The Coordinator-General

# Alpha Coal Project

**May 2012**

REPORT SUMMARY

The Coordinator-General has released his Evaluation Report for the Alpha Coal Project. The report includes an assessment of, and draws conclusions about, the environmental effects of the project and associated mitigation measures. The Coordinator-General has found that the project can proceed, subject to the conditions and recommendations of his report and the proponent gaining all statutory State approvals and meeting its commitments listed in the report. The project will need separate approval under Australian Government law.

This document summarises the main issues covered in the report. For a full copy of the report, visit **www.deedi.qld.gov.au/cg/alpha-coal-project.html**

## What happens now?

Copies of the report will be provided to the proponent, the Commonwealth Environment Minister, nominated entities with responsibilities for compliance with conditions and other relevant advisory agencies.

The proponent will be required to obtain a number of state and local government approvals, including for environmentally relevant activities, a granting of an environmental authority for a mining lease, operational works approvals for clearing native vegetation and waterway barriers, and an MCU for work undertaken within the state development area at Abbot Point.

# Introduction

Hancock Coal Pty Ltd, Hancock Coal Infrastructure Pty Ltd and Hancock Alpha West Pty Ltd (previously Hancock Prospecting Pty Ltd) (the proponent), proposes to develop the Alpha Coal Project. The project comprises the following components:

- a 30 million tonnes per annum (mtpa) open-cut coal mine in the Galilee Basin, near the township of Alpha
- a railway line for the purposes of transporting coal from the project mine to the Port of Abbot Point near Bowen.

The expected life of mine is 30 years, with sufficient resources to potentially extend the project life beyond 30 years.

The estimated capital cost for the project is $6.4 billion, of which $3.4 billion is for the mine component and $3 billion for the rail component. Subject to relevant approvals being granted, the proponent anticipates the construction period to occur between 2013 and 2016. The project is anticipated to create up to 3600 direct jobs during the construction period (1500 mine, 2100 rail) and up to 990 direct jobs during operation (800 mine, 190 rail).

The following provides an overview of the main issues arising from the environmental and social assessment, and the Coordinator-General's conclusions about the impacts of the project

Queensland Government

# Impacts common to the mine and rail components

## Social and economic environment

The project will generate a number of short and long-term social and economic benefits, including direct and indirect employment opportunities and increased industry output through the demand for goods and services.

The Queensland Government requires proponents to develop a social impact management plan (SIMP) for new or expanding major resource development projects which require an EIS to be prepared under either the *Environmental Protection Act 1994* (EP Act) or the SDPWO Act; or projects for which the Department of Environment and Heritage Protection (DEHP) has given approval to a proponent to voluntarily prepare an EIS.

The proponent has made a number of commitments to mitigate potential social and economic impacts and maximise social and economic opportunities of the project, which have been included in the SIMP.

The proponent has completed a comprehensive social impact assessment during the EIS process and lodged a draft SIMP. The Coordinator-General considers that the draft SIMP is largely satisfactory, but will require some further refinement and additional information before final approval. In response to the considerable feedback received from stakeholders throughout the EIS and SEIS consultation process, the SIMP action plans focus on issues such as landholder management, workforce management, local housing, community development, cumulative social impact management, Indigenous participation and local employment and business outcomes.

There is an opportunity for the project to provide a significant economic and social development opportunity for local communities and contribute to future employment and training for Indigenous people and local people.

The proponent will develop a local industry participation plan to ensure contractors provide full, fair and reasonable opportunity to local suppliers and specialist sub-contractors when tendering for equipment or services supplied to the project.

The proponent will establish or participate in the proposed Galilee Basin Cumulative Social Impact Assessment Roundtable to identify and assess cumulative social impacts. Key deliverables of the roundtable will be to implement a Galilee Basin Cumulative Social Impact Study and Galilee Basin Social Infrastructure Plan. The purpose of the cumulative social impact study will be to assess cumulative social impacts for relevant issues such as, but not limited to population, workforce, accommodation, health and housing and use of community infrastructure and services. The social infrastructure plan will determine short-, medium- and long-term strategies for delivering social infrastructure initiatives through partnerships between industry, communities, and governments.

A Galilee Basin SIMP Community Consultative Committee will be established to respond to social impact and management strategies, and to oversee the implementation of the SIMP.

## Transport and traffic

The initial traffic analysis, conducted as part of the EIS, concluded that the net increase in traffic generated by the project during the peak construction period would not have a significant negative impact on the level of service or surface condition of existing roads. Nonetheless, the Coordinator-General requires further traffic and transport analysis to address submitter concerns regarding road safety and transport efficiency, road surface and traffic, impact and demand for emergency services response.

The proponent has committed to reviewing and updating its traffic analysis and accompanying road impact assessment (RIA), road-use management plan (RMP) and traffic management plan (TMP) when additional and more certain trip

generation and traffic volume information would be available.

Based on the mitigation measures provided in the report and the approvals required for the project under the *Transport Infrastructure Act 1994* (for state-controlled roads) and Regional Council's local planning scheme (for local roads), the Coordinator-General is satisfied that impacts to traffic and transport can be managed and are acceptable.

# Mine-specific environmental impacts

## Ecology and offsets

While no state-listed threatened flora species were identified on or adjacent to the mine, the mine site contains suitable habitat for four species based on their habitat preferences and known geographical distribution ranges. Construction activities associated with the development of the mine site may impact upon potential habitat for these threatened species. In addition, construction and ongoing maintenance activities will impact upon protected native plants on site. Two state-listed threatened fauna species were recorded on the mine site, namely the vulnerable squatter pigeon and near-threatened little-pied bat. Activities associated with the construction and operation of the mine are likely to disturb some habitat for these species. However, this is unlikely to significantly impact upon the long-term viability of these species or their geographical distributional range due to the broad extent of that habitat available in the local region.

The proponent has committed to providing environmental offsets for the unavoidable loss of vegetation and biodiversity as a result of the project, in accordance with state and Commonwealth offset policies. The proponent has prepared a draft biodiversity offset strategy to satisfy the various offset requirements of the project.

The Coordinator-General has concluded it is unlikely that significant adverse impacts on the majority of state-listed threatened flora and fauna species would occur, and that the mitigation measures proposed for each of the project components would be adequate to reduce net adverse impacts to an acceptable level.

## Tailings storage facility

The Coordinator-General has considered potential impacts on groundwater of the tailings storage facility (TSF) near the eastern margin of the proposed mine area on an outcrop of the Colinlea sandstone.

The addendum to the SEIS indicated there is limited recharge potential to the underlying Colinlea Sandstone aquifers. Furthermore, the mine environmental authority (EA) conditions and the environmental management (EM) plan will ensure that the TSF will be designed based on good engineering practice and constructed accordingly, thus the potential impacts of artificial recharge with poor quality TSF seepage should be mitigated. The reduction in recharge will only affect the shallow perched groundwater resources directly within the TSF footprints. These groundwater resources are considered to have limited environmental values.

The Out-of-Pit TSF Geotechnical Assessment report concluded that based on the results of this investigation and a review of data previously collected, the TSF site is considered suitable for storing tailings as proposed in the EIS.

The proponent and DEHP agree that further investigation and detailed design needs to be undertaken before a design plan for the TSF can be submitted for assessment.

The Coordinator-General is satisfied with the assessment of risks to groundwater and the mitigation measures proposed to minimise those risks and that the proposed use of lining materials and operation procedures will result in minimal potential for leakage.

## Groundwater

Mining will occur below the regional water table and it will be necessary to dewater the mine, which has the potential to impact on:

- groundwater levels
- groundwater flow direction
- groundwater chemistry
- recharge and discharge mechanisms.

The proponent has committed to:

- project design to ensure the minimum possible impacts on the groundwater resource
- mitigate any adverse effects that may occur such as changes to water quality in both groundwater and surface water resources
- compliance with the terms of any water licence conditions issued by DEHP
- establish an integrated groundwater and surface water monitoring program
- the determination and of approval by DEHP of water quality and trigger levels before the commencement of mine operations.

The proponent has made a commitment to 'make-good' affected groundwater supplies and conditions are recommended in the report for the enforcement of this through the provisions of the *Water Act 2000*.

No connection has been identified between the aquifers affected by the mine and the Great Artesian Basin (GAB). Despite this, more detailed work needs to be undertaken on groundwater modelling, and in particular, on the cumulative impacts of the Galilee mines on groundwater. The Coordinator-General has included a number of conditions in the report that will be imposed on any approval for the project to ensure that the groundwater model is revised, that the source of recharge to groundwater is identified and that any impacts on the GAB are identified.

The proponent will be required to undertake periodic audits of its groundwater model, and re-calibrate and re-predict future impacts during the mining phase of the project.

Given the size of the mine there will be impacts on groundwater, but the Coordinator-General is satisfied that there are suitable conditions in the report to mitigate and monitor the impacts on the surrounding groundwater.

## Surface water diversions

The mine is located adjacent to Lagoon Creek, which is high in the headwaters of the Burdekin River Basin. Lagoon Creek flows to Sandy Creek, Belyando River, Suttor River, and joins the main Burdekin River channel several hundred kilometres north of the mine site. Five key streams within the project area have been identified as 'defined watercourses'. The existing watercourses in the project area are highly ephemeral and do not sustain persistent flow, and the existing beneficial uses of surface water resources around the project area are limited.

The diversion of watercourses for Lagoon Creek, Sandy Creek, and Spring Creek will be required to gain unimpeded access to coal reserves that would otherwise be inaccessible due to the risk of flooding. To supplement the stream diversion channels, flood protection levee banks will be required to protect the mine from flooding. All of the physical works extents of the proposed stream diversions will be contained within the mining lease application 70426 boundary.

The flood levee banks are nominally designed at concept stage to provide protection up to the 3000 year ARI flood level. The nominal level of flood protection equates to a one per cent probability of an extreme flood overtopping the levee bank for the 30-year mine life. The Coordinator-General was made aware by DEHP and landholders of concerns about flooding impacts that would extend off lease due to changes to the catchments as a result of the diversions or other infrastructure. The SEIS response indicated that there could be increases in flood levels off the mining lease.

To ensure that there are no impacts of stream diversions off the mining lease, the Coordinator-General has recommended a condition that, during the detailed design phase of

the project, the proponent must consider flood heights off lease.

Both DEHP and the proponent agree that further investigation needs to be undertaken as part of the detailed design of the diversion structures. A more comprehensive assessment of the diversions will be undertaken as part of the water licence process under the Water Act. Any application that is submitted will be assessed on its merits and in accordance with the criteria under that Act. The former DERM reiterated that the proposed diversions must not impact on the stability and performance of existing watercourses upstream or downstream.

The Coordinator-General is satisfied that the proposed diversions can proceed subject to conditions that will reduce the risks of serious erosion. The proponent must submit information and reports that meet these conditions as part of an application for a water licence under the provisions of the Water Act. The water licence can then be conditioned according to the outcome of that investigation.

The former DERM expressed concern about the extent of currently proposed mining activities surrounding the Alpha Mine including the Kevin's Corner and Galilee Coal projects. The cumulative impact of these three projects on the existing natural resources, including watercourses and diversions, should be examined. The proponent should investigate how the cumulative impact of its proposed diversions and mining activities impacts on adjacent mining projects. To ensure that the cumulative impacts of stream diversions are fully assessed, conditions have been set to address the cumulative impact of stream diversions.

The Coordinator-General has concluded there is sufficient protection in place to ensure that the impacts on the ephemeral streams on and off the mining lease will be mitigated and managed through the conditions contained within this report and through the provisions of the Water Act.

# Rail-specific environmental impacts

## Ecology and offsets

Four state-listed threatened fauna species were recorded on site during the field surveys, including the endangered Troughton's sheathtail bat (probable), vulnerable squatter pigeon and near-threatened little-pied bat and cotton pygmy-goose. Activities associated with the construction and operation of the rail alignment are expected to disturb some habitat for these species. However, this is unlikely to significantly impact upon the long-term viability of these species or their geographical distributional range due to the broad extent of habitat available in the local region and the mobility of these species.

No state-significant threatened aquatic flora species are known in the Burdekin Catchment. One state significant threatened aquatic fauna species, the estuarine crocodile, is known to the Burdekin Catchment and may utilise habitat in association with the Caley Valley Wetlands and Bowen, Bogie and potentially the Elliot Rivers. Several declared marine plants were identified on site in association with the Caley Valley Wetlands.

The proponent has committed to providing an environmental offset for the unavoidable, non-mitigated loss of vegetation and biodiversity as a result of the project, in accordance with State and Commonwealth offset policies. A biodiversity offset strategy has been prepared to satisfy the various offset policies relevant to the project.

The Coordinator-General concluded that it is unlikely that significant adverse impacts on the majority of state-listed threatened flora and fauna species would occur, and that the mitigation measures proposed for each of the project components would be adequate to reduce potential adverse impacts to those listed threatened species to an acceptable level.

## Impacts of rail loop on Caley Valley Wetlands

The Caley Valley Wetland is approximately 5150 hectares (ha) in area and is located adjacent to the Abbot Point Coal Terminal, 21 km north north-west of Bowen. The wetland system comprises a mix of permanent estuarine waters, intertidal mud and sand flats, mangroves, saltmarshes, freshwater marshes and freshwater impoundments. This wetland environment was significantly altered from its natural state by the construction of a series of levees several decades ago by the then land owner. The site is important for waterbirds and migratory species. The wetland experiences distinct seasonal changes, with wet-season filling driving a freshwater system that provides habitat for a number of species. The drying out period (during the dry season) creates a more saline environment, and restricts freshwater areas to pools that may persist depending on the duration of the dry season. The proposed project railway loop intersects 14.5 ha of the Caley Valley Wetlands.

The construction of the rail loop and management of terrestrial areas adjacent to the wetland will be required to limit direct and indirect impacts to the aquatic ecosystem. Construction is proposed to occur over approximately two years with activities occurring throughout the year, 24 hours a day, seven days a week. The rail loop that bisects the wetland is proposed to be constructed upon a rock and earth bund for the majority of the loop. A bottom dump station will be established on the entrance to the loop and a wash bay will be established following the dump station. Two areas of the rail loop will be laid upon culverts such that water flows into/out of the area enclosed by the rail loop are maintained.

The Caley Valley Wetlands are a wetlands of high ecological significance in a catchment for the Great Barrier Reef. The proposed rail loop has the potential to significantly impact on the values of the wetlands both directly, through location of the rail line in the wetlands, and indirectly through changes in water quality resulting from changes in freshwater and tidal hydrology, and release of contaminants to the wetland during and after construction.

Maintaining the current hydrology of the wetlands is critical to maintaining salinity gradients, to prevent drying and subsequent oxidation of acid sulfate soils, and to maintain natural wet and dry cycling, all of which affect the flora and fauna assemblages and ultimately the value of the wetlands to shorebirds (including migratory shorebirds).

In its comments on the EIS, the Australian Government Department of Sustainability, Environment, Water, Population and Communities noted that the proponent needs to address the impacts of the project on the values of the World Heritage Area to which the wetlands are connected.

The report sets conditions to ensure that offsets for the wetlands affected by the project must be determined using the ecological equivalence methodology as detailed within the Biodiversity Offsets Policy October 2011. An offset proposal must be developed by the proponent and approved by DEHP prior to any construction within the Caley Valley Wetlands.

The Coordinator-General concluded that, until final design plans are concluded and submitted to the State Development Area (SDA) branch of his office for material change of use (MCU) approval, it is not possible to address all the impacts of the rail loop on the wetlands. The Coordinator-General has instructed that both trestle and bund construction methods be examined and that all impacts be assessed when this is submitted in order that proper mitigation controls are put in place. He has included a number of conditions in the report to ensure impacts are mitigated.

## Impact of rail on surface water and flooding

The proposed project rail line traverses the Logan Creek/Brown Creek floodplain system, a catchment area of approximately 2600 square kilometres forming a significant portion of the Suttor Sub-Basin (18 000 square kilometres) in the

Burdekin River Catchment. The terrain is predominantly flat with significant flood plains. Land use is dominated by grazing on natural pastures. The landscape is semi-arid with predominantly ephemeral streams (that typically flow during the wet season between December and April). The EIS stated that the construction and the subsequent presence and operation of the project is likely to impact natural stream levels and may cause local erosion (scouring).

One of the primary concerns of landholders from the EIS and during the consultation process was related to the change in duration of inundation due to the development of the project rail alignment.

At the request of the former Coordinator-General, the proponent undertook a detailed floodplain study of the impact of construction of the project railway on creek/river systems along the alignment and this was submitted as part of the addendum to the SEIS. The addendum reports indicate that the proposed cross drainage for the single-track railway can meet the modified drainage design criteria required for the proposed rail corridor.

In general, it appears that proposed cross drainage provisions for the floodplain areas are acceptable, based on the results of the modelling, although this needs to be confirmed by a more detailed review of the proposed cross drainage structures and the modelling results closer to the detailed design stage.

The Coordinator-General considers that the railway cross-drainage can be designed to meet the required criteria such as afflux, culvert velocity, inundation duration and extent as outlined in the conditions on those matters specified in the report.

## Conclusion

There would be significant local, state, regional and national economic benefits to be derived from the project and that any adverse environmental or social impacts can be acceptably avoided, minimised, mitigated and/or offset through the implementation of the measures and commitments outlined in the EIS documentation provided by the proponent. Conditions and recommendations proposed in the report have been formulated in order to further manage impacts to social, environmental and economic values through management plans, EAs and development permits.

Accordingly, the Coordinator-General recommends approval of the project, as described in the report, subject to the conditions and recommendations set out in appendices 1 to 4.

The report is not an approval in itself: it states, imposes and recommends conditions to apply to relevant approvals that must be obtained for the project to proceed.

The EIS process for this project has not assessed the following key elements of the overall proposal and are therefore not subject to the Coordinator-General's specific consideration as part of the report:

- coal port facilities or increased coal shipping
- supply of water and electricity
- quarry sources and supply routes for fill for rail construction
- rail lines beyond the single rail track and nominated passing loop configuration described in the proponent's EIS documentation.

Impact assessment processes for those key elements are being or will be conducted separately and subsequent government approvals for those elements may or may not be granted.

While the Queensland Government has a very clear policy preference that only one multi-user corridor be developed to service the infrastructure needs of the Galilee Basin connecting to coastal ports, the report represents an assessment only of the proponent's rail proposal on its own merits.



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