacts in the form of additional exports, increased employment and demand for local and regional production. However, the Project will place growing pressure on local and regional social infrastructure and could result in localised inflation particularly in relation to wages, housing and accommodation.

Based on advice from the proponent the the mine site has an optimal stocking capacity of 13,430 head of cattle. In 2005-06, the cattle herd within Barcaldine Regional Council was approximately 86,700 head of cattle, which produced an annual slaughter value of approximately \$93.4 million, representing a slaughter value of approximately \$1,100 per head of cattle. Hence the annual slaughter value that the mine site could support is approximately the Project site could generate approximately \$14.8 million in annual agricultural output.

To encourage the development of local and regional industry capability, HPPL will develop an employment and procurement policy guided by industry standards and relevant government guidelines that will reflect:

- Maximising local employment (including work readiness if appropriate);

- Promoting Indigenous employment; and
- Employment of apprentices and trainees (including work readiness if appropriate).

Potential shortages in hard and soft social infrastructure that may result from increased local and regional population (facilitated by increased labour demand) are addressed in the social impact assessment.

# 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 Abbott Point and a coal export terminal.

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

Economic Associates Pty Ltd (Economic Associates) was commissioned by URS Australia Pty Ltd (URS) to prepare and economic impact assessment of the proposed Alpha Coal Project (Mine).

This report provides an assessment of the following regional economic values.

- 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 local and regional residential, commercial and industrial property markets.
- 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 Regional Council (RC) (local level);
- Central West Statistical Division (SD) (regional)<sup>3</sup>; and
- Queensland (state).

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

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

Cumulative economic impacts of the Alpha Coal Project and other major resource Projects are also assessed.

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<sup>3</sup> The assessment of commercial accommodation uses the Outback Tourism Region (TR) as the regional boundary.

## 1.1 Disclaimer

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

## 2 SOCIO-ECONOMIC PROFILE

A socio-economic profile of Aramac statistical local area (SLA), Barcaldine SLA, Jericho SLA and Barcaldine RC as at the 1996, 2001 and 2006 Census of Population and Housing, benchmarked against Central West SD and Queensland is provided in Table 2.1. The following key points can be drawn from this profile.

- In 2006, there were an estimated 3,475 persons living in Barcaldine RC including 748 persons in Aramac SLA (21.5% of Barcaldine RC population), 1,811 persons living in Barcaldine SLA (52.1% of Barcaldine RC population) and 916 persons living in Jericho SLA (26.4% of Barcaldine RC population).
- Between 1996 and 2001, there was a decline in the Barcaldine RC population driven by Aramac SLA and Barcaldine SLA between 1996 and 2001 and by Jericho SLA between 2001 and 2006.
- Barcaldine RC had a relatively mature population with a higher proportion of persons aged 55 years and over than Queensland. The average age of residents in 2006 was above Queensland but marginally below the Central West SD average.
- Within Barcaldine RC, the average age of residents was similar in all regions with Barcaldine SLA recording the highest proportion of children and residents aged 65 years and over.
- Barcaldine RC is characterised by a lower proportion of couple families with children and single parent family households and a higher proportion of lone person households relative to Queensland. Between 1996 and 2006, there was a significant decrease in the proportion of couple families with children households within Barcaldine RC and its component SLAs, particularly in Jericho SLA (down 13.4% points).
- Traditionally the proportion of households fully owning their home has been significantly higher in Barcaldine RC and its component SLAs than in Queensland. In Aramac SLA, almost half of all households fully owned their home in 2006, compared with approximately 30% in Queensland. The incidence of households with a mortgage in Barcaldine RC and its component SLAs was significantly lower than Queensland.
- The proportion of households renting in Barcaldine RC was marginally below Central West SD and Queensland. Average weekly rents were significantly lower in Barcaldine RC than in Queensland and lowest in Aramac SLA (\$49 per week).
- Households within Barcaldine RC generally earn a lower income than the state average with the average weekly household income below \$1,000. Within Barcaldine RC, the average weekly household income was lowest in Aramac SLA.
- Barcaldine RC is characterised by a high proportion of full time employment and a low unemployment rate relative to Queensland. Within Barcaldine RC, Aramac SLA recorded the lowest unemployment rate, decreasing by 6.7% points between 1996 and 2006, while Jericho SLA recorded the highest labour force participation rate in 2006.
- The proportion of persons with a post-school qualification in Barcaldine RC increased between 1996 and 2006 but remained below Central West SD and Queensland. Within Barcaldine RC, Jericho SLA recorded a similar proportion of persons with a certificate to Queensland.

- Barcaldine RC and its component SLAs are characterised by persons employed as managers and labourers. The incidence of managers and labourers was higher in Aramac SLA and Jericho SLA than in Barcaldine SLA. Barcaldine SLA recorded a significantly higher proportion of persons employed in lower white collar professions than Aramac SLA, Jericho SLA and Central West SD.
- Agriculture, forestry & fishing are the most significant industry in terms of employment in Aramac SLA and Jericho SLA accounting for almost half of total employment. Aramac SLA and Jericho SLA also recorded a higher proportion of persons employed in public administration & safety than Queensland. In 2006, the most significant industries of employment in Barcaldine SLA were agriculture, forestry & fishing, public administration & safety and retail trade.

**Table 2.1: Socio-Economic Profile, Barcaldine RC, Central West SD and Queensland, 1996 to 2006**

	Aramac SLA			Barcaldine SLA			Jericho SLA			Barcaldine RC			Central West SD			Queensland		
	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006
Population	792	722	748	1,841	1,763	1,811	964	1,024	916	3,597	3,509	3,475	14,258	14,556	13,371	3,319,186	3,585,639	3,973,960
Ave. Annual Population Growth (%)	-	-1.8%	0.7%	-	-0.9%	0.5%	-	1.2%	-2.2%	-	-0.5%	-0.2%	-	0.4%	-1.7%	-	1.6%	2.1%
<b>Age Distribution</b>																		
0-14 years	23.1%	22.2%	21.4%	23.1%	23.7%	22.1%	24.0%	23.9%	20.3%	23.4%	23.5%	21.5%	23.0%	21.6%	19.4%	21.9%	21.3%	20.4%
15-24 years	10.5%	10.2%	8.2%	12.2%	10.9%	11.9%	10.6%	10.4%	9.0%	11.4%	10.6%	10.3%	12.6%	12.6%	11.1%	14.8%	13.8%	13.6%
25-34 years	14.8%	14.3%	12.7%	15.8%	14.1%	9.7%	18.9%	17.3%	12.1%	16.4%	15.1%	11.0%	16.0%	14.3%	11.6%	15.2%	14.2%	13.3%
35-44 years	12.2%	16.1%	14.6%	14.3%	13.9%	13.5%	14.4%	14.1%	16.3%	13.9%	14.4%	14.4%	14.2%	14.5%	13.5%	15.0%	14.9%	14.6%
45-54 years	15.0%	13.0%	14.4%	11.3%	11.5%	12.2%	12.3%	12.3%	14.4%	12.4%	12.0%	13.3%	12.0%	13.1%	13.6%	12.7%	13.7%	13.7%
55-64 years	12.2%	12.6%	15.2%	9.9%	11.9%	12.6%	10.4%	10.6%	15.6%	10.5%	11.7%	14.0%	10.0%	11.4%	14.6%	8.4%	9.7%	11.4%
65+ years	12.1%	11.6%	13.5%	13.4%	14.0%	18.0%	9.4%	11.3%	12.3%	12.0%	12.7%	15.5%	12.3%	12.5%	16.2%	12.0%	12.4%	13.0%
Average age (years)	37.1	37.2	39.1	36.0	37.0	39.4	34.4	35.5	39.1	35.9	36.6	39.2	35.6	36.8	40.1	35.5	36.6	37.6
<b>Household Type (% of dwellings)</b>																		
Couple families with children	37.5%	33.7%	28.3%	35.7%	30.0%	25.2%	42.0%	38.3%	28.6%	37.8%	33.0%	26.8%	35.2%	29.8%	25.3%	33.7%	30.7%	29.4%
Couple families without children	27.6%	28.5%	22.8%	21.9%	22.3%	23.2%	24.2%	25.3%	26.7%	23.9%	24.4%	24.1%	21.3%	22.7%	23.0%	25.0%	25.3%	26.0%
Single parent family	4.9%	5.2%	7.4%	6.6%	6.7%	8.2%	4.2%	4.2%	5.3%	5.6%	5.7%	7.2%	6.2%	6.5%	7.3%	9.9%	10.8%	10.5%
Lone person households	24.3%	24.0%	29.3%	24.8%	22.2%	23.4%	23.4%	20.0%	27.8%	24.3%	22.0%	25.9%	22.7%	22.2%	23.3%	20.6%	21.8%	21.0%
Average household size	2.7	2.5	2.4	2.9	2.6	2.5	2.7	2.9	2.4	2.8	2.6	2.5	2.9	2.7	2.5	2.8	2.6	2.6
<b>Household Finances</b>																		
% of households fully owning home	56.1%	59.6%	49.0%	46.9%	46.4%	44.0%	50.4%	53.8%	47.1%	50.0%	51.2%	45.9%	46.6%	46.0%	42.9%	38.7%	36.6%	30.4%
% of households purchasing home	12.2%	5.6%	13.3%	16.3%	14.3%	20.3%	11.2%	9.5%	16.2%	14.0%	11.1%	17.6%	12.1%	12.0%	17.2%	29.0%	25.8%	31.4%
% of households renting	25.7%	26.5%	28.2%	29.0%	29.8%	27.7%	31.1%	28.7%	27.9%	28.8%	28.8%	27.9%	33.3%	32.8%	30.9%	31.8%	31.6%	30.0%
Average weekly household income	-	\$856	\$871	-	\$864	\$981	-	\$785	\$976	-	\$841	\$956	-	\$883	\$1,007	-	\$905	\$1,202
Average weekly family income	\$739	\$1,165	\$1,331	\$795	\$1,092	\$1,335	\$663	\$1,072	\$1,306	\$744	\$1,102	\$1,326	\$784	\$1,179	\$1,354	\$918	\$1,175	\$1,499
Average monthly housing loan repayment	\$885	\$1,105	\$953	\$643	\$575	\$917	\$549	\$566	\$1,327	\$660	\$647	\$1,003	\$709	\$788	\$946	\$870	\$977	\$1,475
Average weekly rent payment	\$45	\$45	\$49	\$62	\$68	\$88	\$46	\$50	\$69	\$54	\$58	\$74	\$66	\$74	\$91	\$130	\$154	\$218
<b>Labour Market</b>																		
Full-time employment (% labour force)	71.3%	76.8%	74.7%	69.8%	68.1%	65.4%	84.4%	74.6%	76.3%	74.0%	72.0%	70.7%	65.6%	62.4%	67.0%	61.4%	58.9%	61.8%
Part-time employment (% labour force)	16.3%	12.6%	14.8%	19.9%	22.7%	25.8%	12.7%	14.3%	16.7%	17.1%	17.8%	20.6%	20.9%	23.1%	22.7%	24.1%	26.3%	27.3%
Total employment (% labour force)	90.7%	96.1%	97.4%	95.5%	96.2%	95.5%	97.7%	96.5%	97.3%	95.0%	96.3%	96.5%	92.1%	92.6%	96.5%	90.3%	91.7%	95.2%
Unemployment rate (% labour force)	9.3%	3.9%	2.6%	4.5%	3.8%	4.5%	2.3%	3.5%	2.7%	5.0%	3.7%	3.5%	7.9%	7.4%	3.5%	9.7%	8.3%	4.8%
Participation rate (% of population > 15 years)	76.6%	78.2%	71.1%	71.0%	72.2%	70.3%	72.6%	77.3%	78.3%	72.7%	75.0%	72.7%	71.5%	70.2%	70.7%	70.7%	70.5%	71.3%
<b>Qualifications</b>																		
% of persons with a post-school qualification	17.1%	19.0%	23.0%	22.2%	24.0%	28.8%	14.5%	18.7%	26.4%	19.0%	21.4%	26.9%	21.1%	25.3%	31.3%	27.6%	32.3%	37.5%
% of persons with Bachelor or higher	4.3%	5.5%	6.3%	6.4%	8.3%	7.7%	3.4%	6.0%	5.1%	5.2%	7.0%	6.7%	5.7%	7.4%	8.5%	8.6%	10.8%	13.1%
% of persons with Diploma	4.3%	3.2%	4.8%	5.0%	4.5%	5.5%	4.1%	3.5%	3.7%	4.6%	3.9%	4.8%	4.9%	4.6%	5.8%	5.4%	5.5%	6.6%
% of persons with Certificate	8.5%	10.3%	11.9%	10.7%	11.2%	15.6%	7.0%	9.2%	17.7%	9.2%	10.5%	15.4%	10.4%	13.3%	17.1%	13.6%	16.0%	17.8%
<b>Occupation</b>																		
Upper White Collar Managers	43.6%	39.7%	35.7%	21.0%	20.4%	20.3%	41.8%	39.6%	36.7%	32.0%	30.7%	28.8%	27.7%	26.0%	25.1%	13.3%	12.9%	12.4%



	Aramac SLA			Barcaldine SLA			Jericho SLA			Barcaldine RC			Central West SD			Queensland		
	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006	1996	2001	2006
Professionals	4.8%	4.7%	6.3%	12.8%	14.6%	12.9%	5.8%	7.1%	7.0%	9.0%	10.0%	9.6%	9.9%	10.1%	10.7%	15.3%	16.4%	17.2%
<i>Subtotal</i>	48.4%	44.4%	42.0%	33.7%	35.0%	33.2%	47.6%	46.7%	43.8%	41.0%	40.7%	38.4%	37.6%	36.0%	35.7%	28.6%	29.3%	29.6%
Lower White Collar																		
Community & Personal Service Workers	7.2%	6.0%	6.3%	8.2%	7.9%	9.9%	3.9%	5.2%	6.4%	6.8%	6.6%	8.0%	6.8%	6.9%	8.6%	8.1%	8.9%	9.1%
Clerical and Admin Workers	5.6%	3.5%	5.2%	12.9%	9.8%	11.8%	5.2%	5.2%	5.4%	9.1%	6.9%	8.4%	9.0%	8.5%	9.2%	15.3%	15.0%	14.8%
Sales Workers	0.8%	2.0%	1.6%	6.1%	6.2%	6.1%	3.5%	2.7%	3.8%	4.1%	4.2%	4.4%	4.6%	4.6%	5.2%	10.2%	10.7%	10.3%
<i>Subtotal</i>	13.6%	11.5%	13.2%	27.2%	23.8%	27.8%	12.6%	13.1%	15.7%	20.0%	17.7%	20.8%	20.4%	20.1%	23.1%	33.6%	34.7%	34.2%
Upper Blue Collar																		
Technicians & Trades Workers	10.6%	11.7%	9.9%	16.1%	16.2%	15.7%	7.8%	6.8%	9.6%	12.5%	12.3%	12.5%	13.6%	14.1%	13.2%	15.6%	14.7%	15.3%
<i>Subtotal</i>	10.6%	11.7%	9.9%	16.1%	16.2%	15.7%	7.8%	6.8%	9.6%	12.5%	12.3%	12.5%	13.6%	14.1%	13.2%	15.6%	14.7%	15.3%
Lower Blue Collar																		
Machinery Operators & Drivers	6.1%	8.7%	11.5%	7.3%	7.1%	4.5%	8.7%	7.9%	9.0%	7.4%	7.7%	7.5%	8.5%	8.1%	7.4%	8.3%	7.8%	7.2%
Labourers	17.6%	20.0%	22.0%	13.9%	17.4%	17.6%	21.6%	23.2%	20.7%	16.9%	19.7%	19.5%	17.6%	19.7%	18.6%	11.4%	11.5%	11.9%
<i>Subtotal</i>	23.7%	28.7%	33.5%	21.2%	24.5%	22.1%	30.3%	31.1%	29.7%	24.3%	27.5%	27.0%	26.1%	27.8%	26.0%	19.7%	19.3%	19.1%
<b>Employment by Industry (% of employees)</b>																		
Agriculture, forestry & fishing	53.3%	50.2%	45.9%	15.8%	18.1%	15.0%	45.8%	52.4%	47.8%	32.9%	36.0%	32.0%	31.4%	33.1%	28.3%	5.2%	4.9%	3.4%
Mining	0.8%	0.0%	0.0%	0.6%	0.4%	0.5%	0.6%	0.0%	2.0%	0.7%	0.2%	0.9%	0.9%	0.8%	0.9%	1.6%	1.2%	1.7%
Manufacturing	0.8%	3.2%	1.6%	1.7%	2.4%	2.6%	1.9%	2.3%	2.4%	1.6%	2.6%	2.3%	2.2%	3.3%	3.3%	10.1%	10.5%	9.9%
Electricity, gas, water & waste services	0.8%	0.0%	0.0%	3.1%	2.5%	2.4%	0.6%	0.6%	0.0%	1.9%	1.3%	1.1%	0.8%	0.9%	0.9%	0.9%	1.0%	1.0%
Construction	2.6%	7.7%	8.8%	8.9%	13.7%	7.5%	3.2%	4.5%	3.8%	5.8%	9.5%	6.7%	6.7%	7.4%	5.2%	7.0%	6.9%	9.0%
Wholesale trade	0.8%	0.7%	1.6%	3.5%	2.5%	2.4%	4.5%	2.5%	2.4%	3.2%	2.1%	2.2%	3.4%	3.0%	2.7%	5.3%	4.9%	3.9%
Retail trade	3.4%	3.0%	3.3%	8.0%	9.2%	10.2%	3.5%	4.7%	5.8%	5.6%	6.4%	7.3%	6.7%	7.4%	8.0%	10.6%	11.5%	11.6%
Accommodation & food services	1.8%	1.7%	1.6%	6.9%	6.2%	7.1%	3.7%	2.1%	2.6%	4.8%	3.9%	4.5%	5.9%	5.3%	5.4%	7.2%	7.4%	7.0%
Transport, postal & warehousing	3.7%	3.5%	4.7%	7.6%	5.7%	7.1%	9.3%	7.6%	5.0%	7.2%	5.7%	5.9%	5.4%	4.8%	4.3%	5.1%	5.2%	5.1%
Information media & telecommunications	0.0%	0.0%	0.0%	1.1%	0.8%	0.4%	0.9%	0.0%	1.2%	0.8%	0.4%	0.6%	1.1%	0.9%	0.8%	2.1%	1.9%	1.4%
Financial & insurance services	0.0%	0.7%	0.0%	1.6%	0.4%	0.0%	0.6%	0.6%	0.6%	1.0%	0.5%	0.2%	1.5%	0.9%	1.0%	3.0%	2.8%	2.9%
Rental, hiring & real estate services	0.0%	0.0%	1.1%	0.6%	1.4%	0.5%	0.6%	0.0%	0.6%	0.5%	0.6%	0.7%	0.6%	0.7%	0.7%	2.0%	2.0%	2.1%
Professional, scientific & technical services	0.8%	0.0%	0.8%	3.6%	3.3%	3.9%	1.9%	0.6%	0.0%	2.5%	1.7%	2.0%	2.3%	1.7%	2.0%	5.5%	5.4%	5.6%
Administrative & support services	2.1%	0.7%	0.0%	0.9%	2.0%	1.4%	0.0%	0.6%	0.0%	0.9%	1.3%	0.7%	1.3%	1.8%	1.2%	2.7%	3.2%	3.0%
Public administration & safety	12.8%	8.2%	12.9%	13.1%	6.8%	12.6%	8.4%	6.4%	8.2%	11.7%	7.0%	11.3%	9.7%	7.7%	12.5%	6.3%	6.2%	6.7%
Education & training	5.5%	5.0%	4.1%	8.0%	8.5%	9.3%	5.6%	4.7%	5.8%	6.7%	6.5%	7.1%	7.5%	7.0%	7.3%	7.5%	8.0%	7.6%

Source: Australian Bureau of Statistics (2007a)

## 2.1 Population Projections

The population of Barcaldine RC is projected to increase from 3,504 persons in 2010 to 3,529 persons in 2016 before decreasing to 3,435 persons in 2031. Within Barcaldine RC, Jericho SLA is anticipated to record the highest rate of population growth in the 2010 to 2031 period, increasing from 982 persons in 2010 to 1,011 persons in 2031 or by 0.1% per annum.

The working age population (persons aged 15 to 64) in Barcaldine RC is anticipated to increase from 2,311 persons in 2010 to 2,377 persons in 2021 before decreasing to 2,249 persons in 2031.

The rate of both total population growth and working population growth in Barcaldine RC and its component SLAs are anticipated to be below rates for Central West SD and Queensland.

Table 2.2 shows the population projections for the total and working age populations in Barcaldine RC, Central West SD and Queensland.

**Table 2.2: Population Projections, Barcaldine RC, Central West SD and Queensland, 2010 to 2031**

	2010	2011	2016	2021	2026	2031	2010-31 Average Annual Growth
<b><u>Total Population</u></b>							
Aramac SLA	796	802	803	786	753	715	-0.5%
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%
Barcaldine RC	3,504	3,515	3,529	3,516	3,483	3,435	-0.1%
Central West SD	12,330	12,279	12,570	11,814	13,142	13,580	0.5%
Queensland	4,468,101	4,567,713	5,040,325	5,478,715	5,884,439	6,273,885	1.6%
<b><u>15-64 Population</u></b>							
Aramac SLA	469	470	472	465	448	430	-0.4%
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%
Barcaldine RC	2,311	2,327	2,370	2,377	2,327	2,249	-0.1%
Central West SD	7669	7725	7990	8079	8204	8408	0.4%
Queensland	3,013,486	3,072,544	3,326,612	3,540,104	7,474,162	3,889,397	1.2%

Source: PIFU Population Projections (2008) and Economic Associates estimates

## 2.2 Summary

The socio-economic profile highlights that the component SLAs of Barcaldine Regional Council are more mature relative to Queensland with a high incidence of lone person households. The region is characterised by a high incidence of home ownership but lower average household incomes. Agriculture, forestry & fishing are the dominant industry of employment in Aramac SLA and Jericho SLA, but the incidence of employment in this sector has declined since the 2001 Census.

The population of Barcaldine Regional Council is projected to remain relatively stable until 2031, with Jericho SLA to record the highest growth rate of 0.1% per annum.

## 3 EMPLOYMENT AND ENTERPRISE ACTIVITY WITHIN THE BARCALDINE REGIONAL ECONOMY

### 3.1 Workforce Size

The size of the labour force in Barcaldine RC increased from 2,005 persons in 2010 to 2,067 person in 2031, peaking in 2006-07 at 2,274 persons. The labour force in Barcaldine SLA is estimated to account for approximately half of the regional council labour force peaking at 1,054 persons in 2006-07. In Aramac SLA and Jericho SLA the labour force size peaked in 2006-07 at 517 persons and 704 persons respectively.

A summary of the labour force size in Barcaldine RC between 2001-02 and 2009-10 is presented in Table 3.1.

**Table 3.1: Labour Force, Barcaldine RC, Central West SD and Queensland, 2001-02 to 2009-10**

	Aramac SLA	Barcaldine SLA	Jericho SLA	Barcaldine RC	Central West SD	Queensland
2001-02	503	936	567	2,005	7,722	1,875,400
2002-03	461	949	609	2,019	8,086	1,922,297
2003-04	472	962	642	2,075	8,311	1,967,824
2004-05	500	1,019	680	2,198	8,805	2,048,774
2005-06	513	1,047	699	2,259	9,046	2,109,754
2006-07	517	1,054	704	2,274	9,083	2,196,407
2007-08	460	995	651	2,105	8,061	2,263,618
2008-09	446	986	640	2,072	7,858	2,329,919
2009-10	445	983	639	2,067	7,841	2,370,300
<b>Average Annual Change, 2001-02 to 2009-10</b>	<b>-1.5%</b>	<b>0.6%</b>	<b>1.5%</b>	<b>0.4%</b>	<b>0.2%</b>	<b>3.0%</b>
<b>Average Annual Change, 2008-09 to 2009-10</b>	<b>-0.1%</b>	<b>-0.2%</b>	<b>-0.2%</b>	<b>-0.2%</b>	<b>-0.2%</b>	<b>1.7%</b>

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)

### 3.2 Unemployment Rate

The unemployment rate in Barcaldine RC decreased from 2.5% in 2001-02 to 1.5% in 2006-07 before increasing to 3.0% in 2009-10. The unemployment rate in Barcaldine RC was consistently below the rate in Central West SD and Queensland, with the exception of 2005-06 when it was marginally above Central West SD. Within Barcaldine RC, the unemployment rate was lowest in 2006-07 in Aramac SLA (0.7%) and Barcaldine SLA (1.6%) and 2007-08 in Jericho SLA (1.4%). In 2009-10, the unemployment rate was higher in Aramac SLA (4.5%) than in Barcaldine SLA (2.8%), Jericho SLA (2.1%) and Central West SD (3.4%).

The unemployment rates in Barcaldine RC between 2001-02 and 2009-10 are summarised in Table 3.2.

**Table 3.2: Unemployment Rate, Barcaldine RC, Central West SD and Queensland, 2001-02 to 2009-10**

	Aramac SLA	Barcaldine SLA	Jericho SLA	Barcaldine RC	Central West SD	Queensland
2001-02	1.6%	2.6%	3.1%	2.5%	3.2%	7.9%
2002-03	2.9%	2.3%	2.8%	2.6%	3.3%	7.1%
2003-04	3.1%	2.5%	1.6%	2.3%	2.9%	6.2%
2004-05	1.6%	1.8%	2.6%	2.0%	2.1%	4.9%
2005-06	1.4%	1.8%	2.0%	1.8%	1.7%	5.0%
2006-07	0.7%	1.6%	2.1%	1.5%	1.6%	4.0%
2007-08	2.6%	1.7%	1.4%	1.8%	2.1%	3.7%
2008-09	3.9%	2.3%	1.7%	2.4%	2.8%	4.4%
2009-10	4.5%	2.8%	2.1%	3.0%	3.4%	5.8%
<b>Average Annual Change, 2001-02 to 2009-10</b>	<b>0.4%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>-0.3%</b>
<b>Average Annual Change, 2008-09 to 2009-10</b>	<b>0.6%</b>	<b>0.6%</b>	<b>0.5%</b>	<b>0.5%</b>	<b>0.7%</b>	<b>1.3%</b>

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 77.8% in Barcaldine RC, above the Queensland average (65.1%) but below Central West SD (82.3%). Within Barcaldine RC, the average labour force participation rate was 80.0% in Aramac SLA, 75.1% in Barcaldine SLA and 80.8% in Jericho SLA. The labour force participation rate was highest in 2004-05 in Aramac SLA (87.6%) and 2006-07 in Barcaldine SLA (80.3%) and Jericho SLA (91.8%).

The labour force participation rate in the Barcaldine RC and its component SLAs between 2001-02 and 2009-10 is summarised in Table 3.3.

**Table 3.3: Labour Force Participation Rate, Barcaldine RC, Central West SD and Queensland, 2001-02 to 2009-10**

	Aramac SLA	Barcaldine SLA	Jericho SLA	Barcaldine RC	Central West SD	Queensland
2001-02	84.9%	70.4%	67.4%	72.6%	73.3%	64.1%
2002-03	78.9%	72.6%	73.7%	74.3%	77.7%	63.9%
2003-04	83.2%	74.0%	75.4%	76.4%	80.2%	63.8%
2004-05	87.6%	78.1%	78.6%	80.2%	84.7%	64.9%
2005-06	86.1%	78.8%	90.7%	83.8%	91.6%	64.8%
2006-07	84.3%	80.3%	91.8%	84.5%	92.5%	65.8%
2007-08	74.8%	75.9%	85.0%	78.2%	82.3%	66.0%
2008-09	70.6%	73.5%	82.3%	75.3%	79.3%	66.5%
2009-10	69.5%	72.6%	81.9%	74.5%	79.0%	66.0%
<b>Average</b>	<b>80.0%</b>	<b>75.1%</b>	<b>80.8%</b>	<b>77.8%</b>	<b>82.3%</b>	<b>65.1%</b>

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

#### Aramac SLA

Within Aramac SLA there were an estimated 162 businesses as at June 2007 comprising of 66 employing businesses and 96 businesses operating as sole traders. In June 2007, the most significant industry in Aramac SLA in terms of the number of businesses was agriculture, forestry and fishing (120 businesses). The majority of employing businesses had less than 20 employees (63 businesses).

The number of businesses by size in Aramac SLA as at June 2007 are summarised in Table 3.4.

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

	Number of Employees			Number of Businesses		
	1-19	20-199	200+	Total Employing Businesses	Non-Employing Businesses	Total Businesses
Agriculture, Forestry and Fishing	36	3	0	39	81	120
Mining	3	0	0	3	3	6
Manufacturing	3	0	0	3	0	3
Electricity, Gas & Water Supply	0	0	0	0	0	0
Construction	6	0	0	6	6	12
Wholesale Trade	0	0	0	0	0	0
Retail Trade	6	0	0	6	0	6
Accom, Cafes & Restaurants	3	0	0	3	0	3
Transport & Storage	6	0	0	6	0	6
Communications Services	0	0	0	0	0	0
Finance & Insurance	0	0	0	0	0	0
Property & Business Services	0	0	0	0	6	6
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>63</b>	<b>3</b>	<b>0</b>	<b>66</b>	<b>96</b>	<b>162</b>

Source: Australian Bureau of Statistics (2007b)

#### Barcaldine SLA

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 SLA 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).

The number of businesses by size in Barcaldine SLA as at June 2007 is summarised in Table 3.5.

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

	Number of Employees			Number of Businesses		
	1-19	20-199	200+	Total Employing Businesses	Non Employing Businesses	Total Businesses
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 (2007b)

## Jericho SLA

Within Jericho SLA, 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 industry in Jericho SLA in terms of the number of businesses was agriculture, forestry & fishing (150 businesses). All the employing businesses in Jericho SLA had less 20 employees.

The number of businesses by size in Jericho SLA as at June 2007 is presented in Table 3.6.

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

	Number of Employees			Number of Businesses		
	1-19	20-199	200+	Employing Businesses	Non-Employing Businesses	Total Businesses
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)

## Barcaldine RC

As of June 2007, there were an estimated 567 businesses in Barcaldine RC including 243 employing businesses and 324 non-employing businesses (sole traders). Small businesses (with between one and nineteen employees) accounted for over 90% of employing businesses and approximately 40% of total businesses in 2007. The number of businesses by size in Barcaldine RC as at June 2007 is presented in Table 3.7.

**Table 3.7: Number of Businesses, Barcaldine RC, June 2007**

	Number of Employees			Number of Businesses		
	1-19	20-199	200+	Employing Businesses	Non-Employing Businesses	Total Businesses
Agriculture, Forestry and Fishing	114	12	0	126	252	378
Mining	3	0	0	3	3	6
Manufacturing	12	0	0	12	6	18
Electricity, Gas & Water Supply	0	0	0	0	0	0
Construction	24	0	0	24	15	39
Wholesale Trade	6	0	0	6	6	12
Retail Trade	18	0	0	18	9	27
Accom, Cafes & Restaurants	15	3	0	18	0	18
Transport & Storage	15	0	0	15	9	24
Communications Services	3	0	0	3	0	3
Finance & Insurance	0	0	0	0	0	0
Property & Business Services	9	0	0	9	18	27
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>228</b>	<b>15</b>	<b>0</b>	<b>243</b>	<b>324</b>	<b>567</b>

Source: Australian Bureau of Statistics (2007b)

In 2007, agriculture, forestry & fishing businesses accounted for over half of the businesses within Barcaldine RC and Central West SD including Aramac SLA (74.1%), Barcaldine SLA (51.4%) and Jericho SLA (76.9%).

The number of businesses in Barcaldine RC, Central West SD and Queensland is presented in Table 3.8.

**Table 3.8: Number of Businesses, Barcaldine RC, Central West and Queensland, June 2007**

	Aramac SLA	Barcaldine SLA	Jericho SLA	Barcaldine RC	Central West SD	Queensland
Agriculture, Forestry & Fishing	74.1%	51.4%	76.9%	66.7%	58.8%	11.6%
Mining	3.7%	0.0%	0.0%	1.1%	0.9%	0.4%
Manufacturing	1.9%	4.3%	3.1%	3.2%	1.8%	5.3%
Electricity, Gas & Water Supply	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Construction	7.4%	10.0%	3.1%	6.9%	7.6%	17.7%
Wholesale Trade	0.0%	4.3%	1.5%	2.1%	3.0%	4.0%
Retail Trade	3.7%	5.7%	4.6%	4.8%	8.1%	11.0%
Accom, Cafes & Restaurants	1.9%	4.3%	3.1%	3.2%	3.0%	2.7%
Transport & Storage	3.7%	4.3%	4.6%	4.2%	4.0%	5.9%
Communications Services	0.0%	0.0%	1.5%	0.5%	1.2%	1.2%
Finance & Insurance	0.0%	0.0%	0.0%	0.0%	0.6%	5.7%
Property & Business Services	3.7%	8.6%	1.5%	4.8%	6.3%	24.3%
Education	0.0%	0.0%	0.0%	0.0%	0.1%	0.8%
Health & Community Services	0.0%	1.4%	0.0%	0.5%	1.3%	4.3%
Cultural & Recreational Services	0.0%	2.9%	0.0%	1.1%	1.6%	2.1%
Personal & Other Services	0.0%	2.9%	0.0%	1.1%	1.5%	3.0%
<b>Total</b>	<b>162</b>	<b>210</b>	<b>195</b>	<b>567</b>	<b>2,010</b>	<b>389,775</b>

Source: Australian Bureau of Statistics (2007b)

## 3.5 Agricultural Activity

### 3.5.1 Horticulture

Horticultural activity was not significant within Barcaldine RC between 2000-01 and 2005-06 with limited or no land occupied by horticultural commodities. Sweet corn was the only significant horticultural commodity within Barcaldine RC and was located within Barcaldine SLA. In 2005-06, there was 178 hectares of land occupied by sweet corn in Barcaldine SLA, producing 1,554 tonnes. The value of sweet corn was \$2.26 million in 2005-06, accounting for 6.3% of Queensland production by value.

### 3.5.2 Cropping

There were only limited crop commodities within Barcaldine RC accounting for only a small proportion of Queensland production. Within Barcaldine RC, crop commodities included:

- Hay: Aramac SLA (\$0.22 million), Barcaldine SLA (\$0.01 million) and Jericho SLA (\$0.05 million) accounting for less than 1% of Queensland production by value;
- Legumes for grain: Barcaldine SLA (\$0.12 million); and
- Cereals for grain: Jericho SLA (\$0.04 million).

### 3.5.3 Livestock

#### Livestock (Production)

In Barcaldine RC, the most significant livestock commodities were sheep (excluding lambs) (420,017 sheep or 9.3% of Queensland production), lambs (333,131 lambs or 9.6% of Queensland production) and meat cattle (86,698 head or 3.7% of Queensland production).



Within Barcaldine RC, sheep (excluding lambs) was the most significant commodity in Aramac SLA (243,654 sheep) followed by meat cattle (149,739 head). Barcaldine SLA recorded 31,068 meat cattle and 88,859 sheep while Jericho SLA recorded 239,210 meat cattle.

Between 2000-01 and 2005-06, there was a decline in the number of lambs and meat cattle in Barcaldine RC and an increase in the number of sheep. Livestock production is described in Table 3.9.

**Table 3.9: Livestock ('000), Barcaldine RC, Central West and Queensland, 2000-01 and 2005-06**

Commodity	Aramac SLA		Barcaldine SLA		Jericho SLA		Barcaldine RC		Central West 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
<b>Number ('000)</b>												
Sheep <sup>1</sup>	380	244	290	89	9	618	399	420	3,083	1,506	7,192	3,566
Lambs	79	63	64	24	-	-	679	333	655	371	1,468	899
Meat cattle	78	150	60	31	261	239	143	87	1,411	1,256	11,088	11,354
<b>% of QLD</b>												
Sheep	5.3%	6.8%	4.0%	2.5%	0.1%	0.0%	9.4%	9.3%	42.9%	42.2%	100.0%	100.0%
Lambs	5.4%	7.0%	4.4%	2.6%	-	-	9.8%	9.6%	44.6%	41.2%	100.0%	100.0%
Meat cattle	0.7%	1.3%	0.5%	0.3%	2.4%	2.1%	3.6%	3.7%	12.7%	11.1%	100.0%	100.0%

Note 1: Excluding lambs

Source: ABS Cat. No. 7125.0 - Agricultural Commodities: Small Area Data, Australia, 2005-06 and 2000-01

### Livestock Slaughtered (Value)

In 2005-06, the total value of slaughtered livestock in Barcaldine RC was \$97.01 million, including:

- Aramac SLA: \$32.90 million;
- Barcaldine SLA: \$10.77 million; and
- Jericho SLA: \$53.34 million.

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

**Table 3.10: Livestock Slaughtered Value, Barcaldine RC, Central West and Queensland, 2005-06**

Commodity	Aramac SLA		Barcaldine SLA		Jericho SLA		Barcaldine RC		Central West SD		QLD
	\$m	% QLD	\$m	% QLD	\$m	% QLD	\$m	% QLD	\$m	% QLD	\$m
Cattle and calves	30.92	0.9%	9.19	0.3%	53.29	1.5%	93.40	2.6%	306.12	8.5%	3,606.68
Sheep and lambs	1.78	3.6%	1.58	3.2%	0.00	0.0%	3.35	6.9%	20.79	42.6%	48.75
Other	0.21	0.0%	0.00	0.0%	0.05	0.0%	0.26	0.1%	3.11	0.7%	469.73
<b>Total Value</b>	<b>32.90</b>	<b>0.8%</b>	<b>10.77</b>	<b>0.3%</b>	<b>53.34</b>	<b>1.3%</b>	<b>97.01</b>	<b>2.4%</b>	<b>330.02</b>	<b>8.0%</b>	<b>4,125.16</b>

Source: ABS Cat. No. 7125.0 - Agricultural Commodities: Small Area Data, Australia, 2005-06

### Livestock Products (Value)

The total value of livestock products in 2005-06 was \$9.93 million in Barcaldine RC, with wool accounting for all of the livestock products value. Wool production in Barcaldine RC accounted for 9.3% of Queensland production by value, including:

- Aramac SLA: \$7.26 million or 6.8% of Queensland production by value;

- Barcaldine SLA: \$2.65 million or 2.5% of Queensland production by value; and
- Jericho SLA: \$0.02 million, less than 1% of Queensland production by value.

**Table 3.11: Livestock Products Value, Barcaldine RC, Central West and Queensland, 2005-06**

Commodity	Aramac SLA		Barcaldine SLA		Jericho SLA		Barcaldine RC		Central West SD		Queensland \$m
	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	\$m	% of QLD	
Wool	7.26	6.8%	2.65	2.5%	0.02	0.0%	9.93	9.3%	44.87	42.2%	106.29
Other	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	309.51
<b>Total Value</b>	<b>7.26</b>	<b>1.7%</b>	<b>2.65</b>	<b>0.6%</b>	<b>0.02</b>	<b>0.0%</b>	<b>9.93</b>	<b>2.4%</b>	<b>44.88</b>	<b>10.8%</b>	<b>415.80</b>

Source: ABS Cat. No. 7125.0 - Agricultural Commodities: Small Area Data, Australia, 2005-06

### 3.5.4 Summary of Agricultural Activity

Within the study area horticulture and cropping were not major agricultural industries. Livestock commodities were recorded in all regions with major commodities including sheep and meat cattle. The value of horticulture, cropping and livestock commodities in Barcaldine RC accounted for less than 10% of the Queensland production by value in 2005-06.

## 3.6 Summary

Over the past nine years, the size of the labour force has remained relatively steady throughout Barcaldine RC, with the labour force participation rate averaging 77.8%. The unemployment rate in all SLAs within Barcaldine RC has been consistently lower than the Queensland average.

There were a total of 567 businesses identified in Barcaldine RC as of June 2007, with Barcaldine SLA having the most with 210 businesses. Agriculture, forestry & fishing were the dominant business type across all SLAs within Barcaldine RC, accounting for between 51.4% and 76.9% of total businesses. There were fifteen businesses identified within Barcaldine RC that employed over twenty persons, with twelve agriculture, forestry & fishing businesses and three accommodation, cafes & restaurant businesses.

Livestock was the major agricultural activity in Barcaldine RC, with the total value of livestock slaughtered estimated at \$97.01 million in 2005-06. The majority of livestock slaughtered were cattle and calves, accounting for \$93.40 million or 96.3% of total livestock slaughtered. Horticulture and cropping were not identified as significant agricultural industries in Barcaldine RC.

The preceding analysis suggests that the local and regional economic environment of the Barcaldine RC and Central West SD has improved considerably over the last five to ten years, with labour force participation increasing and unemployment rates decreasing. However, livestock production, the region's most significant form of agricultural production, has experienced significant decline. Agricultural production has traditionally been a foundation of the Barcaldine local economy. The region has faced challenging climatic conditions over the past five to ten years including drought and extreme flooding. In the future, agriculture will face growing competition for labour from mining. Furthermore, as the local and regional economies grow, agriculture will face competition from the services sectors.

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

The following assessment of the coal mine study area 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; and
  - Hostels; and
- Sales of houses, units and townhouses, commercial and industrial.

The Tourist Accommodation, Small Area Data, Queensland publication (ABS, 2010b) identifies one hotel, motel & serviced apartment establishment in Jericho SLA and six hotel, motel & serviced apartment establishments in Barcaldine SLA. However, there is only data available in regards to the performance of accommodation establishments within Barcaldine Regional Council with 15 or more rooms. As a result, occupancy rates for hotels, motels & serviced apartments with 15 or more room were used to determine the average number of vacancies per night.

### 4.1 Commercial Accommodation in Barcaldine Regional Council

In the March quarter 2010, there were an estimated seven hotels, motels & serviced apartments in Barcaldine RC with a total of 100 rooms. There were two caravan parks in Barcaldine RC with a total capacity of 95 sites. In the March quarter 2010, there were an estimated 73 hotels, motels & serviced apartments and 19 caravan parks within the Outback Tourism Region (TR). This is shown in Table 4.1.

**Table 4.1: Summary of Tourism Establishments, Barcaldine RC and Outback TR, March Quarter 2010**

	Hotels, Motels & Serviced Apartments <sup>1</sup>		Caravan Parks	
	No.	Rooms	No.	Total Capacity
Barcaldine RC	7	100	2	95
Outback TR	73	1,513	19	2,282
Queensland	1,554	65,690	318	38,371

Note: Data is not available for holiday flats, units and houses and hostels as there were no establishments in Barcaldine RC

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 Barcaldine RC fluctuated between 30.1% (March quarter 2005) and 57.2% (September quarter

2009). Over the past five years room occupancy rates for hotels, motels & serviced apartments in Barcaldine RC were generally lower than in the Outback TR and Queensland.

Data for the site occupancy rate of caravans in Barcaldine RC was unavailable due to the limited number of caravan parks. In the Outback TR, the site occupancy rate of caravans was highest in the September quarter 2009 at 59.2%. The average site occupancy rate over the past five years was 37.1% in the Outback TR, significantly below the Queensland average of 56.7%.

The occupancy rate trends in Barcaldine RC and the Outback TR from the March quarter 2005 to the March quarter 2010, benchmarked against Queensland are presented in Table 4.2.

**Table 4.2: Occupancy Rate Trends, Barcaldine RC, Outback TR and Queensland, Mar Q 05 to Mar Q 10**

	Barcaldine RC		Outback TR		Queensland	
	Hotels, Motels & Serviced Apartments <sup>1</sup> (room occupancy)	Caravan Parks (site occupancy)	Hotels, Motels & Serviced Apartments <sup>1</sup> (room occupancy)	Caravan Parks (site occupancy)	Hotels, Motels & Serviced Apartments <sup>1</sup> (room occupancy)	Caravan Parks (site occupancy)
Mar Q 05	30.1%	-	39.7%	17.8%	61.0%	49.8%
Jun Q 05	54.6%	-	55.0%	45.1%	61.3%	55.5%
Sep Q 05	43.4%	-	61.6%	51.9%	71.3%	65.7%
Dec Q 05	33.1%	-	49.7%	21.0%	66.8%	51.1%
Mar Q 06	32.4%	-	42.9%	20.7%	62.8%	47.1%
Jun Q 06	41.1%	-	59.8%	42.7%	62.4%	55.8%
Sep Q 06	43.1%	-	64.0%	50.6%	72.5%	65.1%
Dec Q 06	35.1%	-	49.6%	19.4%	68.4%	51.7%
Mar Q 07	31.0%	-	43.7%	21.1%	64.0%	49.4%
Jun Q 07	47.4%	-	58.0%	47.8%	62.4%	58.8%
Sep Q 07	54.3%	-	64.3%	57.8%	71.7%	67.9%
Dec Q 07	39.6%	-	50.8%	27.9%	67.4%	54.7%
Mar Q 08	38.0%	-	43.8%	22.6%	60.6%	49.4%
Jun Q 08	56.9%	-	61.5%	50.9%	60.9%	58.3%
Sep Q 08	56.7%	-	65.7%	54.2%	68.9%	68.1%
Dec Q 08	53.4%	-	51.6%	29.1%	64.8%	54.7%
Mar Q 09	43.4%	-	43.3%	22.1%	57.8%	49.8%
Jun Q 09	54.9%	-	55.7%	48.4%	57.3%	58.1%
Sep Q 09	57.2%	-	63.1%	59.2%	66.7%	68.1%
Dec Q 09	53.9%	-	49.0%	31.6%	63.2%	54.4%
Mar Q 10	36.3%	-	41.0%	28.3%	56.6%	48.4%
<b>Average, Mar Q 05 to Mar Q 10</b>	<b>45.0%</b>	<b>-</b>	<b>53.6%</b>	<b>37.1%</b>	<b>64.6%</b>	<b>56.7%</b>

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 Barcaldine RC ranged between:

- 39-67 vacant hotel / motel rooms and serviced apartments; and
- 33-77 vacancies at caravan sites<sup>4</sup>.

<sup>4</sup> The site occupancy rate of caravan parks in Barcaldine RC was unavailable due to the limited number of caravan parks; hence the Outback TR site occupancy rates were used to estimate the average number of vacant caravan sites.

Vacancy data indicates accommodation demand for hotels, motels and serviced apartments and caravan parks in Barcaldine RC was higher in the June and September quarters of each year.

A summary of the average number of vacant rooms / beds per night in Barcaldine RC and the Outback TR between March quarter 2005 and March quarter 2010 is provided in Table 4.3.

**Table 4.3: Average Number of Vacancies per Night, Barcaldine RC, Outback TR and Queensland, Mar Q 05 to Mar Q 10**

	Barcaldine RC		Outback TR	
	Hotels, Motels & Serviced Apartments <sup>1</sup> (vacant rooms)	Caravan Parks (vacant sites)	Hotels, Motels & Serviced Apartments <sup>1</sup> (vacant rooms)	Caravan Parks (vacant sites)
Mar Q 05	61	33	1,245	2,406
Jun Q 05	39	52	932	1,699
Sep Q 05	55	46	800	1,485
Dec Q 05	64	75	1,053	2,425
Mar Q 06	65	75	1,195	2,459
Jun Q 06	57	54	846	1,805
Sep Q 06	53	47	742	1,555
Dec Q 06	60	77	1,040	2,533
Mar Q 07	67	75	1,156	2,450
Jun Q 07	50	50	872	1,682
Sep Q 07	44	40	741	1,343
Dec Q 07	59	68	1,018	2,296
Mar Q 08	64	74	1,169	2,471
Jun Q 08	44	47	799	1,575
Sep Q 08	43	44	705	1,491
Dec Q 08	46	67	998	2,297
Mar Q 09	58	74	1,195	2,455
Jun Q 09	45	49	933	1,677
Sep Q 09	43	39	765	1,346
Dec Q 09	47	65	1,059	2,202
Mar Q 10	64	68	893	1,636
<b>Average, Mar Q 05 to Mar Q 10</b>	<b>54</b>	<b>58</b>	<b>963</b>	<b>1,983</b>

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

## 4.2 Central West SD Housing Market

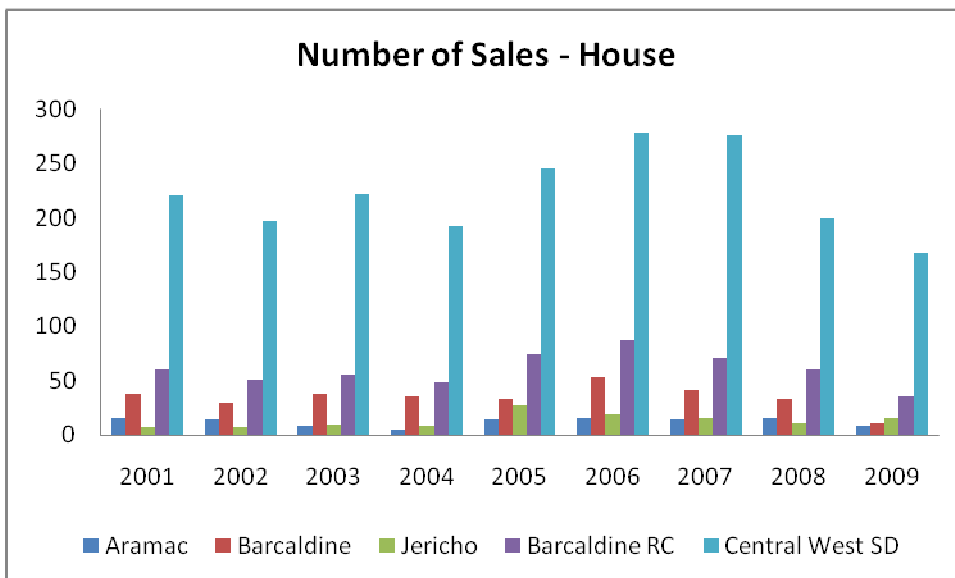
### 4.2.1 Houses

#### Volume of Sales

Within Barcaldine RC, the volume of house sales fluctuated between 2001 and 2009, peaking in 2006 with 87 sales. Within Barcaldine RC, approximately half of the total house sales were located in Barcaldine SLA. The volume of house sales in Barcaldine RC accounted for between 25% and 32% of sales in Central West SD.

The volume of house sales in Barcaldine RC and Central West SD between 2001 and 2009 are shown in Figure 4.1.

**Figure 4.1: Volume of House Sales, Barcaldine RC and Central West SD, 2001 to 2009**



Note: The data was collected in June 2010

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

Source: Property Data Solutions (2010)

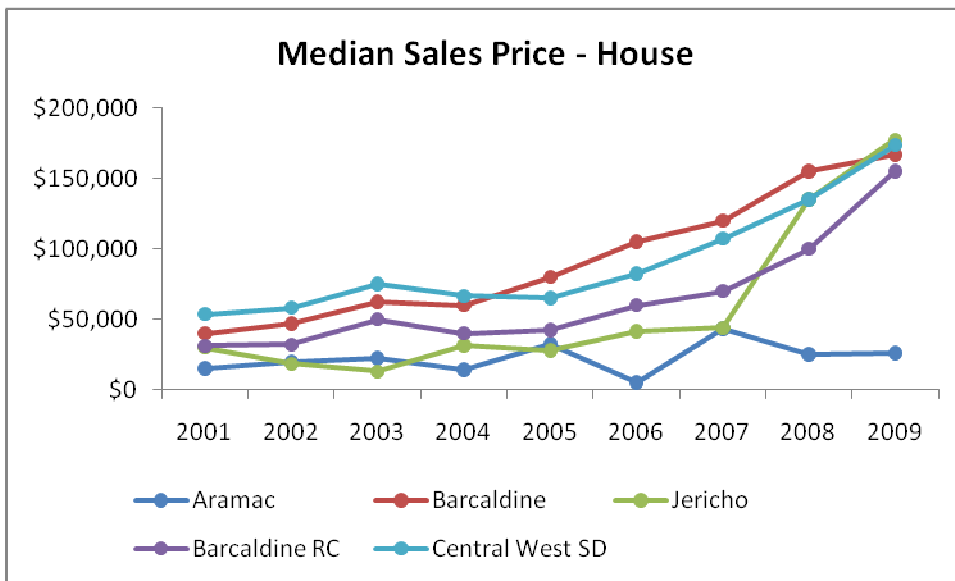
### Median Sale Price

The median sale price of houses in Barcaldine RC increased from \$31,000 in 2001 to \$155,000 in 2009. The median sale price of houses in Barcaldine RC was consistently below the Central West SD median between 2001 and 2009.

Within Barcaldine RC, the median sale price of houses was highest in Barcaldine SLA increasing from \$40,000 in 2001 to \$167,000 in 2009. In Jericho SLA, the median sale price of houses increased significantly between 2007 and 2009 from \$43,750 to \$177,500.

The median sale price for houses in Barcaldine RC and Central West SD between 2001 and 2009 is shown in Figure 4.2.

**Figure 4.2: Median Sale Price, Houses, Barcaldine RC and Central West SD, 2001 to 2009**



Note: The data was collected in June 2010  
 Note: Data is for the year ended 31st December of each year  
 Source: Property Data Solutions (2010)

## 4.2.2 Units and Townhouses

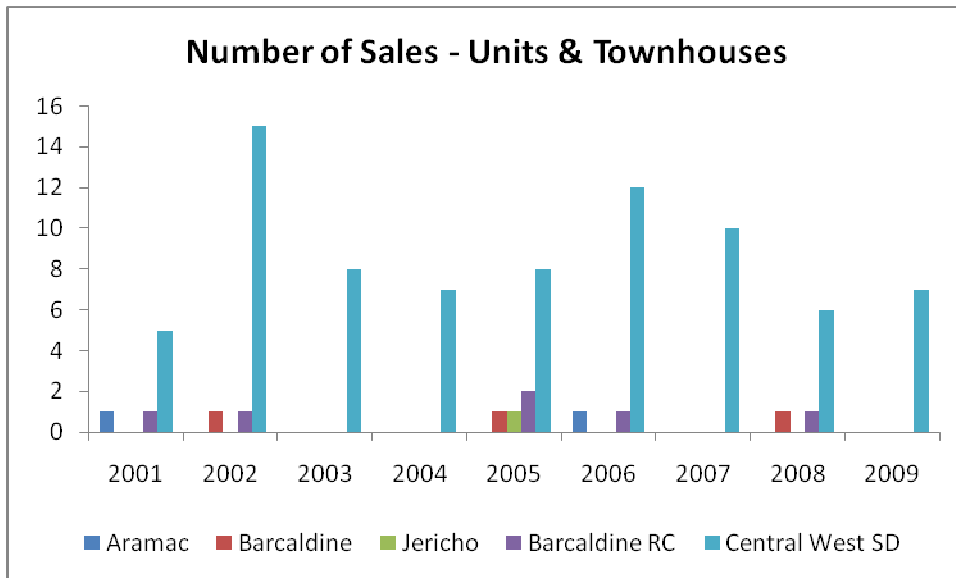
### Volume of Sales

There were only a small number of unit and townhouse sales within Barcaldine RC between 2001 and 2009 with two sales recorded in 2005 and one sale recorded in 2001, 2002, 2006 and 2008.

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.

The volume of unit and townhouse sales in Barcaldine RC and Central West SD between 2001 to 2009 are illustrated in Figure 4.3.

**Figure 4.3: Volume of Unit and Townhouse Sales, Barcaldine RC and Central West SD, 2001 to 2009**



Note: The data was collected in June 2010  
 Note: Data is for the year ended 31st December of each year  
 Source: Property Data Solutions (2010)



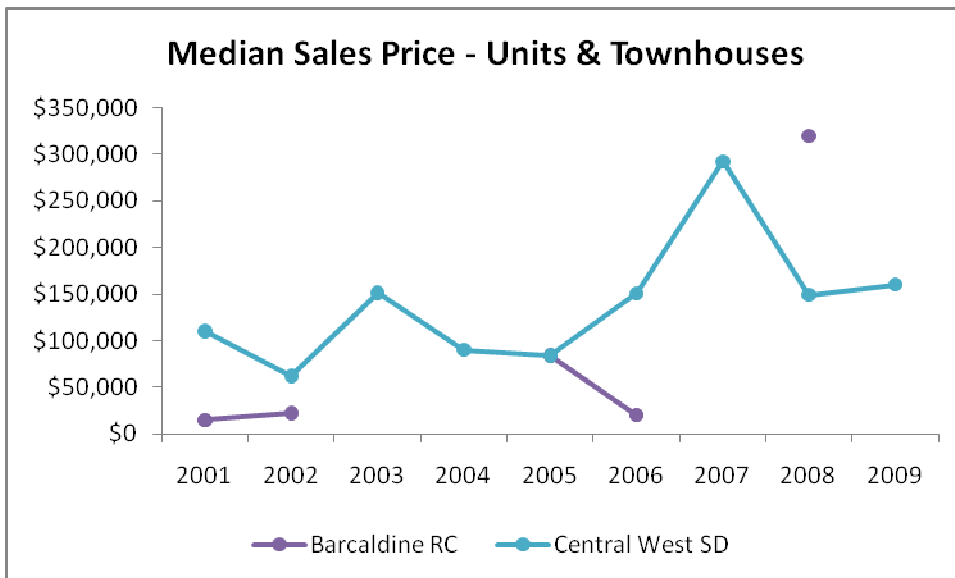
## Median Sale Price

The median sale price of units and townhouses in Barcaldine RC was \$320,000 in 2008 significantly above the Central West SD median. However, the median sales price of units and townhouses in Barcaldine RC is based on only a minimal number of sales.

The median sale price of units and townhouses in Central West SD 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.

Figure 4.4 shows the median price of units and townhouses in Barcaldine RC and Central West SD between 2001 and 2009.

**Figure 4.4: Median Sale Price, Units and Townhouses, Barcaldine RC and Central West SD 2001 to 2009**



Note: The data was collected in June 2010

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

Source: Property Data Solutions (2010)

### 4.2.3 Commercial

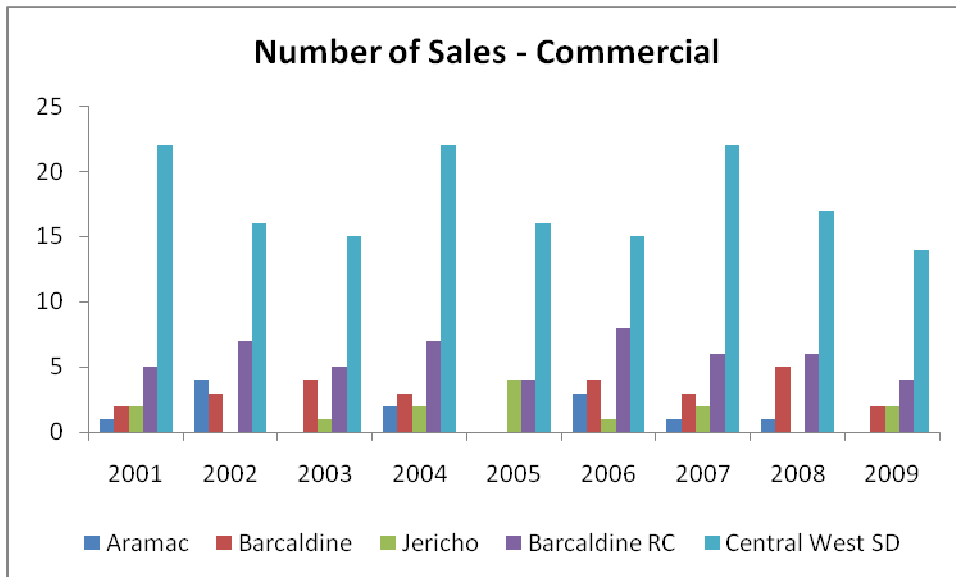
#### Volume of Sales

Within Barcaldine RC, there were between four commercial property sales (2005 and 2009) and eight commercial property sales (2006) per year. Within Barcaldine RC, Barcaldine SLA accounted for approximately half of the total commercial sales between 2001 and 2009.

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

Figure 4.5 below shows the volume of commercial property sales in Barcaldine RC and Central West SD between 2001 and 2009.

**Figure 4.5: Volume of Commercial Sales, Barcaldine RC and Central West SD, 2001 to 2009**



Note: The data was collected in June 2010  
 Note: Data is for the year ended 31st December of each year  
 Source: Property Data Solutions (2010)

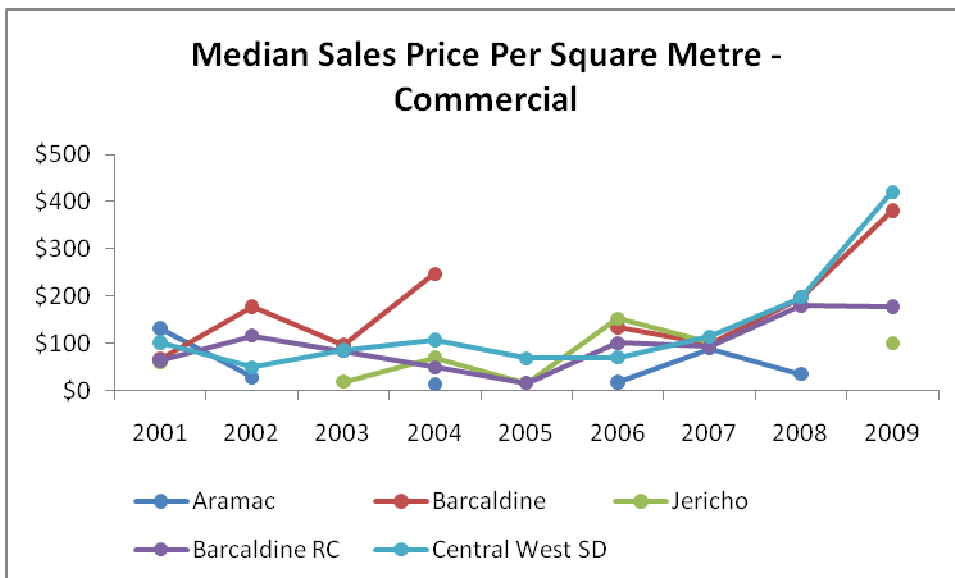
## Median Sale Price

The median commercial property sale price per square metre in Barcaldine RC fluctuated between \$64 per square metre (2001) and \$180 per square metre (2008). Within Barcaldine RC, Barcaldine SLA generally recorded a higher median sale price per square metre for commercial property than Aramac SLA and Jericho SLA.

The median sale price per square metre 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).

Figure 4.6 shows the median sale price per square metre for commercial property in Barcaldine RC and Central West SD between 2001 and 2009.

**Figure 4.6: Median Sale Price, Commercial, Barcaldine RC and Central West SD, 2001 to 2009**



Note: The data was collected in June 2010  
 Note: Data is for the year ended 31st December of each year  
 Source: Property Data Solutions (2010)

## 4.2.4 Industrial

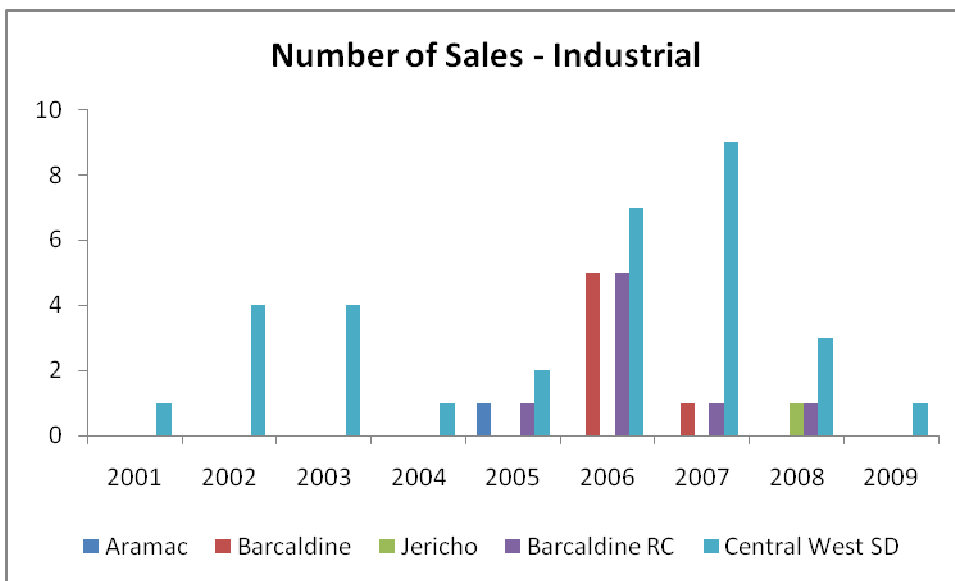
### Volume of Sales

There were eight industrial property sales in Barcaldine RC, five of which were in 2006 in Barcaldine SLA.

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 4.7 below shows the volume of industrial property sales in Barcaldine RC and Central West SD between 2001 and 2009.

**Figure 4.7: Volume of Industrial Land Sales, Barcaldine RC and Central West SD, 2001 to 2009**



Note: The data was collected in June 2010  
 Note: Data is for the year ended 31st December of each year  
 Source: Property Data Solutions (2010)

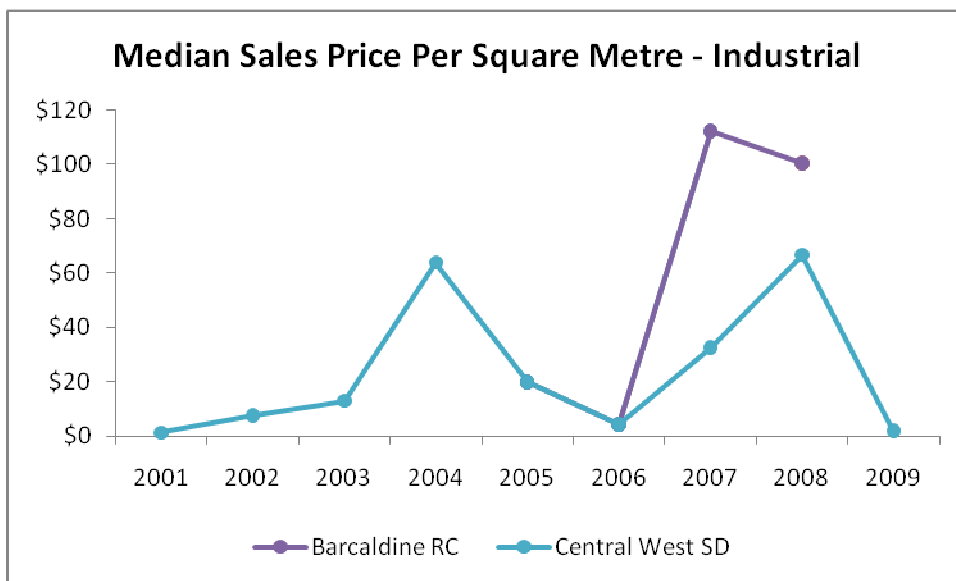
## Median Sale Price

The median sale price per square metre of industrial property in Barcaldine RC was between \$4 per square metre (2006) and \$112 per square metre (2007). The area of industrial properties sold in Barcaldine RC ranged from 1,373 square metres to 113,080 per square metres and sold for under \$250,000.

In Central West SD, the median sale price of industrial property peaked in 2008 at \$67 per square metre and was lowest at \$1 per square metre in 2001.

The median sale price for industrial property between 2001 and 2009 is presented in Figure 4.8.

**Figure 4.8: Median Sale Price, Industrial, Barcaldine RC and Central West SD, 2001 to 2009**



Note: The data was collected in June 2010  
 Note: Data is for the year ended 31st December of each year  
 Source: Property Data Solutions (2010)

## 4.3 Summary

The room occupancy rate of hotels, motels & serviced apartments with five or more rooms in Barcaldine RC fluctuated between 30.1% (March quarter 2005) and 57.2% (September quarter 2009). Over the past five years room occupancy rates for hotels, motels & serviced apartments in Barcaldine RC were generally lower than in the Outback TR and Queensland.

Data for the site occupancy rate of caravans in Barcaldine RC was unavailable due to the limited number of caravan parks. In the Outback TR, the site occupancy rate of caravans was highest in the September quarter 2009 at 59.2%. The average site occupancy rate over the past five years was 37.1% in the Outback TR, significantly below the Queensland average of 56.7%.

In Barcaldine RC, the average number of vacant rooms / beds per night ranged between:

- 39-67 vacant hotel / motel rooms and serviced apartments; and
- 33-77 vacancies at caravan sites.

The volume of house sales in Barcaldine RC accounted for approximately 25% to 32% of sales in Central West SD. The median price of house sales in Barcaldine RC was consistently below Central West SD.

There were four to eight commercial property sales per annum in Barcaldine RC, with the median sales price fluctuating between \$64 per square metre and \$180 per square metre.

There was limited data in regards to unit & townhouse and industrial property sales in Barcaldine RC, so it was difficult to determine the trend in prices over the past nine years.

## 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 Project (Mine). 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>5</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>5</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 Project (Mine). 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.

The various impact measures used in economic impact assessment are described in Table 5.1.

**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>6</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) Community Economic Analysis, Department of Primary Industries: Brisbane, Qld

### 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.

- 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>6</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.
- 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.

### 5.1.2 Construction and Capital Impacts

Construction and capital works associated with the Alpha Coal Project (Mine) will take place over a 33 year period finalising in 2045. HPPL will make significant foreign exchange Project purchases, equivalent to US\$204.51 million and €14.57 million. Australian currency Project purchases will be equivalent to A\$425.83 million. Foreign exchange Project purchases represent imports, which have no impact on the domestic economy. Only Project purchases made in Australia will impact the domestic economy. The analysis assumes that all domestic Project purchases are made within Queensland.

A detailed breakdown of Project purchases by country of origin, type of purchase and year of purchase is provided in Appendix A. It is summarised in Table 5.2.

**Table 5.2: Total construction and capital costs for Alpha Coal Project (Mine) (\$M)**

	US\$ Component	Euro Component	A\$ Component
Drill & Blast	68.97	0.00	47.06
Draglines	375.88	0.00	1,284.47
Prestrip Fleets	1,080.72	102.15	456.77
Coal Mining Fleets	311.51	43.56	108.27
Ancillary Fleets	141.07	0.00	252.72
Processing Plant	66.98	0.00	769.90
Access Road	0.00	0.00	209.88
Dams and Diversions	0.00	0.00	293.74
Infrastructure & Power	0.00	0.00	294.89
Camp	0.00	0.00	328.56
Other Infrastructure	0.00	0.00	212.04
<b>Total Capital Costs</b>	<b>2,045.13</b>	<b>145.71</b>	<b>4,258.31</b>

Project purchases by year and type of expenditure (refer to Appendix A) 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.

Approximately 50% of construction and capital expenditure impacts occur between 2013 and 2017.

### **Output or Consumption Effects**

The output (or consumption) impacts of construction and capital works associated with the Alpha Coal Project (Mine) are detailed in Tables 5.3 and 5.4 below. The most significant output (or consumption) impacts associated with these works are anticipated to arise in 2014 and 2015. These two years account for approximately 31% of output (or consumption) effects resulting from the Project.

In 2014, total output (or consumption) impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$1,352.98 million, comprising \$512.39 million in direct output (or consumption) effects and \$840.59 million in indirect output (or consumption) effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$347.10 million and \$594.47 million respectively. The significant stimulus to the manufacturing sector is generated by major purchases of vehicle fleets required as part of the construction phase of the Project. The significant construction-related impacts are generated by the significant expenditure on roads and other infrastructure items related to the Project.

In 2015, total output (or consumption) impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$1,832.74 million, comprising \$729.94 million in direct output (or consumption) effects and \$1,102.79 million in indirect output (or consumption) effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$710.58 million and \$569.95 million respectively.

## Household Income Effects

The household income impacts of construction and capital works associated with the Alpha Coal Project (Mine) 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 2014 and 2015. These two years account for approximately 26% of household income effects resulting from the Project.

In 2014, total household income impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$294.30 million, comprising \$213.52 million in direct household income effects and \$80.78 million in indirect household income effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$113.56 million and \$60.76 million respectively.

In 2015, total household income impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$466.93 million, comprising \$285.43 million in direct household income effects and \$181.50 million in indirect household income effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$250.15 million and \$58.47 million respectively.

## Employment Effects

The majority of construction employment is anticipated to arise during 2015, where on-site employment levels are anticipated to peak at approximately 1,060 workers in late 2013 and early 2016.

The total employment impacts of construction and capital expenditure associated with the Alpha Coal Project (Mine) are detailed in Tables 5.7 and 5.8 below. The most significant employment impacts associated with these works are anticipated to arise in 2014 and 2015. These two years account for approximately 30% of employment effects resulting from the Project.

In 2014, total employment impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately 5,100 full time equivalent positions, comprising direct employment effects of 3,448 full time equivalent positions and indirect employment effects of 1,652 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 1,327 full time equivalent positions and 2,191 full time equivalent positions respectively.

In 2015, total employment impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately 7,230 full time equivalent positions, comprising direct employment effects of 4,370 full time equivalent positions and indirect employment effects of 2,860 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 3,011 full time equivalent positions and 2,115 full time equivalent positions respectively.

## Value Added Effects

The value added impacts of construction and capital works associated with the Alpha Coal Project (Mine) 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 2014 and 2015. These two years account for approximately 28% of value added effects resulting from the Project.

In 2014, total value added impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$512.45 million, comprising \$369.58 million in direct value added effects and \$142.87 million in indirect value added effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$147.35 million and \$148.08 million respectively.

In 2015, total value added impacts of construction and capital works associated with the Alpha Coal Project (Mine) are estimated to be approximately \$749.54 million, comprising \$487.35 million in direct value added effects and \$262.19 million in indirect value added effects. The manufacturing and construction sectors are anticipated to benefit from the greatest stimulus, equating to approximately \$316.34 million and \$142.46 million respectively.

**Table 5.3: Distribution of output or consumption effects-Alpha Coal Project (Mine) construction and capital expenditure, 2012-2029 (\$M)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	0.30	2.68	4.78	6.01	1.84	1.81	0.88	1.41	0.26	0.53	0.08	1.19	1.27	0.04	0.10	1.06	1.20	0.05
Mining	2.73	24.27	48.65	73.92	32.91	32.71	14.66	28.68	6.29	4.93	1.69	21.16	23.21	2.68	3.56	21.89	23.18	5.40
Manufacturing	13.24	117.70	347.10	710.58	258.64	399.28	150.69	336.78	44.16	25.72	3.36	284.28	264.40	5.41	10.23	272.22	270.54	9.73
Electricity, Gas, Water & Waste Services	0.46	4.11	8.25	12.20	3.93	4.91	2.09	4.01	0.61	0.83	0.12	3.35	3.30	0.09	0.19	3.14	3.27	0.15
Construction	42.86	380.89	594.47	569.95	68.93	49.29	46.15	19.08	1.59	73.07	0.78	7.30	7.81	0.58	0.93	6.64	7.40	0.72
Wholesale Trade	1.95	17.31	35.92	57.55	65.02	27.43	14.11	23.79	11.34	3.80	7.15	25.48	40.58	1.89	6.31	16.10	30.54	1.01
Retail Trade	0.58	5.11	9.31	12.07	3.86	3.89	1.83	3.07	0.56	1.01	0.18	2.59	2.76	0.09	0.22	2.33	2.61	0.12
Accommodation & Food Services	0.43	3.86	7.70	11.32	4.14	4.55	1.97	3.71	0.65	0.78	0.18	3.17	3.29	0.10	0.24	2.88	3.15	0.14
Transport, Postal & Warehousing	2.72	24.17	45.89	63.28	22.53	23.04	10.42	18.63	3.49	4.83	1.08	15.77	16.83	0.62	1.38	14.25	15.93	0.86
Information Media and Telecommunications	0.66	5.83	11.17	15.58	5.38	5.75	2.57	4.64	0.82	1.17	0.24	3.95	4.14	0.12	0.30	3.57	3.94	0.16
Financial & Insurance Services	2.29	20.34	35.08	41.54	11.29	10.79	5.54	8.15	1.50	3.98	0.49	6.70	7.21	0.27	0.60	6.01	6.78	0.36
Rental, Hiring & Real Estate Services	4.92	43.73	77.18	95.15	28.90	27.49	13.57	21.27	4.06	8.61	1.38	17.84	19.41	0.69	1.64	15.85	18.11	0.87
Professional, Scientific & Technical Services	1.69	14.99	26.81	33.69	8.77	10.11	4.79	7.84	1.19	2.95	0.24	6.40	6.35	0.19	0.39	5.98	6.26	0.30
Administrative & Support Services	5.00	44.46	80.93	104.64	30.64	33.50	15.62	26.33	4.36	8.79	1.12	21.93	22.47	0.68	1.53	20.10	21.70	0.95
Public Administration & Safety	0.11	0.96	1.67	2.02	0.52	0.55	0.27	0.42	0.07	0.19	0.02	0.34	0.35	0.01	0.02	0.32	0.34	0.02
Education & Training	0.15	1.32	2.73	4.18	1.37	1.76	0.74	1.44	0.21	0.27	0.04	1.21	1.18	0.03	0.06	1.14	1.18	0.05
Health Care & Social Assistance	0.01	0.13	0.24	0.33	0.11	0.11	0.05	0.09	0.02	0.03	0.00	0.08	0.08	0.00	0.01	0.07	0.08	0.00
Arts & Recreation Services	0.82	7.30	13.13	16.66	5.04	5.14	2.45	4.02	0.72	1.44	0.22	3.36	3.55	0.12	0.27	3.04	3.37	0.16
Other Services	0.14	1.21	1.97	2.08	0.36	0.35	0.22	0.23	0.03	0.23	0.01	0.17	0.17	0.01	0.01	0.16	0.17	0.01
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	0.00	0.00
<b>Direct</b>	<b>29.61</b>	<b>263.11</b>	<b>512.39</b>	<b>729.94</b>	<b>237.87</b>	<b>279.18</b>	<b>121.92</b>	<b>226.66</b>	<b>36.71</b>	<b>52.69</b>	<b>8.22</b>	<b>188.79</b>	<b>190.02</b>	<b>6.41</b>	<b>12.79</b>	<b>176.22</b>	<b>186.35</b>	<b>10.21</b>
<b>Indirect</b>	<b>51.45</b>	<b>457.24</b>	<b>840.59</b>	<b>1,102.79</b>	<b>316.28</b>	<b>363.30</b>	<b>166.71</b>	<b>286.93</b>	<b>45.20</b>	<b>90.46</b>	<b>10.15</b>	<b>237.49</b>	<b>238.34</b>	<b>7.21</b>	<b>15.21</b>	<b>220.53</b>	<b>233.38</b>	<b>10.85</b>
<b>Total</b>	<b>81.05</b>	<b>720.35</b>	<b>1,352.98</b>	<b>1,832.74</b>	<b>554.15</b>	<b>642.49</b>	<b>288.62</b>	<b>513.59</b>	<b>81.91</b>	<b>143.15</b>	<b>18.36</b>	<b>426.28</b>	<b>428.35</b>	<b>13.63</b>	<b>28.00</b>	<b>396.75</b>	<b>419.73</b>	<b>21.06</b>

**Table 5.4: Distribution of output or consumption effects-Alpha Coal Project (Mine) construction and capital expenditure, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	1.15	0.60	1.41	0.18	0.30	1.20	0.33	0.15	0.11	0.18	0.48	0.67	0.10	0.05	0.13	0.00
Mining	21.98	6.40	27.41	3.40	5.46	22.70	9.30	6.29	3.79	6.40	9.78	9.18	2.03	0.94	5.39	0.02
Manufacturing	267.90	36.17	294.03	38.03	44.47	304.52	49.35	15.20	14.63	40.48	35.99	58.34	24.39	13.64	29.69	0.09
Electricity, Gas, Water & Waste Services	3.20	0.99	3.67	0.47	0.65	3.52	0.72	0.29	0.23	0.50	0.78	1.23	0.29	0.16	0.37	0.00
Construction	7.13	73.79	8.69	1.34	4.78	10.15	2.30	1.26	0.96	1.41	3.16	74.25	0.89	0.61	1.12	0.30
Wholesale Trade	27.12	7.79	44.55	5.21	13.42	18.13	15.52	8.80	5.15	3.27	36.14	6.97	1.88	0.83	1.95	0.01
Retail Trade	2.52	1.17	3.07	0.39	0.63	2.63	0.70	0.32	0.23	0.38	1.02	1.33	0.22	0.12	0.28	0.00
Accommodation & Food Services	3.06	0.96	3.66	0.46	0.71	3.23	0.80	0.35	0.25	0.47	1.08	1.16	0.27	0.15	0.34	0.00
Transport, Postal & Warehousing	15.35	5.82	18.75	2.36	3.82	15.96	4.38	2.04	1.44	2.43	6.24	6.80	1.34	0.72	1.78	0.02
Information Media and Telecommunications	3.81	1.40	4.59	0.58	0.91	4.02	1.00	0.43	0.32	0.57	1.40	1.64	0.33	0.18	0.41	0.00
Financial & Insurance Services	6.52	4.42	8.02	1.02	1.73	6.81	1.89	0.88	0.62	1.03	2.77	4.82	0.58	0.31	0.75	0.02
Rental, Hiring & Real Estate Services	17.40	9.80	21.57	2.72	4.65	17.93	5.12	2.38	1.67	2.66	7.78	10.80	1.52	0.82	1.92	0.03
Professional, Scientific & Technical Services	6.13	3.26	7.07	0.91	1.32	6.76	1.43	0.58	0.46	0.96	1.59	3.72	0.55	0.31	0.71	0.01
Administrative & Support Services	21.10	9.99	24.97	3.18	4.87	22.69	5.30	2.24	1.69	3.22	6.84	11.42	1.88	1.03	2.34	0.04
Public Administration & Safety	0.33	0.21	0.39	0.05	0.08	0.36	0.08	0.04	0.03	0.05	0.11	0.23	0.03	0.02	0.04	0.00
Education & Training	1.15	0.32	1.31	0.17	0.23	1.28	0.25	0.10	0.08	0.18	0.26	0.41	0.10	0.06	0.13	0.00
Health Care & Social Assistance	0.07	0.03	0.09	0.01	0.02	0.08	0.02	0.01	0.01	0.01	0.03	0.03	0.01	0.00	0.01	0.00
Arts & Recreation Services	3.26	1.65	3.95	0.50	0.81	3.43	0.89	0.40	0.29	0.50	1.26	1.85	0.29	0.16	0.36	0.01
Other Services	0.16	0.24	0.19	0.02	0.04	0.19	0.04	0.02	0.01	0.03	0.04	0.26	0.02	0.01	0.02	0.00
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>181.61</b>	<b>62.40</b>	<b>212.11</b>	<b>27.05</b>	<b>39.10</b>	<b>197.11</b>	<b>44.86</b>	<b>19.30</b>	<b>14.56</b>	<b>29.30</b>	<b>52.31</b>	<b>76.01</b>	<b>16.26</b>	<b>8.85</b>	<b>21.74</b>	<b>0.21</b>
<b>Indirect</b>	<b>227.71</b>	<b>102.62</b>	<b>265.28</b>	<b>33.96</b>	<b>49.79</b>	<b>248.46</b>	<b>54.56</b>	<b>22.45</b>	<b>17.40</b>	<b>35.41</b>	<b>64.42</b>	<b>119.09</b>	<b>20.45</b>	<b>11.25</b>	<b>25.98</b>	<b>0.36</b>
<b>Total</b>	<b>409.33</b>	<b>165.02</b>	<b>477.39</b>	<b>61.01</b>	<b>88.90</b>	<b>445.58</b>	<b>99.42</b>	<b>41.75</b>	<b>31.96</b>	<b>64.72</b>	<b>116.73</b>	<b>195.10</b>	<b>36.71</b>	<b>20.11</b>	<b>47.72</b>	<b>0.57</b>

**Table 5.5: Distribution of household income effects-Alpha Coal Project (Mine) construction and capital expenditure, 2012-2029 (\$M)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	0.03	0.31	0.54	0.65	0.18	0.18	0.09	0.14	0.02	0.06	0.01	0.11	0.12	0.00	0.01	0.10	0.11	0.01
Mining	0.25	2.19	4.43	6.80	2.86	3.07	1.37	2.72	0.57	0.44	0.12	1.92	2.03	0.28	0.33	2.09	2.11	0.59
Manufacturing	3.78	33.59	113.56	250.15	94.11	147.91	55.02	125.33	16.33	7.62	1.13	106.01	98.32	1.95	3.69	101.59	100.76	3.54
Electricity, Gas, Water & Waste Services	0.03	0.28	0.56	0.83	0.27	0.33	0.14	0.27	0.04	0.06	0.01	0.23	0.22	0.01	0.01	0.21	0.22	0.01
Construction	4.37	38.87	60.76	58.47	7.23	5.25	4.79	2.14	0.20	7.46	0.09	0.91	0.98	0.07	0.11	0.83	0.93	0.08
Wholesale Trade	0.50	4.44	9.22	14.82	17.33	7.11	3.68	6.18	3.03	0.98	1.93	6.68	10.76	0.50	1.69	4.15	8.05	0.26
Retail Trade	0.18	1.61	2.91	3.74	1.19	1.18	0.56	0.93	0.17	0.32	0.05	0.79	0.84	0.03	0.07	0.70	0.79	0.04
Accommodation & Food Services	0.09	0.80	1.60	2.36	0.86	0.95	0.41	0.77	0.14	0.16	0.04	0.66	0.69	0.02	0.05	0.60	0.66	0.03
Transport, Postal & Warehousing	0.99	8.84	16.81	23.25	8.20	8.49	3.83	6.86	1.26	1.77	0.38	5.81	6.17	0.22	0.49	5.26	5.85	0.31
Information Media and Telecommunications	0.09	0.81	1.55	2.16	0.75	0.80	0.36	0.64	0.11	0.16	0.03	0.55	0.57	0.02	0.04	0.50	0.55	0.02
Financial & Insurance Services	0.88	7.86	13.47	15.78	4.17	3.97	2.07	2.98	0.54	1.54	0.18	2.43	2.62	0.10	0.22	2.19	2.46	0.13
Rental, Hiring & Real Estate Services	0.93	8.28	14.62	18.02	5.47	5.21	2.57	4.03	0.77	1.63	0.26	3.38	3.68	0.13	0.31	3.00	3.43	0.16
Professional, Scientific & Technical Services	0.69	6.15	11.01	13.84	3.60	4.15	1.97	3.22	0.49	1.21	0.10	2.63	2.61	0.08	0.16	2.46	2.57	0.12
Administrative & Support Services	2.12	18.83	34.57	45.25	13.30	14.85	6.85	11.72	1.91	3.73	0.47	9.76	9.93	0.30	0.66	8.98	9.63	0.42
Public Administration & Safety	0.05	0.46	0.81	0.97	0.25	0.26	0.13	0.20	0.03	0.09	0.01	0.16	0.17	0.01	0.01	0.15	0.16	0.01
Education & Training	0.10	0.93	1.92	2.93	0.96	1.24	0.52	1.01	0.15	0.19	0.03	0.85	0.83	0.02	0.05	0.80	0.83	0.04
Health Care & Social Assistance	0.01	0.07	0.14	0.19	0.06	0.06	0.03	0.05	0.01	0.01	0.00	0.04	0.05	0.00	0.00	0.04	0.04	0.00
Arts & Recreation Services	0.20	1.80	3.19	3.95	1.14	1.15	0.56	0.89	0.16	0.35	0.05	0.74	0.78	0.03	0.06	0.67	0.74	0.03
Other Services	0.18	1.62	2.63	2.78	0.48	0.47	0.29	0.31	0.04	0.31	0.01	0.23	0.22	0.01	0.01	0.21	0.22	0.01
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	0.00	0.00
<b>Direct</b>	<b>12.90</b>	<b>114.66</b>	<b>213.52</b>	<b>285.43</b>	<b>82.59</b>	<b>97.45</b>	<b>44.02</b>	<b>77.40</b>	<b>11.94</b>	<b>22.73</b>	<b>2.50</b>	<b>64.13</b>	<b>63.79</b>	<b>1.87</b>	<b>3.90</b>	<b>59.79</b>	<b>62.79</b>	<b>2.86</b>
<b>Indirect</b>	<b>2.60</b>	<b>23.10</b>	<b>80.78</b>	<b>181.50</b>	<b>79.82</b>	<b>109.20</b>	<b>41.21</b>	<b>93.00</b>	<b>14.03</b>	<b>5.36</b>	<b>2.40</b>	<b>79.76</b>	<b>77.79</b>	<b>1.90</b>	<b>4.09</b>	<b>74.75</b>	<b>77.32</b>	<b>2.96</b>
<b>Total</b>	<b>15.50</b>	<b>137.76</b>	<b>294.30</b>	<b>466.93</b>	<b>162.42</b>	<b>206.65</b>	<b>85.23</b>	<b>170.40</b>	<b>25.97</b>	<b>28.09</b>	<b>4.90</b>	<b>143.89</b>	<b>141.57</b>	<b>3.76</b>	<b>7.98</b>	<b>134.54</b>	<b>140.11</b>	<b>5.82</b>

**Table 5.6: Distribution of household income effects-Alpha Coal Project (Mine) construction and capital expenditure, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	0.11	0.07	0.13	0.02	0.03	0.12	0.03	0.01	0.01	0.02	0.04	0.07	0.01	0.01	0.01	0.00
Mining	2.01	0.57	2.44	0.30	0.46	2.14	0.86	0.61	0.37	0.65	0.75	0.87	0.19	0.09	0.56	0.00
Manufacturing	99.83	11.45	109.32	14.14	16.34	113.60	18.16	5.48	5.35	15.04	12.87	19.74	9.09	5.09	11.02	0.03
Electricity, Gas, Water & Waste Services	0.22	0.07	0.25	0.03	0.04	0.24	0.05	0.02	0.02	0.03	0.05	0.08	0.02	0.01	0.03	0.00
Construction	0.89	7.54	1.09	0.16	0.53	1.20	0.28	0.15	0.11	0.17	0.39	7.60	0.11	0.07	0.13	0.03
Wholesale Trade	7.13	2.05	11.81	1.38	3.59	4.68	4.15	2.36	1.38	0.85	9.72	1.81	0.49	0.21	0.50	0.00
Retail Trade	0.76	0.37	0.93	0.12	0.19	0.79	0.21	0.10	0.07	0.12	0.31	0.41	0.07	0.04	0.08	0.00
Accommodation & Food Services	0.64	0.20	0.76	0.10	0.15	0.67	0.17	0.07	0.05	0.10	0.22	0.24	0.06	0.03	0.07	0.00
Transport, Postal & Warehousing	5.65	2.12	6.87	0.87	1.39	5.90	1.58	0.73	0.52	0.89	2.23	2.49	0.49	0.27	0.65	0.01
Information Media and Telecommunications	0.53	0.19	0.64	0.08	0.13	0.56	0.14	0.06	0.04	0.08	0.19	0.23	0.05	0.03	0.06	0.00
Financial & Insurance Services	2.37	1.70	2.91	0.37	0.63	2.48	0.69	0.32	0.23	0.37	1.00	1.84	0.21	0.11	0.27	0.01
Rental, Hiring & Real Estate Services	3.29	1.86	4.08	0.52	0.88	3.40	0.97	0.45	0.32	0.50	1.47	2.05	0.29	0.15	0.36	0.01
Professional, Scientific & Technical Services	2.52	1.34	2.90	0.37	0.54	2.78	0.59	0.24	0.19	0.39	0.65	1.53	0.23	0.13	0.29	0.00
Administrative & Support Services	9.38	4.25	11.03	1.41	2.12	10.13	2.31	0.96	0.73	1.43	2.90	4.89	0.84	0.46	1.04	0.01
Public Administration & Safety	0.16	0.10	0.19	0.02	0.04	0.17	0.04	0.02	0.01	0.02	0.05	0.11	0.01	0.01	0.02	0.00
Education & Training	0.81	0.23	0.92	0.12	0.16	0.90	0.18	0.07	0.06	0.13	0.18	0.29	0.07	0.04	0.09	0.00
Health Care & Social Assistance	0.04	0.02	0.05	0.01	0.01	0.04	0.01	0.00	0.00	0.01	0.02	0.02	0.00	0.00	0.00	0.00
Arts & Recreation Services	0.71	0.40	0.87	0.11	0.18	0.75	0.20	0.09	0.06	0.11	0.28	0.44	0.06	0.03	0.08	0.00
Other Services	0.22	0.32	0.25	0.03	0.05	0.25	0.05	0.02	0.02	0.04	0.06	0.34	0.02	0.01	0.03	0.00
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>61.37</b>	<b>25.90</b>	<b>71.00</b>	<b>9.10</b>	<b>13.05</b>	<b>67.32</b>	<b>14.31</b>	<b>5.76</b>	<b>4.54</b>	<b>9.53</b>	<b>16.27</b>	<b>30.43</b>	<b>5.52</b>	<b>3.05</b>	<b>6.99</b>	<b>0.09</b>
<b>Indirect</b>	<b>75.89</b>	<b>8.94</b>	<b>86.46</b>	<b>11.06</b>	<b>14.40</b>	<b>83.48</b>	<b>16.36</b>	<b>6.00</b>	<b>5.00</b>	<b>11.43</b>	<b>17.13</b>	<b>14.63</b>	<b>6.78</b>	<b>3.73</b>	<b>8.32</b>	<b>0.02</b>
<b>Total</b>	<b>137.25</b>	<b>34.84</b>	<b>157.45</b>	<b>20.16</b>	<b>27.46</b>	<b>150.79</b>	<b>30.66</b>	<b>11.76</b>	<b>9.54</b>	<b>20.95</b>	<b>33.40</b>	<b>45.06</b>	<b>12.30</b>	<b>6.78</b>	<b>15.31</b>	<b>0.11</b>



**Table 5.7: Distribution of employment effects-Alpha Coal Project (Mine) construction and capital expenditure, 2012-2029 (FTEs)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	2	17	30	38	12	12	6	9	2	3	1	8	8	0	1	7	8	0
Mining	3	26	53	84	33	39	17	34	7	5	1	24	25	3	4	26	26	7
Manufacturing	41	368	1,327	3,011	1,148	1,814	671	1,540	200	85	14	1,304	1,208	24	45	1,249	1,239	43
Electricity, Gas, Water & Waste Services	1	4	9	13	4	5	2	4	1	1	0	4	4	0	0	3	3	0
Construction	157	1,399	2,191	2,115	268	197	175	84	9	269	4	39	41	3	4	35	39	3
Wholesale Trade	7	60	124	199	233	96	50	83	41	13	26	90	145	7	23	56	108	4
Retail Trade	5	47	86	110	35	35	17	27	5	9	2	23	25	1	2	21	23	1
Accommodation & Food Services	2	19	38	56	20	22	10	18	3	4	1	16	16	1	1	14	16	1
Transport, Postal & Warehousing	15	136	259	356	122	129	58	104	19	27	5	88	92	3	7	80	88	4
Information Media and Telecommunications	2	20	38	53	18	20	9	16	3	4	1	14	14	0	1	12	14	1
Financial & Insurance Services	8	67	117	140	39	37	19	28	5	13	2	23	25	1	2	21	24	1
Rental, Hiring & Real Estate Services	6	53	94	115	35	33	16	26	5	10	2	22	24	1	2	19	22	1
Professional, Scientific & Technical Services	10	92	165	207	54	62	30	48	7	18	2	39	39	1	2	37	39	2
Administrative & Support Services	27	236	430	558	164	180	84	142	23	47	6	118	121	4	8	108	117	5
Public Administration & Safety	1	7	12	14	4	4	2	3	0	1	0	2	2	0	0	2	2	0
Education & Training	2	15	30	46	15	20	8	16	2	3	0	13	13	0	1	13	13	1
Health Care & Social Assistance	0	1	2	2	1	1	0	1	0	0	0	1	1	0	0	0	1	0
Arts & Recreation Services	4	34	60	72	20	20	10	15	3	7	1	13	13	0	1	11	13	1
Other Services	2	22	36	38	7	6	4	4	1	4	0	3	3	0	0	3	3	0
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>216</b>	<b>1,917</b>	<b>3,448</b>	<b>4,370</b>	<b>1,165</b>	<b>1,337</b>	<b>630</b>	<b>1,041</b>	<b>159</b>	<b>378</b>	<b>34</b>	<b>854</b>	<b>850</b>	<b>25</b>	<b>53</b>	<b>795</b>	<b>836</b>	<b>38</b>
<b>Indirect</b>	<b>80</b>	<b>707</b>	<b>1,652</b>	<b>2,860</b>	<b>1,067</b>	<b>1,394</b>	<b>558</b>	<b>1,162</b>	<b>176</b>	<b>147</b>	<b>32</b>	<b>988</b>	<b>969</b>	<b>24</b>	<b>52</b>	<b>924</b>	<b>960</b>	<b>37</b>
<b>Total</b>	<b>295</b>	<b>2,624</b>	<b>5,100</b>	<b>7,230</b>	<b>2,231</b>	<b>2,731</b>	<b>1,187</b>	<b>2,203</b>	<b>335</b>	<b>525</b>	<b>66</b>	<b>1,842</b>	<b>1,819</b>	<b>49</b>	<b>105</b>	<b>1,719</b>	<b>1,796</b>	<b>75</b>

**Table 5.8: Distribution of employment effects-Alpha Coal Project (Mine) construction and capital expenditure, 2030-2045 (FTEs)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	7	4	9	1	2	8	2	1	1	1	3	4	1	0	1	0
Mining	25	7	30	4	5	27	10	7	4	8	8	10	2	1	7	0
Manufacturing	1,227	132	1,343	174	200	1,397	223	67	65	185	157	234	112	63	135	0
Electricity, Gas, Water & Waste Services	3	1	4	1	1	4	1	0	0	1	1	1	0	0	0	0
Construction	38	272	46	7	20	49	12	6	5	7	16	275	4	3	6	1
Wholesale Trade	96	28	159	19	48	63	56	32	19	11	131	24	7	3	7	0
Retail Trade	22	11	28	3	6	23	6	3	2	3	9	12	2	1	2	0
Accommodation & Food Services	15	5	18	2	3	16	4	2	1	2	5	6	1	1	2	0
Transport, Postal & Warehousing	85	32	103	13	20	90	23	10	8	13	32	38	7	4	10	0
Information Media and Telecommunications	13	5	16	2	3	14	3	1	1	2	5	6	1	1	1	0
Financial & Insurance Services	23	15	28	4	6	24	7	3	2	4	10	16	2	1	3	0
Rental, Hiring & Real Estate Services	21	12	26	3	6	22	6	3	2	3	9	13	2	1	2	0
Professional, Scientific & Technical Services	38	20	44	6	8	42	9	4	3	6	10	23	3	2	4	0
Administrative & Support Services	113	53	134	17	26	122	28	12	9	17	36	61	10	6	13	0
Public Administration & Safety	2	1	3	0	1	2	1	0	0	0	1	2	0	0	0	0
Education & Training	13	4	15	2	3	14	3	1	1	2	3	5	1	1	1	0
Health Care & Social Assistance	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Arts & Recreation Services	12	8	15	2	3	13	3	1	1	2	5	8	1	1	1	0
Other Services	3	4	3	0	1	3	1	0	0	0	1	5	0	0	0	0
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>817</b>	<b>420</b>	<b>946</b>	<b>122</b>	<b>178</b>	<b>898</b>	<b>192</b>	<b>77</b>	<b>61</b>	<b>127</b>	<b>220</b>	<b>480</b>	<b>74</b>	<b>41</b>	<b>93</b>	<b>2</b>
<b>Indirect</b>	<b>941</b>	<b>193</b>	<b>1,076</b>	<b>138</b>	<b>184</b>	<b>1,035</b>	<b>206</b>	<b>77</b>	<b>63</b>	<b>142</b>	<b>222</b>	<b>262</b>	<b>84</b>	<b>46</b>	<b>103</b>	<b>1</b>
<b>Total</b>	<b>1,758</b>	<b>613</b>	<b>2,023</b>	<b>259</b>	<b>362</b>	<b>1,933</b>	<b>397</b>	<b>154</b>	<b>124</b>	<b>269</b>	<b>441</b>	<b>742</b>	<b>158</b>	<b>87</b>	<b>196</b>	<b>2</b>

**Table 5.9: Distribution of value added effects-Alpha Coal Project (Mine) construction and capital expenditure, 2012-2029 (\$M)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	0.15	1.37	2.43	3.05	0.93	0.91	0.44	0.71	0.13	0.27	0.04	0.60	0.64	0.02	0.05	0.53	0.60	0.03
Mining	1.99	17.69	34.94	52.01	23.28	22.32	10.11	19.44	4.36	3.58	1.27	14.57	16.23	1.76	2.45	14.77	15.96	3.48
Manufacturing	5.16	45.88	147.35	316.34	117.74	183.86	68.73	155.56	20.32	10.25	1.46	131.50	122.09	2.45	4.64	125.97	125.04	4.43
Electricity, Gas, Water & Waste Services	0.21	1.83	3.66	5.37	1.73	2.14	0.91	1.74	0.27	0.37	0.05	1.46	1.44	0.04	0.08	1.36	1.42	0.06
Construction	10.66	94.75	148.08	142.46	17.60	12.76	11.67	5.19	0.48	18.18	0.22	2.20	2.35	0.16	0.27	2.00	2.23	0.20
Wholesale Trade	0.77	6.81	14.14	22.72	26.90	10.91	5.67	9.49	4.70	1.51	3.00	10.29	16.67	0.78	2.63	6.36	12.44	0.40
Retail Trade	0.23	2.07	3.77	4.88	1.56	1.58	0.74	1.25	0.23	0.41	0.07	1.05	1.12	0.04	0.09	0.95	1.06	0.05
Accommodation & Food Services	0.15	1.37	2.73	4.01	1.46	1.61	0.70	1.31	0.23	0.28	0.06	1.12	1.17	0.04	0.08	1.02	1.12	0.05
Transport, Postal & Warehousing	1.47	13.05	24.75	34.09	12.08	12.38	5.60	10.00	1.87	2.61	0.57	8.47	9.03	0.33	0.73	7.65	8.55	0.46
Information Media and Telecommunications	0.28	2.46	4.71	6.57	2.27	2.43	1.08	1.96	0.35	0.49	0.10	1.67	1.74	0.05	0.13	1.51	1.66	0.07
Financial & Insurance Services	1.49	13.24	22.96	27.45	7.64	7.33	3.72	5.57	1.03	2.60	0.34	4.60	4.95	0.18	0.41	4.12	4.65	0.24
Rental, Hiring & Real Estate Services	2.25	19.99	35.28	43.49	13.21	12.57	6.20	9.72	1.86	3.94	0.63	8.16	8.87	0.31	0.75	7.25	8.28	0.40
Professional, Scientific & Technical Services	0.87	7.72	13.80	17.34	4.51	5.21	2.47	4.04	0.61	1.52	0.13	3.30	3.27	0.10	0.20	3.08	3.22	0.15
Administrative & Support Services	2.65	23.55	43.16	56.39	16.56	18.43	8.51	14.53	2.37	4.66	0.59	12.11	12.32	0.37	0.82	11.13	11.95	0.52
Public Administration & Safety	0.06	0.52	0.90	1.09	0.28	0.30	0.15	0.23	0.04	0.10	0.01	0.18	0.19	0.01	0.01	0.17	0.18	0.01
Education & Training	0.11	1.00	2.07	3.17	1.04	1.34	0.56	1.10	0.16	0.20	0.03	0.92	0.90	0.02	0.05	0.86	0.89	0.04
Health Care & Social Assistance	0.01	0.09	0.17	0.23	0.07	0.08	0.04	0.06	0.01	0.02	0.00	0.05	0.06	0.00	0.00	0.05	0.05	0.00
Arts & Recreation Services	0.31	2.71	4.82	6.01	1.76	1.78	0.86	1.38	0.25	0.53	0.07	1.15	1.22	0.04	0.09	1.04	1.15	0.05
Other Services	0.19	1.67	2.72	2.88	0.50	0.49	0.30	0.32	0.04	0.32	0.01	0.23	0.23	0.01	0.02	0.22	0.23	0.01
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	0.00	0.00
<b>Direct</b>	<b>22.55</b>	<b>200.41</b>	<b>369.58</b>	<b>487.35</b>	<b>144.76</b>	<b>162.36</b>	<b>74.46</b>	<b>128.58</b>	<b>20.94</b>	<b>39.70</b>	<b>5.10</b>	<b>106.95</b>	<b>108.64</b>	<b>3.37</b>	<b>7.28</b>	<b>98.69</b>	<b>105.60</b>	<b>4.93</b>
<b>Indirect</b>	<b>6.45</b>	<b>57.35</b>	<b>142.87</b>	<b>262.19</b>	<b>106.37</b>	<b>136.05</b>	<b>54.01</b>	<b>115.00</b>	<b>18.35</b>	<b>12.14</b>	<b>3.56</b>	<b>96.67</b>	<b>95.83</b>	<b>3.35</b>	<b>6.23</b>	<b>91.36</b>	<b>95.08</b>	<b>5.73</b>
<b>Total</b>	<b>29.00</b>	<b>257.76</b>	<b>512.45</b>	<b>749.54</b>	<b>251.13</b>	<b>298.41</b>	<b>128.47</b>	<b>243.59</b>	<b>39.29</b>	<b>51.84</b>	<b>8.66</b>	<b>203.62</b>	<b>204.48</b>	<b>6.72</b>	<b>13.51</b>	<b>190.05</b>	<b>200.69</b>	<b>10.66</b>

**Table 5.10: Distribution of value added effects-Alpha Coal Project (Mine) construction and capital expenditure, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	0.58	0.31	0.71	0.09	0.15	0.60	0.16	0.07	0.05	0.09	0.24	0.34	0.05	0.03	0.06	0.00
Mining	15.11	4.64	19.06	2.36	3.91	15.40	6.40	4.26	2.57	4.22	7.22	6.42	1.38	0.64	3.53	0.01
Manufacturing	123.86	15.04	135.76	17.56	20.38	140.88	22.64	6.88	6.68	18.67	16.23	25.31	11.27	6.31	13.69	0.04
Electricity, Gas, Water & Waste Services	1.39	0.44	1.60	0.21	0.28	1.53	0.32	0.13	0.10	0.22	0.35	0.54	0.13	0.07	0.16	0.00
Construction	2.15	18.39	2.62	0.39	1.28	2.91	0.68	0.37	0.28	0.41	0.94	18.52	0.25	0.17	0.32	0.08
Wholesale Trade	11.00	3.17	18.29	2.13	5.57	7.17	6.45	3.67	2.14	1.31	15.14	2.78	0.75	0.33	0.77	0.01
Retail Trade	1.02	0.47	1.25	0.16	0.26	1.07	0.28	0.13	0.09	0.16	0.41	0.54	0.09	0.05	0.11	0.00
Accommodation & Food Services	1.08	0.34	1.30	0.16	0.25	1.14	0.28	0.12	0.09	0.16	0.38	0.41	0.10	0.05	0.12	0.00
Transport, Postal & Warehousing	8.24	3.14	10.06	1.27	2.04	8.57	2.34	1.08	0.77	1.30	3.33	3.66	0.72	0.39	0.95	0.01
Information Media and Telecommunications	1.61	0.59	1.94	0.25	0.38	1.70	0.42	0.18	0.13	0.24	0.59	0.69	0.14	0.08	0.17	0.00
Financial & Insurance Services	4.48	2.89	5.50	0.70	1.19	4.67	1.30	0.61	0.43	0.70	1.90	3.17	0.39	0.21	0.51	0.01
Rental, Hiring & Real Estate Services	7.95	4.48	9.86	1.24	2.13	8.20	2.34	1.09	0.76	1.22	3.56	4.94	0.69	0.37	0.88	0.02
Professional, Scientific & Technical Services	3.15	1.68	3.64	0.47	0.68	3.48	0.73	0.30	0.23	0.49	0.82	1.92	0.29	0.16	0.36	0.01
Administrative & Support Services	11.63	5.31	13.70	1.75	2.64	12.56	2.87	1.19	0.91	1.78	3.62	6.11	1.04	0.57	1.29	0.02
Public Administration & Safety	0.18	0.11	0.21	0.03	0.04	0.19	0.05	0.02	0.01	0.03	0.06	0.12	0.02	0.01	0.02	0.00
Education & Training	0.88	0.24	1.00	0.13	0.17	0.97	0.19	0.07	0.06	0.14	0.20	0.31	0.08	0.04	0.10	0.00
Health Care & Social Assistance	0.05	0.02	0.06	0.01	0.01	0.05	0.01	0.01	0.00	0.01	0.02	0.02	0.00	0.00	0.01	0.00
Arts & Recreation Services	1.12	0.60	1.35	0.17	0.28	1.17	0.31	0.14	0.10	0.17	0.43	0.67	0.10	0.05	0.12	0.00
Other Services	0.22	0.34	0.26	0.03	0.06	0.26	0.05	0.02	0.02	0.04	0.06	0.35	0.02	0.01	0.03	0.00
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>102.80</b>	<b>45.41</b>	<b>120.90</b>	<b>15.43</b>	<b>23.11</b>	<b>111.15</b>	<b>25.46</b>	<b>10.71</b>	<b>8.15</b>	<b>15.95</b>	<b>31.57</b>	<b>52.62</b>	<b>9.18</b>	<b>5.03</b>	<b>11.67</b>	<b>0.16</b>
<b>Indirect</b>	<b>92.89</b>	<b>16.79</b>	<b>107.25</b>	<b>13.67</b>	<b>18.59</b>	<b>101.37</b>	<b>22.37</b>	<b>9.62</b>	<b>7.30</b>	<b>15.40</b>	<b>23.92</b>	<b>24.22</b>	<b>8.33</b>	<b>4.51</b>	<b>11.55</b>	<b>0.05</b>
<b>Total</b>	<b>195.69</b>	<b>62.20</b>	<b>228.15</b>	<b>29.10</b>	<b>41.70</b>	<b>212.52</b>	<b>47.83</b>	<b>20.34</b>	<b>15.44</b>	<b>31.35</b>	<b>55.49</b>	<b>76.84</b>	<b>17.51</b>	<b>9.54</b>	<b>23.21</b>	<b>0.20</b>

### 5.1.3 Operating Expenditure Impacts

Operating costs are anticipated to commence in 2013 and run through to 2045. HCPL is anticipated to expend approximately \$30,602.52 million in operating expenses throughout the life of the Project. The most significant cost items in terms of total operating costs include:

- Operating labour costs: 18% of total operating costs;
- Fuel and lubricant costs: 19% of total operating costs;
- Equipment maintenance consumables: 13% of total operating costs.

The composition of Project operating costs indicates that the operation of the Alpha Coal Project (Mine) is likely to result in major stimulus to the mining and manufacturing sectors of Queensland.

These costs are anticipated to gradually increase throughout the life of the Project from less than \$20 million per annum in the first two years of operation to:

- \$289.47 million in 2016;
- \$895.26 million in 2021;
- \$953.90 million in 2026;
- \$1,034.25 million in 2031;
- \$1,122.08 million in 2036;
- \$1,227.04 million in 2041; and
- \$1,476.93 million in 2045

Table 5.11 below summarises operating costs associated with the Alpha Coal Project (Mine) for selected years. A detailed breakdown of operating costs is presented in Appendix A.

**Table 5.11: Summary of Alpha Coal Project (Mine) operating costs (\$M)**

	2013	2014	2019	2024	2029	2032	2039	2045	Total
Operating Labour Costs	0.00	0.00	155.77	184.88	181.16	188.02	201.11	238.07	5,537.36
Maintenance Labour Costs	0.00	0.00	47.47	55.29	53.66	57.40	61.56	74.21	1,673.22
Fuel and Lube Costs	0.00	0.00	177.50	201.44	183.55	191.51	211.10	283.43	5,915.21
Electrical Power Costs	0.00	0.00	55.67	71.62	84.87	98.85	103.32	110.87	2,541.55
Other Equipment Operating Consumables	0.00	0.00	42.49	53.31	52.89	58.52	63.43	77.16	1,650.62
Equipment Maintenance Consumables	0.00	0.00	119.17	134.41	124.61	132.89	146.27	196.50	4,046.36
Coal Handling Prep Plant	0.00	0.00	87.99	113.44	114.02	108.07	113.30	140.63	3,205.59
Explosives Costs	0.00	0.00	25.73	37.97	46.63	57.50	67.84	81.41	1,510.82
Other Consumables Costs	12.00	12.14	29.02	32.53	33.53	34.42	35.54	36.85	1,018.29
Site Contractors Costs	0.00	0.00	18.58	28.43	35.69	51.69	45.06	19.26	1,131.55
Other Contracts Costs	0.34	5.53	59.46	63.28	60.91	88.10	90.01	218.53	2,371.95
Miscellaneous Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>12.34</b>	<b>17.67</b>	<b>818.85</b>	<b>976.60</b>	<b>971.51</b>	<b>1,066.97</b>	<b>1,138.55</b>	<b>1,476.93</b>	<b>30,602.52</b>

As with construction and capital expenditure, operating expenditure by year and type of expenditure (summarised in Appendix A) 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 5.12 to 5.19 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 (Mine).

### Output or Consumption Effects

The output (or consumption) impacts of operating expenditure associated with the Alpha Coal Project (Mine) are detailed in Tables 5.12 and 5.13 below. As stated previously, the economic impacts resulting from operating expenditure increase from generally minimal impacts in the first two years of operation to significant impacts by 2019 after which impacts continue to increase until the final year of operation (2045).

In the first year of operation (2013), total output (or consumption) impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to be approximately \$28.55 million, comprising \$12.34 million in direct output (or consumption) effects and \$16.21 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 \$19.42 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 Project (Mine) are estimated to increase to approximately \$2,289.31 million, comprising \$953.90 million in direct output (or consumption) effects and \$1,335.40 million in indirect output (or consumption) effects. The three most significantly impacted sectors at this stage of the Project include:

- Mining, with output (or consumption) impacts of \$783.83 million;
- Manufacturing, with output (or consumption) impacts of \$589.17 million; and
- Wholesale trade, with output (or consumption) impacts of \$286.26 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 the final year of operation (2045), total output (or consumption) impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$3,509.62 million, comprising \$1,476.93 million in direct output (or consumption) effects and \$2,032.69 million in indirect output (or consumption) effects. The three most significantly impacted sectors at this stage of the Project include:

- Mining, with output (or consumption) impacts of \$1,244.96 million;
- Manufacturing, with output (or consumption) impacts of \$882.88 million; and

- Wholesale trade, with output (or consumption) impacts of \$429.81 million.

### Household Income Effects

The household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are detailed in Tables 5.14 and 5.15 below.

In the first year of operation (2013), total household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to be approximately \$7.67 million, comprising \$4.20 million in direct household income effects and \$3.47 million in indirect household income effects.

By 2026, total household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$424.43 million, comprising \$271.81 million in direct household income effects and \$152.62 million in indirect household income effects.

In the final year of operation (2045), total household income impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$645.53 million, comprising \$414.52 million in direct household income effects and \$231.01 million in indirect household income effects.

### Employment Effects

Operational employment levels are expected to increase from approximately 340 workers in 2013 to approximately:

- 2,060 workers in 2016;
- 1,960 workers in 2021;
- 2,010 workers in 2026;
- 2,070 workers in 2031;
- 2,250 workers in 2036; and
- 2,380 workers in 2042.

The total employment impacts of operating expenditure associated with the Alpha Coal Project (Mine) are detailed in Tables 5.16 and 5.17 below.

In the first year of operation (2013), operating expenditure associated with the Alpha Coal Project (Mine) is estimated to support 92 full time equivalent positions, including 54 direct full time equivalent positions and 38 indirect full time equivalent positions.

By 2026, operating expenditure associated with the Alpha Coal Project (Mine) is estimated to support 5,487 full time equivalent positions, including 3,597 direct full time equivalent positions and 1,890 indirect full time equivalent positions.

In the final year of operation (2045), operating expenditure associated with the Alpha Coal Project (Mine) is estimated to support 8,338 full time equivalent positions, including 5,479 direct full time equivalent positions and 2,859 indirect full time equivalent positions.

## Value Added Effects

The value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are detailed in Tables 5.18 and 5.19 below. As stated previously, the economic impacts resulting from operating expenditure increase from generally minimal impacts in the first two years of operation to significant impacts by 2019 after which impacts continue to increase until the final year of operation (2045).

In the first year of operation (2013), total value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to be approximately \$12.85 million, comprising \$7.34 million in direct value added effects and \$5.52 million in indirect value added 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 \$8.08 million.

By 2026, total value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$1,149.02 million, comprising \$734.26 million in direct value added effects and \$414.77 million in indirect value added effects. The three most significantly impacted sectors at this stage of the Project include:

- Mining, with value added impacts of \$553.76 million;
- Manufacturing, with value added impacts of \$189.45 million; and
- Wholesale trade, with value added impacts of \$111.67 million.

In the final year of operation (2042), total value added impacts of operating expenditure associated with the Alpha Coal Project (Mine) are estimated to increase to approximately \$1,770.63 million, comprising \$1,115.79 million in direct value added effects and \$654.84 million in indirect value added effects. The three most significantly impacted sectors at this stage of the Project include:

- Mining, with value added impacts of \$874.96 million;
- Manufacturing, with value added impacts of \$282.35 million; and
- Wholesale trade, with value added impacts of \$168.40 million.



**Table 5.12: Distribution of output or consumption effects-Alpha Coal Project (Mine) operating expenditure, 2013-2029 (\$M)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	0.49	0.51	1.09	2.69	4.74	6.46	7.82	8.66	8.61	8.67	9.40	9.49	9.50	9.36	10.02	9.53	9.68
Mining	1.57	7.60	88.25	236.30	436.03	575.82	697.03	767.26	749.60	746.19	812.03	813.36	786.44	783.83	832.36	762.59	784.08
Manufacturing	19.42	20.58	55.10	166.75	308.72	420.75	506.54	560.92	552.76	555.52	605.21	606.38	602.76	589.17	633.66	591.13	599.04
Electricity, Gas, Water & Waste Services	0.25	0.30	1.26	48.95	62.84	77.39	86.59	92.19	96.84	98.10	104.80	110.39	116.75	113.50	124.20	124.49	124.59
Construction	0.44	0.71	5.82	22.60	39.80	52.20	62.84	69.15	67.80	67.92	74.09	74.48	73.28	72.48	77.63	72.45	73.70
Wholesale Trade	0.96	1.17	19.33	77.02	155.32	205.83	255.50	283.97	269.87	271.26	301.16	298.29	287.96	286.26	306.88	281.67	285.87
Retail Trade	0.26	0.31	1.27	4.12	7.51	10.04	12.16	13.42	13.15	13.20	14.42	14.47	14.26	14.08	15.09	14.07	14.31
Accommodation & Food Services	0.39	0.44	1.64	5.17	9.50	12.73	15.42	17.03	16.67	16.74	18.30	18.34	18.08	17.82	19.11	17.80	18.10
Transport, Postal & Warehousing	1.57	2.03	9.68	28.22	51.64	69.02	83.58	92.26	90.59	90.66	98.76	99.19	97.40	96.42	103.03	95.76	97.73
Information Media and Telecommunications	0.20	0.24	1.28	4.55	8.47	11.31	13.73	15.19	14.82	14.87	16.27	16.29	16.02	15.80	16.95	15.75	15.99
Financial & Insurance Services	0.42	0.59	3.79	13.67	24.42	32.29	38.96	42.94	42.16	42.24	46.05	46.29	45.61	45.07	48.28	45.04	45.83
Rental, Hiring & Real Estate Services	0.75	1.11	8.04	26.77	50.25	66.97	81.35	89.87	87.54	87.66	96.00	96.05	93.97	92.91	99.49	91.91	93.64
Professional, Scientific & Technical Services	0.26	0.37	2.15	6.68	12.18	16.31	19.65	21.70	21.41	21.40	23.23	23.35	23.01	22.70	24.27	22.55	22.99
Administrative & Support Services	1.24	1.55	8.41	29.91	55.93	75.27	90.77	100.65	98.92	99.15	107.98	107.96	106.94	104.80	112.27	104.25	105.86
Public Administration & Safety	0.04	0.05	0.19	0.55	1.01	1.35	1.64	1.81	1.78	1.79	1.94	1.95	1.92	1.90	2.03	1.90	1.93
Education & Training	0.07	0.09	0.39	1.43	2.52	3.36	4.02	4.43	4.38	4.39	4.77	4.81	4.78	4.70	5.04	4.73	4.80
Health Care & Social Assistance	0.01	0.01	0.04	0.12	0.21	0.28	0.34	0.38	0.38	0.38	0.41	0.41	0.41	0.40	0.43	0.40	0.41
Arts & Recreation Services	0.20	0.26	1.47	5.02	9.36	12.51	15.15	16.76	16.38	16.41	17.94	17.95	17.65	17.40	18.64	17.27	17.57
Other Services	0.01	0.02	0.07	0.21	0.37	0.50	0.60	0.66	0.66	0.66	0.71	0.72	0.71	0.70	0.75	0.70	0.72
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	0.00
<b>Direct</b>	<b>12.34</b>	<b>17.67</b>	<b>94.98</b>	<b>289.47</b>	<b>511.69</b>	<b>681.55</b>	<b>818.85</b>	<b>902.56</b>	<b>895.26</b>	<b>894.56</b>	<b>967.99</b>	<b>976.60</b>	<b>964.88</b>	<b>953.90</b>	<b>1,018.54</b>	<b>951.87</b>	<b>971.51</b>
<b>Indirect</b>	<b>16.21</b>	<b>20.26</b>	<b>114.30</b>	<b>391.26</b>	<b>729.13</b>	<b>968.84</b>	<b>1,174.83</b>	<b>1,296.70</b>	<b>1,259.06</b>	<b>1,262.65</b>	<b>1,385.49</b>	<b>1,383.59</b>	<b>1,352.57</b>	<b>1,335.40</b>	<b>1,431.60</b>	<b>1,322.11</b>	<b>1,345.35</b>
<b>Total</b>	<b>28.55</b>	<b>37.93</b>	<b>209.28</b>	<b>680.73</b>	<b>1,240.82</b>	<b>1,650.39</b>	<b>1,993.68</b>	<b>2,199.26</b>	<b>2,154.32</b>	<b>2,157.21</b>	<b>2,353.48</b>	<b>2,360.19</b>	<b>2,317.45</b>	<b>2,289.31</b>	<b>2,450.14</b>	<b>2,273.98</b>	<b>2,316.85</b>

**Table 5.13: Distribution of output or consumption effects-Alpha Coal Project (Mine) operating expenditure, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	9.96	10.20	10.28	10.66	10.58	11.12	11.32	11.56	11.39	11.53	11.82	12.35	12.86	13.02	13.80	14.36
Mining	785.46	841.57	828.20	872.96	863.48	881.74	896.31	932.80	905.56	918.75	969.17	1,010.43	1,058.55	1,065.86	1,171.06	1,244.96
Manufacturing	614.77	619.15	621.40	645.60	638.82	676.86	686.23	696.14	683.86	694.98	710.65	743.68	781.56	792.85	841.65	882.88
Electricity, Gas, Water & Waste Services	130.07	131.97	133.31	138.83	139.60	150.92	149.81	149.99	147.91	146.21	146.11	148.05	150.17	149.56	150.14	163.79
Construction	75.14	77.62	77.44	80.98	80.45	83.68	84.86	86.79	85.02	86.10	89.08	92.77	97.09	98.22	105.15	110.29
Wholesale Trade	294.03	295.47	297.86	309.86	308.21	318.41	326.68	331.74	327.29	335.07	346.51	365.74	388.35	398.46	426.72	429.81
Retail Trade	14.63	15.02	15.03	15.69	15.57	16.25	16.52	16.87	16.55	16.80	17.34	18.12	19.00	19.26	20.60	21.52
Accommodation & Food Services	18.51	18.94	18.97	19.78	19.61	20.50	20.85	21.27	20.88	21.22	21.88	22.89	24.02	24.38	26.07	27.18
Transport, Postal & Warehousing	99.32	103.50	103.04	107.85	106.90	110.95	112.70	115.85	113.28	114.86	119.31	124.48	130.33	131.73	142.04	149.50
Information Media and Telecommunications	16.37	16.69	16.71	17.43	17.30	18.08	18.37	18.71	18.37	18.66	19.24	20.12	21.15	21.48	22.95	23.90
Financial & Insurance Services	46.74	48.29	48.19	50.39	50.03	52.11	52.84	54.05	52.95	53.62	55.46	57.77	60.46	61.16	65.50	68.79
Rental, Hiring & Real Estate Services	95.35	98.32	98.06	102.64	101.73	105.72	107.46	109.99	107.70	109.44	113.52	118.71	124.81	126.60	136.33	142.57
Professional, Scientific & Technical Services	23.33	24.29	24.13	25.29	25.04	26.10	26.42	27.12	26.48	26.81	27.80	28.92	30.25	30.52	32.88	34.92
Administrative & Support Services	107.91	109.86	109.80	114.81	113.44	119.44	120.85	122.81	120.62	122.33	125.68	131.06	137.47	139.43	149.03	157.00
Public Administration & Safety	1.97	2.03	2.03	2.12	2.10	2.19	2.22	2.28	2.23	2.26	2.34	2.44	2.56	2.59	2.77	2.91
Education & Training	4.90	5.03	5.03	5.25	5.21	5.48	5.53	5.64	5.53	5.59	5.75	5.98	6.24	6.31	6.72	7.11
Health Care & Social Assistance	0.42	0.43	0.43	0.45	0.44	0.46	0.47	0.48	0.47	0.48	0.49	0.52	0.54	0.55	0.59	0.61
Arts & Recreation Services	17.92	18.37	18.35	19.18	19.00	19.84	20.14	20.55	20.16	20.47	21.15	22.10	23.21	23.55	25.26	26.44
Other Services	0.73	0.77	0.76	0.80	0.79	0.82	0.83	0.86	0.83	0.84	0.87	0.90	0.94	0.94	1.02	1.09
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>984.92</b>	<b>1,034.25</b>	<b>1,026.68</b>	<b>1,076.23</b>	<b>1,066.97</b>	<b>1,109.28</b>	<b>1,122.08</b>	<b>1,155.11</b>	<b>1,127.46</b>	<b>1,138.55</b>	<b>1,182.23</b>	<b>1,227.04</b>	<b>1,278.43</b>	<b>1,286.39</b>	<b>1,385.77</b>	<b>1,476.93</b>
<b>Indirect</b>	<b>1,372.61</b>	<b>1,403.27</b>	<b>1,402.36</b>	<b>1,464.32</b>	<b>1,451.32</b>	<b>1,511.40</b>	<b>1,538.34</b>	<b>1,570.41</b>	<b>1,539.64</b>	<b>1,567.47</b>	<b>1,621.93</b>	<b>1,699.98</b>	<b>1,791.12</b>	<b>1,820.08</b>	<b>1,954.48</b>	<b>2,032.69</b>
<b>Total</b>	<b>2,357.53</b>	<b>2,437.52</b>	<b>2,429.03</b>	<b>2,540.55</b>	<b>2,518.29</b>	<b>2,620.68</b>	<b>2,660.42</b>	<b>2,725.52</b>	<b>2,667.10</b>	<b>2,706.02</b>	<b>2,804.16</b>	<b>2,927.02</b>	<b>3,069.55</b>	<b>3,106.47</b>	<b>3,340.25</b>	<b>3,509.62</b>

**Table 5.14: Distribution of household income effects-Alpha Coal Project (Mine) operating expenditure, 2013-2029 (\$M)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	0.06	0.06	0.12	0.29	0.50	0.68	0.82	0.91	0.91	0.91	0.99	1.00	1.00	0.99	1.06	1.01	1.03
Mining	0.14	0.81	8.66	21.30	38.28	50.63	61.01	67.11	66.37	65.87	71.05	71.57	69.48	69.38	73.41	67.61	69.73
Manufacturing	5.32	5.63	12.01	34.78	61.38	85.61	101.48	112.63	114.43	114.87	123.03	124.66	127.00	122.94	132.45	125.69	126.97
Electricity, Gas, Water & Waste Services	0.02	0.02	0.09	3.59	4.60	5.67	6.34	6.75	7.09	7.18	7.67	8.08	8.55	8.31	9.10	9.12	9.13
Construction	0.06	0.09	0.75	2.93	5.15	6.74	8.12	8.93	8.76	8.78	9.57	9.62	9.47	9.37	10.03	9.37	9.53
Wholesale Trade	0.25	0.30	4.86	19.29	39.11	51.88	64.42	71.53	67.89	68.26	75.93	75.20	72.55	72.11	77.38	70.91	71.99
Retail Trade	0.08	0.10	0.40	1.29	2.36	3.15	3.81	4.21	4.13	4.14	4.52	4.54	4.47	4.42	4.74	4.42	4.49
Accommodation & Food Services	0.08	0.09	0.34	1.08	1.98	2.65	3.21	3.55	3.47	3.49	3.81	3.82	3.77	3.71	3.98	3.71	3.77
Transport, Postal & Warehousing	0.57	0.72	3.34	9.78	17.90	23.94	28.99	32.01	31.44	31.47	34.28	34.43	33.84	33.48	35.79	33.28	33.95
Information Media and Telecommunications	0.03	0.03	0.18	0.63	1.18	1.57	1.91	2.11	2.06	2.06	2.26	2.26	2.22	2.19	2.35	2.18	2.22
Financial & Insurance Services	0.15	0.21	1.38	4.96	8.87	11.73	14.15	15.60	15.32	15.34	16.73	16.81	16.56	16.37	17.52	16.34	16.63
Rental, Hiring & Real Estate Services	0.14	0.21	1.52	5.07	9.52	12.68	15.41	17.02	16.58	16.60	18.18	18.19	17.80	17.60	18.84	17.41	17.74
Professional, Scientific & Technical Services	0.11	0.15	0.88	2.74	5.00	6.70	8.07	8.91	8.79	8.79	9.54	9.59	9.45	9.32	9.97	9.26	9.44
Administrative & Support Services	0.53	0.66	3.55	12.80	23.94	32.29	38.87	43.13	42.47	42.57	46.31	46.31	45.98	44.98	48.19	44.77	45.44
Public Administration & Safety	0.02	0.02	0.09	0.27	0.48	0.65	0.79	0.87	0.85	0.86	0.93	0.93	0.92	0.91	0.97	0.91	0.92
Education & Training	0.05	0.06	0.28	1.01	1.77	2.36	2.82	3.11	3.08	3.09	3.35	3.38	3.36	3.30	3.54	3.32	3.37
Health Care & Social Assistance	0.01	0.01	0.02	0.07	0.12	0.16	0.20	0.22	0.22	0.22	0.24	0.24	0.23	0.23	0.25	0.23	0.24
Arts & Recreation Services	0.04	0.06	0.33	1.12	2.09	2.79	3.38	3.73	3.65	3.66	4.00	4.00	3.93	3.88	4.15	3.85	3.91
Other Services	0.02	0.02	0.10	0.28	0.50	0.67	0.80	0.88	0.88	0.88	0.95	0.96	0.95	0.94	1.00	0.94	0.96
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	0.00
<b>Direct</b>	<b>4.20</b>	<b>5.21</b>	<b>24.76</b>	<b>79.88</b>	<b>146.01</b>	<b>195.06</b>	<b>235.72</b>	<b>260.41</b>	<b>255.55</b>	<b>256.01</b>	<b>279.00</b>	<b>279.85</b>	<b>275.54</b>	<b>271.81</b>	<b>291.02</b>	<b>270.68</b>	<b>275.47</b>
<b>Indirect</b>	<b>3.47</b>	<b>4.06</b>	<b>14.15</b>	<b>43.39</b>	<b>78.71</b>	<b>107.50</b>	<b>128.88</b>	<b>142.80</b>	<b>142.83</b>	<b>143.02</b>	<b>154.34</b>	<b>155.75</b>	<b>156.00</b>	<b>152.62</b>	<b>163.71</b>	<b>153.65</b>	<b>155.98</b>
<b>Total</b>	<b>7.67</b>	<b>9.27</b>	<b>38.91</b>	<b>123.27</b>	<b>224.72</b>	<b>302.56</b>	<b>364.59</b>	<b>403.21</b>	<b>398.37</b>	<b>399.03</b>	<b>433.34</b>	<b>435.60</b>	<b>431.54</b>	<b>424.43</b>	<b>454.73</b>	<b>424.33</b>	<b>431.46</b>

**Table 5.15: Distribution of household income effects-Alpha Coal Project (Mine) operating expenditure, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	1.06	1.09	1.09	1.13	1.13	1.19	1.21	1.23	1.21	1.23	1.26	1.31	1.36	1.38	1.46	1.52
Mining	69.44	75.90	74.30	78.55	77.68	79.07	80.10	83.94	81.21	82.01	86.86	90.05	93.72	93.76	103.52	111.74
Manufacturing	130.50	131.77	132.08	137.13	135.61	146.03	146.55	148.34	145.50	146.58	148.41	153.64	159.76	160.59	168.52	182.17
Electricity, Gas, Water & Waste Services	9.53	9.67	9.77	10.17	10.23	11.06	10.98	10.99	10.84	10.71	10.70	10.84	11.00	10.95	10.99	11.99
Construction	9.72	10.04	10.01	10.47	10.40	10.82	10.97	11.22	10.99	11.13	11.51	11.99	12.55	12.69	13.58	14.25
Wholesale Trade	74.07	74.40	75.01	78.08	77.64	80.24	82.35	83.62	82.48	84.49	87.42	92.35	98.15	100.75	107.97	108.73
Retail Trade	4.59	4.72	4.72	4.93	4.89	5.10	5.18	5.30	5.20	5.27	5.44	5.69	5.96	6.04	6.47	6.75
Accommodation & Food Services	3.86	3.95	3.95	4.12	4.09	4.27	4.34	4.43	4.35	4.42	4.56	4.77	5.01	5.08	5.43	5.66
Transport, Postal & Warehousing	34.53	35.92	35.78	37.44	37.11	38.55	39.16	40.22	39.34	39.89	41.40	43.20	45.24	45.74	49.27	51.83
Information Media and Telecommunications	2.27	2.32	2.32	2.42	2.40	2.51	2.55	2.60	2.55	2.59	2.67	2.79	2.93	2.98	3.18	3.32
Financial & Insurance Services	16.96	17.53	17.49	18.29	18.15	18.90	19.17	19.61	19.21	19.46	20.13	20.97	21.95	22.20	23.79	24.98
Rental, Hiring & Real Estate Services	18.06	18.62	18.57	19.44	19.27	20.02	20.35	20.83	20.40	20.73	21.50	22.48	23.64	23.98	25.82	27.00
Professional, Scientific & Technical Services	9.58	9.97	9.91	10.38	10.28	10.72	10.85	11.14	10.88	11.01	11.42	11.88	12.42	12.53	13.50	14.34
Administrative & Support Services	46.32	47.07	47.05	49.21	48.58	51.29	51.83	52.61	51.68	52.39	53.74	56.00	58.71	59.53	63.57	67.15
Public Administration & Safety	0.94	0.97	0.97	1.02	1.01	1.05	1.07	1.09	1.07	1.09	1.12	1.17	1.23	1.24	1.33	1.39
Education & Training	3.44	3.54	3.53	3.69	3.66	3.85	3.89	3.96	3.88	3.93	4.04	4.20	4.39	4.43	4.72	5.00
Health Care & Social Assistance	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.27	0.28	0.28	0.30	0.31	0.32	0.34	0.35
Arts & Recreation Services	3.99	4.09	4.09	4.27	4.23	4.42	4.49	4.58	4.49	4.56	4.71	4.93	5.17	5.25	5.63	5.89
Other Services	0.97	1.02	1.01	1.06	1.05	1.10	1.11	1.14	1.11	1.12	1.16	1.21	1.25	1.26	1.35	1.45
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>280.80</b>	<b>289.18</b>	<b>288.60</b>	<b>301.45</b>	<b>298.84</b>	<b>311.83</b>	<b>316.44</b>	<b>323.65</b>	<b>317.01</b>	<b>321.56</b>	<b>332.37</b>	<b>346.86</b>	<b>363.64</b>	<b>368.10</b>	<b>394.72</b>	<b>414.52</b>
<b>Indirect</b>	<b>159.26</b>	<b>163.65</b>	<b>163.31</b>	<b>170.59</b>	<b>168.82</b>	<b>178.62</b>	<b>179.99</b>	<b>183.49</b>	<b>179.67</b>	<b>181.33</b>	<b>185.98</b>	<b>192.91</b>	<b>201.10</b>	<b>202.59</b>	<b>215.72</b>	<b>231.01</b>
<b>Total</b>	<b>440.06</b>	<b>452.83</b>	<b>451.91</b>	<b>472.04</b>	<b>467.66</b>	<b>490.45</b>	<b>496.42</b>	<b>507.14</b>	<b>496.68</b>	<b>502.88</b>	<b>518.36</b>	<b>539.77</b>	<b>564.74</b>	<b>570.70</b>	<b>610.44</b>	<b>645.53</b>

**Table 5.16: Distribution of employment effects-Alpha Coal Project (Mine) operating expenditure, 2013-2029 (FTEs)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	3	3	6	16	29	40	48	53	53	53	57	58	58	57	61	58	59
Mining	2	9	96	227	401	531	638	701	699	692	743	751	731	731	771	713	736
Manufacturing	55	58	126	382	678	947	1,121	1,244	1,266	1,270	1,360	1,377	1,406	1,358	1,464	1,388	1,401
Electricity, Gas, Water & Waste Services	0	0	1	47	61	75	84	89	94	95	101	107	113	109	120	120	120
Construction	2	4	32	127	222	291	350	385	378	379	413	415	409	404	433	404	411
Wholesale Trade	3	4	65	260	526	698	867	963	914	919	1,022	1,012	976	970	1,041	954	969
Retail Trade	2	3	12	38	69	93	112	124	122	122	133	134	132	130	140	130	132
Accommodation & Food Services	2	2	8	25	47	63	76	84	82	82	90	90	89	88	94	88	89
Transport, Postal & Warehousing	9	11	47	138	252	337	408	451	443	444	484	486	478	472	505	470	480
Information Media and Telecommunications	1	1	4	16	29	39	47	52	51	51	56	56	55	54	58	54	55
Financial & Insurance Services	1	2	13	47	84	112	135	148	146	146	159	160	158	156	167	156	159
Rental, Hiring & Real Estate Services	1	1	10	32	61	81	99	109	106	106	116	116	114	113	121	111	114
Professional, Scientific & Technical Services	2	2	13	41	75	100	121	134	132	132	143	144	142	140	149	139	142
Administrative & Support Services	7	8	45	159	298	401	483	535	527	528	575	575	569	558	598	555	563
Public Administration & Safety	0	0	1	4	7	9	11	12	12	12	13	13	13	13	14	13	13
Education & Training	1	1	4	16	28	37	45	49	49	49	53	54	53	52	56	53	53
Health Care & Social Assistance	0	0	0	1	1	2	2	3	3	3	3	3	3	3	3	3	3
Arts & Recreation Services	1	1	6	19	36	48	58	64	63	63	69	69	67	66	71	66	67
Other Services	0	0	1	4	7	9	11	12	12	12	13	13	13	13	14	13	13
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>54</b>	<b>67</b>	<b>323</b>	<b>1,063</b>	<b>1,931</b>	<b>2,578</b>	<b>3,113</b>	<b>3,438</b>	<b>3,378</b>	<b>3,384</b>	<b>3,686</b>	<b>3,700</b>	<b>3,647</b>	<b>3,597</b>	<b>3,852</b>	<b>3,588</b>	<b>3,650</b>
<b>Indirect</b>	<b>38</b>	<b>45</b>	<b>170</b>	<b>536</b>	<b>979</b>	<b>1,334</b>	<b>1,602</b>	<b>1,775</b>	<b>1,771</b>	<b>1,773</b>	<b>1,916</b>	<b>1,932</b>	<b>1,931</b>	<b>1,890</b>	<b>2,028</b>	<b>1,900</b>	<b>1,929</b>
<b>Total</b>	<b>92</b>	<b>112</b>	<b>493</b>	<b>1,599</b>	<b>2,910</b>	<b>3,912</b>	<b>4,715</b>	<b>5,213</b>	<b>5,148</b>	<b>5,157</b>	<b>5,602</b>	<b>5,632</b>	<b>5,578</b>	<b>5,487</b>	<b>5,880</b>	<b>5,487</b>	<b>5,579</b>

**Table 5.17: Distribution of employment effects-Alpha Coal Project (Mine) operating expenditure, 2030-2045 (FTEs)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	60	62	62	65	64	67	69	70	69	70	72	75	78	79	84	87
Mining	731	808	789	835	826	839	848	893	862	868	921	952	987	983	1,089	1,186
Manufacturing	1,440	1,449	1,452	1,508	1,491	1,610	1,613	1,630	1,598	1,609	1,626	1,682	1,750	1,758	1,842	1,999
Electricity, Gas, Water & Waste Services	125	127	128	134	134	145	144	144	142	141	141	143	145	144	145	158
Construction	419	433	432	452	449	467	474	484	474	480	497	517	541	547	586	614
Wholesale Trade	997	1,001	1,009	1,051	1,045	1,080	1,108	1,125	1,110	1,137	1,177	1,243	1,321	1,356	1,453	1,463
Retail Trade	135	139	139	145	144	150	153	156	153	155	160	168	176	178	191	199
Accommodation & Food Services	91	93	93	97	96	101	103	105	103	104	108	113	118	120	128	134
Transport, Postal & Warehousing	488	507	505	528	524	545	553	568	556	564	584	610	638	646	694	730
Information Media and Telecommunications	56	57	57	60	59	62	63	64	63	64	66	69	73	74	79	82
Financial & Insurance Services	162	167	167	174	173	180	183	187	183	186	192	200	209	212	227	238
Rental, Hiring & Real Estate Services	116	119	119	124	123	128	130	133	131	133	138	144	151	154	165	173
Professional, Scientific & Technical Services	144	150	149	156	154	161	163	167	163	165	171	178	186	188	202	215
Administrative & Support Services	574	584	584	611	603	636	643	653	642	651	668	697	731	741	792	835
Public Administration & Safety	13	14	14	15	14	15	15	16	15	16	16	17	18	18	19	20
Education & Training	55	56	56	58	58	61	62	63	62	62	64	67	70	70	75	79
Health Care & Social Assistance	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4
Arts & Recreation Services	68	70	70	73	73	76	77	79	77	78	81	85	89	90	97	101
Other Services	13	14	14	14	14	15	15	16	15	15	16	16	17	17	18	20
Ownership of Dwellings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Direct</b>	<b>3,722</b>	<b>3,833</b>	<b>3,826</b>	<b>3,996</b>	<b>3,962</b>	<b>4,137</b>	<b>4,196</b>	<b>4,290</b>	<b>4,203</b>	<b>4,261</b>	<b>4,401</b>	<b>4,590</b>	<b>4,809</b>	<b>4,867</b>	<b>5,214</b>	<b>5,479</b>
<b>Indirect</b>	<b>1,969</b>	<b>2,021</b>	<b>2,018</b>	<b>2,108</b>	<b>2,086</b>	<b>2,205</b>	<b>2,223</b>	<b>2,266</b>	<b>2,219</b>	<b>2,241</b>	<b>2,299</b>	<b>2,387</b>	<b>2,491</b>	<b>2,511</b>	<b>2,675</b>	<b>2,859</b>
<b>Total</b>	<b>5,691</b>	<b>5,854</b>	<b>5,843</b>	<b>6,104</b>	<b>6,049</b>	<b>6,342</b>	<b>6,419</b>	<b>6,556</b>	<b>6,422</b>	<b>6,501</b>	<b>6,701</b>	<b>6,977</b>	<b>7,300</b>	<b>7,378</b>	<b>7,889</b>	<b>8,338</b>

**Table 5.18: Distribution of value added effects-Alpha Coal Project (Mine) operating expenditure, 2013-2029 (\$M)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Agriculture, Forestry & Fishing	0.24	0.25	0.54	1.33	2.35	3.21	3.88	4.29	4.27	4.30	4.66	4.70	4.71	4.64	4.97	4.72	4.79
Mining	1.12	4.97	59.83	165.82	308.99	407.80	494.49	544.44	529.53	527.70	576.14	575.90	556.00	553.76	588.85	538.44	552.99
Manufacturing	8.08	8.52	18.76	53.66	95.86	132.68	158.22	175.45	176.46	177.28	190.98	192.85	194.92	189.45	203.91	192.73	194.93
Electricity, Gas, Water & Waste Services	0.12	0.14	0.56	19.17	24.72	30.49	34.16	36.40	38.19	38.68	41.34	43.51	45.96	44.69	48.89	48.95	49.00
Construction	0.13	0.22	1.79	6.99	12.29	16.11	19.39	21.34	20.92	20.96	22.86	22.99	22.62	22.38	23.97	22.37	22.76
Wholesale Trade	0.39	0.47	7.51	29.85	60.57	80.34	99.77	110.79	105.12	105.70	117.60	116.47	112.35	111.67	119.84	109.81	111.48
Retail Trade	0.11	0.12	0.51	1.66	3.03	4.05	4.91	5.42	5.31	5.33	5.82	5.84	5.76	5.69	6.09	5.68	5.78
Accommodation & Food Services	0.14	0.16	0.58	1.83	3.36	4.51	5.46	6.03	5.90	5.93	6.48	6.49	6.40	6.31	6.76	6.30	6.41
Transport, Postal & Warehousing	0.84	1.08	5.10	14.88	27.23	36.40	44.08	48.66	47.79	47.83	52.10	52.33	51.40	50.88	54.37	50.55	51.58
Information Media and Telecommunications	0.08	0.10	0.54	1.92	3.57	4.77	5.79	6.41	6.25	6.27	6.86	6.87	6.76	6.66	7.15	6.64	6.75
Financial & Insurance Services	0.29	0.40	2.57	9.34	16.66	22.03	26.57	29.28	28.75	28.81	31.41	31.58	31.12	30.75	32.94	30.75	31.28
Rental, Hiring & Real Estate Services	0.34	0.51	3.68	12.24	22.97	30.61	37.19	41.08	40.02	40.07	43.89	43.91	42.95	42.47	45.48	42.02	42.81
Professional, Scientific & Technical Services	0.13	0.19	1.11	3.44	6.27	8.39	10.12	11.17	11.02	11.02	11.96	12.02	11.85	11.69	12.50	11.61	11.84
Administrative & Support Services	0.67	0.83	4.44	15.98	29.89	40.29	48.52	53.83	52.99	53.11	57.79	57.78	57.35	56.12	60.13	55.85	56.69
Public Administration & Safety	0.02	0.03	0.10	0.30	0.54	0.73	0.88	0.97	0.96	0.96	1.04	1.05	1.03	1.02	1.09	1.02	1.04
Education & Training	0.05	0.07	0.30	1.09	1.91	2.55	3.05	3.36	3.32	3.33	3.62	3.65	3.63	3.56	3.83	3.59	3.64
Health Care & Social Assistance	0.01	0.01	0.03	0.08	0.15	0.20	0.24	0.27	0.26	0.26	0.29	0.29	0.28	0.28	0.30	0.28	0.29
Arts & Recreation Services	0.07	0.09	0.51	1.74	3.25	4.34	5.26	5.82	5.69	5.70	6.23	6.23	6.13	6.04	6.47	6.00	6.10
Other Services	0.02	0.02	0.10	0.29	0.51	0.69	0.83	0.91	0.91	0.91	0.98	0.99	0.98	0.97	1.03	0.97	0.99
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	0.00
<b>Direct</b>	<b>7.34</b>	<b>9.22</b>	<b>60.28</b>	<b>213.83</b>	<b>404.69</b>	<b>536.29</b>	<b>652.10</b>	<b>719.61</b>	<b>693.88</b>	<b>696.28</b>	<b>767.34</b>	<b>763.96</b>	<b>743.28</b>	<b>734.26</b>	<b>787.70</b>	<b>723.94</b>	<b>736.57</b>
<b>Indirect</b>	<b>5.52</b>	<b>8.95</b>	<b>48.29</b>	<b>127.78</b>	<b>219.45</b>	<b>293.91</b>	<b>350.70</b>	<b>386.31</b>	<b>389.79</b>	<b>387.88</b>	<b>414.71</b>	<b>421.49</b>	<b>418.92</b>	<b>414.77</b>	<b>440.87</b>	<b>414.33</b>	<b>424.57</b>
<b>Total</b>	<b>12.85</b>	<b>18.17</b>	<b>108.57</b>	<b>341.62</b>	<b>624.13</b>	<b>830.20</b>	<b>1,002.80</b>	<b>1,105.92</b>	<b>1,083.67</b>	<b>1,084.16</b>	<b>1,182.05</b>	<b>1,185.45</b>	<b>1,162.21</b>	<b>1,149.02</b>	<b>1,228.57</b>	<b>1,138.26</b>	<b>1,161.14</b>

**Table 5.19: Distribution of value added effects-Alpha Coal Project (Mine) operating expenditure, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Agriculture, Forestry & Fishing	4.93	5.05	5.09	5.28	5.24	5.50	5.60	5.72	5.64	5.71	5.85	6.11	6.37	6.45	6.84	7.12
Mining	555.19	590.37	582.18	612.95	606.34	619.91	630.97	654.94	636.67	647.08	681.52	712.07	747.82	754.79	827.77	874.96
Manufacturing	200.36	202.27	202.98	210.67	208.43	223.10	224.82	227.85	223.71	226.04	229.62	238.67	248.95	251.08	264.43	282.35
Electricity, Gas, Water & Waste Services	51.14	51.89	52.41	54.58	54.88	59.30	58.88	58.97	58.15	57.50	57.49	58.28	59.14	58.92	59.21	64.55
Construction	23.21	23.97	23.92	25.01	24.85	25.85	26.21	26.80	26.26	26.59	27.50	28.64	29.97	30.32	32.45	34.03
Wholesale Trade	114.70	115.19	116.15	120.90	120.22	124.25	127.53	129.48	127.73	130.85	135.38	143.04	152.03	156.07	167.25	168.40
Retail Trade	5.91	6.07	6.07	6.34	6.28	6.56	6.67	6.81	6.68	6.78	7.00	7.32	7.67	7.78	8.32	8.69
Accommodation & Food Services	6.55	6.70	6.71	7.00	6.94	7.26	7.38	7.53	7.39	7.51	7.75	8.10	8.51	8.63	9.23	9.62
Transport, Postal & Warehousing	52.43	54.61	54.38	56.91	56.41	58.57	59.49	61.14	59.79	60.62	62.95	65.68	68.77	69.52	74.93	78.85
Information Media and Telecommunications	6.90	7.04	7.05	7.35	7.30	7.63	7.75	7.89	7.75	7.87	8.11	8.48	8.92	9.06	9.68	10.08
Financial & Insurance Services	31.91	32.95	32.89	34.39	34.14	35.57	36.07	36.89	36.14	36.60	37.84	39.42	41.25	41.73	44.68	46.92
Rental, Hiring & Real Estate Services	43.59	44.95	44.83	46.92	46.50	48.33	49.13	50.28	49.23	50.03	51.89	54.26	57.06	57.87	62.32	65.17
Professional, Scientific & Technical Services	12.01	12.50	12.42	13.02	12.89	13.44	13.60	13.96	13.63	13.80	14.31	14.89	15.57	15.71	16.92	17.98
Administrative & Support Services	57.79	58.75	58.72	61.41	60.64	63.99	64.68	65.66	64.50	65.39	67.10	69.93	73.31	74.35	79.40	83.83
Public Administration & Safety	1.06	1.09	1.09	1.14	1.13	1.18	1.20	1.23	1.20	1.22	1.26	1.31	1.37	1.39	1.49	1.56
Education & Training	3.72	3.82	3.81	3.98	3.95	4.15	4.20	4.28	4.19	4.24	4.36	4.54	4.74	4.79	5.10	5.40
Health Care & Social Assistance	0.29	0.30	0.30	0.31	0.31	0.32	0.33	0.34	0.33	0.34	0.35	0.36	0.38	0.38	0.41	0.43
Arts & Recreation Services	6.22	6.38	6.37	6.66	6.60	6.89	6.99	7.14	7.00	7.11	7.34	7.67	8.06	8.18	8.77	9.18
Other Services	1.00	1.06	1.05	1.10	1.09	1.13	1.15	1.18	1.15	1.16	1.20	1.25	1.30	1.30	1.40	1.50
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>751.96</b>	<b>764.89</b>	<b>765.13</b>	<b>798.70</b>	<b>791.48</b>	<b>823.10</b>	<b>839.50</b>	<b>855.89</b>	<b>839.70</b>	<b>857.02</b>	<b>887.39</b>	<b>932.79</b>	<b>986.11</b>	<b>1,004.64</b>	<b>1,079.90</b>	<b>1,115.79</b>
<b>Indirect</b>	<b>426.96</b>	<b>460.08</b>	<b>453.29</b>	<b>477.22</b>	<b>472.67</b>	<b>489.83</b>	<b>493.15</b>	<b>512.20</b>	<b>497.46</b>	<b>499.42</b>	<b>521.46</b>	<b>537.24</b>	<b>555.07</b>	<b>553.67</b>	<b>600.70</b>	<b>654.84</b>
<b>Total</b>	<b>1,178.92</b>	<b>1,224.97</b>	<b>1,218.42</b>	<b>1,275.92</b>	<b>1,264.14</b>	<b>1,312.92</b>	<b>1,332.64</b>	<b>1,368.09</b>	<b>1,337.15</b>	<b>1,356.44</b>	<b>1,408.85</b>	<b>1,470.03</b>	<b>1,541.18</b>	<b>1,558.31</b>	<b>1,680.60</b>	<b>1,770.63</b>



## 5.2 Value of Coal Exports

The Alpha Coal Project (Mine) will produce approximately 856 million tonnes (Mt) of coal for export from Queensland throughout the life of the mine, the value of these exports to the Queensland economy will be approximately \$83.6 billion. Once fully operational the coal mine, will produce approximately 30 Mtpa of coal exports, equating to a value of \$2.9 billion per annum.

## 5.3 Opportunity Cost of the Project

### 5.3.1 Indicative Agricultural Production Value

The potential agricultural production value of the Project site can be implied by calculating by estimating the potential size of a grazing herd and imputing its value. Table 5.20 indicates that approximately 21,143 hectares of the Project site is non-remnant grassland. Advice from AustralAsian Resource Consultants (AARC) indicates that this area had been previously cleared for grazing. The remaining woodland and heath areas are unlikely to be suitable for grazing without further clearing.

Cattle would represent the highest value grazing herd. Advice from the proponent indicates that the carrying capacity of the mine area is approximately 13,430 head of cattle. Data contained in section 3.5.3 indicates that in 2005-06, the cattle herd within Barcaldine Regional Council was approximately 86,700 head of cattle, which produced an annual slaughter value of approximately \$93.4 million, representing a slaughter value of approximately \$1,100 per head of cattle.

Based on the above estimates, the Project site could support a cattle herd of approximately 13,430 cattle, representing an annual slaughter value of \$14.8 million.

## 5.4 Localised Inflation

Large resource projects can push demand well ahead of supply for a range of goods and services, leading to localised inflation. Those who remain outside the mining industry or industries servicing mining can be disadvantaged, because of a wide range of affordability issues (e.g. unaffordable rents and housing, higher costs and poor availability of services, and a loss of skilled labour to sectors offering much higher remuneration).

The most significant localised inflationary impact is likely to be felt in housing and accommodation. However, analysis contained in section 4 suggests that property market inflation has already occurred as a result of property market speculation.

Inflation in property prices can be addressed by increasing the supply of residential product. However, the risk of a slow down in the resources sector, similar to that experienced in the 1990s, militates against significant additions to the housing stock.

Localised inflation in everyday items, such as groceries, is likely to be more limited, with higher prices experienced in western communities more likely to be attributable to transport costs, rather than demand pull inflation.

## 5.5 Summary of Impacts

The Alpha Coal Project (Mine) represents a major potential stimulus to the regional, state and national economies. The Project will generate significant demand for labour in both development and operational phases.

A significant quantum of on-site employment is anticipated to be satisfied by fly-in-fly-out or drive-in-drive-out workers. However, a proportion of the workforce is likely to choose to reside within the region. The demand for labour would not be exclusively limited to mine construction or operation. Mine-related expenditure will stimulate significant labour demand throughout Queensland.

The Project is likely to place pressure on local and regional labour and accommodation (both housing and commercial accommodation) markets. The local area and the region have experienced rising property costs associated with growing interest in the development of resource projects within the Galilee Basin.

The Project will generate significant positive economic impacts in the form of additional exports, increased employment and demand for local and regional production. However, the Project will place growing pressure on local and regional social infrastructure and could result in localised inflation particularly in relation to wages, housing and accommodation.

Assuming that the Project site could support a herd of approximately 13,430 cattle (based on an optimal stocking rate of two cattle per hectare over approximately 21,000 hectares of grassland), the Project site could generate approximately \$14.8 million in annual agricultural output.

To encourage the development of local and regional industry capability, HPPL will develop an employment and procurement policy guided by industry standards and relevant government guidelines that will reflect:

- Maximising local employment (including work readiness if appropriate);
- Promoting Indigenous employment; and
- Employment of apprentices and trainees (including work readiness if appropriate).

Potential shortages in hard and soft social infrastructure that may result from increased local and regional population (facilitated by increased labour demand) are addressed in the social impact assessment.

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# APPENDIX A

## DETAILED COSTS

**Table A.1: Alpha Coal Project (Mine) construction & capital costs, 2010-2029 (\$M)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
<b>Capital Costs - US\$</b>																		
Component																		
Drill & Blast	0.00	0.00	0.00	2.38	3.62	4.82	2.44	6.00	1.29	0.00	0.06	0.06	0.17	2.44	2.39	4.72	2.33	5.95
Draglines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.29	0.00	0.00	0.00	44.29	44.29	0.00	3.08	42.75	44.29	0.00
Prestrip Fleets	0.00	0.00	0.00	22.59	105.26	133.12	100.32	106.77	46.74	1.24	2.86	37.56	8.90	4.11	5.35	17.85	1.50	1.45
Coal Mining Fleets	0.00	0.00	0.00	1.23	10.56	21.86	16.85	18.23	16.86	5.76	1.92	8.91	2.16	2.96	5.99	13.38	20.72	16.90
Ancillary Fleets	0.00	0.00	0.00	4.40	5.49	9.13	7.22	7.98	4.80	1.11	2.54	5.61	4.66	5.77	4.92	3.74	3.44	1.16
Processing Plant	0.00	0.00	0.00	0.22	5.56	4.71	0.69	5.62	2.75	0.00	0.24	4.78	0.99	0.50	3.27	1.24	2.51	1.00
Access Road	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	0.00	0.00
Dams and Diversions	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	0.00	0.00
Infrastructure & Power	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	0.00	0.00
Camp	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	0.00	0.00
Other Infrastructure	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	0.00	0.00
<b>Total Capital Costs - US\$</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>30.83</b>	<b>130.49</b>	<b>173.66</b>	<b>127.52</b>	<b>188.89</b>	<b>72.45</b>	<b>8.11</b>	<b>7.62</b>	<b>101.21</b>	<b>61.16</b>	<b>15.77</b>	<b>25.00</b>	<b>83.68</b>	<b>74.80</b>	<b>26.47</b>
Component																		
<b>Capital Costs - Euro</b>																		
Component																		
Drill & Blast	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	0.00	0.00
Draglines	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	0.00	0.00
Prestrip Fleets	0.00	0.00	0.00	13.82	7.30	21.12	0.38	0.38	0.74	0.00	0.00	0.00	0.30	0.29	0.28	0.26	0.50	0.00
Coal Mining Fleets	0.00	0.00	0.00	0.00	2.06	2.06	2.07	2.07	4.16	0.00	0.00	0.00	2.15	2.16	2.17	2.18	4.39	0.00
Ancillary Fleets	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	0.00	0.00
Processing Plant	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	0.00	0.00
Access Road	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	0.00	0.00
Dams and Diversions	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	0.00	0.00
Infrastructure & Power	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	0.00	0.00
Camp	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	0.00	0.00
Other Infrastructure	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	0.00	0.00
<b>Total Capital Costs - EURO</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.82</b>	<b>9.36</b>	<b>23.18</b>	<b>2.45</b>	<b>2.45</b>	<b>4.89</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.45</b>	<b>2.45</b>	<b>2.45</b>	<b>2.45</b>	<b>4.89</b>	<b>0.00</b>
Component																		
<b>Capital Costs - A\$</b>																		
Component																		
Drill & Blast	0.00	0.00	0.00	1.63	2.53	2.97	1.57	4.09	1.31	0.00	0.02	0.10	0.13	1.73	1.48	3.01	1.62	4.07
Draglines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	159.95	0.00	0.00	0.00	159.95	159.95	0.00	0.70	159.60	159.95	0.00
Prestrip Fleets	0.00	0.00	0.00	13.06	43.36	58.75	39.41	42.30	19.06	0.34	0.73	14.95	2.98	1.14	1.46	7.27	0.62	0.42
Coal Mining Fleets	0.00	0.00	0.00	0.33	3.95	7.19	5.72	6.17	6.64	1.64	0.53	2.53	1.56	1.76	2.67	4.81	7.86	4.88
Ancillary Fleets	0.00	0.00	0.00	2.40	47.07	4.04	4.36	4.61	8.52	0.30	6.69	9.42	24.98	1.47	5.47	0.97	14.97	0.33
Processing Plant	0.00	0.00	104.30	327.35	99.18	178.49	41.36	1.90	1.18	0.00	0.05	1.64	0.22	0.11	0.82	0.36	1.12	0.31
Access Road	0.00	44.64	137.29	13.97	13.97	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
Dams and Diversions	0.00	86.82	55.50	0.00	0.00	0.00	0.00	0.19	0.00	50.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Infrastructure & Power	29.61	54.45	24.85	185.98	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
Camp	0.00	62.03	143.22	104.91	25.20	-6.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Infrastructure	0.00	15.18	47.23	80.30	2.60	20.95	29.50	7.46	0.00	0.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
<b>Total Capital Costs - A\$</b>	<b>29.61</b>	<b>263.11</b>	<b>512.39</b>	<b>729.94</b>	<b>237.87</b>	<b>265.58</b>	<b>121.92</b>	<b>226.66</b>	<b>36.71</b>	<b>52.69</b>	<b>8.22</b>	<b>188.79</b>	<b>190.02</b>	<b>6.41</b>	<b>12.79</b>	<b>176.22</b>	<b>186.35</b>	<b>10.21</b>
Component																		

**Table A.2: Alpha Coal Project (Mine) construction & capital costs, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
<b>Capital Costs - US\$</b>																	
<b>Component</b>																	
Drill & Blast	1.29	0.18	2.45	0.06	0.06	2.33	4.72	4.72	2.52	4.79	0.13	2.39	0.00	0.00	4.66	0.00	68.97
Draglines	45.83	3.08	42.75	3.08	1.54	44.29	0.00	4.62	3.08	0.00	3.08	1.54	0.00	0.00	0.00	0.00	375.88
Prestrip Fleets	6.41	5.35	45.45	50.14	51.68	60.09	60.63	11.52	8.54	45.14	25.96	33.62	32.14	13.48	34.93	0.00	1,080.72
Coal Mining Fleets	18.69	16.97	9.81	4.36	8.66	4.09	4.32	8.23	11.83	22.39	16.85	19.30	1.30	0.00	0.42	0.00	311.51
Ancillary Fleets	5.07	7.17	6.53	6.82	7.54	2.83	4.34	3.17	6.00	3.52	6.79	6.32	1.90	0.30	0.82	0.00	141.07
Processing Plant	2.28	3.49	3.00	2.27	2.75	2.51	2.75	3.23	3.43	1.43	2.20	0.43	0.21	2.72	0.20	0.00	66.98
Access Road	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	0.00
Dams and Diversions	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	0.00
Infrastructure & Power	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	0.00
Camp	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	0.00
Other Infrastructure	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	0.00
<b>Total Capital Costs - US\$</b>	<b>79.57</b>	<b>36.23</b>	<b>109.98</b>	<b>66.73</b>	<b>72.24</b>	<b>116.14</b>	<b>76.76</b>	<b>35.50</b>	<b>35.39</b>	<b>77.27</b>	<b>55.01</b>	<b>63.60</b>	<b>35.54</b>	<b>16.49</b>	<b>41.03</b>	<b>0.00</b>	<b>2,045.13</b>
<b>Component</b>																	
<b>Capital Costs - Euro</b>																	
<b>Component</b>																	
Drill & Blast	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	0.00
Draglines	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	0.00
Prestrip Fleets	0.00	0.00	0.21	0.20	0.19	14.01	0.37	0.00	0.00	0.00	7.08	7.07	6.91	6.91	13.82	0.00	102.15
Coal Mining Fleets	0.00	0.00	2.24	2.25	2.25	2.26	4.53	0.00	0.00	0.00	2.28	2.29	0.00	0.00	0.00	0.00	43.56
Ancillary Fleets	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	0.00
Processing Plant	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	0.00
Access Road	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	0.00
Dams and Diversions	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	0.00
Infrastructure & Power	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	0.00
Camp	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	0.00
Other Infrastructure	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	0.00
<b>Total Capital Costs - EURO</b>	<b>0.00</b>	<b>0.00</b>	<b>2.45</b>	<b>2.45</b>	<b>2.45</b>	<b>16.27</b>	<b>4.89</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9.36</b>	<b>9.36</b>	<b>6.91</b>	<b>6.91</b>	<b>13.82</b>	<b>0.00</b>	<b>145.71</b>
<b>Component</b>																	
<b>Capital Costs - A\$</b>																	
<b>Component</b>																	
Drill & Blast	1.31	0.05	1.65	0.18	0.10	1.70	2.94	3.18	1.67	3.03	0.28	1.56	0.24	0.00	2.92	0.00	47.06
Draglines	160.30	0.70	159.60	0.70	0.35	159.95	0.00	1.05	0.70	0.00	0.70	0.35	0.00	0.00	0.00	0.00	1,284.47
Prestrip Fleets	2.10	1.27	18.45	20.28	21.40	28.87	25.12	4.13	3.13	18.30	11.99	15.32	14.92	7.41	18.25	0.00	456.77
Coal Mining Fleets	5.35	4.85	3.78	2.21	3.46	2.14	3.21	2.38	3.39	6.45	5.83	6.50	0.35	0.00	0.11	0.00	108.27
Ancillary Fleets	11.83	3.57	27.19	2.98	10.45	1.16	12.21	7.55	4.12	0.91	32.81	1.56	0.50	0.07	0.21	0.00	252.72
Processing Plant	0.52	1.35	1.24	0.51	1.18	1.12	1.18	0.81	1.33	0.40	0.50	0.10	0.05	1.17	0.05	0.00	769.90
Access Road	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	209.88
Dams and Diversions	0.00	50.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.41	0.00	0.00	0.00	0.00	293.74
Infrastructure & Power	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	294.89
Camp	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	328.56
Other Infrastructure	0.20	0.20	0.20	0.20	2.17	2.17	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	212.04
<b>Total Capital Costs - A\$</b>	<b>181.61</b>	<b>62.40</b>	<b>212.11</b>	<b>27.05</b>	<b>39.10</b>	<b>197.11</b>	<b>44.86</b>	<b>19.30</b>	<b>14.56</b>	<b>29.30</b>	<b>52.31</b>	<b>76.01</b>	<b>16.26</b>	<b>8.85</b>	<b>21.74</b>	<b>0.21</b>	<b>4,258.31</b>
<b>Component</b>																	

**Table A.3: Alpha Coal Project (Mine) ongoing and operating costs, 2013-2029 (\$M)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Operating Labour Costs	0.00	0.00	36.14	61.63	101.48	129.77	155.77	173.56	171.14	171.66	185.15	184.88	182.51	179.71	191.33	179.95	181.16
Maintenance Labour Costs	0.00	0.00	3.38	15.39	29.26	38.14	47.47	53.67	51.73	51.79	55.97	55.29	53.76	53.64	56.59	53.19	53.66
Fuel and Lube Costs	0.00	0.00	12.62	52.02	109.52	143.69	177.50	195.94	181.57	182.73	206.24	201.44	190.31	188.45	202.79	180.42	183.55
Electrical Power Costs	0.00	0.00	0.00	37.76	43.66	50.21	55.67	58.08	61.00	62.10	66.77	71.62	76.09	75.32	82.48	84.89	84.87
Other Equipment Operating Consumables	0.00	0.00	2.08	11.04	23.81	32.65	42.49	47.28	45.45	46.24	52.33	53.31	51.91	52.04	56.39	52.08	52.89
Equipment Maintenance Consumables	0.00	0.00	8.80	34.76	73.57	96.58	119.17	131.75	122.06	122.56	137.86	134.41	127.65	126.73	136.29	122.62	124.61
Coal Handling Prep Plant	0.00	0.00	0.00	26.67	51.68	80.11	87.99	98.27	107.77	107.26	111.47	113.44	123.71	111.07	123.18	115.15	114.02
Explosives Costs	0.00	0.00	1.51	5.97	12.81	18.54	25.73	29.75	31.05	32.14	35.83	37.97	40.18	40.30	44.27	45.39	46.63
Other Consumables Costs	12.00	12.14	14.52	15.86	19.03	26.21	29.02	31.24	31.60	31.82	32.42	32.53	32.61	32.88	33.19	33.42	33.53
Site Contractors Costs	0.00	0.00	2.80	5.85	7.82	17.04	18.58	19.39	27.21	23.38	20.26	28.43	24.64	30.62	29.50	23.57	35.69
Other Contracts Costs	0.34	5.53	13.13	22.50	39.05	48.61	59.46	63.62	64.68	62.88	63.71	63.28	61.51	63.14	62.52	61.20	60.91
Miscellaneous Costs	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	0.00
Total	12.34	17.67	94.98	289.47	511.69	681.55	818.85	902.56	895.26	894.56	967.99	976.60	964.88	953.90	1,018.54	951.87	971.51

**Table A.4: Alpha Coal Project (Mine) ongoing and operating costs, 2030-2045 (\$M)**

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Operating Labour Costs	185.14	183.02	184.19	188.98	188.02	196.30	199.33	200.30	198.42	201.11	203.69	210.65	220.48	222.82	231.02	238.07	5,537.36
Maintenance Labour Costs	55.14	55.26	55.82	57.37	57.40	58.82	60.18	61.06	60.58	61.56	63.05	65.76	69.05	70.55	74.48	74.21	1,673.22
Fuel and Lube Costs	187.75	185.04	186.00	193.74	191.51	197.42	204.08	206.55	203.37	211.10	219.66	235.26	254.05	262.76	284.70	283.43	5,915.21
Electrical Power Costs	89.31	92.12	93.93	97.55	98.85	105.04	105.01	105.60	104.82	103.32	103.69	105.01	105.65	105.29	104.96	110.87	2,541.55
Other Equipment	54.98	55.59	56.49	58.49	58.52	60.19	61.78	62.60	62.17	63.43	65.39	68.67	72.15	73.67	77.35	77.16	1,650.62
Operating Consumables																	
Equipment Maintenance Consumables	128.17	127.07	128.16	134.07	132.89	137.30	141.82	143.71	141.52	146.27	152.19	162.73	175.42	181.79	197.30	196.50	4,046.36
Coal Handling Prep Plant	116.85	108.07	106.81	111.71	108.07	130.62	124.28	119.16	114.93	113.30	107.18	106.45	110.72	108.04	107.01	140.63	3,205.59
Explosives Costs	50.29	53.92	56.05	57.77	57.50	61.36	63.98	67.07	66.82	67.84	69.39	74.35	76.36	77.37	81.28	81.41	1,510.82
Other Consumables Costs	33.72	33.86	34.01	34.23	34.42	34.72	35.04	35.30	35.53	35.54	35.73	35.89	36.20	36.48	36.75	36.85	1,018.29
Site Contractors Costs	22.31	50.83	37.18	53.59	51.69	38.25	34.68	63.06	49.01	45.06	71.37	68.04	64.48	52.65	95.31	19.26	1,131.55
Other Contracts Costs	61.25	89.48	88.04	88.72	88.10	89.27	91.90	90.70	90.29	90.01	90.89	94.24	93.87	94.99	95.60	218.53	2,371.95
Miscellaneous Costs	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	0.00
Total	984.92	1,034.25	1,026.68	1,076.23	1,066.97	1,109.28	1,122.08	1,155.11	1,127.46	1,138.55	1,182.23	1,227.04	1,278.43	1,286.39	1,385.77	1,476.93	30,602.52