Alpha Coal Project Environmental Impact Statement









Section 03 Cumulative Impacts

3.1 Introduction

The Terms of Reference (TOR) for the Alpha Coal Project (the Project) Environmental Impact Statement (EIS) require that direct, indirect and cumulative impacts be identified and assessed with respect to environmental values and potential extent of impacts.

The potential environmental, social and economic impacts of the mine and railway components of the Project are assessed in Volume 2 and Volume 3 of the Alpha Coal Project EIS, respectively. Where possible, adverse impacts are avoided or mitigated via implementation of sound environmental protection and management criteria. Additional supporting information is presented in the EIS technical appendices (Volumes 5 and 6).

Cumulative effects may occur due to the compounding and synergistic interactions arising from other developments, occurring in the same area or over similar time frames to the project being assessed. Environmental values may be impacted as a result of a geographic overlap of project areas, scheduling overlap or using the same infrastructure, services and resources. Many of the cumulative effects associated with the Project are derived on a broader scale from transport, economic and social interactions between the Alpha Coal Project and other existing or proposed projects within the project vicinity. Closer to the Project site cumulative effects associated with the Project may include air quality (dust), groundwater, surface water, noise etc.

The Project cumulative impact report (Volume 4, Appendix G) assesses the cumulative impacts of both the development of the proposed mine and rail components of the Alpha Coal Project. The cumulative impact assessment is based on the best information publicly available when this EIS was prepared, which was limited to the development stages of other projects. A summary of the key findings for the cumulative impact assessment for the Project is provided below.

3.2 Objective

The objective of the cumulative impact assessment is to present clear and concise information on the cumulative impacts on specific environmental, social and economic values that could occur as a consequence of the Project operating in conjunction with any other existing or proposed developments.

The cumulative impacts are to be considered at a local and regional level, accumulating over time and to the exacerbation of impacts in intensity or scale, frequency or duration, and in either isolation or combination with other known existing or planned impacts.

The requirements of relevant State Planning Policies, Environmental Protection Policies, National Environmental Protection Measures and other strategies and regulations are addressed in assessing the cumulative impacts of the project on the existing environment.

3.3 Methodology

The methodology used to assess the Project's cumulative impacts consisted of the following tasks.

• Identify the impacts of the Alpha Coal Project in isolation using existing baseline conditions (which include the impacts from existing projects and activities in the sphere of influence of the Project).

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- Identify relevant projects within the sphere of influence of the Alpha Coal Project that are either
 proposed or approved but not yet operational which could generate impacts that could potentially
 interact with similar impacts from the Alpha Coal Project.
- Identify appropriate spatial boundaries for the analysis of cumulative impacts. Where potentially
 interacting projects are not located close enough for the relevant impacts to overlap, cumulative
 impacts are less likely. The extent of the assessment boundaries will vary according to the nature
 of the impact being assessed.
- Identify appropriate temporal boundaries for the analysis of cumulative impacts. Where the schedules of potentially interacting projects do not overlap (primarily for construction activities), cumulative impacts are less likely. The extent of the assessment boundaries will vary according to the nature of the impact being assessed.
- Assess the cumulative impacts for each project component i.e. mine and railway.
- Assess the significance of the cumulative impacts with respect to beneficial or detrimental effects.

3.4 Mine

The Alpha Coal Project (Mine) is a proposed open cut coal mine with product coal capacity of 30 Mtpa located within a well known thermal coal deposit in the Galilee Basin, Queensland. Water and power supply infrastructure to service the mine are necessary components of the proposed development.

Cumulative impacts that may impact on specific environmental values for the mine site are identified in Table 3-1. Furthermore, the locations of relevant projects are shown on Figure 3-1. A break down of the potential cumulative impact that could be resultant from interactions of the Alpha Coal Project (Mine) and other existing or proposed projects at regional and local levels is presented in Volume 4, Appendix G).

The proposed projects located adjacent to the Alpha Coal Project (Mine) that have the potential to have a significant cumulative impact particularly on social and environmental values in the local area include:

- Kevin's Corner Project (Kevin's Corner), a proposed 30 Mtpa open cut and underground coal mine located on mining lease application (MLA) 70425, immediately north and adjoining the Alpha MLA;
- Waratah Galilee Coal Mine (Waratah), which is a proposed 25 Mtpa open cut coal mine adjoining Alpha MLA to the south;
- Galilee Basin Power Station, a proposed coal-fired power station producing 900 MW (net) immediately to the south of the Alpha MLA;
- South Galilee Coal Project (SGCP), which is a proposed 15-20 Mtpa open cut and underground mining operation located to the south west of the Alpha township;
- Powerlink power transmission line, a proposed transmission lines from Lilyvale substation to a new Galilee Hub substation (during construction phase) to supply power to the Project; and
- SunWater raw water line, a proposed water pipeline from Mora nbah to a raw water dam within Alpha Coal Project MLA.

A conservative approach to the cumulative impact assessment was taken by assuming simultaneous construction of all projects. However, this is unlikely be the case as some projects may be deferred or some may even be cancelled.



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3.5 Railway

The Alpha Coal Project also involves construction of a 495 km railway to transport processed coal from the proposed Alpha Coal Project (Mine) to the existing Port of Abbot Point. The rail line will transport up to an estimated 60 Mtpa of coal on a single track and will service the Alpha Coal Project (Mine) as well as the Kevin's Corner Mine which is also being proposed by HPPL.

In addition to the actual alignment, the rail component of the Alpha Coal Project (Rail) also includes:

- Two balloon loops, one at the Alpha Coal Mine and one at the Port of Abbot Point for loading and unloading;
- Eight passing loops each approximately 5 kms long to accommodate for export of 60 Mpta of coal;
- Maintenance sidings along the railway line;
- Marshalling yard at the entry to the Abbot Point State Development Area (APSDA); and
- Five accommodation camps accommodating 700 to 800 personnel per camp including two permanent camps and three temporary camps.

The proposed rail alignment commences at the Alpha coal mine, 50 km north of the Alpha Township and terminates at the Abbot Point coal export terminal, 25 km north of Bowen. The alignment of the Alpha Coal Project (Rail) has been selected on the basis of several factors, primarily environmental, economic and geotechnical grounds. The entire alignment is within the Burdekin River catchment and the alignment crosses a number of major and minor streams including the Belyando River, Suttor River, Bowen River and Bogie River. Topography is varied along the alignment with the highest point at 300 m above sea level.

Land use along the alignment is largely grazing and the alignment avoids towns and settlements. Towns and settlements within 50 km of the Alpha Coal Project (Rail) include Alpha, Collinsville and Bowen.

The alignment does not pass through any areas of high nature conservation significance such as national parks, nature reserves or state forests. The alignment does encroach upon the outer edge of the Caley Valley Wetlands at Abbot Point; these wetlands are listed on the National Directory of Important Wetlands. The alignment also traverses some areas of threatened ecological communities listed under the *Environment Protection and Biodiversity Conservation Act 1999*, and endangered and of concern vegetation under the Queensland Vegetation Management Act 1994.

The potential cumulative impacts that may impinge on specific environmental, economic and social values are identified in Table 3-1.

3.6 Conclusion

The mine and the rail aspects of the Alpha Coal Project are expected to have varying potential cumulative impacts on the environmental, economic and social values within their sphere of influence. The potential cumulative impacts resultant from the mine are expected to be predominantly localised around the mine site and will be over the life of the project. The rail on the other hand is expected to have its largest potential impacts during the construction period. These potential impacts are not definitive as they are dependent on continued operation of existing projects and the approval and development of new mines and infrastructure.

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Table 3-1 Potential Cumulative Impacts – Alpha Coal Project

Environmental Value	Alpha Coal Project (Mine)	Alpha Coal Project (Rail)
Land	Medium	Medium
Land Use	Medium	Medium - Low
Landscape Character	Low	Low
Nature Conservation	Low	Low
Surface Water	High	Low
Groundwater	Medium	Low
Air Quality	Medium	Low
Greenhouse Gas	Medium	Low
Noise and Vibration	Low	Low
Solid Waste	Low	Low
Traffic and Transport	Medium	Low
Non Indigenous Cultural Heritage	Medium	Low
Indigenous Cultural Heritage	Low	Low
Social and Community	High	Low – Medium
Hazard and Risk	*	Low
Economics	High	Low

* Not assessed for the mine as all of the risk items were restricted to site.