

## 19.1 Description of Environmental Values

### 19.1.1 Economic composition

The economic composition of the Mackay statistical district (SD) and of the Isaac Region, in comparison with Queensland as a whole was possible through the generation of an input-output table for each region. These tables presented in Appendix O, Section 3.1 show that across Queensland, agriculture, forestry and fishing account for 4.3% of the State's economy. In Mackay SD, the agriculture, forestry and fishing industry's share of the economy is slightly higher at 5.2%. However, it is in mining that the differences are truly significant. Queensland's mining industry accounts for nearly 9% of the State's economy. Mining's share is a much more significant 55% in Mackay SD. While mining in Queensland includes a variety of minerals, mining in Mackay SD is over 95% coal mining.

In the Isaac Region, agriculture, forestry and fishing (3%) is a smaller share of the economy than in Queensland or Mackay SD; however, as it has the second largest share in the local economy it must still be considered a significant industry. Mining (effectively coal mining), with a 90% share of the Isaac Region economy, clearly dominates. The remaining industries located within Isaac Region account for around 7% of the economy; of these, construction, at 1.7%, is the largest. It would be expected that much of the construction sector would be associated with activity in the mining industry.

### 19.1.2 Business composition of Mackay SD and Isaac Region

To further understand the types of businesses in the Mackay SD and Isaac Region, Australian Bureau of Statistics (ABS) data and census data for 2006 was obtained. While these data sets are subject to some uncertainties, it is expected that they present a reasonable picture of regional economic activity.

Despite mining's major share of the Mackay SD's economy, the data suggests that the industry has fewer members in the region than most of the other industry types. This is not surprising given the inherently large scale operations associated with most mining enterprises. The largest number of registered businesses (that is have an Australian business number [ABN]) in the Mackay SD are involved in agriculture, forestry and fishing. Property and business services, construction and retail trade also contain a significant number of enterprises in the Mackay SD. The mining sector with over 6,000 workers is the largest employer in the Isaac Region.

The Isaac Region clearly does contain a large number of agricultural businesses, as well as many construction, retail trade and property and business services businesses. The construction businesses, and their more than 800 employees, likely depend for much of their work on the mining industry in the region.

### 19.1.3 Regional Agriculture

The major agricultural activities in the Mackay SD and the Isaac Region revolve around raising cattle for human consumption, and the growth of cereal crops and sugar cane. These account for over 90% of the agricultural industry in these regions. By comparison, for Queensland these account for 50% of the State's activities. The Isaac Region itself produces approximately 60% of the Mackay SD's agricultural products.

In the period from 2000-01 to 2006-07, there has been a considerable drop in the generation of cereal crops in both the Isaac Region and Mackay SD - amounting to an 80% loss in the value of production. Over the same period there has been a 5% drop in the value of agricultural products in the Isaac Region.

Drought has had a negative impact on farming in the Isaac Region. However, good summer rainfalls led the Queensland Government to revoke the region's drought status in July this year (ABC News, 2008). Further positive news for agriculture, in Mackay SD as well as Isaac Region, is the recent high prices being paid for beef cattle in Queensland due to the fall in the Australian dollar and a shortage of cattle (Meat and Livestock Australia, 2008).

### 19.1.4 Mining in the Bowen Basin

The coal deposits associated with ECMP are part of the Bowen Basin coal deposits that currently supports 34 coal mines in Queensland (Australian Mining, 2008).

Recent projects that have commenced in the Isaac Region include:

- Carborough Downs Mine Expansion. Located 15 km east of Moranbah this mine expansion is increasing mining output from 1.9 Mtpa to around 5 Mtpa of ROM coal and increasing the mine's workforce by 76 full time equivalent employees (Queensland Government EPA, 2007).
- Lake Lindsay Project. Located in the Isaac Region (formerly the Broadsound Shire), this new mine development is expected to reach full production of 4 Mtpa of saleable coal in 2009 (Anglo Coal, 2008) and employ up to 150 people (Queensland Government EPA, 2005).
- Newlands Coal Project. Located 129 km west of Mackay in the Isaac Region, and the project will expand the mine's output by up to 2.5 Mtpa of ROM coal. No new staff will be required to meet this expanded output (Queensland Government EPA, 2006a).
- Norwich Park East Pit Coal Mine. This mine expansion in the Isaac Region requires no additional labour as staff shall be redistributed from the existing Norwich Park workforce (Queensland Government EPA, 2008).
- Sonoma Coal Project. Located in the Bowen Shire (part of the Mackay SD) this project will extract approximately 3 Mtpa of coal for local processing. Mining and processing of coal will require approximately 110 personnel (Queensland Government EPA, 2006b).

At the time the Economics Report (Appendix O) was written (end 2008) there were an additional, eight expansion projects committed or under consideration as well as 22 new mines under consideration, including the ECMP (Bowen Basin, Mining Communities Research Exchange, 2008). With such strong levels of activity planned in the Bowen Basin, it was expected that the Isaac Region and the Mackay SD would continue to be influenced by the construction and operation phases of new and existing mines in the short and medium term. This is still the likely case although at a slower than expected pace. Long term, the current global economic crisis will have a large influence on global development - particularly Chinese and Indian growth rates which will influence the demand for coal around the world.

### 19.1.5 Employment and Housing

A description of the employment and housing requirements for the construction and operational phases of the ECMP are presented in Section 2.6.9 (Project Description) and Section 16.2 (Social Environment).

Mackay is a large regional city located 975 km north of Brisbane in the Mackay SD. At the 2006 census the population of the city of Mackay was approximately 85,000; the population of the Mackay SD at the time of the census was just over 150,000. Moranbah (the nearest service centre to the ECMP), by comparison is a small regional town located approximately 200 km south-west of Mackay. At the 2006 census the population of Moranbah was approximately 7,400.

The boom in coal mine construction and production throughout the Bowen Basin has put accommodation pressures on the region. Moranbah, which is in the Isaac Region, is a rapidly growing town where housing prices have risen rapidly. The median house price in the town has risen from \$75,000 in 2003 to \$346,875 in March 2008, an annual growth rate of 36% (Ludlow, 2008). Enquiries to a Moranbah based real estate agency revealed that there are currently no rental vacancies in Moranbah and there exists a waiting list of at least 120 for rental accommodation in the town. Weekly rent for an average three bedroom house in the town is currently around \$750 per week (McArtney, 2008).

The proposed housing developments in Moranbah are expected to ease the current housing pressures, however, with the population of the town likely to continue to rise while well paid work in the area remains plentiful, a fall in residential pricing is unlikely and the rental market would be expected to remain tight.

House prices in the regional city of Mackay have shown some remarkable fluctuations, peaking in 2002 and 2006 with rises of 177%, before stabilising in the last two years. The average price for a house in Mackay in the September quarter 2007 was \$385,000 and rents are high with a two bedroom unit on the market for \$750 per week (Ludlow, 2008).

### 19.1.6 Availability of goods and services and relative prices

A limited comparison of relative prices for consumer goods in Moranbah, Mackay and Brisbane was undertaken. The survey indicated that of the 18 goods sampled 12 were the same price in Mackay as in Brisbane; three goods had a lower price in Mackay while three had a higher price in Mackay than in Brisbane. Overall the average price was 2.4% higher in Mackay than Brisbane due mainly to much higher prices for fresh produce.

Prices in Moranbah were only the same as the prices in Brisbane for 2 of the 18 goods sampled. Overall the average price in Moranbah was 5.3% higher than in Brisbane and 2.9% higher than in Mackay.

## 19.2 Potential Impacts and Mitigation Measures

The ECMP is projected to involve capital expenditure of \$640 million over a 28 month period, and an annual operating budget (once full production is achieved) of around \$250 million. Input-output analysis was used in order to estimate the impact of these expenditures on the economies of Isaac Region, the Mackay SD and on Queensland.

### 19.2.1 Input-output analysis

An input-output table provides a summary, or a “snapshot”, of the transactions occurring within an economy over a selected period. The ABS produces input-output tables at the national level. These tables show the consumption and sales patterns of over 100 industries. In simple terms they show, for a given industry, which other industries it purchases from and to which other industries it sells. The national (Australian) input-output tables also show the use of industry production in private and government consumption, the use in public and private investment and sales to foreigners (exports).

While the ABS produces national input-output tables, they do not produce state or regional tables. Input-output tables and multipliers for the Isaac Region, the Mackay SD and State of Queensland were produced for the purpose of this EIS.

An explanation of the generation of the tables and applicable input-output multipliers is presented in Appendix O, Section 3.1.

### 19.2.2 Economic Impact

Using the input-output multipliers derived for Queensland, Mackay SD and the Isaac Region, the economic impact of the construction and operation of the ECMP were estimated. The scale of the ECMP, while significant at a local, regional and state level, is not considered to be of sufficient magnitude to warrant national level analysis to be conducted (the total value of production is anticipated to represent only 0.05% of Gross Domestic Product (GDP)). Economic impacts have therefore been determined only for Queensland and its regions.

### 19.2.3 Construction Phase Impacts

During ECMP construction, the income (wages and salaries) in Queensland is estimated to increase between \$104 and \$135 million, in a typical year, while value added is estimated to increase between \$120 and \$188 million. Employment in Queensland is estimated to increase between 884 and 1,448 jobs. These job figures include the 500 jobs created directly by the construction phase of the ECMP.

In the Mackay SD and the Isaac Region the impacts are smaller, as would be expected. In Mackay SD, income is estimated to increase between \$79 and \$92 million in a typical year of construction, while value added rises by between \$82 and \$114 million. Employment in Mackay SD is estimated to increase between 555 and 825 - which includes the 500 direct jobs in mine construction.

The Isaac Region is estimated to see incomes increase between \$75 and \$76 million, value added increase between \$75 and \$78 million and employment increase between 502 and 523 jobs. Clearly, with 500 of these jobs directly created by the mine's construction there is little in the way of flow-on employment; however, the 500 direct jobs clearly provide local opportunities. Given that total

employment in the Isaac Region (from the 2006 census) is 11,800, an additional 500 jobs in the region represents a 4% increase in employment.

#### 19.2.4 Operational Phase Impacts

Full production is anticipated to commence in 2012 and over approximately 20 years provided medium to long term effects on the State, regional and local economies. In Queensland, income is estimated to increase between \$123 and \$162 million, at full production, while value added is estimated to increase between \$522 and \$610 million. Employment in Queensland is estimated to increase between 1,313 and 2,041 jobs. These job figures include the 356 jobs created directly by the operation of the mine.

In Mackay SD, income is estimated to increase between \$86 and \$101 million in a typical year of operation, while value added rises by between \$451 and \$490 million. Employment in Mackay SD is estimated to increase between 820 and 1,146 - which includes the 356 direct jobs in operation.

The Isaac Region is estimated to see incomes increase between \$59 and \$61 million, value added increase between \$395 and \$401 million and employment increase between 412 and 458 jobs. Given that total employment in the Isaac Region is 11,800, an additional 450 jobs in the region represents a 4% increase in employment.

#### 19.2.5 Opportunity cost of land use

The area of surface disturbance will be approximately 318 ha. This land is currently used for grazing beef cattle. It has been assumed that while the underground operations will result in surface subsidence it will not impact on the current productive status of the land. Through assessing the regional data as presented in Appendix O, Section 3.4 it has been determined that as a result of forgoing 318 ha of grazing land there would be a loss of sales of 22 cattle per annum. This translates to a loss of regional production of \$22,000 per annum of beef cattle sales.

Comparing the opportunity cost of using the 318 ha of grazing land for the ECMP with the positive impacts arising from the operation of the mine it is clear that the impact of the loss of grazing land is relatively small. For example, the loss of income in Isaac Region is around \$2,000 from the loss of grazing land compared with a gain of \$60 million from the operation of the ECMP.

#### 19.2.6 Value of ecosystem services

The 318 ha of surface disturbance has not been identified to include any unique environmental features and its disturbance will not lessen the ability of the environment - at a local, regional or state level - to provide ecosystem services such as waste disposal and assimilation, flood mitigation, water catchment or pollination of crops. Therefore, no value has been assigned for the loss of ecosystem services as a result of the ECMP.

#### 19.2.7 Housing

The extensive development of the Bowen Basin coal deposits has resulted in strong demand for housing within the Mackay SD, including in the City of Mackay and the town of Moranbah. The ECMP can only increase housing demand locally and throughout the region. The potential development of new lots within Moranbah will alleviate the situation to a certain extent; however, it is likely that these lots will not substantially reduce the backlog of demand for rental accommodation, especially in the short term.

#### 19.2.8 Local business

Australia's mining boom towns share common labour supply issues. High demand for labour has driven labour costs up for all businesses within the boom towns and beyond to surrounding areas. Labour availability is also compromised for local small and medium enterprises. Construction and operations workforces associated with the ECMP will increase pressures in an already tight labour market throughout the Mackay SD (unemployment rate in June 2008 of 3.2% - calculated from Department of Education, Employment and Workplace Relations, 2008).

### 19.2.9 Infrastructure needs

Any infrastructure requirements for the ECMP will be handled by direct negotiation between the Proponent and the Queensland Government and relevant local government authorities.

Access to coal export terminals will be facilitated by the north missing link rail project. As with other infrastructure needs of the ECMP, direct negotiations will be employed to seek appropriate outcomes for all parties.

### 19.2.10 Potential impacts of major hazards

Flooding is a known threat to the continuity of mining operations. Instances of major local flooding could result in losses in production from the ECMP. The potential economic impact of flooding on the ECMP and surrounding communities is presented in Appendix O, Section 3.6.5. It is expected that if the mine is forced to close due to severe flooding for a period of a week, the maximum community impact would be reduction of approximately 2% of the projects positive economic contribution for that year. However, in practice it is unlikely that the impacts would be this high, as mineworkers would not all be stood down for the week affected by the flooding. In fact, it is possible that additional workers and additional goods and services would be required at the mine to undertake remedial work to overcome the impacts of the flooding creating flow-on economic benefits to local workers and businesses.

### 19.2.11 Distributional effects

The town of Moranbah will be the most affected by the ECMP's development and operation. The inflated housing market in Moranbah is already forcing lower income earners out of the market and creating a severe accommodation shortage (Queensland Department of Housing, 2007). The ECMP will add to these housing pressures. The impact of this situation is discussed further in Section 16.2.6.

Higher accommodation and labour costs also add to pressures on local small to medium businesses that are unable to capture the positive income effects of the current mining boom. The ECMP will add to these pressures in Moranbah and in the Mackay SD.

### 19.2.12 Balance of trade

Production from the ECMP will be valued at just under \$600 million per annum, all of which is assumed to be exported. Assuming only a small share of the annual \$250 million operating costs are met through imported goods and services (say 10%), then in operations an improvement in Australia's balance of trade of over \$550 million is to be expected (this does not take into account any potential exchange rate impacts).

The positive balance of trade position in operations is balanced to some extent by a negative trade balance associated with the construction phase, as imports of mining equipment will be required. Construction phase imports of up to \$300 million may be possible, which is still less than one year's exports during operations.

### 19.2.13 Potential mitigation strategies

Accommodation costs are a key variable determining how the benefits of major projects flow through to local and regional communities. Local benefits are maximised by employment flowing to local areas; however, in times of escalating accommodation costs, employees and businesses not linked to the boom can find they miss out on many of the benefits.

A healthy mixed economy is able to utilise workers of a variety of occupations and skill levels. Not all of these workers are able to command the level of income needed to meet housing and living costs in the so-called booming mining towns.

Rising accommodation costs are brought about by increases in demand outstripping increases in supply. Lags in the approvals processes for land releases and for accommodation construction can lead to excessive delays (relative to market demand) in the new accommodation developments. Housing

construction can also be restricted due to lack of appropriate trades - many of whom may have found work in the mines.

The local government authorities responsible for Moranbah have favoured developments that foster "permanent" housing (housing for potential long term residents and their families) and have rejected single person accommodation options (rejecting a planned 2,000 person development outside of Moranbah in 2006). This policy, while fostering local community development, does increase housing demand in the town.

A revision to local government policies could produce accommodation developments that would reduce housing pressures; however, such a policy shift may compromise aspirations for a long-term stable community in Moranbah.

Regional infrastructure, for example water supply in Moranbah (McMahon, 2006), can frequently be subject to capacity constraints making it difficult to develop and release land for housing.

Vale understands the economic and social pressures of the Moranbah region in particular and acknowledges while these issues are not exclusively related to the ECMP or to any individual project there is an effect on the community of the project. While the ECMP Proponent cannot be expected to take responsibility for major town infrastructure or for land release, Government, State and local, have an opportunity to foster local and regional development by accelerating accommodation developments in particular. In the absence of such developments, Vale may be able to reduce housing pressures in local areas through a combination of fly-in fly-out and drive-in drive-out practices which would mitigate against further increases to accommodation costs.

The Proponent may be in a position to assist the local and State Government authorities in other ways, such as through support for some community infrastructure. Any such arrangements will need to be the result of direct negotiation between the relevant parties.