6. Economies

This section provides a summary of the economic assessment undertaken in regards for the Project. The assessment was undertaken in accordance with the requirements of the Terms of Reference (ToR) and a table cross-referencing these requirements is provided in Volume 4 Appendix C ToR Cross Reference Table. The economic assessment incorporates both Mine and Rail elements of the Project. The detailed report is included in Volume 4 as Appendix H Economics.

6.1 Introduction

An assessment of the combined effects of the Mine and Rail components of the Project has been undertaken and is included in Volume 4 Appendix H. The section provides a summary of the assessment including:

- A snapshot of the demographic characteristics of the region
- Trends in economic indicators, such a gross regional product, industry structure and sector drivers such as construction, mining and tourism and other economic indicators such as building approvals and wages
- Employment and unemployment trends in the region
- Estimates of the scale of the Project's economic impact on the Queensland economy
- Strategies for impact mitigation on the local and regional economy
- Impacts and mitigation for the agricultural sector and property management

6.2 Description of Affected Local and Regional Economies

6.2.1 Overview

The Project (Mine) is located predominantly within the Local Government Area (LGA) of Isaac (Figure 1-1). Part of the Project (Mine) is located in Charters Towers LGA. Access to the Project is generally not directly available from the Charters Towers LGA, due to the road network configuration. The Project (Rail) is located wholly within the Isaac LGA. The access to and therefore influence of the Project will be to the east; as such, the Study Area includes the Isaac LGA and broader Mackay region.

The baseline economic overview provides an indication of the current economic activities within the Project Study Area. Data assessed and presented in Volume 4 Appendix H Economics clearly indicates that mining activities already dominate industry within the Project region, with 83 per cent of the regions Gross Regional Product (GRP) generated by mining. Employment within the region also continues to be dominated by the mining industry with an increase of mining employees to over 92 per cent between the 2001 and 2008 census. The continued and uninterrupted growth in the mining industry is the main contributor to the lower levels of unemployment seen in the region in comparison to the State average and the 42 per cent growth in average household weekly income seen between 2001 and 2006.

6.2.2 Regional Characteristics

The Isaac LGA covers an area of 58,869 square kilometres (km^2), accounting for 3.4 per cent of the State of Queensland. The region has an estimated population of 22,629 (2010), accounting for 0.5 per cent of Queensland's total population. The Isaac LGA population is projected to increase by 59 per cent over the next 20 years. This represents an average annual growth rate of 2.9 per cent (OESR 2011).

In 2010, 58 per cent of the population were of working age (aged between 25 and 64); while a further 24.9 per cent were under the age of 14. This indicates the region supports a higher number of young families, perhaps attracted by increased employment opportunities in the mining and construction sectors. The region also retains a much smaller percentage of individuals aged over 65 (4.1 per cent) compared to the State average of 12.6 per cent, inferring that retirees tend to move out of the region.

Migration data for 2006 confirms that 23.1 per cent of the Isaac population lived at a different address in the previous year. This was above the State average of 19.7 per cent, suggesting the LGA has a higher transient population than the State as a whole (OESR, 2011).

The closest township to the Mine is Clermont, which is 160 km southeast. Moranbah is the nearest regional centre. It is located 200 km west of the site and already has established service providers to the mining industry.

6.2.3 Economic Activity

6.2.3.1 Gross Regional Product

GRP is a key measure of regional economic performance. It is an established indicator that can provide insight into the health and size of the region's economic activity. Recent trends indicate that mining has consistently grown within the region, not being impacted by the global financial crisis, unlike other industries such as the construction and retail sectors. It is reasonable to assume that this consistent increase in output will remain whilst mining activities are continuing within the region.

GRP for the Isaac LGA in 2009-10 was $9.8 billion, 3.8 per cent of Queensland Gross State Product (GSP) (REDC 2011). In 2007-08 and 2008-09, the region's GRP accounted for 3.1 per cent and 3.7 per cent, respectively, of Queensland GSP (REDC 2009). This demonstrates a consistent increase in the region's contribution to overall State economic activity.

6.2.3.2 Mining Sector

The mining sector output increased by $1.9 billion over the three years to 2009-10, this represents a total increase of 34 per cent and average annual growth of 11.3 per cent (REDC 2008, 2009, 2010). The sector has continued to reinforce its position as the overwhelming driver behind regional economic activity. Mining accounts for 83 per cent of Isaac's GRP.

6.2.3.3 Construction Sector

The construction sector averaged $158 million of annual output between 2007-08 and 2009-10. The sector accounted for an average of 1.9 per cent of Isaac GRP between 2007-08 and 2009-10 (REDC 2008, 2009, 2010).

6.2.3.4 Transport, Postal and Warehousing Sector

The transport, postal and warehousing sector averaged $69 million of annual output between 2007-08 and 2009-10. The sector accounted for an average of 0.8 per cent of Isaac's GRP between 2007-08 and 2009-10 (REDC 2008, 2009, 2010).

6.2.3.5 Agricultural Sector

The agriculture, forestry and fishing sector averaged $88 million of annual output between 2007-08 and 2009-10. The sector accounted for an average of one per cent of Isaac's GRP between 2007-08 and 2009-10 (REDC 2008, 2009, 2010). When viewed in light of the mining activity the data indicates that the previously dominant agricultural sector declined sharply over this period.

6.2.3.6 Retail Sector

The retail sector averaged $45 million of annual output between 2007-08 and 2009-10. The retail sector accounted for an average of 0.5 per cent of Isaac's GRP between 2007-08 and 2009-10 (REDC 2008, 2009, 2010).

6.2.3.7 Tourism Sector

Detailed data regarding supply and demand for tourist facilities is not publicly available. The ABS regional profile for Isaac, released in 2010, identified no change in the supply of tourist accommodation between 2007 and 2009 (REDC 2009).

6.2.3.8 Number of Businesses

Agriculture, forestry and industry had the highest number of businesses and mining had the lowest. The mining sector however, accounts for nearly 50 per cent of total employment in the region (OESR 2011). Taken together, these data suggests mining companies each employ considerably more employees than their counterparts in other sectors. This, in turn, implies the size and scale of mining companies is substantially greater than companies in other industry sectors. Therefore, mining is a considerable driver of total employment within the LGA.

6.2.4 Property and Land Values

The overall trend in residential building approvals was up for the five years to 2010. Non-residential building approvals peaked in 2007 and 2008 (ABS 2006a, 2007, 2008, 2009, 2010c).

Since the last annual valuation, residential land within the region has increased in value. Commercial land has remained relatively stable over the period however, industrial land within the Isaac region has experienced moderate to major increase, primarily due the development of mining activities. Agricultural land has remained stable since the last value.

Moranbah's housing prices have experienced a rapid increase over the last decade from about $65,000 in 2002 to almost $650,000 in 2011 and nearing $700,000 in mid-2012. Clermont has also shown a trend of steady increase before a general plateau emerged in 2007. However, increases in Clermont have not been at the same rate. Charters Towers and Mackay have not been affected by the same price spikes recording a median of $237,000. Rents for two and three bedroom apartments fluctuated significantly from $250 to over $1,000 per week. However, the demand for the two bedroom apartments was steady through the December 2009 to March 2011.

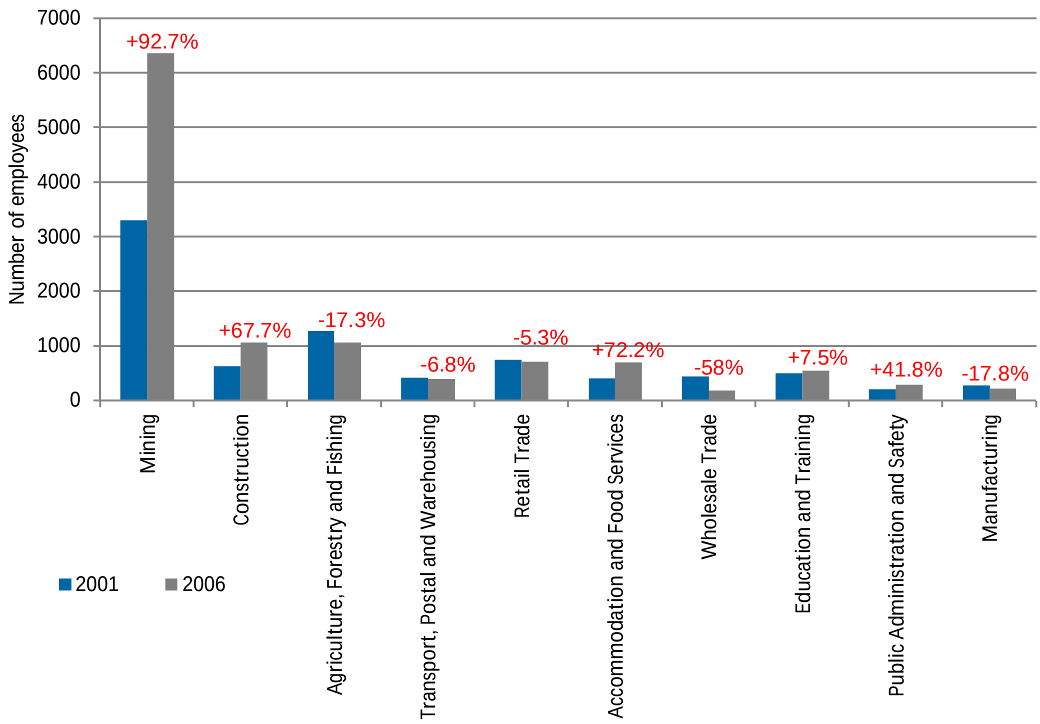
6.2.5 Labour Market

Figure 6-1 displays how the sectoral contribution to total employment within the region has changed between 2001 and 2006. Mining remains, by far, the largest source of employment within the region. In 2006, the agriculture/forestry/fishing and construction sectors were the next highest employers after the mining sector.

In 2009, ABS data indicates that unemployment rates in Isaac and the Central Highlands were one per cent and 2.3 per cent, respectively. This is considerably lower than the State average of 4.4 per cent. Isaac unemployment has remained very low and stable over the past four years, while statewide unemployment has fallen moderately (ABS 2010b, 2011).

Average weekly household income increased significantly between 2001 and 2006. Overall, the wages for the whole of Isaac have increased by 42 per cent over this period (REDC 2009). Wage increases of this magnitude are broadly consistent with a booming or lead sector such as the mining sector.

Figure 6-1 Number of Employees per Sector



Source: ABS (2001), ABS (2006b)

6.2.6 Agriculture

The dominant land use in the Isaac region is land for grazing: nearly 90 per cent of the Isaac LGA land is used for grazing. Cattle production dominates as a source of agricultural production with over 85 per cent of the total gross value of agricultural production for Isaac and a herd size estimated in 2006 at 861,000 head.

The Project (Mine) covers an area of approximately 44,730 ha. The mine directly impacts parts of six cattle stations, Moray Downs, Carmichael, Mellaluka, Albinia, Doongmabulla and Lignum.

There is a wide range in the market value of grazing land in this region which currently sells for between $500 and $2,000 per hectare, depending on quality of the land (e.g. rugged and poorer soils land versus creek flat land) as well as the level and quality of ‘improvements’ such as water facilities (dams, bores etc.), accommodation, yards, fencing, existing stock and so forth. Other factors influencing property value will include access to a water licence and terrain.

The rail line traverses a length of approximately 189 km within a 95 m wide corridor. The eastern portion of the rail line is within the strategic cropping land management area and flanks large portions of strategic cropping land (management area). Approximately 115 ha of strategic cropping land (management area) is traversed by the rail line within the western cropping zone. The rail corridor’s relationship with good quality cropping land is identified in greater detail in Volume 4 Appendix Y Rail Soils Assessment.

The rail line travels through grazing farm land and traverses a number of stock routes, impacts of which will need to be mitigated, ensuring stock movement and rotation is still possible via over passes or rail crossings.

6.2.7 Summary

The baseline economic overview provides an indication of the current economic activities within the Study Area. Data clearly indicates that mining activities already dominate industry within the region, with 83 per cent of the regions GRP generated by mining. Recent trends indicate that mining has consistently grown within the region, and has had limited exposure to the impacts of the GFC, unlike other industries such as the construction and retail sectors. It is reasonable to assume that this consistent increase in the region GRP will remain whilst mining activities are continuing within the region.

Employment within the area also continues to be dominated by the mining industry with an increase of mining employees to over 92 per cent between the 2001 and 2006 census. The proportion of employees engaged within the mining industry is vastly greater than the average for Queensland as a whole. Industries that provide support services to coal production such as construction and public administration and safety are seeing increases in employment.

The continued and uninterrupted growth in the mining industry is the main contributor to the lower levels of unemployment seen in the region in comparison to the State average and the 42 per cent growth in average household weekly income seen between 2001 and 2006.

A region’s competitive advantage emerges from the presence of natural resources and capabilities for value-adding to these natural resources. Within the Mackay, Isaac, Whitsunday and region this has driven specialisation in the mining sector, evidenced in the growth in this sector. Locally, Isaac LGA, with an average annual growth of 11.3 per cent for the three years to 2009-2010 and regionally, Mackay, Isaac, Whitsunday by 5.3 per cent over the same period.

The strong growth in employment within the mining sector demonstrates a competitive advantage for the region within the sector. Similarly, the sector represents higher levels of total employment per business that other sectors. The total employment and number of businesses within the mining sector accounts taken together, suggests mining companies each employ considerably more employees than their counterparts in other sectors. This, in turn, implies the size and scale of mining companies is substantially greater than companies in other industry sectors. Therefore, mining is a considerable driver of total employment within the LGA.

6.3 Potential Impacts and Mitigation Measures

6.3.1 Overview

Section 6.3.2 estimates the scale of the proposed development's economic impact on the Queensland economy. Impacts are measured through a range of economic indicators namely; GRP; household income and employment. These indicators provide a strong measure of economic impact. Volume 4 Appendix H describes the economic impact assessment conducted for the Project.

Section 6.3.3 outlines strategies for local participation to be implemented to ensure that the positive economic impacts identified are realised. The impact on agricultural property management and proposed mitigation measures are outlined in Section 6.3.4.

6.3.2 Potential Impacts

6.3.2.1 Mine

The Project (Mine) will at full production produce 60 million tonne (product) per annum (Mtpa) and have an operating life of approximately 90 years. The majority of construction is expected to occur prior to 2015, with ramp-up to full production by 2022. Capital investment for the life of the Mine is expected to total $21.5 billion (Runge Limited 2011)

Construction of the Project (Mine) is expected to generate on average over the construction years $78.2 million per annum in direct and indirect benefits on the Mackay region's GRP, a considerable proportion of which will be direct benefits such as purchase of local materials or services. For the State as a whole, positive impacts on average over the construction period are estimated to be $203 million a year. The construction phase also provides considerable benefits to household income and employment. On average, construction will generate an additional 378 full time equivalent (fte) jobs a year within the Mackay region and 1,192 full time equivalent jobs for Queensland.

The operation cost of the mine will continue to see considerable investment in capital as the Mine is expanded and as machinery reaches the end of its life and needs to be replaced. The estimated production cost, over the life of the Mine (for the purpose of this assessment) is expected to be around $33 per tonne.

The operational phase of the Project (Mine) sees benefits that increase in line with production rates of coal. At the point of full production (60 Mtpa) total positive benefits on GRP, for that year, in the Mackay region reach an estimated total of $3,795 million and at a State level $4,170 million. Positive impacts on household incomes within the region will total $372.2 million and State wide $573.5 million. Employment levels locally will see an increase in fte of 4,093 and State wide 6,789.

The estimated resource available to be mined is approximately 7.8 billion tonnes of coal. The available resource has been optimised through planning of mine infrastructure locations to minimise potential sterilisation of resource. Details regarding resource sterilisation are provided in Volume 4 Appendix M Land Use Report.

Economic consequences relevant to the State include royalties earned on mined resources. Coal, being a finite resource will diminish over time. Therefore, it is assumed that royalties earned from finite resources will diminish over time, unless further deposits are found.

6.3.2.2 Rail

Construction of the Project (Rail) has an expected delivery time of two to three years and is expected to require capital expenditure totalling $1.2 billion. Construction of the Project (Rail) is expected to generate on average over the construction years $145 million per annum in direct and indirect impacts on the Mackay regions GRP. Positive impacts on average, for the State as a whole, over the construction period are estimated to be $229 million a year. The construction phase also provides considerable benefits to household income and employment. On average, construction will generate an additional 1,451 full time equivalent jobs within the Mackay region and 2,481 full time equivalent jobs for Queensland. Benefits during the construction period will be felt most vigorously during the years' one and two.

The operational phase of the Project (Rail) sees impacts that increase in line with production rates of the Mine. At the point of full production (60 Mtpa) total impacts per year on GRP, for that year, in the Mackay region reach an estimated total of $176.6 million and at a State level $274.1 million. Benefits to household incomes within the region will total $107.2 million and State wide $157.9 million. Employment levels locally will see an increase in fte of 1,215 and State wide 2,025.

The Project (Mine) is expected to start production at 2 Mtpa and gradually ramp up to full production of 60 Mtpa by 2022. It is expected that on average the cost of coal transportation will be $7.70 per tonne. Impacts of operation across GRP, household income and employment continue to rise through the first 10 years of operation as the Mine production grows.

The location and extent of mining tenements have been considered when determining the location of the Project (Rail) alignment to reduce the potential of resource sterilisation. A management hierarchy has been implemented to undertake consultation with key tenure holders to gain their feedback on the alignment of the Project (Rail). Where it is not feasible to realign the Project (Rail), negotiations will be undertaken with key tenure holders to reach mutually satisfactory outcomes.

6.3.3 Impact Mitigation

The size, scale and required expertise of developments such as the Project often impose considerable strains on the mining proponent, resulting in the use of large levels of resourcing from outside the local region. This is required because of corporate economies of scale or company policy.

As a State, Queensland currently has a considerable level of mining activity underway. A concerted effort is being made by the Queensland Government and residents to bolster policies and campaigns that encourage the use of local or state-wide resources. Such campaigns, strongly backed by the State Government, such as the 'Buy Local' campaign have renewed vigour after the Queensland floods. They are important in the encouragement of large mining firms to implement a procurement strategy that sees local goods and services used instead of their international equivalents. Such procurement will help the region and affected economies realise benefits such as, higher levels of employment, greater GRP and higher average household incomes. The strategy is ensuring that significant investment is seen both in the local and State economies. Impacts will be felt across an array of businesses, either due to direct consumption by the mine or indirect consumption i.e. additional goods and services purchased by the workers.

The distribution of the impacts on the local, regional and State economies are mostly positive. The remaining positive impacts will be felt nationally throughout Australia. There are a number of Queensland Government policies that aim to increase and encourage the levels of local participation in the development. These strategies aim to mitigate the potential adverse impacts on the region. Table 6-1 outlines these strategies.

Table 6-1 Existing Government Strategies

Strategy	Objective
Indigenous Employment and Training Strategy 2008-2011 Queensland Department of Education and Training	The strategy focuses on achieving improved employment and training outcomes for Indigenous people by placing a particular emphasis on those individuals and communities that are locked into intergenerational unemployment due to multi-faceted social and life issues.
Mackay, Isaac and Whitsunday Regional Plan 2011 - 2031 Department of Local Government and Planning	The strategy aims to manage regional growth and change while protecting and enhancing the quality of life in the region. The plan incorporates a comprehensive policy framework to guide decision-making for managing the region's growth until 2031.
Queensland Government Building and Construction Contracts Structured Training Policy Department of Education and Training	The policy requires that a minimum of 10 per cent of the total labour hours on any Queensland Government building or civil construction project (valued over $250,000 for building or $500,000 for civil construction) must be undertaken by Indigenous workers, apprentices, trainees or cadets or used for the up-skilling of existing employees (to a maximum of 25 per cent of the deemed hours).
Local Industry Policy Department of Employment, Economic Development and Innovation, 2008	The strategy aims to adhere to the 'Queensland first' philosophy and creating jobs for Queenslanders, jobs that are sustainable and which will assist in achieving a more highly skilled workforce in key industries and deliver on the Government's economic priorities. Objectives include: Promoting local industry's involvement in value-adding activities in Queensland; and Maximising employment and business growth in Queensland by expanding market opportunities for local industry.

In addition, Adani has identified the need for a Local Industry Participation Plan as part of the Social Impact Assessment (see Volume 1 Section 4). The Local Industry Participation Plan (LIPP) will be prepared in accordance with the Local Industry Policy – a fair go for local industry, updated October 2010 (LIP) and associated Guidelines. Adani will work with both Councils, Clermont Preferred Futures Group, and local businesses in conjunction with government agencies (Office of Advanced

Manufacturing) and the Industry Capability Network (ICN) in developing the plan to provide robust, integrated and sustainable local business participation opportunities.

6.3.4 Agricultural Property Management

6.3.4.1 Mine and Rail Impacts

The area lost to agriculture (grazing) as a result of the Mine assuming the whole site is made unavailable for grazing is approximately 44,730 ha. Assuming an average level land value of $600 per ha, this represents a cost of around $27 million, or expressed as an annuity over 10 years at 10 per cent, a cost of $4.8 million per year. If land values are reflective of its productive values, then this loss of production is small relative to the regional gross agricultural value of $233 million (2006).

There will be marginal adverse economic impacts such as direct impacts of reduced agricultural production due to the development of the Project (Mine) and Project (Rail). Construction and operation of the Mine and Rail will have a minor impact on the access of stock to grazing land. This impact can be minimised by the project design, which can include rehabilitation of land post-mining activities and implementation of appropriately designed crossing points on the railway for stock and vehicle access.

Other impacts relate to the possible reduced security of stock and ability for stock to escape or damage themselves from interaction with the construction site or activity and the introduction and/or transfer of weeds and disease to regional properties. Details regarding good quality agricultural land are provided in Volume 4 Appendix M Land Use Report.

6.3.4.2 Mine Mitigation

Physical impacts on the local communities may induce economic impacts. The mine will be developed in a staged process. The land identified for the mine is used to graze cattle and also contains a number of access tracks and watering bores. Of the three properties significantly impacted in terms of land area and operations, the following mitigation measures have been implemented.

Adani has purchased in full the Moray Downs property. As such, no direct impact associated with severance will be realised. In regard to Lignum and Mellaluka, Adani is negotiating a package of compensatory measures to minimise operational impacts associated with severance of land and infrastructure. In addition, measures implemented during operations such as the Near Neighbour Policy proposed in the Social Impact Management Plan (Volume 1 Section 4) will provide greater certainty in regard to staged development and how these may impact property operations.

6.3.4.3 Rail Mitigation

Where there is direct loss of agricultural production, purchasing the property(ies) in part or whole will be considered where impact is likely to be significant. Where potential for reduced access to property arises, Adani will work with landowners to minimise impact including implementing measures such as agreeing the location of easements to reduce impacts e.g. outside property boundaries and/or along fence lines, rather than through middle of property where practicable. If appropriate, consideration will be given to developing a plan for construction timing to minimise impact on farming operations. The provision of appropriate access and ability to cross easements has been considered (see Volume 4 Appendix Z Rail Land Use Report). Infrastructure and facilities will be avoided as far as possible and, where impacted, replaced on a like for like basis. The crossing of pastoral property and farm access roads will be minimised and alternative access provided during unavoidable construction activities as appropriate.

To mitigate the introduction/transfer of weeds/disease (biosecurity), Adani will develop appropriate biosecurity protocols including potentially restricted access, vehicle/plant wash down/ etc. Information will also be provided on road closures/detours and alternative routes provided in appropriate media and with signage during railway construction. Following construction, adequate reinstatement of agricultural properties as reasonably practical, along with appropriate rehabilitation to ensure post construction condition is suitable for the intended use will be undertaken.

6.4 Summary

The potential of the Project to produce significant positive impacts on the local and State economies is substantial. In order to ensure the range and extent of positive impacts can be achieved, a number of measures to mitigate negative impacts will be put in place. Strategies such as an increase in local participation of regional and Queensland based industry as well as encouraging the participation and up-skilling of disadvantaged groups such as indigenous communities. Such strategies will require assessment frameworks to be developed that should include a mix of project specific indicators as well as quantitative statistics well proven in tracking the success of strategies and policies.

The Project will impact on property management of properties adjacent to the Project (Mine) and Project (Rail). Disruption will be minimised through the implementation of appropriate mitigation measures.

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