



# **Millennium Expansion Project**

## **Environmental Impact Statement**

### **CHAPTER 17:**

### **ECONOMY**

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## **17.0 ECONOMICS**

### **17.1 EXECUTIVE SUMMARY**

The potential economic impacts of the Millennium Expansion Project (MEP) have been assessed at two levels:

- Impacts on the regional and State economy; and
- Impacts on the local economy, workforce and housing market.

The economic analysis has drawn the following conclusions regarding the economic impacts of the MEP.

### **17.2 VALUES**

The current economic base of the region is focused on sugar, beef, aquaculture, other agriculture (e.g. fruit and vegetable growing, goat farming) and coal mining. Coal mining contributes to a large proportion of economic activity in the region.

Employment opportunities in the coastal areas of the region are largely centred on service industries while employment opportunities inland are largely associated with the coal industry.

### **17.3 ISSUES**

It is anticipated that the MEP will have a significant impact on the economic environment. The MEP will require an increase of 160 people to the long term operational workforce (72%), that will have flow on effects to the local economy.

These impacts will be felt locally, as well as throughout the Mackay region and the State.

The net impacts of the MEP Phase 1 across the combined Isaac/Mackay/Whitsunday region are as follows:

- 160 new jobs at the mine site and an estimated additional 265 jobs in other industries;
- \$178 million in net mine expenditure resulting in an additional \$67 million in output from other industries; and
- net value-adding from the mine of \$108.8 million, leading to an additional \$33 million in value-adding in other sectors.

The net impacts of the MEP Phase 2 across the combined Isaac/Mackay/Whitsunday regions are as follows:

- 380 new jobs at the mine site and an additional 627 jobs in other industries;
- \$225 million in net mine expenditure resulting in additional \$87 million in output from other industries; and
- net value-adding from the mine of \$139 million, leading to an additional \$43 million in value-adding in other sectors.

There will also be economic impacts further afield along the coal logistics chain that supports the export of coal. This involves the transport of coal via the Goonyella Rail System to the Dalrymple Bay Coal Terminal (DBCT) at the Port of Hay Point, south of Mackay.

## **17.4 MITIGATION STRATEGIES**

The MEP will have a positive economic impact to the local Isaac and Mackay regions, as well as nationally. The main mitigation strategy will be to minimise effects on housing and accommodation. It is anticipated that the majority of the workforce will be housed at the MAC Coppabella Accommodation Camp (MAC) to minimise housing pressure on surrounding towns like Moranbah.

## **17.5 INTRODUCTION**

This assessment has been prepared to identify potential direct and indirect economic impacts, of the MEP.

The economic environment considerations that have been addressed for this Environment Impact Statement (EIS) are as outlined in the final Terms of Reference (TOR).

These considerations are as follows:

- existing economic environment that may be affected by the MEP;
- significance of the MEP on the local and regional economic context;
- long and short-term beneficial (e.g. job creation) and adverse (e.g. competition with local small business) impacts that are likely to result from the development;
- the potential, if any, for direct equity investment in the MEP by local businesses or communities;
- the cost to all levels of government of any additional infrastructure provision;
- assess implications for future development in the locality (including constraints on surrounding land uses and existing industry);
- assess the potential economic impact of any major hazard identified;
- the distributional effects of the MEP including proposals to mitigate any negative impact on disadvantaged groups;
- the value of lost or gained opportunities for other economic activities anticipated in the future; and
- impacts on local property values.

The assessment has adopted an Input-Output (I-O) analysis to identify regional and state economic impacts relating to employment, income and output. Material sources used in the assessment include economic data in the public domain and project specific information. Australian Dollars (AUD) is the currency referred to throughout this report.

## **17.6 ECONOMIC MODELLING METHODOLOGY**

The impacts on the regional economic environment were assessed using an I-O analysis. The I-O approach is based on industry tables that model the structure

of an economy by describing inter-industry relationships. It is a useful approach that can describe total impact on an economy from an initial increase in demand in a particular industry. Further details on the methodology of this analysis are contained in **Appendix F12 - Economics**.

Economic impacts at a regional and national level can be traced through the economic system in a number of ways. In this assessment, the following impacts are considered:

- direct multiplier effects-increases in economic activity (value added) and employment that are directly generated in the industry receiving the impact;
- indirect multiplier effects- flow-on impacts from industries that support the industry receiving the direct impact;
- induced multiplier effects-changes in consumption by the household sector in response to income changes from the direct and indirect impacts; and
- total multiplier effects – the sum of the direct, indirect and induced effects outlined above.

These impacts are measured in a number of different ways:

- output-gross value of production;
- value-added-the additional value not already calculated from the output; and
- employment-the increased number of jobs, expressed as full-time employment (FTE).

There are a number of limitations relating to the application of an I-O methodology which are discussed in the following points:

- this study relies on datasets prepared by the Queensland Government and the Australian Government. It is noted that the structure of the regional and national economies may have changed significantly since these tables were prepared;
- the study method used has a general bias to overstate impacts, as the Australian Bureau of Statistics (ABS) noted ‘the theoretical basis (of multiplier effects) produces estimates which somewhat overstate the actual impacts in terms of output and employment’ (ABS, 2002). This is mitigated in this assessment by the conservative estimates of the initial operation impacts; and,
- inter-industry relationships are implicitly assumed to be linear across the scale of impacts and relative prices for inputs and outputs are assumed to remain in fixed proportion irrespective of supply conditions. This means that the results of I-O analysis do not take into account shortages in factors of production or changes in relative prices of inputs.

## **17.7 EXISTING ECONOMIC ENVIRONMENT**

The traditional economic base of the region is centred on sugar, beef, agriculture and coal mining. There has been a recent move towards the development of aquaculture, fruit and vegetable growing as well as goat farming activities (Regional Economic Development Corporation (REDC) 2008).

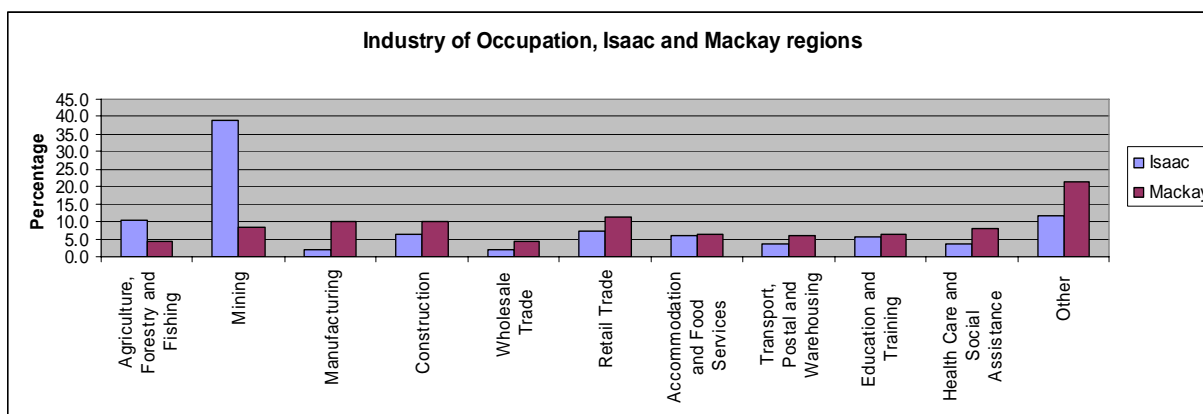
Employment opportunities in the coastal areas of the region are largely centred on service industries while employment opportunities inland are largely associated with the coal industry.

### 17.7.1 Jobs by Industry of Occupation

The Isaac Region's economic base in terms of employment has historically centred upon agriculture and coal mining. In recent years the significance of mining as an employer has grown substantially, with mining now providing employment for 39% of the workforce.

Together with agriculture (accounting for 11% of the workforce), these two industries dominate the local economy accounting for half of all jobs within the Isaac region. **Figure 17-1** graphically presents the domination of mining as the key employer within the Isaac Region.

**Figure 17-1 Industry of Occupation for Isaac and Mackay<sup>1</sup>**

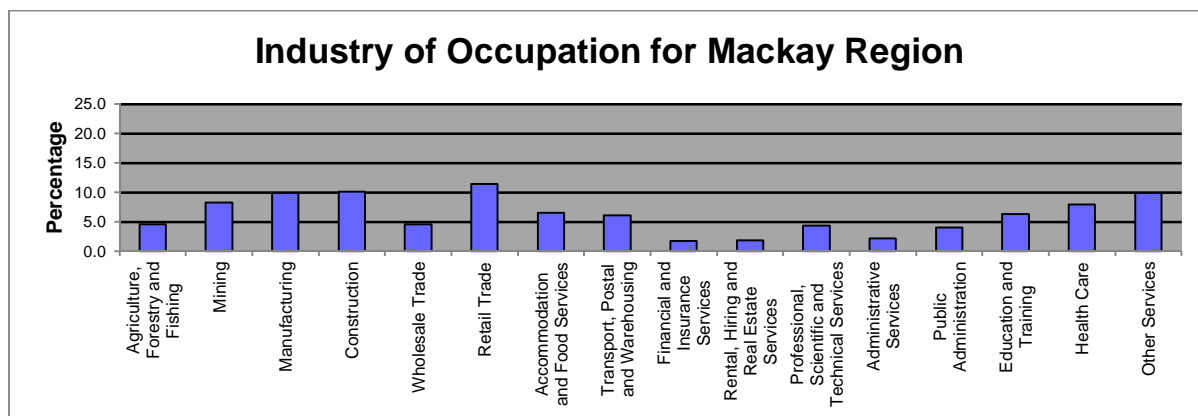


Source: ABS (2006)

<sup>1</sup> In percent of total employed persons aged 15 years and over (2006)

Conversely, Mackay's employment base is more diverse as highlighted below in **Figure 17-2**. The three largest employers (Retail 11.4%, Construction 10.1% and Manufacturing 9.9%) combined, only account for 30% of all jobs.

**Figure 17-2 Industry of Occupation for Mackay Region**



Source: ABS (2006)

This highlights Mackay's significance as a diversified regional centre and township, providing a wide array of products and services to neighbouring



regions. It should be noted that a significant proportion of Mackay's registered mining employees (8.3%) are likely to work within the Isaac region, but may choose to reside in Mackay.

## 17.7.2 Types and Numbers of Businesses

The distribution of businesses within Isaac and Mackay Local Government Areas (LGAs) is presented below in **Table 17-1**. A summary of the key points for each LGA are as follows:

### 17.7.2.1 *Isaac LGA*

Within the Isaac LGA, a total 1,635 businesses were recorded in 2007 of which approximately 729 (45%) were engaged in agriculture. However, almost half (348) of the businesses engaged in agriculture had a gross turnover of less than \$100,000 in 2006/07. Other key sector groups were property and business services (183 businesses), construction (165 businesses) and retail trade (129 businesses).

### 17.7.2.2 *Mackay LGA*

The Mackay LGA recorded 9,636 businesses in 2007, highlighting its status as a major regional business centre and provider of goods and services to neighbouring rural precincts, including the Isaac region.

Similarly within the Isaac region, agriculture accounted for the largest number of business registrations at 1,986 (21%), followed by property and business services (1,803 businesses), and construction (1,758 businesses).

**Table 17-1 Business Count by Industry for the Isaac and Mackay Regions**

Industry	Isaac Region	Mackay Region
Agriculture	729	1,986
Mining	30	180
Manufacturing	87	417
Electricity and Gas and Water Supply	0	3
Construction	165	1,758
Wholesale Trade	30	288
Retail trade	129	1,017
Accommodation Cafes and Restaurants	45	285
Transport and Storage	96	561
Communication Services	21	72
Financial and Insurance	45	480
Property And Business Services	183	1,803
Education	9	102
Health and Community Services	21	321
Cultural and Recreational Services	21	102
Personal and Other Services	24	261
Total Businesses	1,635	9,636

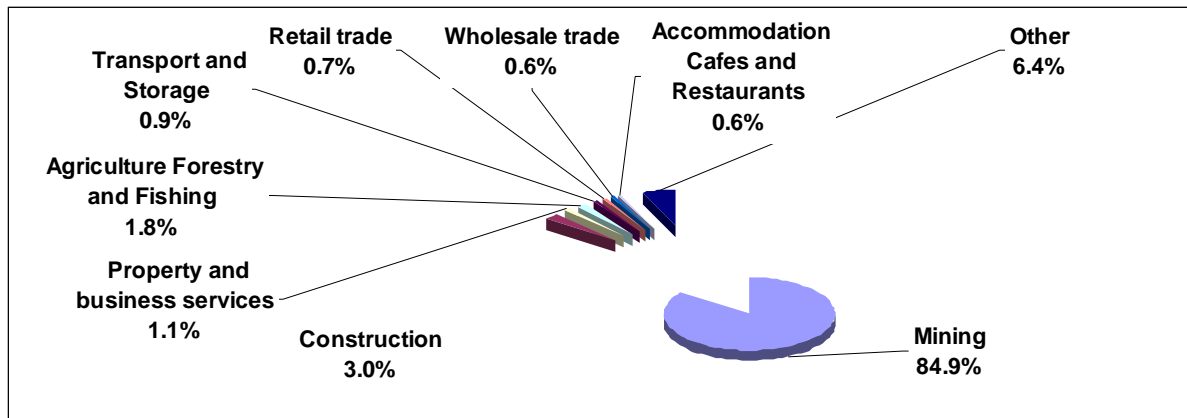
Source: ABS (2007)

### 17.7.3 Coal Mining

The MEP is located within the northern Bowen Basin, Australia's largest developed coal reserve area providing approximately 83% of Queensland's coal production. Coal mining is the most significant contributor to the Isaac regional economy (**Figure 17-3**).

In the 2007/08 financial year it directly contributed nearly 85% of the Gross Regional Product (GRP) for the Isaac region.

**Figure 17-3 Breakdown of the Isaac Region's Gross Regional Product by Sector**



Source: Aurecon (2010), REDC (2008)

Within the combined Regional Council Areas of Mackay, Whitsunday, and Isaac, mining is still the most dominant economic activity, accounting for 58% of the GRP for the combined region (REDC, 2008).

The contribution of mining to the region's GRP and employment has increased significantly in recent times. From 2001-2006, regional employment in mining grew by 89.9% to represent 12% of the Mackay, Whitsunday and Isaac region's employment (REDC, 2008).

### 17.7.4 Mining and Support Services

As a highly mechanised industry handling bulk resource materials, the mining sector invests substantially in both heavy mining equipment and skilled labour. Providing and servicing mining equipment and mine site infrastructure, providing on-site staff and supporting various associated infrastructure requires a wide array of products and services from other business sectors, many of which will be sourced from the Isaac region. Key sectors that rely on mining activity for income include construction, property and business services, transport, accommodation, and food services. Hence, mining's total contribution to the Isaac region economy is above the 85% identified as direct contributions.

Specialised inputs such as mining engineering support services are more likely to be sourced from larger business centres such as Mackay or Brisbane and occasionally from further afield. The REDC has identified the potential for a mining services industry within the Isaac LGA in either Moranbah or Clermont, where industrial land is available. The MEP will add additional commercial merit for the development of a mining services industry within Isaac LGA, increasing the local skills set and job opportunities.

### **17.7.5 Construction**

After mining, construction is the next largest sector in terms of economic activity within the Isaac region based on contribution to total GRP.

As indicated above, it is estimated that a large proportion of this construction activity is linked with mining activity either:

- directly with mine site construction of accommodation camps, amenities, offices, sheds, etc; and
- indirectly with the construction of private dwellings in local townships housing mining employees and their families.

Non-residential building (\$17.5 million or 55%) dominated construction within the Isaac region while private residential (\$14.3 million) accounted for the remaining 45% of building approvals in value terms.

Within the neighbouring Mackay region, construction is the second largest economic contributor (10.1%), after retail trade (11.4%). As a major regional city and coastal region, Mackay's industry mix is more diverse than that of the Isaac region, and has a significant private dwelling construction sector servicing the rapidly growing residential population.

### **17.7.6 Agriculture and Farming**

Agriculture is a significant industry sector within both the Isaac and Mackay regions. In terms of business numbers, agriculture supports the largest numbers of registered businesses within the Isaac regional community, accounting for 45% of all businesses. However, a large proportion of these are sole trader/family partnership operations with relatively low gross turnovers.

In terms of employment, agriculture employs 11% of the Isaac region's workforce, second only to mining which employs 39% of the local workforce.

Agriculture in the Isaac region is dominated by extensive livestock grazing systems, with minor areas cultivated for broad-acre cropping. Based on the latest Census, agriculture within the former LGA of Belyando was valued at \$105.6 million in 2005/06, in which livestock production (beef) accounted for \$91 million (86%) and broad-acre cropping (wheat, sorghum, maize) accounting for the remaining \$14 million.

A total of 221 farms were engaged in grazing pasture production, covering a total area of 2.865 million ha. Based on recorded income from livestock production of \$91 million in 2005/06, the income generated from grazing pastures was approximately \$32 per ha.

Agriculture production in Central Queensland has regularly experienced negative impacts associated with drought, most recently during the 2003-2007 period (Department of Environment and Resource Management, 2010), although irrigators with water allocations were somewhat protected from the immediate impacts of the drought, assisted in part by water storage infrastructure put in place in response to mining activities.

Since 2008, regular and occasionally torrential rainfall has largely overcome drought related impacts. It is worth noting that since the 1990s, the Australian Government has recognised that occasional droughts are a normal part of the Australian weather pattern, with only significantly long and severe droughts now eligible for Government assistance.

### 17.7.7 Gas

The Moranbah Gas project has contributed significantly to the region's GRP. It is currently the sole provider of gas into the Townsville market. There is also opportunity for the supply to expand to include Gladstone, with the planned 440 km high pressure coal seam gas line from Moranbah to Gladstone.

### 17.7.8 Other Large Scale Developments

The Isaac region has a recent history of many large-scale resource developments. In May 2010, the REDC reported the value of major developments under construction in the Mackay Whitsunday Region as \$11.3 billion, with a further \$33.4 billion in potential projects currently under investigation as shown in **Table 17-2**.

**Table 17-2 Regional Development Economic Development Corporation, May 2010-Developments by Category (AUD Million of Dollars)**

Category	Under Study	Committed	Under Construction	Completed	Total	Previous Total
Agribusiness	50.0	298.0	0.0	7.0	355.0	305.0
Community Infrastructure	0.0	12.1	454.3	0.0	466.4	486.0
Construction	494.0	1,622.5	2,833.5	20.0	4,970.0	4,268.0
Energy	2,300.0	260.0	892.0	0.0	3,452.0	3,452.0
Manufacturing	7,000.0	64.0	1,230.0	17.0	8,311.0	8,311.0
Marine	730.0	3.0	514.0	0.0	1,247.0	1,247.0
Mining	12,681.0	0.0	451.5	1,500.0	14,632.5	13,634.5
Ports-Air	0.0	10.0	0.0	0.0	10.0	10.0
Ports-Sea	6,750.0	0.0	845.0	95.0	7,690.0	7,690.0
Professional Services	0.0	86.3	93.3	0.0	179.6	173.5
Rail	1,970.0	1,298.0	3,400.0	30.0	6,698.0	6,698.0
Retail	110.0	310.0	233.5	0.0	653.5	385.5
Roads	0.0	38.7	312.7	109.7	461.1	444.9
Tourism	66.9	0.0	0.0	0.0	66.9	91.9
Water	1,248.0	29.9	55.0	0.0	1,332.9	1,492.3
Total	33,399.9	4,032.5	11,314.8	1,778.7	50,525.9	48,689.6

Source: REDC, 2010

Examples of major projects that have recently been constructed and committed to are shown in **Table 17-3**.

Table 17-3 Recent Major Projects within the Region

Sector	Major Projects, Developing Company and Approximated Value
Mining	<ul style="list-style-type: none"> <li>Divert run-off from undisturbed</li> <li>Carborough Downs Coal Project-Vale Australia (\$180 million)</li> <li>Clermont Coal Mine-Rio Tinto Coal Australia (\$950 million total project capital expenditure)</li> <li>Daunia Coal Project-BHP Mitsui Coal (\$500 million)</li> <li>Isaac Plains Coal Expansion Project-Vale (\$103 million)</li> <li>Lake Lindsay Coal Mine-Anglo Coal Australia/Mitsui Coal Holdings Australia (\$516 million)</li> <li>Vermont Coal Project-Bowen Basin Coal (\$176 million)</li> </ul>
Energy	<ul style="list-style-type: none"> <li>Central Queensland Gas Pipeline, Moranbah to Gladstone-ALG Energy/Arrow Energy (\$220 million)</li> <li>Energy Supply Mackay Northern Suburbs-Ergon Energy (\$40.6 million)</li> <li>Mindi Electrical Feeder Substation (Goonyella System)-Queensland Rail (\$17.1 million)</li> <li>Moranbah North Gas Power Unit-Anglo Coal/Energy Developments (\$60 million)</li> <li>Nebo to Queensland Rail (QR) Bolingbroke transmission line-Powerlink Queensland (\$20 million)</li> <li>Nebo to Strathmore transmission line-Powerlink Queensland (\$105 million)</li> </ul>
Industry	<ul style="list-style-type: none"> <li>Evolution Paget Industrial Park-Mirvac and Industrial Commercial Property Solutions (\$200 million)</li> <li>Harbour City Central-Giant Developments (\$20 million)</li> <li>Hastings Deering Complex-FKP (\$40 million)</li> <li>Industroplex-FKP Property Group (\$40 million)</li> <li>Industry East Q-Massland (\$57.2 million)</li> <li>Mackay Gateway Business Park-Evolve Property Group/Investec Group (\$30 million)</li> <li>Moranbah Ammonium Nitrate Manufacturing Complex (\$935 million).</li> <li>Site Business Park-GAP Developments (\$17 million)</li> <li>South Mackay Industrial Estate-Office of the Coordinator General (\$7.4 million)</li> <li>Universal Self Storage-Giant Developments (\$4.2 million)</li> </ul>
Roads	<ul style="list-style-type: none"> <li>Eton Range Upgrade-Main Roads (\$5 million)</li> <li>Forgar Bridge Duplication-Main Roads (\$128 million)</li> <li>Hospital Bridge Replacement-Main Roads (\$33.6 million)</li> <li>Joint Levee Road Mackay-Main Roads (\$14.2 million)</li> <li>Mackay-Bucasia Road Upgrade-Main Roads (\$21.9 million)</li> <li>Peak Downs Highway Widening-Main Roads (n.a)</li> </ul>
Rail	<ul style="list-style-type: none"> <li>Bolingbroke Substation-QR Network (\$30 million)</li> <li>Broadlea-Mallaway-Wotonga Duplication-QR Network (\$88 million)</li> <li>Jilalan Rail Yard Upgrade-QR Network (\$500 million)</li> <li>Rollingstock Increased Capacity-QR National (\$2.92 billion)</li> </ul>
Marine	<ul style="list-style-type: none"> <li>Mackay Marina Expansion-Mackay Marina Pty Ltd (\$14 million)</li> <li>Port of Airlie Marina-Meridien (\$500 million)</li> </ul>
Ports	<ul style="list-style-type: none"> <li>Abbot Point Coal Terminal Stockyard System Upgrade-Ports Corporation Queensland (\$68 million)</li> <li>Abbot Point Coal Terminal X25 Expansion-Ports Corporation Queensland (\$95 million)</li> <li>Abbot Point Coal Terminal X50 Expansion-Ports Corporation Queensland (\$770 million)</li> <li>Dalrymple Bay Coal Terminal Expansion Stage 7-Babcock and Brown Infrastructure (\$1.1 billion)</li> </ul>
Tourism	<ul style="list-style-type: none"> <li>Clarion Hotel Extension-Clarion Hotel Mackay Marina (n.a)</li> <li>Jagabara Championship Golf Course-Laguna Whitsundays Resort (\$25 million)</li> </ul>

Sector	Major Projects, Developing Company and Approximated Value
	<ul style="list-style-type: none"> <li>• Peppers Coral Coast Resort-Latitude Development Group (\$140 million)</li> </ul>
Water	<ul style="list-style-type: none"> <li>• Mackay Water Recycling Project-Mackay Water (\$154 million)</li> <li>• Mirani Water Treatment Plant-Mackay Water (\$4.7 million)</li> <li>• Nebo Road Water Treatment Plan Upgrade-Mackay Water (\$10 million)</li> <li>• Pump Stations Upgrade-Mackay Water (\$8 million)</li> <li>• Sarina Pipeline Project-Mackay Water (\$6.3 million)</li> </ul>

### 17.7.9 Value of Rateable Properties

Median property prices have risen substantially within the Isaac Region as indicated in **Table 17-4** below. The growth rate for median property prices has risen by over 700% in the past five years in Moranbah, well above the five year growth rate of 120% for the Mackay Region.

The growth in house prices within the Isaac Region was predominantly supported by the rapid growth of mining activities within this region. It should be noted that house prices within Isaac would have started from a low base five years ago, in comparison to house prices within the Mackay region.

Now that median property prices within the Isaac Region are comparable with those of the Mackay Region, future appreciation in house prices are likely to be more consistent between the Isaac region and those of neighbouring coastal areas of Mackay and Whitsunday.

**Table 17-4 Median Property Prices**

Dwelling Structure	Medium Value March 2009	Change Over Last Year	Change Over Five Years
Isaac Regional Council	\$380,000	11.80%	309.7%
-Clermont	\$290,000	-0.9%	383.3%
-Moranbah	\$389,500	19.8%	737.6%
-Dysart	\$395,000	12.9%	216.0%
Mackay Regional Council	\$383,000	0.30%	120.1%

Source: Real Estate Institute of Queensland

Median weekly rent prices were somewhat mixed within the Mackay Region in 2009. Although strong rent increases were recorded for the region in December 2008, the Global Financial Crisis in 2009 dampened the local rental market.

In 2009 weekly rents for flats were either lower than, or comparable with, the rent prices recorded for 2008, as shown in **Table 17-5** below.

**Table 17-5 Median Weekly Rent for the Mackay Region**

Dwelling Structure	December 2007	December 2008	December 2009
1 bed flat	\$200	\$230	\$220
2 bed flat	\$255	\$280	\$280
3 bed flat	\$330	\$430	\$420
2 bed house	\$300	\$300	\$310
3 bed house	\$350	\$380	\$370
4 bed house	\$450	\$500	\$450

*Source: Residential Tenancies Authority*

Anecdotal evidence suggests the ability of local businesses to attract new employees to the Isaac and Mackay LGAs is hindered by the lack of available and affordable non-camp housing in Moranbah and other towns.

## **17.8 POTENTIAL IMPACTS AND MITIGATION MEASURES**

The MEP has the potential to impact the local, state and national economies. At the local level and within the Isaac region, there will be a direct increase in demand for employees, local services and supplies.

Demand from the mine site for employees and services will also spill over into the wider Mackay-Whitsunday regional economy, along with increased demand for small and medium sized businesses supplying the mining industry.

On a state level there will be substantial increases in mining royalties, rail freight charges, port handling charges and demand for medium and large sized businesses supplying products and services to the mining industry.

On a national level, the increased coal production will lead to higher coal exports for Australia, having a positive impact on the national trade balance.

The economic impact analysis of the MEP has been divided into the following mine expansion phases:

- Phase One: covering the period between 2011 and 2015 (inclusive). The current Millennium mine site is projected to be de-commissioned in 2015. New mining activities included under the MEP proposal are proposed to commence alongside the existing pit in 2011; and
- Phase Two: covering the period between 2016 and 2027 (inclusive). This covers the operational period of the MEP only with the existing Millennium mine site operations decommissioned. The MEP is projected to be decommissioned in 2027.

### **17.8.1 Phase One (2011-2015)**

The analysis presented relates to new activities directly related to the MEP proposal. The operational costs and decommissioning costs in 2015 for the existing Millennium mine site operations are excluded from this analysis.



Projected total expenditure for the MEP is \$880 million between 2011-2015, equalling \$176m on a per annum basis. An additional 160 Full-Time Equivalent (FTE) persons on mine site positions will be required each year.

The breakdown of net expenditure and jobs for the Isaac and Mackay/Whitsunday regions are shown separately in **Table 17-6** below.

**Table 17-6 Net Annual Mine Expenditure and Jobs during Phase One**

Region	Net Expenditure (\$ m) <sup>1</sup>	Income (Salaries) (\$ m) <sup>2</sup>	Mine Employment (FTE persons) <sup>3</sup>
Isaac	\$4.2 m	\$1.6 m	16
Mackay/Whitsunday	\$171.8 m	\$14.4 m	144
Total	\$176 m	\$16 m	160

<sup>1</sup>Aurecon estimate 3.5% of total net expenditure (other than labour) to be spent within the Isaac Region

<sup>2</sup>Aurecon conservatively estimate average mine salary at \$100,000 per employee

<sup>3</sup>Aurecon estimate 10% of MEP employees to reside within the Isaac region

Source: Aurecon (2010)

While this expansion project relies predominantly upon existing transportation infrastructure, there is also the potential to rail coal to the Abbot Point Coal Terminal (APCT).

**Table 17-7** summarises the Phase One impact of the MEP on the Isaac Region based upon annualised spend and forecasted employment.

**Table 17-7 MEP Phase One-Annual Economic Impact, Isaac LGA**

	Output (\$ m)	Income (\$ m)	Employment (FTE Persons)	Value Added (\$m)
Direct	\$4.2 m	\$1.6 m	16	\$2.6 m
Indirect	\$1.2 m	\$0.2 m	11	\$0.7 m
Total	\$5.4 m	\$1.8 m	27	\$3.3 m

FTE = Full Time equivalent employment positions

Source: Aurecon, 2010

The annual economic impact on the Isaac Region during Phase One of the MEP (2011-2015) is estimated as follows:

- an increase in direct mine output value of \$4.2 million per annum, and additional flow on increase of \$1.2 million through other industries;
- an increase of \$1.6 million in mining income (wages and salaries to mining staff) will result in an additional \$200,000 in income through flow-on effects to other industries;
- an increase of 16 direct jobs at the mine will stimulate an additional 11 jobs through other industries; and
- an estimated increase in GRP in the Isaac region of \$3.3 million.

The majority of mine expenditure and employment will be sourced from the Mackay and Whitsunday Regions.



The Phase One impact of the MEP based upon annualised spend and forecasted employment for the broader Mackay/Whitsunday Region is summarised in **Table 17-8** below.

**Table 17-8 MEP Phase One- Annual Economic Impact, Mackay/Whitsunday Region**

	Output (\$ m)	Income (\$ m)	Employment (FTE Persons)	Value Added (\$m)
Direct	\$171.8 m	\$14.4 m	144	\$106.2 m
Indirect	\$66.3 m	\$8.2 m	254	\$32.8 m
Total	\$238.1 m	\$22.6 m	398	\$139 m

Source: Aurecon, 2010

The net impacts of the MEP during Phase One, across the combined Isaac and Mackay/Whitsunday Regions, are as follows:

- 160 new jobs at the mine site, and an additional 265 jobs in other industries;
- \$178 million in net mine expenditure resulting in additional \$67 million in output from other industries; and
- net value-adding from the mine of \$108.8 million, leading to an additional \$33 million in additional value-adding in other sectors.

### 17.8.2 Phase Two (2016-2027)

Phase Two of the MEP is projected to be 12 years (2016-2027) with annual operational costs projected at \$225 million. 380 employees are predicted to be required for the additional 12 years of mine life that will not occur without the MEP.

The majority of employees will live in the Mackay Region and utilise camp facilities provided at the MAC or similar facility. Peabody will transport staff to and from the MAC, although some local staff (estimated at 5%) may reside in neighbouring communities including Moranbah and Glenden.

Once operations commence, the local Isaac region will experience ongoing annual economic impacts through the life of the MEP, mainly due to direct employment in the local area and the level of spending in the Region (**Table 17-9**).

**Table 17-9 MEP Phase Two-Regional Annual Mine Expenditure and Jobs**

	Net Expenditure (\$ m) <sup>1</sup>	Income (Salaries) (\$ m) <sup>2</sup>	Mine Employment (FTE Persons) <sup>3</sup>
Isaac	\$5.4 m	\$3.8 m	38
Mackay/Whitsunday	\$219.6 m	\$34.2 m	342
Total	\$225 m	\$38 m	380

<sup>1</sup>Aurecon estimate 3.5% of total net expenditure (other than labour) to be spent within the Isaac Region

<sup>2</sup>Aurecon conservatively estimate average mine salary at \$100,000 per employee

<sup>3</sup>Aurecon estimate 10% of MEP employees to reside within the Isaac region

**Table 17-10** summarises the Phase Two impact of the MEP in the Isaac Region based upon annualised spend and forecasted employment.

**Table 17-10 MEP Phase Two-Annual Economic Impact, Isaac LGA**

	Output (\$ m)	Income (\$ m)	Employment (FTE persons)	Value added (\$m)
Direct	\$5.4 m	\$3.8 m	38	\$3.3 m
Indirect	\$2.1 m	\$1.5 m	24	\$0.9 m
Total	\$7.5 m	\$5.3 m	62	\$4.2 m

FTE = Full Time equivalent employment positions

Source: Aurecon, 2010

As indicated above the majority of mine expenditure and employment will be sourced from the greater Mackay/Whitsunday Region. **Table 17-11** summarises the Phase Two impact of the MEP based upon annualised construction spend and forecasted employment for the Mackay/Whitsunday region.

**Table 17-11 MEP Phase Two-Annual Economic Impact, Mackay/Whitsunday Region**

	Output (\$ m)	Income (\$ m)	Employment (FTE Persons)	Value Added (\$m)
Direct	\$219.6 m	\$34.2 m	342	\$135.9 m
Indirect	\$84.7 m	\$27.0 m	603	\$41.9 m
Total	\$304.3 m	\$61.2 m	945	\$177.8 m

Source: Aurecon,2010

The net impacts of the MEP during Phase Two, across the combined Isaac and Mackay/Whitsunday Regions, are as follows:

- 380 new jobs at the mine site, and an additional 627 jobs in other industries;
- \$225 million in net mine expenditure resulting in additional \$87 million in output from other industries; and
- net value-adding from the mine of \$139 million, leading to an additional \$43 million in additional value-adding in other sectors.

### 17.8.3 Decommissioning

The current Millennium Mine is forecast to cease in 2015. The MEP proposes to expand mining operations on the site until 2027. A detailed decommissioning plan will be developed well in advance of this time.

Cessation of mining activities at the Millennium Mine will impact the local Isaac regional economy. However, the degree of economic impact will be influenced by a range of factors at that time including:

- the number of employees involved at the MEP mine site at time of decommissioning, and the possibility of staging decommissioning over a period of time;
- the number of mine site employees and their families permanently residing within the Isaac region;

- continued expansion and development of other mining projects within the region; and
- actual market demand and price of coal at time of decommissioning in 2027.

Decommissioning the MEP will also impact the neighbouring LGAs of Mackay and Whitsunday, but to a much lesser degree. Both Mackay and Whitsunday have a much more stable and diverse economic base with the majority of available labour force employed in other industries including retail, construction, tourism, transport, healthcare, and agriculture.

The land within and surrounding the proposed MEP consists of large scale coal mines and low density cattle grazing stations. The majority of the land is categorised as 'unsuitable for dry land cropping' and 'marginal to unsuitable for grazing' (refer to **Chapter 7-Land**), although some smaller portions of good quality grazing land has been identified, mostly along creek lines.

Land that is disturbed by the MEP will be returned to low level grazing land, where possible. Compensation agreements have already been negotiated with landholders to the west and southwest of the MEP as part of other leases associated with the Millennium Mine.

#### **17.8.4 Local Significance**

At the local level, a relationship can be drawn between the level of employment and spending in the area. The MEP would require a substantial long term operational workforce. This would have flow on effects to the local economy.

Due to the relatively tight local labour market, a proportion of the required workforce is likely to be sourced from further afield, including the Mackay and Whitsunday Regions, and elsewhere within Queensland and interstate.

For staff sourced from other regions outside of Isaac, Mackay and Whitsunday LGAs, the impact at the local and regional level would depend on how many choose to relocate to the area permanently, rather than operate on a drive-in/drive-out, or BIBO basis. Permanent residents would spend more money in local businesses but could also impact on the housing and rental markets in the region (i.e. if more people relocate to the area, more dwellings would be required, which may increase the already high pressure on housing in the region).

#### **17.8.5 Employment**

Experience within the Bowen Basin, confirmed by economic modelling, indicates that the increased economic activity from the MEP employees spending on local businesses and services will generate additional full time and part time jobs within the local community.

The Isaac LGA has been characterised by a constrained labour market, low unemployment and shortages in skilled labour over a number of years. Despite major job losses in the recent GFC, the Queensland Resources Council continues to report that industry employment remains near record levels. High proportions of the workforce in Moranbah (45.6%) and the Isaac LGA (38.9%) are employed in the mining sector.

In addition, jobs in mining are generally higher paying than many others, evidenced by the wage levels for the Isaac region being well above that of the

state averages. However, high wages within mining are accused of having detrimental impacts for other local business sectors, particularly agribusiness which continues to lose skilled and unskilled labour resources to the mining industry.

It is estimated that 95% of the MEP workforce will live in the Mackay region and will commute to, and utilise facilities at the MAC. It is assumed the other five per cent will live in and commute locally around the towns of Moranbah and Coppabella.

The MEP will have an overall positive impact on the local economy and workforce by attracting additional workers to the Isaac region. Over time, it is likely a proportion of MEP employees and their families would relocate to the region on a permanent basis.

An additional impact would arise from family members, who are not MEP employees, seeking and obtaining employment in the local area. An influx of working-age people associated with MEP employees would help ease some of the pressures that have been experienced on the local labour market.

#### **17.8.6 Local Businesses**

Not only do the mines directly employ a significant proportion of the local labour market, local businesses also rely on the mines and mining staff for their market and expenditures arising from additional employment stimulated by mines. As such, the MEP would benefit local and regional areas through increased employment opportunities as well as through required services and support, with some of the MEP's budget being spent in the region.

Furthermore, local spending can generate the need for additional employees within local firms to accommodate the increased business. This growth can help support broader community initiatives such as the recent introduction of seven day trading at Moranbah.

#### **17.8.7 Impact of Direct MEP- Related Employment**

According to ABS data from the most recent household income and expenditure survey, average household expenditure on goods and services was approximately 79% of gross household income. An estimated 80% of household expenditure was identified as likely to be incurred with or through local businesses.

Average earnings for mining industry personnel are around \$100,000 per annum. The MEP expects to employ at least 160 additional staff in the first five years (2011-2015), and then maintain an additional 380 staff between 2016 and 2027. It is estimated that approximately five per cent of the workforce will reside locally within the Isaac Region area, as indicated in **Table 17-12** below.

**Table 17-12 Additional Wage Income Generation within the Isaac Region**

	Additional Mining Staff	Additional Mining Staff Residing Locally	Additional Wage Income in Isaac	Additional Wage Income in Mackay Whitsunday <sup>1</sup>
2011-2015	160	8	\$0.8 m pa	\$15.2 m pa
2016-2027	380	19	\$1.9 m pa	\$36.1 m pa

<sup>1</sup>The remaining workforce that reside permanently outside the Isaac Region

### 17.8.8 Impact of MEP-Stimulated Employment

According to the REDC, average weekly full-time adult earnings were around \$1,138 or \$59,176 per annum for the broader Mackay/Whitsunday/Isaac Region in 2006.

Based on the impact analysis above, approximately 265 new jobs would be created indirectly from the economic stimulation resulting from the MEP in the first five years (Phase One 2011-2015). During Phase Two (2016-2027), 627 jobs would be created indirectly.

Assuming that these jobs do not offset employment creation that would have otherwise occurred, this is equivalent to expenditure through local and regional businesses of an additional \$15.6 million during Phase One and \$37 million during Phase Two. These estimates are in constant 2010 prices.

### 17.8.9 Housing

As a result of the low unemployment rate and skills shortage within the Isaac region, MEP staff requirements are more likely to be sourced from other regions such as Mackay/Whitsunday, or further afield including South East Queensland.

It is expected that most staff will live in the Mackay region and stay at the MAC in Coppabella when working. Some staff however may choose to reside in Moranbah. As a result, some pressure may be placed on the housing market by those requiring both temporary and permanent accommodation. However, if most workers stay at the MAC as is anticipated, the impact on the value of properties is not likely to be significant. Incremental impacts on housing associated with specific mining projects may be small, but given the heavy reliance of the region on the mining industry and the number of mining projects within the region, the cumulative impacts may be more significant.

Peabody is unable to directly address this cumulative issue because housing demand and supply is dependent on a number of factors beyond its control. These factors include the development of other unrelated projects in the Isaac region that may impact on housing demand and supply. Also, the quantum and the timing of the release of residential land is a local government responsibility. Peabody will assist long term planning by providing accurate and timely planning updates to the existing stakeholders (local government authorities and others) engaged in accommodation planning as they become available.

As it is anticipated that the majority of new workers will be housed in the MAC Village at Coppabella, it is unlikely that the MEP will significantly affect property values in the local region. The demand for housing in nearby centres such as Moranbah is anticipated to be minimal.

### 17.8.10 Local Community Infrastructure and Services

The impact of MEP on community infrastructure and services will be limited by having the majority of the workforce accommodated in site camps that provide full amenities on site. Currently, employees are free to leave the site between shifts, however many employees choose to remain on site because of the high level of amenities provided.

Any potential impact of the MEP on the capacity of community infrastructure and services will be dependent on a range of influences on population and the relevant timing of these in relation to the timing of this project (and other mining expansion and development projects within the Isaac Region).

In order to assist with forward social infrastructure planning, Peabody will consult with Isaac Regional Council and other relevant community infrastructure providers to ensure that any impacts of the MEP are understood and considered in planning proposals.

## 17.9 REGIONAL SIGNIFICANCE

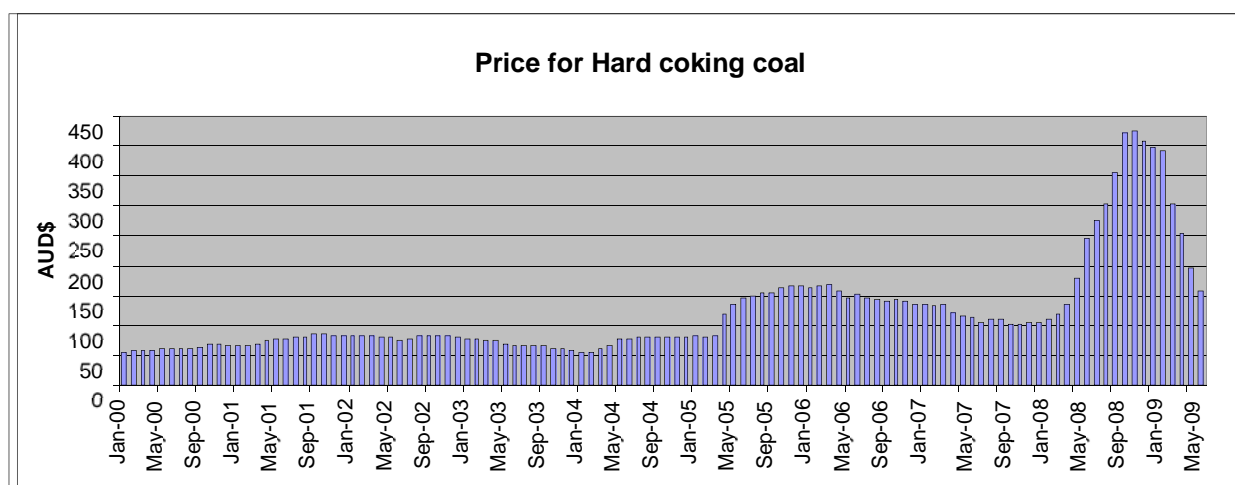
### 17.9.1 Coal Demand and Exports

The MEP would result in a significant increase in coal exports from the region. The MEP proposes to increase coal production as follows:

- increase the existing Run of Mine (ROM) coal mining capacity from 2 Mtpa-5.5 Mtpa for the current life (2011-2015); and
- increase the operational life of the mine beyond 2015-2027.

The value of coal has increased significantly in recent years, as highlighted below in **Figure 17-4**.

**Figure 17-4 Monthly Prices for Hard Coking Coal**



Source: Queensland Treasury

During 2008, the price of coking coal rose substantially from around \$100 per tonne at the start of the year, to historical highs of over \$400 per tonne at the end of 2008. Prices in 2009 eased substantially back towards \$150 per tonne, though in March/April 2010 it was reported that a number of mines were signing contracts at or above \$200 per tonne.

For the purposes of this analysis, future coking coal prices are estimated at \$150 to \$200 per tonne. Assuming the latest quoted market price of \$180 per tonne, the added value of exports in 2010 constant prices is highlighted in **Table 17-13** below:

**Table 17-13 Additional Coal Exports Attributed to MEP**

	Additional Coal Tonnage	Additional Coal Export Value <sup>1</sup>
2011-2015	2.0 Mtpa	\$300-\$400 million pa
2016-2027	3.5 Mtpa	\$525-\$700 million pa

Note that the coking coal price is held constant in this calculation at between \$150 and \$200 per tonne (constant 2010 prices).

## 17.10 COSTS TO GOVERNMENT

Potential costs to government are discussed in this section and mainly relate to general costs for the coal system as opposed to specific costs associated with the MEP.

### 17.10.1 Rail

The Goonyella coal rail network increased capacity with the commissioning of the Coppabella Yard Upgrade in 2008. It is not expected that any additional upgrades to rail will be necessary for the MEP, and therefore no additional railway infrastructure costs are likely.

### 17.10.2 Port

Coal will be loaded at Dalrymple Bay Coal Terminal (DBCT). No additional cost is expected to be incurred by government as a result of the use of these facilities as any costs incurred by the MEP are expected to be recovered through fees levied to the EPP for coal handling.

### 17.10.3 Road

It is planned that the MEP will utilise the existing site access road, but that new mine haulage roads within the mine expansion areas will be required, as well as a crossing over the New Chum Creek. These road modifications will be undertaken by Peabody.

### 17.10.4 Water

Management of water resources is based on sourcing water from the Burdekin supply line. The potential interconnection of three Peabody operations (Burton Coal Mine, Millennium Coal Mine and Eaglefield Coal Mine) would enable adequate supply and reuse options. No augmentation of existing government bulk water sources is considered.

### 17.10.5 Accommodation

The MAC in Coppabella will provide sufficient accommodation for the additional workers required by the MEP. Additional capacity at other camps may be required during peak times.

The MEP workforce and their families would use services provided by the state and local government (e.g. educational, medical, justice and municipal



services). These costs would have been incurred if the workforce lived elsewhere in Queensland and therefore should not be considered an additional cost.

Increased costs to the Isaac Regional Council should be offset by rates charged to new residents. No significant increase in overall government costs is anticipated to result from the proposed MEP.

## 17.11 GOVERNMENT REVENUES

This section considers the possible impacts on government revenues arising from the MEP. These include coal royalties, state payroll tax and local government revenues.

### 17.11.1 Coal Royalties

The MEP is expected to generate production of up to 3.5 Mtpa for the life of the mine. The production of this coal would generate royalty payments to the Queensland Government. Under the current two-tiered coal royalty system, companies pay seven per cent of the value up to \$100 per tonne and 10% of the value thereafter.

For example, a price of \$100 per tonne attracts a rate of seven per cent of coal value, \$150 per tonne attracts eight per cent and \$200 per tonne attracts eight and a half per cent.

Subject to exchange rate variations and coal price fluctuations over the life of the mine, the estimated royalty payments that would be made to the Queensland Government are estimated at \$24-\$34 million per annum for the first five years, before increasing to \$42 million-\$59.5 million per annum as indicated in **Table 17-14** below.

**Table 17-14 Additional Coal Royalties to the Queensland Government<sup>1</sup>**

	Additional Coal Tonnage	Royalties to the Queensland Government
2011-2015	2.0 Mtpa	\$24-\$34 million pa
2016-2027	3.5 Mtpa	\$42-\$59.5 million pa

<sup>1</sup>Note that the coking coal price is held constant in this calculation at between \$150 and \$200 per tonne.

### 17.11.2 Rail and Port Charges

The existing transport infrastructure is projected to support the MEP with coal transported by rail on the Goonyella rail network to the DBCT.

The Abbot Point Coal Terminal (APCT) may be utilised in but this is not required for the MEP to proceed. The anticipated additional incomes for rail and port authorities are shown in **Table 17-15** below.



**Table 17-15 Additional Income to Rail and Port Authorities**

	Additional Coal Tonnage	Approximate Rail Charges <sup>1</sup>	Approximate Port Charges <sup>2</sup>
2011-2015	2.0 Mtpa	\$19.5 million	\$0.7 million pa
2016-2027	3.5 Mtpa	\$34 million pa	\$1.2 million pa

<sup>1</sup>Based on 162 km rail track journey to port, at \$0.06 t/km

<sup>2</sup>Based on Harbour Due of \$0.067 per tonne for DBCT. In addition, there is a Tonnage Due of \$0.258 and Port Security Charge of \$0.002 per gross registered tonne of the ship (which have been added in this analysis on direct coal tonnage).

### 17.11.3 State Payroll Tax

Companies or groups of companies that pay \$1 million or more a year in Australian wages must pay payroll tax. Deductions, concessions and exemptions are available to eligible entities. The current payroll tax is four and three quarter per cent of Total Taxable Wages (Queensland Office of State Revenue).

The additional employment attributed to the MEP is assumed to comprise Peabody personnel over and above any exemption or payroll tax deduction levels. Average earnings for mining industry personnel are estimated conservatively at \$100,000 per annum.

The MEP expects to employ a total workforce of 160 additional staff for Phase One (2011-2016) and maintain 330 staff thereafter (2016-2027). **Table 17-16** highlights the MEP staffing levels and forecast State payroll taxes.

**Table 17-16 Additional State Payroll Taxes to the Queensland Government**

	Additional Mining Staff	Additional Payroll Taxes to the Queensland Government <sup>1</sup>
2011-2015	160	\$760,000 pa
2016-2027	380	\$1.8 million pa

<sup>1</sup>In current dollars, assuming conservative average mine site wages of \$100,000 per annum, and payroll tax of 4.75%.

On an annualised basis, this is equivalent to a wages bill of \$16 million for the first five years, and then \$38 million thereafter. If the full value of these wages attracted payroll tax, it is estimated that the Queensland Government would receive tax revenues of \$0.76 million per annum between 2011-2015, and then \$1.8 million per annum thereafter until 2027. While this might overstate the level of payroll tax generated, there is the possibility that employment additional to the anticipated staff could be generated as a result of the MEP.

### 17.11.4 Local Government Revenue

For both the Isaac and Mackay LGAs, a proportion of the new employment generated by the MEP would stimulate housing and commercial/retail development. To the extent that new land is developed or converted into higher value use, local government revenues would benefit.

However, an estimate of the likely revenue generated would depend critically on two factors, namely the number of workers attracted to the MEP from

outside the region and the extent to which those workers build new houses or trigger additional commercial/retail development on greenfield sites. The latter factor is significantly influenced by Isaac and Mackay LGAs to provide appropriately zoned land to meet residential and commercial demand.

### **17.11.5 Proposed Mineral Resource Rental Tax**

Following consultation with industry, the Australian Government has proposed a Minerals Resource Rent Tax (MRRT) regime for the mining of coal in Australia. Subject to receiving the appropriate approvals, the MRRT will commence on 1 July 2012.

The Australian Government's rationale for the MRRT is to provide a more appropriate return to the Australian community from the exploitation of its non-renewable resources compared with the current arrangements.

Key features of the MRRT are:

- limited to iron ore and coal companies whose resource profits exceed \$50 million per annum;
- the MRRT will apply a tax rate of 30% to the value of the resource, rather than the value added by the miner;
- new investment will be treated in the form of an immediate write off, rather than depreciated over a number of years;
- it will broadly adopt the same category of non-deductible expenditure that currently applies to the Petroleum Resources Rent Tax;
- the MRRT will carry forward unutilised losses at the long term government bond rate plus 7%;
- it will provide transferability of deductions thereby supporting mine development because it means a company can use the deductions that flow from investments in the construction phase of a project to offset the MRRT liability from another of its projects that is in the production phase;
- states and territories will keep existing royalties with the Australian Government providing companies with refundable credits for current state royalties paid;
- recognition of past investments will be provided through a credit that recognises the market value of the investment written down over a period of up to 25 years. Unlike other costs, this starting base will not be uplifted. However, those companies that wish to use their current written down values of the EEP's assets, excluding the value of the resource, will be provided with an accelerated depreciation over five years. This starting base will be able to be uplifted at the government's long term bond rate plus seven per cent;
- the MRRT will recognise the particular characteristics of different commodities, by applying a taxing point as close to the point of extraction as practicable, and using appropriate pricing arrangements to ensure only the value of resources extracted is taxed; and
- the MRRT will provide a 25% extraction allowance to further shield from tax the important know-how and capital that mining companies bring to mineral extraction.

The specific detail of the MRRT has still to be finalised and legislated and therefore it is considered too early to identify the financial impacts of the MRRT on the MEP.

## 17.11.6 Environmental Economic Impact

### 17.11.6.1 *Ecosystem Impacts*

The majority of the MEP area and surrounds has been modified through cattle grazing and mining that has significantly altered the landscape. The presence of ten vegetation communities hosting remnant ecosystems has been identified for the MEP site. The distribution of these communities is complex, often occurring in small isolated pockets or within mixed communities that cannot be separated at a 1:25,000 scale.

Approximately 66 ha of remnant vegetation is likely to be cleared for the MEP, consisting mainly of Acacia woodland. As a minimum, the same area of native ecosystem to be cleared for the MEP will be revegetated with native species. The ecosystems residing within the vegetation provides goods and services, however many of these are difficult to fully identify and value from an economic perspective.

In valuing the remnant vegetation to be cleared as part of the MEP, two approaches have been utilised:

- comparison to past studies regarding ecosystem valuations; and
- estimated MEP vegetation value as a carbon sink.

### 17.11.6.2 *Comparison to Past Studies*

Curtis (2003) undertook a study to place an economic value of the ecosystem of the Wet Tropics World Heritage Area of north-east Queensland. It identifies a total of 10 ecosystem services and valued each utilising various methodologies including surveys and Delphi panel studies. Curtis (2003) identifies the value of remnant ecosystems within the Wet Tropics at \$210-\$236 per ha/pa.

In considering this ecosystem valuation, the following key points relating to the Wet Tropics (in comparison to the MEP site):

- the wet tropics region resides within a much higher rainfall region;
- it contains a much broader spectrum of fauna and flora, and diversity of ecosystems; and
- it is likely to have a much more significant ecosystem value.

Acknowledging the above points, and the date of Curtis' work (2003), it ascribes an ecosystem value for the remnant vegetation in the MEP area at \$250 per ha/pa. At this estimate, the economic value of the 66 ha of remnant vegetation to be cleared is estimated at \$16,500 per annum in total.

A more controversial and international study is that by Costanza *et al.* (1997). Examining Australian ecosystems in generic terms, Costanza estimates the economic value of Temperate/boreal forests at \$543 per ha/pa. This estimate is more than twice that of Curtis (2003). Utilising Costanza's estimate of approximately \$550 per ha, the projected economic value of the 66 ha of remnant vegetation is \$36,300 per annum.

### 17.11.6.3 *As a Carbon Sink*

A second economic valuation technique considered is to value the area of remnant vegetation to be cleared for the MEP as a carbon sink (sequestration). In some ways, this methodology relies on partial market signals that are easier to validate from an economic perspective.

As a carbon sink, the remnant vegetation has two carbon values: stored carbon in current state, and an annual sequestration value. Maraseni *et al.* (2006) provide a useful indication of soil carbon within a Spotted Gum location in a low rainfall area of South East Queensland. A remnant forest was observed to contain approximately 300 tonne soil carbon per ha, and was able to sequester approximately two-three tonnes per annum. While the Spotted Gum forest is a very different ecosystem to that found in the MEP area, and is likely to be a significant over-estimation of the carbon storage capability of the MEP ecosystems, this was the closest example of carbon storage figures available.

Assuming a carbon value of \$20 per tonne, which is a long term value projected under a national trading scheme, the potential value of the 66 ha of remnant vegetation at the MEP is calculated as:

- \$396,000 in total carbon currently stored in the soil (300 tonne ha soil carbon that is assumed to be totally lost upon clearing); and
- \$3,960 per annum, being the annual value of carbon sequestered by the remnant vegetation based on carbon sequestered into the soil at three tonnes per annum.

It should be noted that it is difficult to ascertain an accurate carbon value until a carbon emissions trading scheme has been established. In addition, countries with currently operational emissions trading schemes do not recognise soil carbon as a claimable source, therefore the \$396,000 is a theoretical value that could never actually be recovered under current systems.

#### 17.11.6.4 *Alternative Land Use*

Alternative land use for the proposed MEP site is low intensity cattle grazing. To the extent that mining operations reflect a higher economic use of the land, there would be a net economic benefit from a change in land use.

The 2005/06 Agricultural Census identified that the average value of gross return from livestock grazing across the region was approximately \$32 per ha. It is noted that this value would include a wide spectrum of grazing operations from irrigated improved pastures through to low quality native pastures.

**Chapter 7-Land** states that the MEP site is categorised as Suitability Class Five (Unsuitable for dry land cropping), and Classes Four-Five (Marginal to Unsuitable) for grazing, with only very minimal areas categorised as Class Three for grazing.

The foregone opportunity cost of the mine site (900 ha) for cattle grazing is estimated at \$28,800 per annum, based on production and financial data from the 2005/06 census year. It should be noted that production rates and market prices vary from year to year, however the \$28,800 gross annual grazing value is considered to be optimistic considering the land classification provided.

Assuming that the MEP will lock out livestock grazing operations for the next 20 years (includes a three year buffer for vegetation to re-establish), the forgone grazing value of the site is approximately \$580,000 for the 20 years.

Effective rehabilitation of the site after completion of mining operations would allow for the return of native vegetation, and subsequent re-introduction of cattle grazing where suitable and sustainable.

### **17.11.7 Cumulative Impacts**

Incremental impacts on housing associated with specific mining projects may be small; though given the heavy reliance of the region on the mining industry and the number of mining projects within the region, the cumulative impacts may be significant.

The town of Moranbah would be the most affected by the MEP, but only if more than anticipated numbers of people decided to reside there instead of at the MAC. The inflated housing market in Moranbah has forced some lower income earners out of the market and has created a severe accommodation shortage (Queensland Department of Housing, 2007). The MEP may add to these housing pressures. The impact of this situation is discussed in **Section 17.8.9** above.

Higher accommodation and labour costs may also add pressures on local small to medium businesses that are unable to capture the positive economic effects of the current mining boom.

In terms of other cumulative economic impacts, the MEP already contributes to Queensland's most important export commodity which employs thousands of people, both directly and indirectly.

The MEP forms part of a growth strategy designed to strategically service the expanding demands of India, China and other international coking coal markets. The cumulative economic impacts of the MEP include increased export income, royalties and employment, generating wealth within Queensland and Australia that significantly benefits the wider community.

## **17.12 CONCLUSIONS**

The economic impact analysis of the MEP has drawn the following conclusions:

### **17.12.1 Significant Economic Stimulus to the Economy**

The MEP is predicted to provide significant ongoing economic benefits to the regional, state and national economies. Over the life of the MEP, the EEP will contribute approximately \$2.9 billion to the national economy.

### **17.12.2 Minor Cost In Terms of Revenues Forgone**

In the absence of the MEP, the economic contribution of the existing beef grazing system over the next 20 years is estimated at approximately \$600,000 in total. Incorporating the most optimistic value for ecosystems services for the remnant vegetation to be cleared for MEP of \$40,000 per annum (\$800,000 over the 20 years), the net projected opportunity cost for the site is \$1.2 million over the next 20 years.

### **17.12.3 New jobs**

The MEP is predicted to result in an additional 380 jobs on site. Purchases by MEP and expenditure by the mining staff will stimulate an additional 620 jobs through other industries within local and state communities.

### **17.12.4 Housing**

It is anticipated that the majority of new workers will be housed during working shifts in the MAC at Coppabella, while maintaining permanent residences in the Mackay region. It is unlikely that the MEP will significantly affect property

values in the region. The demand for housing in nearby centres such as Moranbah is anticipated to be minimal.

#### **17.12.5 Boost for Federal Government Revenue**

Although still under discussion and negotiation with the mining sector, the MRRT announced recently will result in a substantial tax payment to the Australian Government at the expense of Peabody.

#### **17.12.6 Substantial Boost to Balance of Payments**

The value of production from the MEP is projected at \$525-\$700 million for the first five years, before increasing to \$825 million-\$1.1 billion in the subsequent 12 years. All of the production is assumed to be exported. Over the life of the MEP, the EEP will improve Australia's balance of payment by approximately \$4.5 billion-\$10.4 billion.

#### **17.12.7 Boost for State Government Revenue**

Subject to exchange rate variations and coal price fluctuations over the life of the mine, the estimated royalty payments alone that would be made to the Queensland Government are estimated at \$42-\$59.5 million per annum, post 2015. It is expected that the quantum of this payment will remain the same whether collected under the existing Queensland Government system or under the administrative arrangements of the proposed MRRT.

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