

Wandoan Coal Project Economic Impact Assessment

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Wandoan Joint Venture



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Executive summary

The underlying purpose of an economic assessment is to identify and provide an indicative estimation of the likely construction and operational economic impacts of the Project's activities. In doing so, this assessment estimates the economic benefits arising from the Project's activities and is intended to be indicative only.

PB has conducted an economic impact assessment by reviewing the Project's existing economic environment, estimating the potential economic impacts during construction and operation using the input-output analysis approach, discussing the economic implications of the Project for the development of the locality, businesses and industries, and estimating the contribution to Government revenues in terms of royalty and other payments resulting from the Project

Overall, the results of the analysis are supportive of the Project's development, presenting regional, state and national economic benefits that could potentially be realised over the life of the Project. In this context, the 'region' is defined as the Darling Downs Statistical Division comprising the (former) Taroom Shire, which includes the Wandoan locality. The 'state' is defined as the rest of Queensland, and 'national' is defined as the rest of Australia.

The key findings relevant to the EIS are summarised below.

Existing economic environment

A review of the existing economic environment indicates that there is considerable capacity for the region to support the Project and to consequently improve the region's socio-economic performance. In particular:

- although the industrial structure of the Project's location is dominated by the agricultural industry, other industries and corresponding labour market characteristics prevalent in the region suggests that the existing environment will initially support the growth and development of the Project
- while unemployment in the Wandoan township is above average compared to the region, there is greater scope for the unemployed to benefit from increased employment opportunities resulting from the Project and
- the Wandoan locality has the highest household vacancy rates compared to the surrounding Shires examined, suggesting that the township has a greater capacity to initially service the demand for housing resulting from the Project.

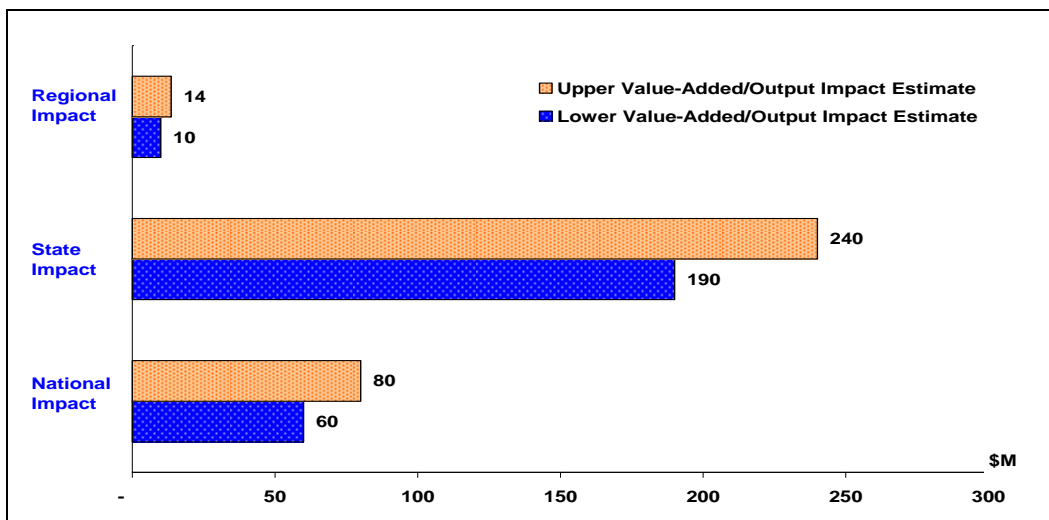
During construction phase

The findings of the analysis are supportive of the Project's development. The total flow-on impact (direct, indirect, induced) resulting from the initial expenditure is expected to yield the following total flow-on impacts at the regional, state and national levels.

- *Regional:* on average, the total flow-on affect is expected to contribute between \$10 and \$14 million per annum in revenues associated with goods and services produced. This is expected to support between 160 and 210 jobs per annum.
- *State:* on average, the total flow-on affect is expected to contribute between \$190 and \$240 million per annum in revenues associated with goods and services produced. This is expected to support approximately 880 and 1,180 jobs per annum.

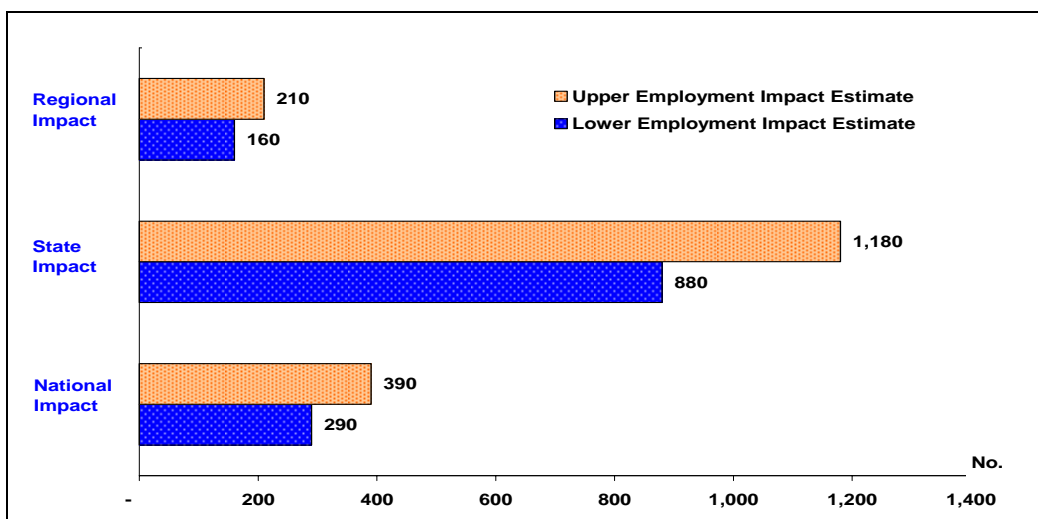
- *National:* on average, the total flow-on affect is expected to contribute between \$60 and \$80 million per annum in revenues associated with goods and services produced. This is expected to support between 290 and 390 jobs per annum.

Thus as estimated above, the largest economic impact is expected to occur at the state level as a result of the Project’s construction. This is followed by the national and regional impacts. The impacts as presented at the geographical level are illustrated in Figure E-1 and E-2 respectively. The impacts, shown alternatively, in terms of direct, indirect and induced are presented in Figures E-3 and E-4 respectively.



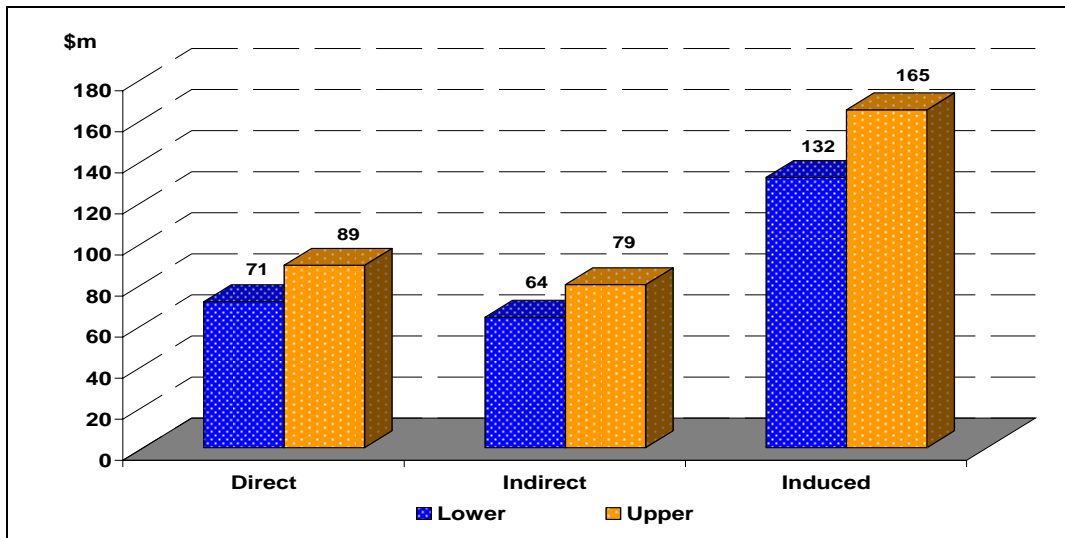
Note: Figures are rounded. Impacts are the sum of direct, indirect and induced estimates.

Figure E-1: Total value added/output impacts during construction (per annum)



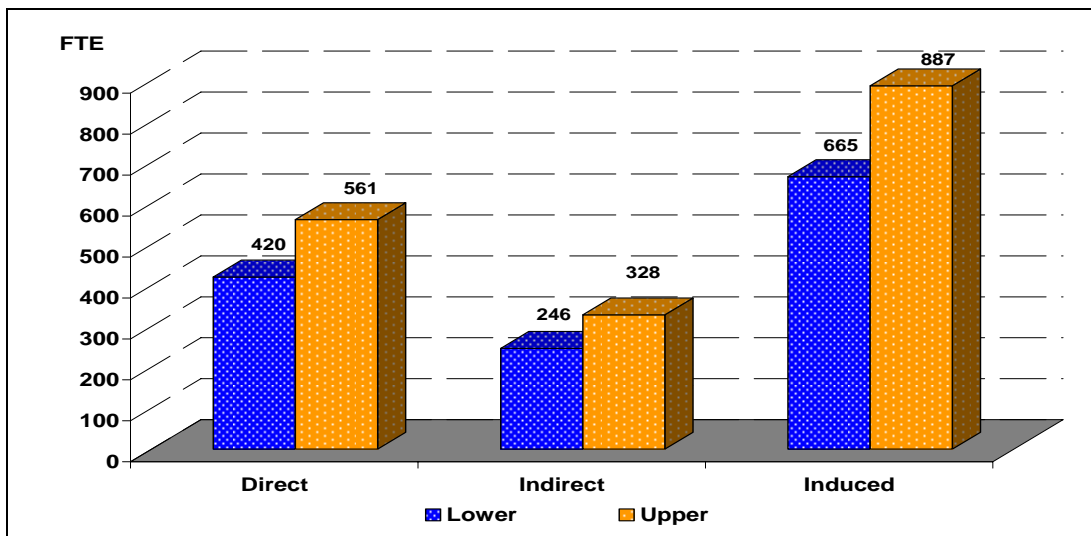
Note: Figures are rounded. Impacts are the sum of direct, indirect and induced estimates.

Figure E-2: Total employment impacts during construction (per annum)



Note: Impacts are the sum of regional, state and national impacts.

Figure E-3: Direct, indirect and induced valued-added/output impacts during construction (per annum)



Note: Impacts are the sum of regional, state and national impacts.

Figure E-4: Direct, indirect and induced employment impacts during construction (per annum)

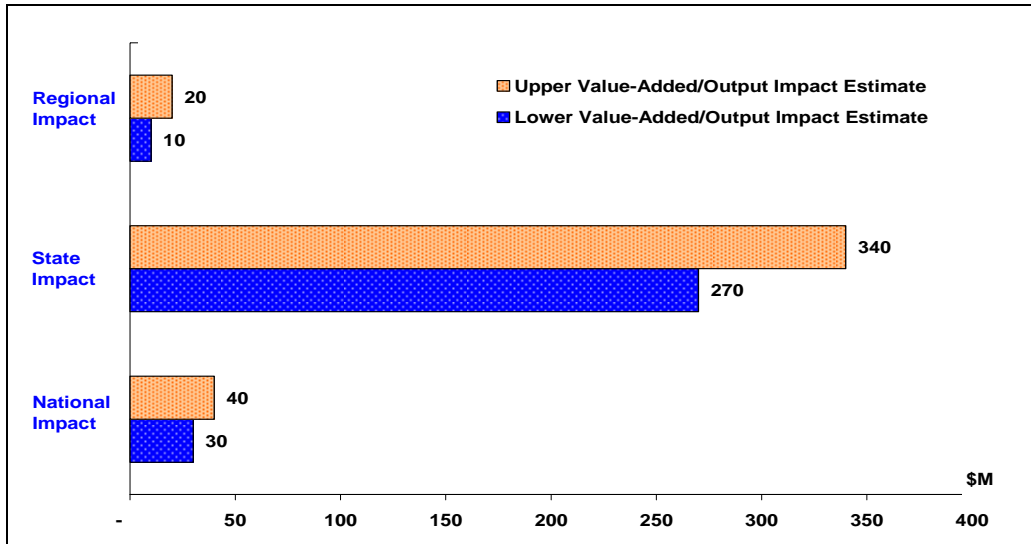
During operating phase

The total flow-on impact during the operations phase is presented below.

- *Regional:* on average, the total flow-on affect is expected to contribute between \$10 and \$20 million per annum in revenues associated with goods and services produced. This is expected to support between 150 and 200 jobs per annum.
- *State:* on average, the total flow-on affect is expected to contribute between \$270 and \$340 million per annum in revenues associated with goods and services produced. This is expected to support approximately 1,270 and 1,700 jobs per annum.

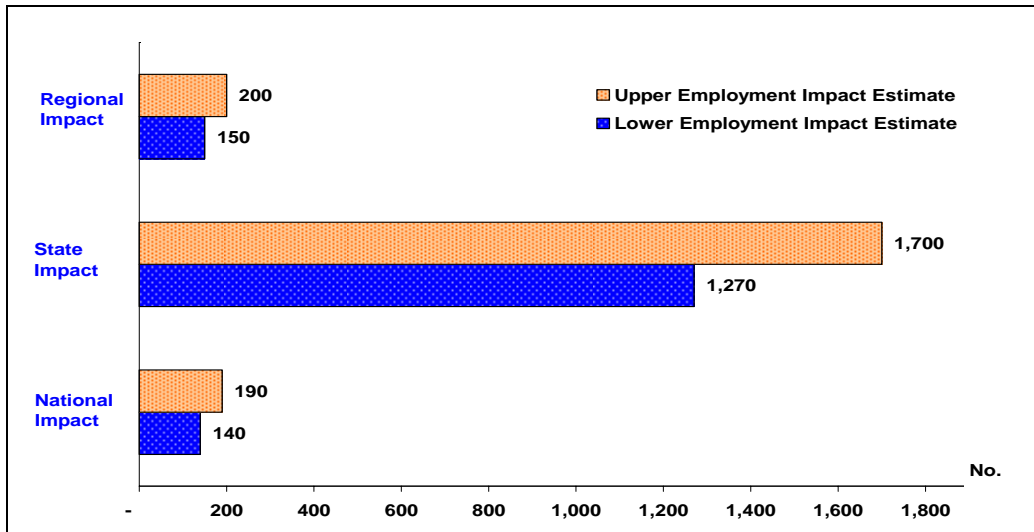
- *National:* on average, the total flow-on affect is expected to contribute between \$30 and \$40 million per annum in revenues associated with goods and services produced. This is expected to support between 140 and 180 jobs per annum.

As with the construction phase, the largest economic impact is expected to occur at the state level. These impacts are illustrated in Figure E-5 and E-6 respectively. The impacts, shown alternatively, in terms of direct, indirect and induced are presented in Figures E-7 and E-8 respectively.



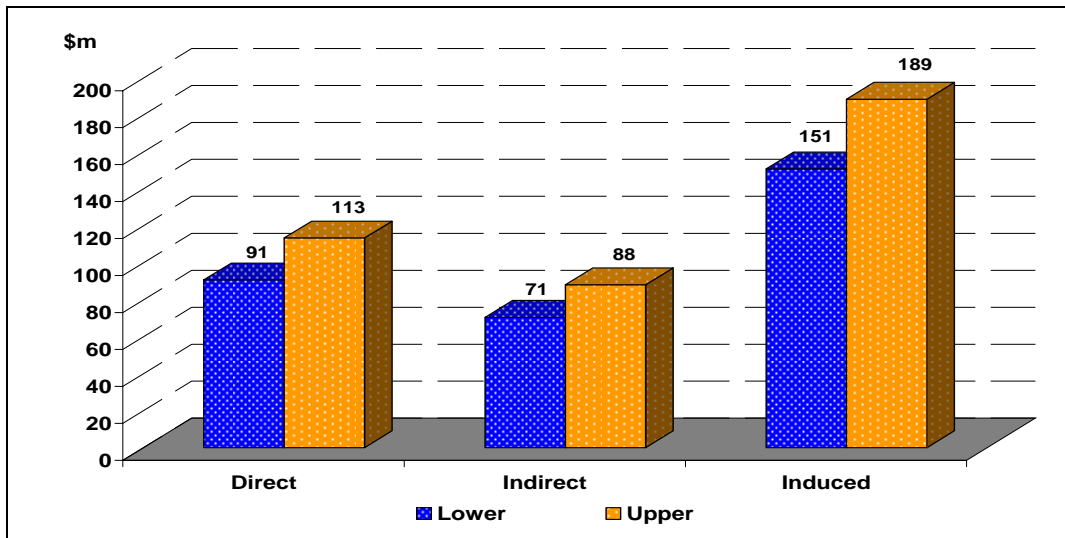
Note: Figures are rounded. Impacts are the sum of direct, indirect and induced estimates.

Figure E-5: Total value added/output impacts during operations (per annum)



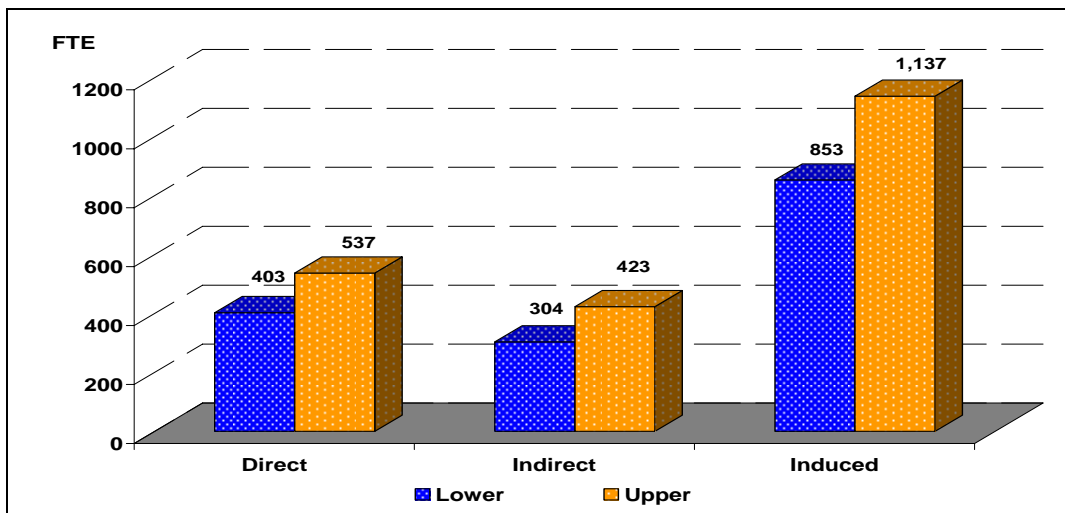
Note: Figures are rounded. Impacts are the sum of direct, indirect and induced estimates.

Figure E-6: Total employment impacts during operations (per annum)



Note: Impacts are the sum of regional, state and national impacts.

Figure E-7: Direct, indirect and induced valued-added/output impacts during operation (per annum)



Note: Impacts are the sum of regional, state and national impacts.

Figure E-8: Direct, indirect and induced employment impacts during operation (per annum)

Other economic implications of the Project

Implications for royalty and other payments

The average production of 22 million tonnes of coal per annum over the life of the Project is expected to contribute significantly to government royalty payments in Queensland. In total, it is expected that approximately \$3.7 billion in royalty payments would be payable to the Queensland Government over the 30 years of Project operations. This is equivalent to an average annual royalty payment of approximately \$135 million per annum.

Major infrastructure enabling the operation and growth of the coal industry includes transport (rail and ports). In this context, Xcq has advised that approximately \$500 million per annum could be expected to be paid in rail and port charges over the life of the Project.

Additionally, the use of land for the Project is expected to contribute to Dalby Regional Council in terms of rate payments. XCQ will be expected to contribute annual local government rate payments to the direct benefit of the provision of services by Council to the community.

Implications for businesses, industry and development in the region

The investment in the construction and operation of the Project is also expected to generate significant economic benefits to the region in the form of increased economic activity and employment. These benefits, would in turn lead to a steady increase in the region's population and subsequent demand for goods and services. The net effect for the development in the region would thus involve the encouragement of:

- greater private sector investment in the Wandoan locality and region more generally as new and emerging businesses seek to supply the increase in demand for goods and services
- an increase in the number and type of businesses across new and existing development areas
- competition across new and existing development areas, reflecting growth in business activities, business expansion and new start-ups and
- greater profitability across new and existing development areas, reflecting increased commerce.

It should be noted that a likely consequence of this economic growth will be higher property values and rents for local and regional businesses, reflecting growth in the demand for real property as a result of the rising population, income and business activity. The negative impacts in terms of increased rents may be offset, however, by higher local employment and incomes.

Further, as the existing economic environment in the Wandoan locality is mainly agricultural orientated, there is a possibility that the existing workforce and industrial activities in the wider region will shift towards coal mining activities. The change in industry orientation is likely to be accompanied by small increased residential construction in the form of building activity within Wandoan, the mine infrastructure area and at the Project accommodation village.

Overall, the net change in industrial orientation resulting from the investment in the Wandoan Coal Mine is expected to increase the level of economic activity for regional, state and national economies. This in turn is expected to lead to improved prosperity as incomes, employment and demand for goods and services increases during the life of the Project.

1. Introduction

1.1 Overview of the Project

The Wandoan Coal Project (the Project) is proposed to be developed by the Wandoan Joint Venture (the WJV). The joint venture partners are Xstrata Coal Queensland Pty Ltd (XCQ), ICRA RPW Pty Ltd and Sumisho Coal Australia Pty Ltd. The Project comprises the development of thermal coal resources situated immediately west of the Wandoan Township approximately 350 km northwest of Brisbane and located within Dalby Regional Council. The coal resources will be developed as an open cut mine with related local infrastructure and a Project covering an area of approximately 32,000 ha.

The underlying purpose of the economic assessment is to identify and provide an indicative estimation of the likely construction and operational economic impacts of the Project's activities. In doing so, this assessment estimates the direct, indirect and induced benefits arising from these activities at the regional and rest of Australia levels. It also includes a brief discussion of the likely implications of the project for individuals, businesses and industries, as well as future developmental prospects in the locality arising from the development.

1.2 Assessment approach

In undertaking the economic impact assessment, the study has included the following key elements.

- a review of the existing economic environment of the study area, including:
 - economic base and activity in the region
 - population growth and the labour market
 - income, earnings, and cost of housing and
 - dwelling characteristics, vacancy and tenure types.
- application of Input-Output (I-O) analysis to measure the direct and indirect economic impacts of the Project during the construction and operational phases of the project.
- a qualitative discussion of the economic significance and implications of the Project for local and regional economic development.

The review of the existing economic environment was based on statistical data compiled for the local government areas and 2006 ABS Census survey results. It is noted that, on 15 March 2008, the Shires of Murilla, Chinchilla, Wambo, Tara and Taroom (Division 2 — Wandoan) were amalgamated to form the Dalby Regional Council. The remainder of the Taroom Shire was absorbed into Banana Shire Council. Consequently, the reference to Taroom (which included Wandoan) and Banana Shires in this report are based on the local government boundaries as they were prior to 15 March 2008. However, this is not seen to be a limiting factor in the analysis undertaken within this report as it reflects an overview of the historical environment, from which the effects of the Project can be anticipated.

Also, this report should be read in conjunction with TR 21-1-V1.5 Social Impact Assessment.

1.3 Report structure

The remainder of the report is structured as follows:

- Section 2 provides an overview of the existing economic environment in which the Project is scheduled to take place
- Section 3 outlines the Input-Output methodology adopted to assess the economic impacts including the data and assumptions adopted for the assessment
- Section 4 summarises and outlines the results of the economic impact assessment and
- Section 5 provides a discussion on the economic implications of the Project including royalty and other payments arising from the Project, the key benefits of the project for businesses and industries, and future developmental opportunities in the locality.

2. Existing economic environment

This Section provides an overview of the existing economic environment of the area in which the Project is located. The purpose of this description is to provide a basis to understand the conditions impacting on the region's economic environment, from which the effects of the Project can be anticipated.

2.1 Study area

For the purpose of assessing the existing economic environment, the description of the existing economic environment focuses on the regions of the Wandoan locality, using data from the former Taroom, Chinchilla, Murilla and Banana Shires. These regions have been selected on the basis of the location of the Project.

The combined data of these two shires provides an understanding of the wider community demographics and values. It is understood that potential impacts may extend to other local government areas (LGAs) and adjacent communities over the life of the Project.

2.2 Economic base and activity

2.2.1 Industry and employment structure of Taroom, Chinchilla Murilla and Banana

The economic base of the former Taroom, Chinchilla, Murilla and Banana Shires are dominated by the agricultural sector. As shown in Table 2-1, the largest number of businesses in the Taroom region was classified as agricultural, forestry and fishery (75%), followed by construction (5.2%), and property and business services (4%). Chinchilla, by contrast, mainly comprised of agriculture, forestry and fishing (50.8%), retail trade (10.3%) and property and business services (10%). Similarly, Murilla comprised mainly of agriculture, forestry and fishing (57.6%), construction (7.6%), and retail trade (7.1%). The Banana region, also mainly comprised of agriculture, forestry and fishery enterprises (58.6%), followed by property and business services (8.1%), and retail trade (7.5%).

In this context, it should be noted that the Shires of Murilla and Banana have a small number of mining business in the Project area. That is, Murilla has six mining businesses, while Banana has nine.

Table 2-1: Number and percentage of businesses by industry

Industry	Taroom (S) (Count)	Taroom (S) (%)	Chinchilla (S) (Count)	Chinchilla (S) (%)	Murilla (S) (Count)	Murilla (S) (%)	Banana (S) (Count)	Banana (S) (%)
Agriculture, forestry and fishing	558	75.0%	501	50.8%	318	57.6%	1,149	58.6%
Mining/mining services	0	0.0%	0	0.0%	6	1.1%	9	0.5%
Manufacturing	9	1.2%	33	3.3%	9	1.6%	42	2.1%
Electricity, gas and water supply	0	0.0%	0	0.0%	0	0.0%	9	0.5%

Industry	Taroom (S) (Count)	Taroom (S) (%)	Chinchilla (S) (Count)	Chinchilla (S) (%)	Murilla (S) (Count)	Murilla (S) (%)	Banana (S) (Count)	Banana (S) (%)
Construction	39	5.2%	84	8.5%	42	7.6%	135	6.9%
Wholesale trade	6	0.8%	21	2.1%	21	3.8%	33	1.7%
Retail trade	27	3.6%	102	10.3%	39	7.1%	147	7.5%
Accommodation, cafes and restaurants	12	1.6%	9	0.9%	21	3.8%	51	2.6%
Transport and storage	24	3.2%	30	3.0%	24	4.3%	72	3.7%
Communication services	12	1.6%	9	0.9%	9	1.6%	18	0.9%
Finance and insurance	12	1.6%	36	3.6%	15	2.7%	57	2.9%
Property and business services	30	4.0%	99	10.0%	30	5.4%	159	8.1%
Education	0	0.0%	0	0.0%	0	0.0%	3	0.2%
Health and community services	3	0.4%	30	3.0%	12	2.2%	39	2.0%
Cultural and recreational services	6	0.8%	15	1.5%	6	1.1%	12	0.6%
Personal and other services	6	0.8%	18	1.8%	0	0.0%	27	1.4%
Total	744	100.0%	987	100.0%	552	100.0%	1,962	100.0%

Source: ABS 2008a, 2008b, 2008c, 2008d

The above composition of businesses is reflected in industry employment for Taroom (see Table 2-2 below). In the 2006 Census, the top three industries of employment for Taroom (S) were sheep, beef cattle and grain farming (51.7%), followed by local government administration (5.5%), school and education (4.9%). For Chinchilla, the top three industries of employment were sheep, beef cattle and grain farming (14.8%), school education (6.1%) and heavy and civil engineering (4.0%). However, it should be noted that Chinchilla includes some level of mining employment that is not captured in the ABS Census, as Wilkie Creek mine currently operates in this locality. For Murilla, the top three industries of employment were sheep, beef cattle and grain farming (30.4%), school education (6.1%) and local government administration (5.7%).

The above trends, however, is not reflected in the top two industries of employment for Banana, where the number of enterprises is disproportionate to the relative level of industry employment (see Table 2-2). That is, according to the 2006 Census, the most common industries of employment for Banana were coal mining (14.3%), followed by sheep, beef cattle and grain farming (14%). This suggests that the (nine) mining businesses recorded in Banana (see Table 2-1) contribute significantly to the level of industry employment (see Table 2-2), despite their relatively fewer numbers.

Table 2-2: Top five industries of employment

Employment type	Locality (S)	% aged 15 years and over	Australia (Count)	% aged 15 years and over
Taroom (S)				
Sheep, Beef Cattle and Grain Farming	691	51.7%	133,275	1.5%
Local Government Administration	72	5.4%	128,838	1.4%
School Education	65	4.9%	414,214	4.5%

Employment type	Locality (S)	% aged 15 years and over	Australia (Count)	% aged 15 years and over
Hospitals	31	2.3%	303,923	3.3%
Road Freight Transport	24	1.8%	162,448	1.8%
Chinchilla				
Sheep, Beef Cattle and Grain Farming	416	14.8%	133,275	1.5%
School Education	171	6.1%	414,214	4.5%
Heavy and Civil Engineering Construction	112	4.0%	53,350	0.6%
Supermarket and Grocery Stores	100	3.6%	218,821	2.4%
Residential Building Construction	73	2.6%	163,300	1.8%
Murilla (S)				
Sheep, Beef Cattle and Grain Farming	386	30.4%	133,275	1.5%
School Education	78	6.1%	414,214	4.5%
Local Government Administration	72	5.7%	128,838	1.4%
Hospitals	33	2.6%	303,923	3.3%
Fuel Retailing	27	2.1%	32,421	0.4%
Banana (S)				
Coal Mining	984	14.3%	26,891	0.3%
Sheep, Beef Cattle and Grain Farming	962	14.0%	133,275	1.5%
School Education	347	5.0%	414,214	4.5%
Meat and Meat Product Manufacturing	290	4.2%	43,124	0.5%
Local Government Administration	170	2.5%	128,838	1.4%

Source: ABS 2006 Census, QuickStats: Banana(S) and Taroom (S)

The economic profiles provided above indicate that while agriculture remains the dominant form of industry activity in the region, other industries prevalent in the region partially provides the necessary skill base to support the initial needs of the Project (e.g. school education, heavy and civil engineering). This is especially the case in the Banana Shire where coal mining employment currently comprises a significant proportion of its current workforce.

2.2.2 Industry and employment structure of Wandoan

In reviewing the character of the Wandoan locality more specifically, it is observed that the mining industry currently accounts for a small proportion of employment (see Table 2-3). Based on the 2006 Census data, employment in the mining industry accounted for 3% of total employment in the area. The main employment activity in the area was agriculture, accounting for 46% of total employment. Thus, as noted above, it is evident that agricultural activity supports local employment and income. This is followed by education and training (8%) and public administration and safety (7%).

It can also be seen from Table 2-3 that the industry of employment in Wandoan is marginally different from the state and national average. Studies suggest that the supply of local labour is likely to adjust more rapidly when the skill composition of potential labour matches the skill requirements demanded by the market. Therefore, it would be expected that the Project would, in time, have the effect of developing a greater coal mining skill base. This skill base is expected to be highly specialised in nature and tend to be initially contracted with existing market participants or suppliers that may be outside of the region's current labour market skill mix. Thus, while it is not evident that the local labour market will necessarily benefit from the

expansion of mining activities in the region initially, the ability of the current workforce to adapt via further education and training in mining is expected to grow with the operation of the Project.

Table 2-3: Industry employment shares

Industry	Wandoan (Count)	Wandoan (S) (%)	Queensland (%)	Australia (%)
Agriculture, forestry and fishing	184	46%	3%	3%
Mining/mining services	11	3%	2%	1%
Manufacturing	24	6%	10%	10%
Electricity, gas, water and waste services	6	2%	1%	1%
Construction	12	3%	9%	8%
Wholesale trade	10	3%	4%	4%
Retail trade	25	6%	12%	11%
Accommodation and food services	12	3%	7%	6%
Transport, postal and warehousing	15	4%	5%	5%
Information media and telecommunications	0	0%	1%	2%
Financial and insurance services	0	0%	3%	4%
Rental, hiring and real estate services	0	0%	2%	2%
Professional, scientific and technical services	7	2%	6%	7%
Administrative and support services	5	1%	3%	3%
Public administration and safety	29	7%	7%	7%
Education and training	33	8%	8%	8%
Health care and social assistance	13	3%	10%	11%
Arts and recreation services	0	0%	1%	1%
Other services	3	1%	4%	4%
Inadequately described/Not stated	8	2%	3%	3%
Total	397	100%	100%	100%

Source: ABS 2006, Census of Population and, Cat. No. 2068.0 – 2006 Census Tables

2.3 Labour force and unemployment statistics

2.3.1 Current and future population growth

Population growth is an important driver of economic growth creating opportunities for employment and supporting local businesses and commerce. Population growth in the former Taroom shire, however, declined from 2001 to 2006. This decline was also observed in the Banana shire. Data published by the OESR (2008a, 2008b) indicates that the total resident population in the Taroom region is expected to decline over the period 2006 to 2026, averaging -2.2% over the forecast period. By contrast, total resident population in the Chinchilla, Murilla, and Banana region is expected to rise over the same period, averaging 1.6%, 0.6% and 0.02% respectively. This compares to a population growth projection of 9.1% for Queensland over the same period (see Table 2-4).

Table 2-4: Population projections

Year	2001	2006	2011	2016	2021	2026
Taroom (S)						
Count	2,684	2,561	2,507	2,457	2,420	2,397
% change	-	-4.58%	-2.11%	-1.99%	-1.51%	-0.95%
Chinchilla (S)						
Count	6,046	6,224	6,340	6,424	6,475	6,544
% change	-	2.94%	1.86%	1.32%	0.79%	1.07%
Murilla (S)						
Count	2,720	2,735	2,764	2,779	2,791	2,803
% change	-	0.55%	1.06%	0.54%	0.43%	0.43%
Banana (S)						
Count	14,488	14,415	14,450	14,475	14,492	14,503
% change	-	-0.50%	0.20%	0.20%	0.10%	0.10%
QLD (S)						
Count	3,628,946	4,041,368	4,428,138	4,823,408	5,211,995	5,583,956
% change	-	11.40%	9.60%	8.90%	8.10%	7.10%

Source: OESR 2008a, 2008b, 2008c, 2008d

2.3.2 Labour force and unemployment

The labour force characteristics of Wandoan (L), Wandoan (S), Taroom (S), Chinchilla (S), Murilla (S), Banana (S) and Queensland are illustrated in Table 2-5 below. Based on the 2006 Census, the different employment types are expressed in terms of full-time, part-time, away from work, employed hours not stated, and unemployment. The corresponding percentage of these employment types (as a proportion of the total labour force) are shown in Table 2-6.

The Census data indicates that there are a higher proportion of full-time workers in Wandoan (urban centre locality) and the former Taroom, Chinchilla, Murilla and Taroom Shires compared to Queensland, suggesting that commerce and industry activity in these localities are above the state average. There is, however, a smaller percentage of part-time employment for the Wandoan region compared to Queensland overall.

Table 2-5: Labour force (population aged 15 years and over)

	Wandoan (L)	Wandoan (S)	Taroom (S)	Chinchilla (S)	Murilla (S)	Banana (S)	QLD (State)
Total labour force	190	407	1,357	2,915	1,301	7,057	1,915,949
Employed full-time	127	299	1,000	1,886	855	4,876	1,180,892
Employed part-time	45	79	272	772	321	1,523	530,504
Employed away from work	3	7	25	81	35	257	63,507
Employed hours not stated	6	12	39	71	58	235	50,096
Unemployed	9	10	21	105	32	166	90,950
Not in the labour force	97	160	429	1,462	660	2,454	971,831

Source: ABS 2006 Census

Table 2-6: Percentage of labour force, by type

	Wandoan (L)	Wandoan (S)	Taroom (S)	Chinchilla (S)	Murilla (S)	Banana (S)	QLD (State)
Total labour force							
Employed full-time	66.8%	73.5%	73.7%	64.7%	65.7%	69.1%	61.6%
Employed part-time	23.7%	19.4%	20.1%	26.5%	24.7%	21.6%	27.7%
Employed away from work	1.6%	1.7%	1.8%	2.8%	2.7%	3.6%	3.3%
Employed hours not stated	3.2%	2.9%	2.9%	2.4%	4.5%	3.3%	2.6%
Unemployed	4.7%	2.5%	1.5%	3.6%	2.5%	2.4%	4.7%

Source: PB calculations based on ABS 2006 Census

Table 2-6 also shows unemployment as a proportion of the total labour force. While unemployment for Wandoan (L) is equivalent to that of Queensland (i.e. 4.7%), the Wandoan (S) locality (i.e. 2.5%) is below the state level (i.e. 4.7%). A similar trend applies for Taroom, Chinchilla, Murilla and Banana, where there is a smaller proportion of unemployed compared to the Queensland state.

2.4 Income, earnings, and costs of housing

Table 2-7 below illustrates the income, earning and housing statistics for Banana (S), Taroom (S), Chinchilla (S), Murilla (S) and Wandoan (S). The different income types are expressed in terms of median individual, housing and family incomes.

With the exception of Murilla, the median family incomes for Wandoan were below that of Taroom, Banana, and Chinchilla. Specifically, the median family income for Wandoan was \$976 per week, compared to \$957 for Murilla, \$1,017 per week for Taroom, \$1,058 for Chinchilla, and \$1,321 per week for Banana. In contrast, individual incomes were the lowest for Murilla, followed by Chinchilla, Wandoan, Taroom and Banana. That is, \$392 per week for Murilla, \$399 per week for Chinchilla, \$409 per week for Wandoan, \$442 per week for Taroom and \$528 per week for Banana.

In 2006, the average number of persons per households in Wandoan, Taroom and Murilla was 2.4, compared to 2.5 for Chinchilla and 2.6 for Banana. This was accompanied by median housing loan repayments of \$474 per week for Wandoan, \$542 per week for Taroom, \$704 per week for Murilla, \$867 per week for Chinchilla and \$1,000 per week for Banana. Therefore, the Wandoan locality had the lowest median housing loan repayment, whilst Banana had the highest.

The ABS Census provides information on rental prices from 2006 that shows the median rent paid per week within the region is low when compared to the state (e.g. median of \$41 per week in Wandoan and \$85 per week in Taroom and \$25 per week in Murilla Shire). These low rental figures within the region may indicate regional trends whereby rented properties are provided at reduced rates or as part of a salary package for those who work and manage agricultural properties for the owners. However, research undertaken on rental properties available during October 2008 showed that advertised rents for a 3 bedroom house in Wandoan ranged from \$190 to \$450 per week; and a 2 bedroom duplex at Miles was advertised at \$200 per week.

In this context, it should be noted that median weekly rents recorded in the 2006 Census appears to be very low compared to current market trends.

Furthermore, according to the Australian Property Monitors (2008), the median price of a house in Wandoan was \$197,000 (six months to February 2008). This compared to a median house priced of \$305,000 for rural Queensland over the same period.

Chapter 21 Social provides an analysis of potential housing cost impacts arising from the Project construction and operations.

Table 2-7: Regional income and household statistics

	2006 Census data
Wandoan (\$)	
Median age (in years)	40
Median individual income (\$ per week)	409
Median household income (\$ per week)	692
Median family income (\$ per week)	976
Median housing loan repayment (\$ per week)	474
Average household size	2.4
Taroom (\$)	
Median age (in years)	40
Median individual income (\$ per week)	442
Median household income (\$ per week)	810
Median family income (\$ per week)	1,017
Median housing loan repayment (\$ per week)	542
Average household size	2.4
Chinchilla (\$)	
Median age (in years)	38
Median individual income (\$ per week)	399
Median household income (\$ per week)	890
Median family income (\$ per week)	1,058
Median housing loan repayment (\$ per week)	867
Average household size	2.5
Murilla (\$)	
Median age (in years)	40
Median individual income (\$ per week)	392
Median household income (\$ per week)	697
Median family income (\$ per week)	957
Median housing loan repayment (\$ per week)	704
Average household size	2.4
Banana (\$)	
Median age (in years)	34
Median individual income (\$ per week)	528
Median household income (\$ per week)	1,143
Median family income (\$ per week)	1,321

	2006 Census data
Median housing loan repayment (\$ per week)	1,000
Average household size	2.6

Source: Australian Bureau of Statistics Census 2006.

2.5 Dwelling characteristics, vacancy and tenure type

The dwelling, vacancy and tenure characteristics of Wandoan (S), Taroom (S), Chinchilla (S), Murilla (S), Banana (S) and Queensland are illustrated in Table 2-7 below. Based on the 2006 Census, the data indicates that Wandoan has the highest vacancy rate (30%), followed by Taroom (27%), Murilla (18%), Chinchilla (16%), Banana (13%) and Queensland (9%). Thus these vacancy rates suggest that the Wandoan locality would have a greater capacity to cater (at least initially) for increased housing demand resulting from the Project.

The Census data also indicates that across the regions observed, full ownership is the dominant form of tenure type. With the exception of Queensland as a whole, rental accommodation is the second most common form of tenure type, followed by tenure types being purchased. Chapter 21 Social provides an analysis of potential housing impacts arising from the Project construction and operations.

Table 2-8: Dwelling characteristics, vacancy rate and tenure type (2006 Census)

	← Dwelling characteristics →			← Tenure type →				
	Total dwellings	Dwelling occupancy	Vacancy rate (%)	Fully Owned	Being Purchased	Rented	Other tenure type	Not stated
Wandoan (S)								
Count	426	299	30%	136	56	91	4	13
(%)	-	-	-	46%	19%	30%	1%	4%
Taroom (S)								
Count	1,297	949	27%	465	170	262	18	32
(%)	-	-	-	49%	18%	28%	2%	3%
Chinchilla (S)								
Count	2,770	2,338	16%	981	576	632	31	119
(%)	-	-	-	42%	25%	27%	1%	5%
Murilla (S)								
Count	1,328	1,092	18%	486	219	299	20	68
(%)	-	-	-	45%	20%	27%	2%	6%
Banana (S)								
Count	5,874	5,129	13%	1,721	1,363	1,613	69	362
(%)	-	-	-	34%	27%	31%	1%	7%
QLD (S)								
Count	1,660,750	1,508,522	9%	458,468	473,248	452,596	14,830	109,379
(%)	-	-	-	30%	31%	30%	1%	7%

Source: ABS Census 2006.

2.6 Summary of existing environment

From the above review of the existing economic environment, it can be observed that the Wandoan/Taroom locality and adjacent region provide a strong foundation to cater for the Project's development. There is also notable scope for the Project to improve the socio-economic performance of the region. Specifically:

- although the industrial structure of the former Taroom shire is dominated by the agricultural industry, other industries and corresponding labour market prevalent in other Shires examined provide the necessary social and economic infrastructure to support the growth of the Project (e.g. existing coal mining and associated support industry, school and education and health)
- unemployment in the Wandoan township is equivalent to the state average of 4.7%; however, this is above average compared to the Shires examined, suggesting that there is greater scope for the unemployed in the township to service the Project and related needs going forward and
- household vacancy rates in the Wandoan locality is the most prevalent compared to the Taroom, Chinchilla, Murilla and Banana Shires, suggesting that the town has a capacity to initially service demand for housing resulting from the Project, albeit only for a short period of time in the initial construction phase.

3. Economic impact analyses framework

This Section provides an overview of the economic framework used to estimate the impacts. It includes an outline of the Input-Output (I-O) analysis framework used, the type of impacts associated with this assessment, a description of the key economic indicators to be measured, the limitations of using the I-O method, and a discussion of the data and assumptions associated with the magnitude, location and timing of investment expenditures.

3.1 Method

3.1.1 Input-Output analyses framework

The method used to measure the economic impacts of constructing and operating the Project is Input-Output (I-O) analyses. I-O analysis is a well-established and widely used technique for estimating economic impacts of an existing, expanding or new economic activity in a region. It examines how the Project affects an economy through all of the backward and forward linkages between all industries in the economy. It takes the initial effect of the Project, and traces all the multiplier or 'flow-on' effects — known as direct, indirect and induced. The final result is an overall picture of the Project's expected contribution for the regional, state and national economies.

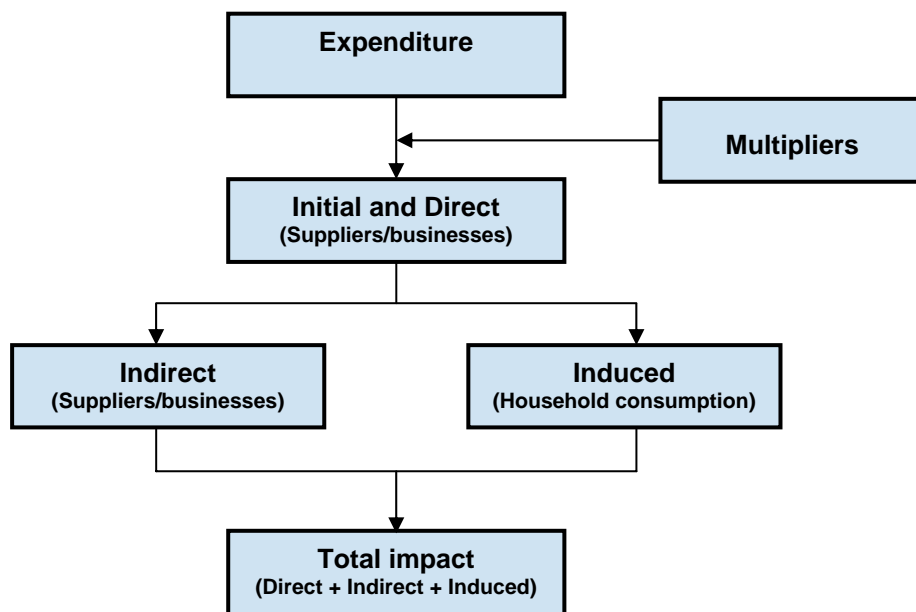


Figure 3-1: Input-Output analysis framework

Figure 3-1 above provides a high-level illustration of the I-O analysis framework used to estimate the economic impact of the Project. As illustrated, the initial expenditure on the Project creates a first-round, or direct flow-on effect, across all businesses and employees in the supply chain supporting the Project (e.g. construction or mining). This in turn encourages further indirect expansionary effects to other sectors of the economy supporting the Project (e.g. residential building construction). As well as the direct and indirect effects, further induced

impacts or ‘pay-packet’ affects are expected to be realised in terms of the consumption of goods and services by the household sector (e.g. retail trade, cafes and restaurants).

3.1.2 Type of impacts

The economic impact of the Project can be traced through the economic system in several different ways. For the purpose of this assessment, the following types of impacts are used:

- the **direct multiplier effect** represents the increase in economic activity (value added and output) and employment which is directly generated across all supplying sectors in the industry receiving the initial impact
- the **indirect multiplier effect** represents the second round that occurs across all secondary industries in the economy to support the direct impact
- the **induced multiplier effect** represents the change in consumption by the household sector or “pay packet” effect in response to income changes resulting from the direct and indirect impacts and
- the **total multiplier effect** is the sum of the direct, indirect and induced multiplier effects outlined above.

3.1.3 Economic indicators

In applying the I-O method, the economic impact is measured by means of three key economic indicators — value added (at the regional level), output (at the rest of Australia level) and employment (at both regional and rest of Australia levels). These impacts are described below.

Value Added and Output Impact

The valued added measure can be defined as the *net* revenue of goods and a service produced by all industries resulting directly and indirectly from a change in final demand and is equivalent to gross regional product (GRP). The output measure, by contrast, is the defined as the *gross* revenue of goods and services produced by all industries of the economy that is required to satisfy the change in final demand for the output of that industry.

In this context, the preferred measure is value added as it is a better estimator of contribution to economic activity, whilst the output measure is more “susceptible to multiple counting, because they sum all intermediate transactions over all stages of the production process” (West 1998). However, as value added I-O tables were not readily available for the rest of Australia, output measures were used for estimation of these impacts. Hence, regional level impacts were derived using value-added I-O tables, whilst rest of Australia impacts were derived using I-O tables from national estimates published by the ABS.

An explanation of the value added and output measures can be described as follows. During the construction phase of the Project, for example, the initial impact can be defined as the net increase in economic activity resulting directly and indirectly from a change in final demand. The direct flow-on effect relates to the additional value of sectors directly supporting the expansion in activity of the construction sector. The indirect effects quantify the additional value of output associated with sectors not considered as direct support sectors (these effects are collectively referred to as the industrial support effects).

Employment Impact

Employment flow-on effects occur because businesses adjust the level of resources used to accommodate for changes in the valued added and output impacts. For instance, during the operational phase of the mine development, employment increases to enable the production of goods and services to service maintenance workers. Employment includes the number of working proprietors, and may encompass managers, directors, and other employees in terms of full-time equivalents. Employment flow-on effects also have direct and indirect effects. The direct flow-on effect is defined as the change in employment associated with those industries directly supporting the activities of the expanding sector. The indirect effects represent the increase in employment across all indirect support sectors (i.e. sectors providing inputs to supply sectors).

3.2 Method limitations

The multipliers used in this study rely on multipliers obtained from the Queensland Office of Government Statistician Regional Input-Output Tables (OESR 2004), and the Australian Bureau of Statistics Input-Output Multipliers (ABS 2004). As the Table sources are dated, care should be taken in terms of the reliability and accuracy of the estimates provided. In particular, the assessment assumes that industrial structure of the Australian economy has remained relatively unchanged since the compilation of the Tables. For this reason, among others, range estimates rather than point estimates, are provided in order to take into account possible structural changes in the economy since the compilation of the I-O multipliers.

In this study, the multiplier base estimates are set to range between 40 to 50 per cent to take into account possible biases and uncertainty for output and value-added. By contrast, the multipliers for employment have a higher degree of uncertainty due to rising wages and incomes in the economy. As such, the employer base estimates are set to range between 30 to 40 per cent of the base estimates.

Despite these limitations, the I-O framework provides a means of estimating the economic impact of the Project, and is intended to be indicative only.

3.3 Data and assumptions

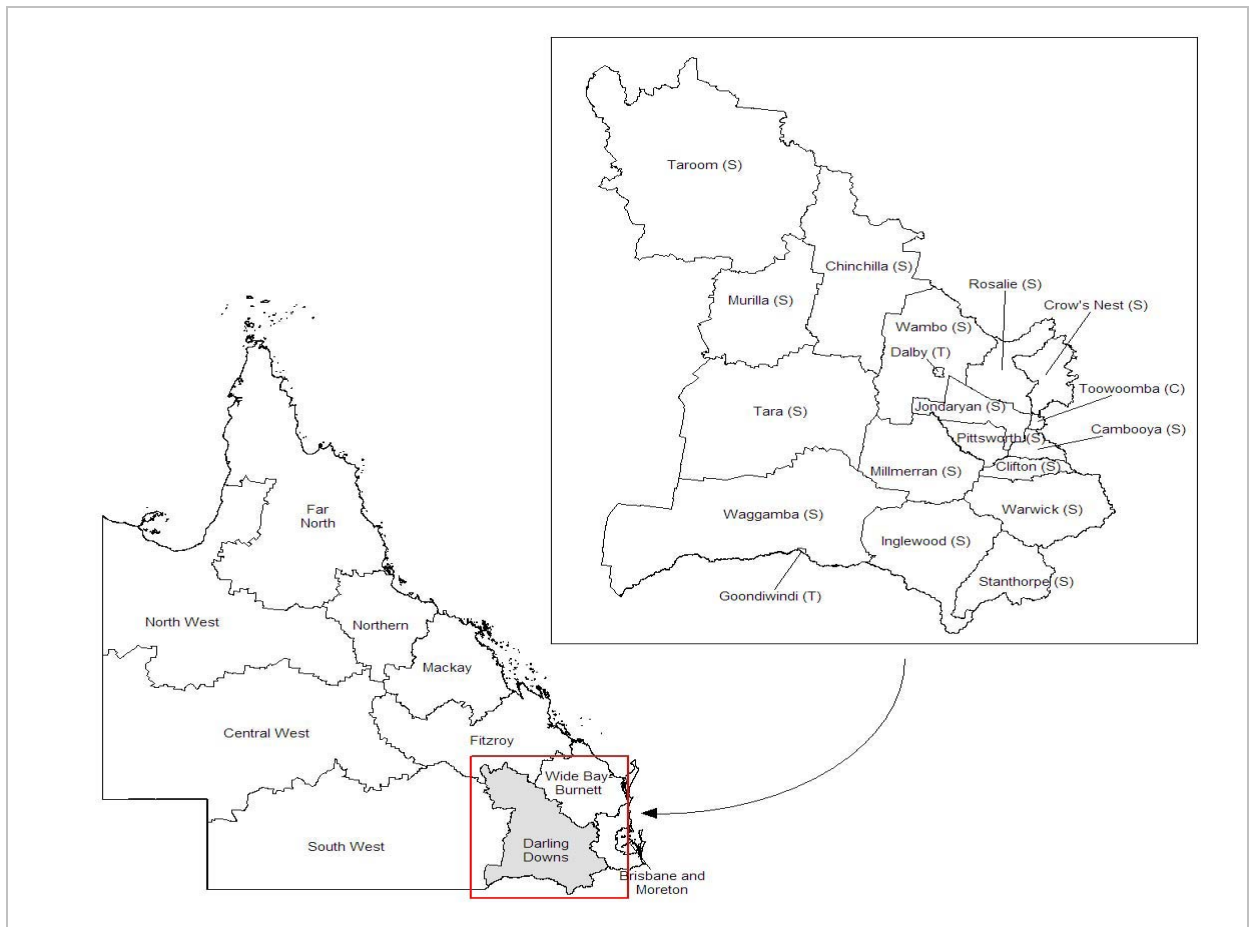
3.3.1 Regional, State and National Impact Definition

In this assessment, the impacts are separated into regional, state and national impacts. That is:

- the regional level is defined as the statistical division of Darling Downs
- the state level is defined as the rest of Queensland and
- the national level is defined as the rest of Australia.

The Darling Downs Statistical Division includes the former Taroom, Chinchilla and Murilla Shires, where the Wandoan Project is located. However, it excludes the Banana Shire. This region comprises a total area of 90,246 square kilometres, 5.2% of the total area of the State. Figure 3-2 illustrates the geographic breakdown of the Darling Downs Division (OESR 2005).

Capital and operating expenditure profiles are apportioned at these geographic levels to estimate the economic impacts and are intended to be indicative only. The proportion of costs across these regions to be expended is outlined in Section 3.3.2 and 3.3.3 respectively.



Source: OESR (2005)

Figure 3-2: Darling Downs Statistical Division

3.3.2 Construction phase data and assumptions

Relevant data provided by XCQ used to estimate the impact of the Project during the construction phase are presented in Table 3-1 below, and are separated in terms of expected expenditure at the regional, state and national levels. Key construction costs include coal handling and preparation plant (CHPP), mine infrastructure and other infrastructure (e.g. water supply infrastructure).

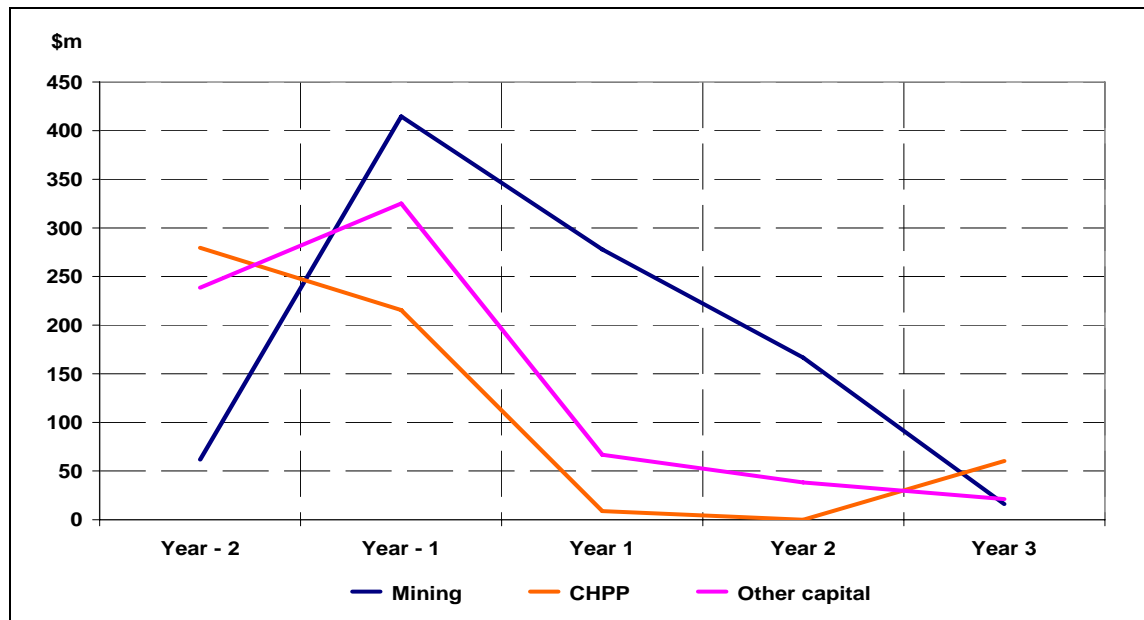
The construction period is expected to take place over a 5 year period. Total capital expenditure is expected to cost \$2.9 billion (2008/09 dollars), with the majority of expenditure, as a proportion of total expenditure, taking place in construction Year -2 and Year -1. However, as shown in Figure 3-3 (below), capital expenditure is expected to peak in Year -1, with 44% of total capital expenditure being expended at this time.

While there is uncertainty about the final level of regional expenditure, XCQ has advised that it is expected that around 8% would be expended at the regional level, 49% would be expended at the state level, and 18% would be expended nationally. The remaining 25% is expected to be expended internationally. However, for the purpose of this assessment, expenditure overseas has been treated as a leakage in the model. That is, the expenditure internationally is expected to result in overseas revenues and employment. The proportions are preliminary and have been used to estimate the economic impacts for the three separate geographies.

Table 3-1: Summary of forecast construction expenditures for Wandoan Coal Project (real-adjusted)

	Year - 2	Year - 1	Year 1	Year 2	Year 3	Total
Construction phase						
Expenditure profile	26%	44%	16%	9%	4%	100%
Regional (\$m)						
Mining	7	44	30	18	2	100
CHPP	30	23	1	0	6	60
Other capital	25	35	7	4	2	74
State (\$m)						
Mining	40	271	181	109	10	612
CHPP	183	141	6	0	39	369
Other capital	156	212	44	25	14	451
Rest of Australia (\$m)						
Mining	15	99	67	40	4	225
CHPP	67	52	2	0	14	135
Other capital	57	78	16	9	5	166
Total (\$m)	773	1,273	471	273	130	2,921

Note: Figures may not sum precisely due to rounding.
Source: XCQ



Source: XCQ

Figure 3-3: Forecast capital expenditure profile

3.3.3 Operational phase data and assumptions

The operational data used to estimate the impact of the Project are presented Table 3-2 below. The operational period is expected to take place over a 27 year period. As shown in Table 3-2 (below), total operational expenditure is expected to cost \$15.6 billion over the projected operating period (2008/09 dollars). The estimates exclude overseas expenditure, rail and port transport costs, coal research levy charges, Queensland Government royalties, and carbon taxes (if implemented). Annual expenditure, as a percentage of total operational expenditure, is expected to be expended on average at 4% per annum – that is, approximately \$578 million per annum

Table 3-2: Operational expenditures for Project (real adjusted)

	Average Operational Expenditure (per annum)	Total Operational Expenditure (27 years)
Operational Phase		
Average expenditure profile	4%	100%
Regional (\$m)		
Mining	23	608
CHPP	9	233
Other capital	5	145
State (\$m)		
Mining	300	8,102
CHPP	115	3,111
Other capital	72	1,933
National (\$m)		
Mining	34	911
CHPP	13	350
Other capital	8	217
Total Operating Costs (\$m)	578	15,610

Note: Figures may not sum precisely due to rounding.
Source: XCQ

Similar to the construction expenditure proportions, there is uncertainty about the level of regional expenditure. However, it is expected that around 9% would be expended at the regional level, 80% would be expended at the state level, 6% would be expended at the national level, and 5% would be expended at the overseas level. The notably higher share at the state level during the operational phase is wholly consistent with expectations that the Project will tend to benefit the State more than other geographies due to the extraction of the resource from the mine-gate to the export gate for overseas export and consumption. Like the construction phase, these proportions are preliminary and have been used to estimate the economic impacts for the three separate geographies.

4. Potential economic impacts

This Section presents the economic impacts that would potentially arise from the construction and operation of the Project. The impact analyses incorporate the construction and operational profiles of the Project as discussed in the preceding Section. It estimates the direct, indirect and induced benefits arising from these activities at the regional level and for the rest of Australia.

4.1 Impacts during construction phase

Based on the projected capital expenditure proportions outlined in Section 3.3.2, the Project's economic impacts during construction are summarised in Table 4-1.

Table 4-1: Average per annum economic impact during construction

Impact type	← Value Added/Output → (\$m)		← Employment → (Full Time Equivalents)	
	Lower	Upper	Lower	Upper
REGIONAL				
Direct impact	6	8	100	134
Indirect impact	3	4	33	44
Induced impact	1	2	26	34
Total	10	14	159	212
STATE				
Direct impact	49	61	241	321
Indirect impact	46	57	161	214
Induced impact	98	123	482	643
Total	193	241	884	1,178
NATIONAL				
Direct impact	16	20	79	105
Indirect impact	15	19	53	70
Induced impact	32	40	158	210
Total	63	79	290	385

Note: Figures may not sum precisely due to rounding.
Source: PB estimates.

4.1.1 Direct flow-on impacts

Direct affects are the value of goods and services (including numbers employed) necessary to establish the mine, including construction activities directly supporting the construction of the mine. Examples of the type of businesses likely to be affected include construction trade services, landscaping, or civil engineering contractors and suppliers located in the geographies examined.

In summary, the initial impact during construction is expected to yield the following direct flow-on affects.

- *Regional:* on average, the direct flow-on affect is expected to contribute between \$6 and \$8 million per annum in revenues associated with goods and services produced. This is expected to support between 100 and 134 jobs per annum.
- *State:* on average, the direct flow-on affect is expected to contribute between \$49 and \$61 million per annum in revenues associated with goods and services produced. This is expected to support approximately 241 and 321 jobs per annum.
- *National:* on average, the direct flow-on affect is expected to contribute between \$16 and \$20 million per annum in revenues associated with goods and services produced. This is expected to support between 79 and 105 jobs per annum.

4.1.2 Indirect flow-on impacts

Indirect flow-on on impacts would occur because inputs would need to be purchased from many other sectors to support the direct flow-on impacts associated with constructing the mine. The indirect flow-on impacts may include machinery, appliances and equipment, as well as communication services.

In summary, the initial impact during construction is expected to yield the following indirect flow-on affects.

- *Regional:* on average, the direct flow-on affect is expected to contribute between \$3 and \$4 million per annum in revenues associated with goods and services produced. This is expected to support between 33 and 44 jobs per annum.
- *State:* on average, the direct flow-on affect is expected to contribute between \$46 and \$57 million per annum in revenues associated with goods and services produced. This is expected to support approximately 161 and 214 jobs per annum.
- *National:* on average, the direct flow-on affect is expected to contribute between \$15 and \$19 million per annum in revenues associated with goods and services produced. This is expected to support between 53 and 70 jobs per annum.

4.1.3 Induced flow-on impacts

Induced flow-on on impacts would occur due to increased spending of wage and salary earners on items such as accommodation, cafes, restaurants, and retail trade.

In summary, the initial spend during construction is expected to yield the following induced flow-on affects.

- *Regional:* on average, the induced flow-on affect is expected to contribute between \$1 and \$2 million per annum in revenues associated with goods and services produced. This is expected to support between 26 and 34 jobs per annum.
- *State:* on average, the induced flow-on affect is expected to contribute between \$98 and \$123 million per annum in revenues associated with goods and services produced. This is expected to support approximately 482 and 643 jobs per annum.

- *National:* on average, the induced flow-on affect is expected to contribute between \$32 and \$40 million per annum in revenues associated with goods and services produced. This is expected to support between 158 and 210 jobs per annum.

4.1.4 Total flow-on impacts

The total flow-on impact (direct, indirect, induced) resulting from the initial expenditure undertaken during the construction is presented below.

- *Regional:* on average, the total flow-on affect is expected to contribute between \$10 and \$14 million per annum in revenues associated with goods and services produced. This is expected to support between 159 and 212 jobs per annum.
- *State:* on average, the total flow-on affect is expected to contribute between \$193 and \$241 million per annum in revenues associated with goods and services produced. This is expected to support approximately 884 and 1,178 jobs per annum.
- *National:* on average, the total flow-on affect is expected to contribute between \$63 and \$79 million per annum in revenues associated with goods and services produced. This is expected to support between 290 and 385 jobs per annum.

Thus as estimated above, the largest economic impact is expected to occur at the state level as a result of the Project’s construction. This is followed by the national and regional impacts.

Figures 4-1 and Figures 4-2 below summarises the total value added/output and employment impacts during construction in terms of direct, indirect and induced impacts across all geographies examined.

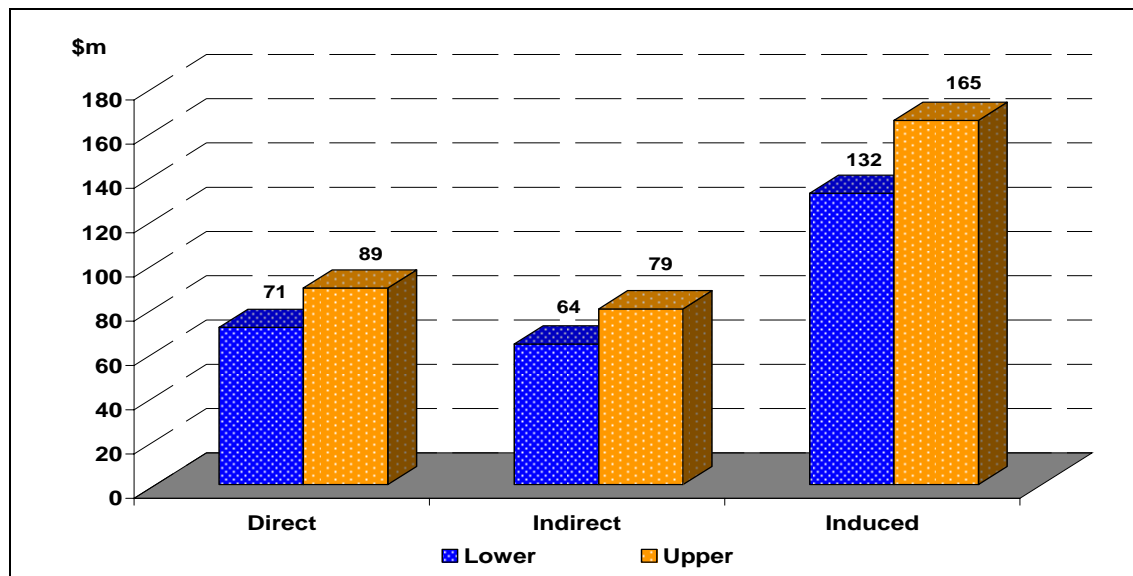


Figure 4-1: Value added or output impacts during construction

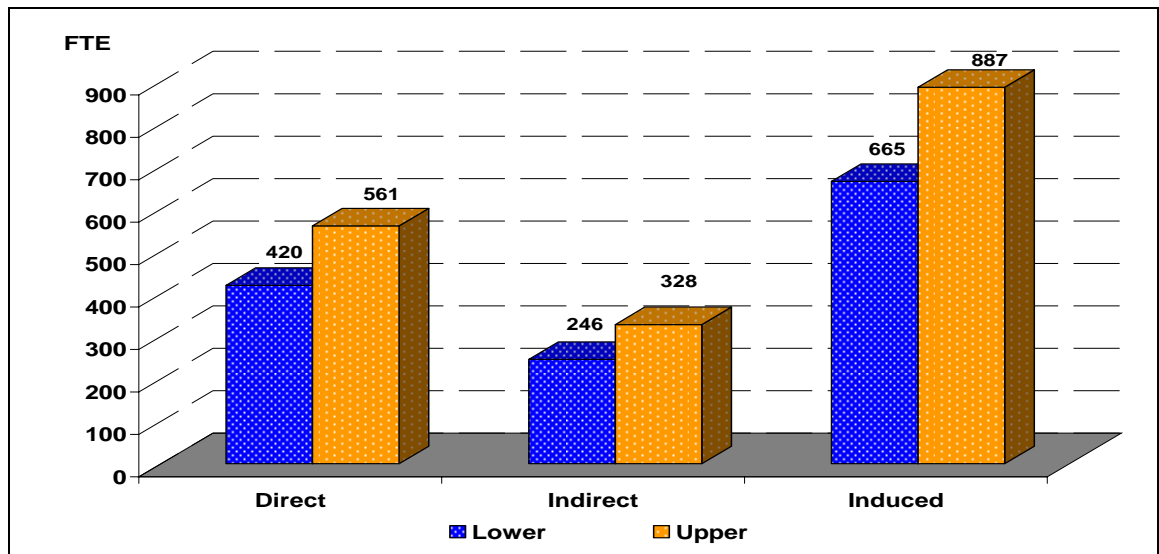


Figure 4-2: Full-time equivalent jobs during construction

4.2 Impacts during operational phase

Based on operational expenditure profiles provided by Xcq over the operating period, the Project's operational economic impacts are summarised in Table 4-2.

Table 4-2: Average per annum economic impact during operation

Impact type	← Value Added/Output → (\$m)		← Employment → (Full Time Equivalents)	
	Lower	Upper	Lower	Upper
REGIONAL				
Direct impact	6	7	78	104
Indirect impact	3	4	33	44
Induced impact	4	5	41	54
Total	13	16	152	202
STATE				
Direct impact	76	95	292	389
Indirect impact	61	76	243	341
Induced impact	132	165	730	974
Total	269	336	1,266	1,704
NATIONAL				
Direct impact	9	11	33	44
Indirect impact	7	9	27	38
Induced impact	15	19	82	110
Total	31	39	142	192

Note: Figures may not sum precisely due to rounding.
Source: PB estimates.

4.2.1 Direct flow-on impacts

The direct affects during operation are the operational activities directly supporting the operation of the mine's production. Examples of the type of businesses likely to be affected include engineering contractors and suppliers, and trade services.

In summary, the initial impact during operations is expected to yield the following direct flow-on affects.

- *Regional:* on average, the direct flow-on affect is expected to contribute between \$6 and \$7 million per annum in revenues associated with goods and services produced. This is expected to support between 78 and 104 jobs per annum.
- *State:* on average, the direct flow-on affect is expected to contribute between \$76 and \$95 million per annum in revenues associated with goods and services produced. This is expected to support approximately 292 and 389 jobs per annum.
- *National:* on average, the direct flow-on affect is expected to contribute between \$9 and \$11 million per annum in revenues associated with goods and services produced. This is expected to support between 33 and 44 jobs per annum.

4.2.2 Indirect flow-on impacts

Indirect flow-on on impacts would occur because inputs would need to be purchased from many other sectors to support the direct flow-on impacts associated with constructing the mine. The indirect flow-on impacts may include machinery, appliances and equipment, as well as the supply of water, gas and electricity.

In summary, the initial impact during operations is expected to yield the following indirect flow-on affects.

- *Regional:* on average, the indirect flow-on affect is expected to contribute between \$3 and \$4 million per annum in revenues associated with goods and services produced. This is expected to support between 33 and 44 jobs per annum.
- *State:* on average, the indirect flow-on affect is expected to contribute between \$61 and \$76 million per annum in revenues associated with goods and services produced. This is expected to support approximately 243 and 341 jobs per annum.
- *National:* on average, the indirect flow-on affect is expected to contribute between \$7 and \$9 million per annum in revenues associated with goods and services produced. This is expected to support between 27 and 38 jobs per annum.

4.2.3 Induced flow-on impacts

Like the construction phases, Induced flow-on on impacts would occur due to increased spending of wage and salary earners at the operational phases of the Project. Examples of businesses and industries most likely to be affected include finance, property and business services, accommodation, cafes, restaurants, and retail trade.

In summary, the initial spend during operations is expected to yield the following induced flow-on affects.

- *Regional:* on average, the induced flow-on affect is expected to contribute between \$4 and \$5 million per annum in revenues associated with goods and services produced. This is expected to support between 41 and 54 jobs per annum.
- *State:* on average, the induced flow-on affect is expected to contribute between \$132 and \$165 million per annum in revenues associated with goods and services produced. This is expected to support approximately 730 and 974 jobs per annum.
- *National:* on average, the induced flow-on affect is expected to contribute between \$15 and \$19 million per annum in revenues associated with goods and services produced. This is expected to support between 82 and 110 jobs per annum.

4.2.4 Total flow-on impacts

The total flow-on impact (direct, indirect, induced) resulting from the initial expenditure undertaken during the operation is presented below and has been rounded.

- *Regional:* on average, the total flow-on affect is expected to contribute between \$13 and \$16 million per annum in revenues associated with goods and services produced. This is expected to support between 152 and 202 jobs per annum.
- *State:* on average, the total flow-on affect is expected to contribute between \$269 and \$336 million per annum in revenues associated with goods and services produced. This is expected to support approximately 1,266 and 1,704 jobs per annum.
- *National:* on average, the total flow-on affect is expected to contribute between \$31 and \$39 million per annum in revenues associated with goods and services produced. This is expected to support between 142 and 192 jobs per annum.

As with the construction phase, the largest economic impact is expected to occur at the state level as a result of the Project's operation. This is followed by the national and regional impacts.

Figures 4-3 and Figures 4-4 summarises the total value added/output and employment impacts during operation in terms of direct, indirect and induced impacts across all geographies examined.

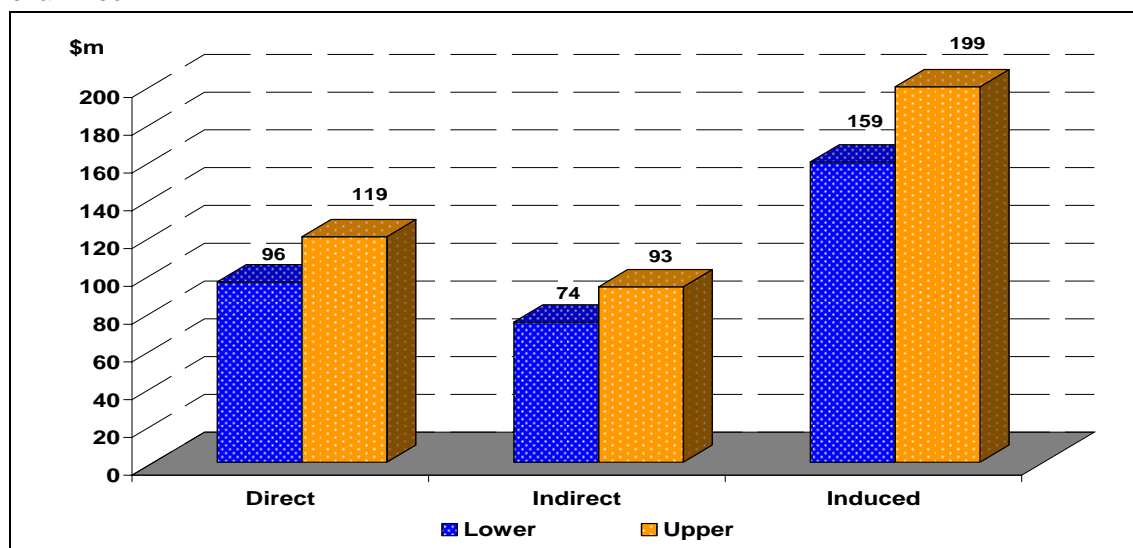


Figure 4-3: Value added or output impacts during operation

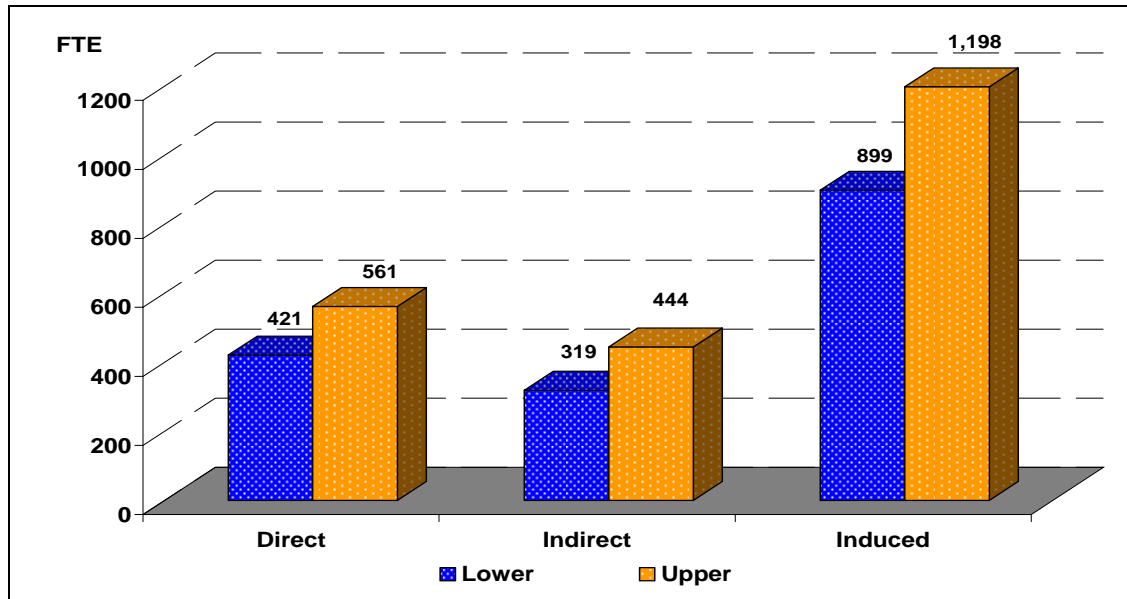


Figure 4-4: Full-time equivalent impacts during operation

4.3 Possible constraints

Several supply-side opportunities and constraints of the region are likely to affect the degree to which the estimated economic impacts above can be realised. These include the supply of labour and the capacity of regional businesses to service new demand for goods and services, together with availability of local housing and other physical and social infrastructure and amenities required.

As noted in Section 2 of this report, whilst the economic profile of the region suggests that there is some capacity for existing businesses and industries to initially support the growth of the Project, it is expected that there will be insufficient labour supply to support the Project over its entirety. Accordingly, it is expected that the shortfall in labour supply will be imported from the wider state, as well as nationally. At the same time, it is likely that existing and new business will be required to be developed in order to provide services (e.g. mining maintenance services) for the mine and the increased number of people residing within the region.

There may be opportunity to review the extent of capital equipment required to be imported into the region (including overseas imports) over the life of the Project. However, this depends on the specialist nature of such equipment and the economies of scale required to establish a local/regional/national supplier.

Consequently, although the Project would provide opportunities for regional labour and business supply, it is likely that the attraction of skilled workers and new business entrepreneurs would be required. In part, the level of attraction would rely on the capacity of the education and training system to up-skill workers, and accompanying opportunities presented to entrepreneurs and business managers to invest in new businesses ventures across the region.

5. Other economic implications

The construction and operational impacts estimated in the preceding Section have a number of economic implications. This Section briefly outlines the likely implications of the Project in terms of implications for Government revenues, the development of the locality and a high level identification of key businesses and industries likely to be affected.

5.1 Implications for Government revenues

5.1.1 Royalty payments from coal production

The expected average production of 22 million tonnes of coal per annum over the operating period is expected to have significant implications for royalty payments. In Queensland, coal royalties are assessed according to a two tier coal royalty system which results in an increasing variable rate of royalty once the price of coal exceed \$100 per tonne per quarter. Specifically, coal companies pay 7% of value up to A\$100 per tonne and 10 per cent of the value thereafter. For example, a price of A\$100 per tonne attracts a rate of 7% of coal value, A\$150 per tonne attracts 8% and A\$200 per tonne attracts 8.5%.

In total, and subject to exchange rate variations, it is estimated that approximately \$3.7 billion in royalty payments would be made to the Queensland Government over the 30 year operation of the Project. On an annual basis, the average royalty payment is expected to contribute \$135 million per annum. However, the payment is expected to peak in year 4, contributing approximately \$167 million.

5.1.2 Rail and port charges

Major infrastructure enabling the operation and growth of the coal industry includes transport (rail and ports). Queensland coal is transported through a series of supply chains, including five dedicated rail networks linking coal mines to major coal export terminals.

In this context, XCQ has advised that approximately \$500 million per annum could be expected to be paid in rail and port charges over the 30 year operation of the Project.

5.1.3 Other payments

In addition to the royalty, rail and port contributions outlined above, the use of land for the Project is expected to contribute to Council rates. Specifically, Dalby Regional Council charges different rates for use of their land. The Project would likely be categorised as "Coal Mining >200 people".

The contributions are expected to assist in the funding of a wide range of services to the benefit of the community, including the management and maintenance of critical social and economic infrastructure such as local roads, libraries, sporting grounds and swimming pools, parks and playgrounds, community halls, and street lighting, as well as providing services such as waste collection, information and economic development.

5.2 Implications for development in the locality

The investment in the construction and operation of the Project is expected to generate significant economic benefits to the region in the form of increased economic activity and employment. These benefits (as measured in the preceding Section), would in turn lead to a steady increase in the region’s population and subsequent demand for goods and services. Figure 5-1 summarises the economic implications of the Project for future development and change in the locality.

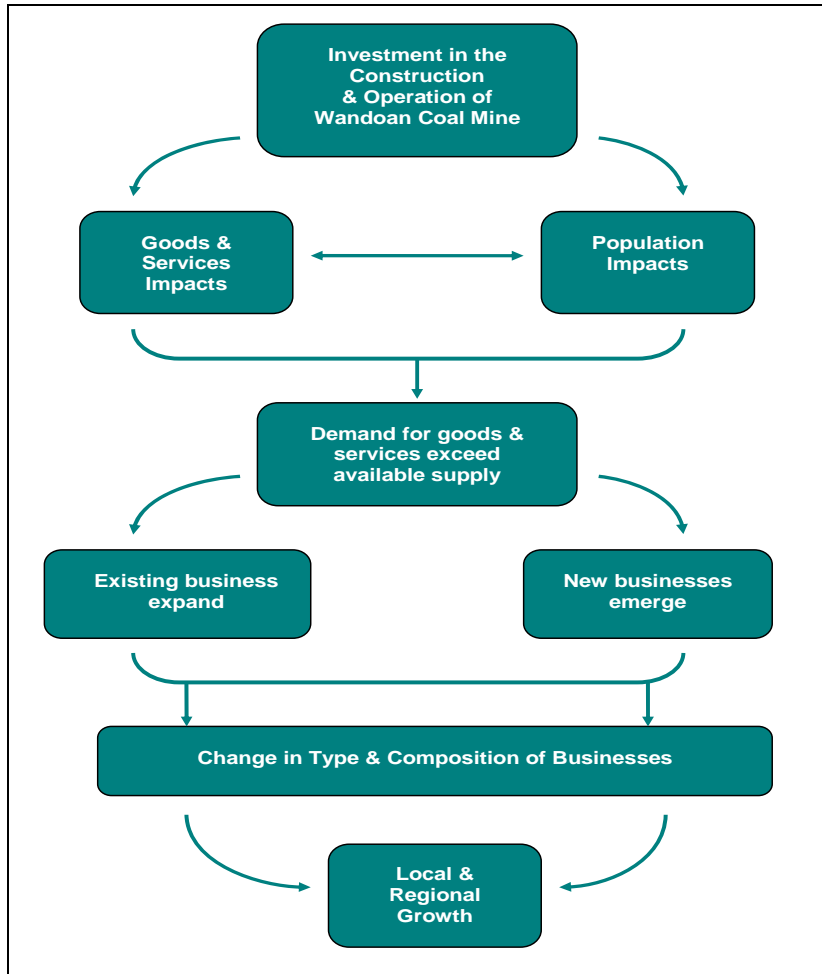


Figure 5-1: Implications of the Project for development in the locality

As shown in Figure 5-1, the increase in demand for goods and services afforded by the Project is likely to improve sales turnover for existing businesses within the Wandoan locality and the wider region more generally. However, the ability of existing business to meet increased demand is likely to exceed available supply as the market expands. New opportunities for entrepreneurs would therefore emerge to directly support coal production, and indirectly through supporting activities. Inward investment into the region is therefore expected to result as new businesses are established to meet growing demand. As a result of this growth, businesses would most likely respond by changing the type and composition of their business type to better meet consumer choices and preferences. Taken together, these effects and resulting change would lead to local and regional growth, as businesses and industries adjust to cater for the Project and associated needs.

In summary, the increase demand for goods and services would facilitate the development of the locality in terms of encouraging:

- greater private sector investment in the Wandoan locality and region more generally as new and emerging businesses seek to supply the increase in demand for goods and services resulting from the Project
- an increase in the number and type of businesses across new and existing development areas, reflecting increased demand for goods and services
- competition across new and existing development areas, reflecting growth in business activities, business expansion and new start-ups and
- greater profitability across new and existing development areas, reflecting increased commerce and demand for goods and services.

It should be noted that a likely consequence of this economic growth will be higher property values and rents for local and regional businesses, reflecting growth in the demand for real property as a result of the rising population, income and business activity. The negative impacts in terms of increased rents may be offset, however, by the higher local employment and incomes.

5.3 Implications for businesses and industries

The Project is expected to change the underling economic base and industrial structure of the Wandoan locality by developing businesses and industries that directly and indirectly support the construction and operation of coal mining activities. The key driver of this underlying change relates to the increase in demand for goods and services and population growth resulting from increased employment opportunities.

At a high level, the types of businesses expected be affected directly, based on the OESR's (2004) I-O industry classification, are as follows.

- for construction: additional economic activity and employment in:
 - non-residential building construction
 - non-building construction and
 - construction trade services.
- for operation: additional economic activity and employment in coal mining activities.

In contrast, the types of businesses most likely to be affected indirectly for both construction and operation of the coal mine are as follows.

- additional economic activity and employment in:
 - electricity supply, gas and water
 - residential building construction
 - accommodation, cafes, and restaurants
 - wholesale and retail trade
 - machinery, appliances and equipment
 - road transport
 - rail and pipeline transport

- services to transport
- communication services
- finance, property and business services
- residential property operators
- education services
- health and community services and
- cultural and recreational services.

However, it is noted that as the existing economic environment in the Wandoan locality is mainly agricultural orientated, there is a possibility that the existing workforce and industrial activities in the wider region shifts towards coal mining activities. The change in industry orientation is likely to be accompanied by increased residential building construction as the locality expands to cater for an enlarged workforce.

The impacts of the Project on the local and regional economic values will be directly related to employment and expenditure in the region. These economic values can be protected and enhanced during the construction and operations phases by sourcing goods and services from local businesses in the region, where practicable and feasible to do so. This would help to retain economic benefits within the region. The achievement of this objective may be assessed by monitoring spending by the Project in the region on goods and services.

Overall, the net change in industrial orientation resulting from the investment in the Project is expected to increase the level of economic activity for regional, state and national economies. This in turn is expected to lead to improved prosperity as incomes, employment and demand for goods and services increases during the life of the Project.

Appendix A

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