

Advice to decision maker on coal mining project

Proposed action: Coal Mine and Rail Infrastructure

Requesting agency	Department of Sustainability, Environment, Water, Population and Communities
Date of request	23 May 2012
Project title	Adani's Carmichael Coal Mine and Rail Infrastructure Project (EPBC 2010/5736)
Summary of request	<p>The Department of Sustainability, Environment, Water, Population and Communities (the department) has assessed proposed projects in accordance with the provisions of the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p> <p>The department advises the Interim Independent Expert Scientific Committee on Coal Seam Gas and Coal Mining (the interim committee) of an opportunity to comment on a draft environmental impact statement. Specifically, the department seeks the advice of the interim committee on whether the draft environmental impact statement provides for thorough assessment/mitigation of:</p> <ol style="list-style-type: none"> 1) potential water-related impacts on listed threatened species and communities, in particular, groundwater-dependent ecosystems supporting habitat for species such as the Black-throated Finch; and 2) potential impacts to groundwater-dependent ecosystems such as the Doongmabulla Springs and more broadly, potential impacts to the Great Artesian Basin. 3) Other views from the interim committee on the draft environmental impact statement are also welcome. <p>The draft environmental impact statement is not yet available for public review, however, is expected to be on public exhibition in June. The public exhibition would then be expected to close in mid July 2012. The department requests comments for incorporation by early July 2012.</p>

Advice

1. Overall, the interim committee notes that the cumulative surface and groundwater impacts in the region are unknown. In general, there is a high level of uncertainty surrounding surface water, and in particular, groundwater impacts.
2. The interim committee suggests that the groundwater modelling should be independently peer reviewed and that any future approval should be contingent on adequate regional groundwater monitoring and modelling, including uncertainty analysis.
3. The interim committee considers that information relating to the potential impacts of this project

should be commensurate with its scale. The committee notes that the proposed mine is in close proximity to the Great Artesian Basin.

4. Given the project's scale and locality, the interim committee further suggests that the proponent should give consideration to the scheduling of the project's development phases/stages in order to manage environmental impact.
5. The interim committee further suggests that the regional cumulative impacts (covering surface water, groundwater, geomorphological, hydrological and ecological impacts) be adequately assessed and appropriately influence the scheduling of the project's development phases.
6. The interim committee advises that it would be useful to characterise the overburden to determine the possible resulting water quality (acidity and salinity) of runoff and within the void.
7. Due to the level of uncertainty in relation to groundwater impacts, the committee suggests that the reliability and/or sensitivities parameters related to the associated modelling be evaluated. The estimated vertical subsidence is significant and is likely to affect the regions hydrology. Due to the level of uncertainty the committee recommends more detailed modelling needs to be undertaken.
8. The interim committee suggests that a site and regional water balance be provided to adequately assess the proposal's potential adverse impacts to matters of national environmental significance and water resources. The interim committee further suggests that as part of this process, the groundwater model be refined by including additional data sets and an explanation for the assumed parameters.
9. The interim committee notes that surface water is expected to be adversely impacted by catchment reduction of approximately 38,380 ha and by groundwater drawdown which may reduce base flow. The committee notes that the 500 m riparian buffer either side of the Carmichael River is likely to be compromised by water table drawdown of up to 45 m in the vicinity of the river. This combined with a 25 per cent reduction in groundwater discharge to the system, would be expected to result in an increase to the duration of zero flow and/or low flow periods.
10. The interim committee advises that the Great Artesian Basin may be indirectly impacted by induced drawdown in near surface Tertiary and Quaternary-age units, which are present throughout the project area. Significant impacts are likely to the listed Doongmabulla Springs, which will also affect surface base flows. Specifically, the committee advises that:
 - a) The preliminary modelling suggests potentially significant drawdown. Further modelling as per item 2 should be considered specifically in relation to the Doongmabulla Springs. and
 - b) Aquatic surveys of the Doongmabulla Springs should be undertaken by the proponent.
11. In terms of the specific questions asked of the committee, the committee advises that the project will remove or modify large areas of Brigalow (*Acacia harpophylla* dominant and co-dominant) and Black-throated finch (*Poephila cincta cincta*) habitat. The committee notes that additional cumulative impacts to *P. cincta cincta* habitat are also likely from a number of other substantial coal projects in the Galilee Basin.

**Date of
advice**

29 June 2012
