



12. Conclusions and Recommendations

12.1 Conclusion

12.1.1 Social Impact Assessment

As part of the Project EIS, Adani undertook a robust social impact assessment. The purpose of the social impact assessment was to identify social benefits and impacts and their significance arising from the Projects activities. Impact identification, stakeholder engagement and expert advice assisted in developing the mitigation strategies. Community engagement for the SIA was integrated with the EIS consultation process. The SIA was undertaken in consultation with the Department of Employment, Economic Development and Innovation Social Impact Assessment Unit (DEEDI SIAU), Isaac Regional Council (IRC), Charters Towers Regional Council (CTRC) and service providers in the region. Land negotiations undertaken between the Proponent and landholders were used in lieu of case studies.

Adani has developed a number of management and mitigation measures and made several commitments in order to address both the positive and negative potential impacts of the Project. These measures will be carefully developed in collaboration with many other organisations, agencies and individuals. Some of these measures include:

- ▶ Development of a Workforce Management Plan that seeks to employ people initially from the region, Queensland and the rest of Australia before seeking overseas workers.
- ▶ Development of a Local Industry Participation Plan in collaboration with Office of Advanced Manufacturing and others to provide the best opportunity for local businesses to engage in the Project and continue to grow sustainable businesses in local areas.
- ▶ Development of a Workforce Management Plan that includes a comprehensive employee induction programme addressing, among other things, a code of Conduct for Employees and contractors regarding behaviour, alcohol and drug use, cultural awareness and safety.
- ▶ Development of a Housing and Accommodation Strategy that responds to housing and accommodation issues in local and regional communities Entering into a road maintenance and management agreement with IRC for the upgrade and maintenance of local roads, along with agreements with DTMR regarding state controlled roads and intersections.
- ▶ Membership and active participation in community and industry organisations to collaborate in identifying and managing cumulative impacts of all mining activity in the area.

The various impact management initiatives detailed in the SIMP will be led by Adani in partnership and collaboration with various partners as outlined in the management strategies and the action plans. The SIMP will be reviewed on an annual basis, with a rolling life of 10 years. The annual reviews will be based on stakeholder engagement and feedback enabled through the various stakeholder engagement and reporting processes. To ensure that that Project is delivered in line with the commitments in the EIS, an overall Project Commitments Register will be developed and maintained, which will form the basis of monitoring for compliance with the EIS.



12.1.2 Indigenous and Non-Indigenous Cultural Heritage

The Project affects four native title/Aboriginal party areas. During the course of 2011 and 2012, Adani engaged with each of the relevant groups and established the agreements with each party. Under the terms of the early works agreements and CHMPs, representatives of the Aboriginal parties have been involved in providing cultural heritage clearances for early/investigative works within the Project Area. Cultural heritage surveys will be undertaken in line with the scope of the work program, particularly ongoing agreed practices regarding cultural heritage finds. This process will allow for practical project design responses, particularly avoidance, when modification to the concept design is practical.

A search of heritage registers has not identified any areas of non-indigenous cultural heritage value within the Project Area. Two areas of national heritage significance are identified through searches of relevant databases. The Great Barrier Reef (also listed as a World Heritage Place) and the Tree of Knowledge. Both these places are in excess of 200 km from the Project Area. The Great Barrier Reef is downstream of the Project Area via the Belyando River and not expected to be impacted by the Project. The Project will not impact the Tree of Knowledge.

The Project is not expected to impact matters of state heritage significance. Where items of archaeological importance are identified during construction or operation of the Project the procedures identified in the DERM publication Onsite Procedures for Historical Archaeology will be implemented.

12.1.3 Economics

An economic assessment of the Project on has been undertaken, measured through a range of economic indicators namely: GRP; household income and employment. The capital investment for the life of the Mine is expected to total \$21.5 billion.

Construction of the Project (Mine) is expected to generate on average \$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, with positive impacts for the State as a whole, 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 fte jobs a year within the Mackay region and 1,192 full time equivalent jobs for Queensland.

The operation 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 is estimated at \$33 per tonne: benefits increase in line with production rates of coal. At 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.

Construction of the Project (Rail) will incur capital expenditure estimated at a total \$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 impacts during the operational phase of the Project (Rail) 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 regionally will see an increase in fte of 1,215 and State wide 2,025.

The distribution of the impacts on the local and State economies are mostly positive, with further positive impacts felt nationally and internationally. In order to ensure the local and State economies obtain the maximum possible benefits from the development strategies and mitigate the potential adverse impacts on the region, policies and measures will be put in place to ensure these economies retain as many of the benefits as possible. The aim is to increase local participation of regional and Queensland based industry as well as encouraging the participation and up-skilling of disadvantaged groups.

12.1.4 Consultation

A consultation program has been implemented as an integral part of the Project, the overall aim of which was to inform stakeholders and the broader community of the Project, actively seek their involvement in the EIS and report back on how this input was considered in the Project's outcomes. Stakeholders involved in the consultation process have included Commonwealth, State and Local Government representatives, potentially affected landowners, local business and residents, community interest groups, industry representatives, environmental and cultural heritage groups, media and surrounding communities. A Consultation Plan was developed and implemented for the EIS phase of the Project.

Plans for consultation as part of the Project's construction and operational phases will be included in the EMP and SIMP. Ongoing consultation will continue throughout the life of the Project to ensure due consideration of all project-related opportunities and concerns.

12.1.5 Cumulative Impacts

The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five years. A number of projects have been identified as having particular relevance in terms of cumulative impacts associated with project development or they offer the opportunity for co-location of infrastructure, and / or are a consequential development and provide necessary supporting infrastructure for the export of product coal.

The following projects are relevant in terms of cumulative impacts associated with project development and are currently under assessment and have been included in the cumulative assessment:

- ▶ Alpha Coal Project (EPBC 2008/4648, 2008/4647)
- ▶ Kevin's Corner (EPBC 2009/5033)
- ▶ Galilee Coal (Northern Export Facility) (EPBC 2009/4737)
- ▶ South Galilee Coal Project (EPBC 2010/5496)



The following projects are relevant to consequential development as they provide necessary supporting infrastructure for the export of product coal:

- ▶ Abbot Point Terminal 0 Project (EPBC 2011/6194)
- ▶ Port of Hay Point (Dudgeon Point Expansion) (EPBC 2012/6240)

Using impact assessments within Volume 2 and Volume 3 of the Project EIS, a concise list of potential Project impacts has been developed in relation to related projects. The cumulative assessment the defined to the spatial and temporal boundary for assessment and reviewed stated impacts from other projects and utilising a relevance factor and significance impacts were determined.

In summary the cumulative impacts having a low risk, include:

- ▶ Aquatic ecology
- ▶ Air quality
- ▶ Greenhouse gas emission
- ▶ Noise
- ▶ Waste
- ▶ Cultural Heritage (Non-Indigenous)

The cumulative impacts having a medium risk include:

- ▶ Land use
- ▶ Landscape character (Rail)
- ▶ Surface water
- ▶ Groundwater
- ▶ Traffic and transport
- ▶ Cultural heritage (Indigenous)
- ▶ Social and community
- ▶ Economics

The cumulative impacts having a high risk include:

- ▶ Terrestrial ecology

12.1.6 Draft Offsets Strategy

A number of potential direct and indirect impacts have been identified within the Project footprint under both Commonwealth and State offset policies and include the direct loss of protected vegetation communities, habitat for threatened species and resources as a result of vegetation clearing. The delivery of offsets must meet the specific offset requirements outlined in all relevant environmental offset policies. In general there are two primary options for delivering offsets, these being either land-based offsets (direct or indirect) and/or offset payments.

There is scope for most of the offset obligations associated with impacts to Commonwealth and State environmental values to be met through the delivery of a combined offset approach that address impacts to environmental values protected under both areas of legislative jurisdiction. Offset options



that nominate a complementary approach will need to be negotiated with DSEWPaC and DEHP so that these options satisfy the requirements of both Commonwealth and State offset policies.

The potential direct and indirect impacts associated with the Project have been assessed against Commonwealth and State government offsets policies to identify the Project's offset requirements. No DERM mapped essential habitat for species protected under the *Nature Conservation Act 1992* is present within the Project footprint: offsets for essential habitat are not required under State legislation for this Project. Project impacts to environmental values are therefore with respect to impacts to Commonwealth matters of national environmental significance (NES) and to State protected environmental values.

The Project offset strategy details where the Project will impact upon matters of NES, high conservation status regional ecosystems (REs), threatened ecological communities (TECs), protected fauna, and important watercourse, wetland or corridor vegetation, as identified through Project specific specialist studies, having regard to relevant Commonwealth and State government offset policies.

Where possible, the overlapping State (e.g. native vegetation, REs) and Commonwealth (e.g. TEC) biodiversity values have been identified. For offsets that are likely to be required for remnant vegetation associated with a watercourse, the total clearing extents have been estimated using the relevant distances stipulated.

Offset payments and financial contributions to research under Queensland Biodiversity Offsets Policy (QBOP) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Environmental Offsets Policy also should be considered as potential options to form part of the offset package.

12.1.7 Matters of National Environmental Significance

Potential impacts arising from construction and operational works that may affect matters of NES have been assessed, and considered with regard to whether an important population of protected species occurs at the site and whether impacts may be significant or not. In considering impact to listed taxa and communities, assessment was also made to identify relevant matters for impact assessment in relation to an important population; a) for listed vulnerable threatened species, habitat critical to survival; b) for listed threatened species and important habitat; and, c) for migratory species.

Mitigation measures to avoid/minimise/offset impacts to identified matters of NES resulting from the construction and operational activities associated with the Project have been proposed and offset commitments have been identified. Findings of the assessment are summarised against the controlling provisions for the Project.

12.1.8 Project Approvals and Planning Assessment

Adani has taken care to identify the relevant approvals required to give effect to the various aspects of the Project in Volume 4, Appendix D Project Approvals and Planning Assessment. Adani is actively working to reduce the complexity associated with the large number of approvals which are relevant to this project. Adani is seeking recommendations through the Coordinator-General's Report in regards to approvals required for the project. To assist the Coordinator-General, applications have been included within this report, such as for temporary workforce accommodation camps and certain vegetation approvals.



The design process for the project is ongoing, and as such, detailed supporting approvals information has been included for those project elements that have progressed to a sufficient level of design. As design progresses, so too will the supporting information required for approvals applications, and this information may be assessed and approved at that time.

12.2 Recommendations

The outcomes of specialist studies, community consultation and stakeholder engagement, along with regulatory requirements, codes and guidelines all form the framework which has determined Project commitments made by Adani. These commitments range from broad social, economic cultural and economic commitments, through to measures required to protect environmental values specific to the Project site. They include further investigations, field work and monitoring required at various stages of the Project life. These documented commitments are a part of an ongoing strategy to meet EIS obligations.

A number of Project commitments have been identified to provide additional baseline data pre-construction to:

- ▶ Inform and refine potential for impact upon specific environmental features such as the Black-throated finch
- ▶ Inform offset requirements for specific environmental features
- ▶ Establish site specific thresholds for application of effective monitoring of environmental receptors
- ▶ Enable applicable management and mitigation measures to be developed and incorporated into Project Environmental Management Plans
- ▶ Confirm relevancy of findings from EIS studies immediately prior to construction work commencement to show currency of data at that time
- ▶ Confirm agency expectations are met with regard to environmental protection during Project delivery

It is recommended that all pre-construction and operations monitoring and research studies identified are completed to achieve the above and to provide additional information to regulatory agencies. Further, it is also recommended that consideration be given to establishing technical advisory panels for specific environmental features of concern. Panels could guide additional study requirements, independently verify objectives are achieved by studies and include regulators, proponents and technical specialists to provide a common forum for discussion to enable targeted activity requirements to be identified, agreed and delivered.



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