

**Independent Expert Scientific Committee on Coal Seam Gas and  
Large Coal Mining Development (IESC)  
Meeting 100, 8 – 9 November 2023**

**MINUTES  
Canberra**

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**ATTENDANCE AND APOLOGIES**

IN ATTENDANCE

Dr Chris Pigram (Chair)  
Dr Andrew Boulton  
Professor Jenny Davis  
Dr Jenny Stauber  
Dr Juliette Woods  
Associate Professor Phil Hayes  
Professor Rory Nathan  
Professor Wendy Timms

INVITED GUESTS

*Item 3.1*

Department of Climate Change, Energy, the Environment and Water (DCCEW)

Mahani Taylor, Branch Head Nature Positive Law Reform and Standards  
Tess Burdon, Director

OFFICE OF WATER SCIENCE (OWS)

Des Owen, Director	Isabelle Francis
Amelia Lewis	Jason Smith
Andriana Stoddart	Laura Richardson
Aranza Bulnes-Beniscelli	Loren Pollitt
Ben Klug	Sarah Taylor
Dylan Stinton	Tess Nelson
Frances Knight	

*Note: OWS attendees include those with full or partial attendance.*

**1. Welcome and Introductions**

The Chair acknowledged the traditional owners, past and present, on whose lands this meeting was held, and welcomed members of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) to the meeting.

## *DCCEEW welcomes*

Prior to the opening of the meeting on 8 November 2023, the Committee welcomed and met with Lyn O'Connell, Deputy Secretary DCCEEW, and Simon Banks, Division Head Environmental Water and Aquatic Ecosystems, who congratulated the Committee on 100 meetings.

During the lunch break on 9 November 2023, the Committee welcomed and met with Bruce Edwards, Division Head, and Kate Gowland, Branch Head, from the Nature Positive Regulation Division, and Jane Coram, Head of the Environment Information Australia Division and former Committee member, who congratulated the Committee on 100 meetings.

### 1.1 Attendance and Apologies

IESC members in attendance and apologies are recorded above.

### 1.2 Disclosure of Interests

Committee members were invited to make disclosures. Committee members also completed a Meeting Declaration of Interests before the meeting commenced. No actual, potential or perceived conflicts of interest were recorded for this meeting.

### 1.3 Confirmation of Agenda

The Committee endorsed the agenda for Meeting 100.

### 1.4 Confirmation of Out-of-Session Decisions

The Committee noted that:

- minutes of the Committee's ninety-ninth meeting on 4 October 2023 were agreed out-of-session and published on 20 October 2023.

### 1.5 Correspondence

The Committee noted the status of correspondence to 30 October 2023.

### 1.6 Action Items

Ongoing items were noted and updates were provided on the timing of completion.

### 1.7 Forward Planning Agenda

The Committee noted the forward planning agenda.

It was agreed that the next meeting be scheduled to be a videoconference on 13 – 14 December 2023.

### 1.8 Environmental Scan

The OWS reported on recent events.

## **2. Advice on Projects referred by governments**

### 2.1 Aurukun Bauxite Project

The Aurukun Bauxite Project ('the project') is a proposed bauxite mine and associated infrastructure on a greenfield site in western Cape York, Queensland, located 23 km from the township of Aurukun and 600 km from Cairns (*Aurukun Bauxite Project: Environmental Impact Statement*, Glencore 2023, 04, p. 4-1). The project will mine 15 million tonnes per annum (Mtpa) of run-of-mine (ROM) bauxite, which will be processed onsite into 8 Mtpa of product bauxite (Glencore 2023, 04, p. 4-1).

The project will consist of multiple disturbance areas (approximately 68 km<sup>2</sup>) mined to a maximum depth of 14 m (Glencore 2023, 04, p. 4-7) that will be progressively mined from the north-western area to the south-eastern area over the 22 years of mine life (Glencore 2023, 04, p. 4-8). The project will include construction of an on-site beneficiation plant, a coastal loading facility and water management infrastructure, including a 19 m high dam across Tapplebang Creek (Glencore 2023, 04, pp. 4-9 – 4-10). This dam will inundate 10 km of the creek (and approximately 4.5 km<sup>2</sup>), impacting its riparian vegetation which is classified as Regulated Vegetation, a Matter of State Environmental Significance (MSES). There may also be impacts of the dam on food supply, habitat and movement of Estuarine Crocodile

(*Crocodylus porosus*), listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and known to occur in the creek.

The project is within the Ward River catchment, with Tapplebang Creek, Coconut Creek and a small tributary of Norman Creek crossing the project area (Glencore 2023, 07, p. 7-2). The catchment supports Darwin Stringybark (*Eucalyptus tetradonta*) woodlands, identified as a groundwater-dependent ecosystem (GDE) (Glencore 2023, 08, p. 8-26) and provides breeding and foraging habitat for EPBC Act-listed species such as Palm Cockatoo (*Probosciger aterrimus*), Red Goshawk (*Erythrotriorchis radiatus*), Black-footed Tree-rat (*Mesembriomys gouldii*), Masked Owl (*Tyto novaehollandiae*) and White-throated Needletail (*Hirundapus caudacutus*) (Glencore 2023, 08, pp. 8-27 – 8-28). Some 6,885 ha of this vegetation will be cleared for the project (Glencore 2023, 04, p. 4-33).

Responses to the questions in the following advice focus on relevant aspects of the hydrology, water quality and ecological features of groundwaters, fresh surface waters and their associated biota but intentionally excludes marine or estuarine aspects.

Key potential impacts from this project are:

- substantial hydrological and ecological impacts collectively due to clearing vegetation and lowering large areas of the catchments of Tapplebang and Coconut creeks, and partly replacing highly permeable soils and shallow aquifer materials with residual fines from mining.
- planned removal of 6,885 ha of vegetation that provides vital breeding and foraging habitat for multiple EPBC Act-listed and migratory species.
- changes to hydrological and sediment regimes and flow volumes due to the proposed damming of Tapplebang Creek which will have downstream impacts on aquatic ecosystems, including wetlands which are used by EPBC Act-listed species (e.g., Largetooth Sawfish (*Pristis pristis*)).
- replacement of a 10 km stretch of seasonally flowing narrow creek with a more permanently inundated lake, completely altering the aquatic and riparian habitats of Tapplebang Creek for at least two decades. Although the planned fishway should enable passage of most fish around the dam, aquatic habitat in the lake-like 10 km dammed stretch will likely be suboptimal for many stream fish species. The dam may also impact movement and habitat use of the Estuarine Crocodile, an EPBC Act-listed species known to occur in the creek.
- increased sediment, and possibly contaminant, movement to Coconut Creek and Tapplebang Creek, especially during extreme rainfall events.

The IESC has identified key areas in which additional work is required to address the key potential impacts, as detailed in this advice. These are summarised below.

- Conceptualisation, quantification of processes and subsequent impact assessment modelling in the unsaturated and saturated zones should be developed further and integrated for baseline, mining and post-mining conditions.
- The period of monitoring of groundwater levels should be extended, and additional analysis of groundwater level recession completed. Further characterisation of project site hydraulic properties of bauxite and the underlying weathered Bulimba Formation aquifer are required together with characterisation of the mechanical consolidated backfill material.
- Measurement of flows in Tapplebang Creek and Coconut Creek over the wet and dry seasons to provide baseline information on year-to-year variability in baseflows to constrain the pre-mining water balance and to inform potential changes to enhanced recharge rates associated with mining and the construction of Tapplebang Dam.
- Collection of further baseline information on year-to-year variability and timing of ecologically important flow components to be able to assess downstream impacts of Tapplebang Dam.

- Assessment of the value of selecting an alternative downstream release strategy from Tapplebang Dam that is higher than 5.1 ML/d during the wet season (up to 100 ML/d or higher) to better preserve ecologically important flow components.
- Consideration of climate-change scenarios in groundwater modelling, surface-water flow modelling, flood modelling and water-balance modelling assessments, to evaluate changes in rainfall amounts, flow regime, infiltration rates and occurrence of extreme events over the life of mine (LOM) and inform identification of all possible impacts of the project.
- Development of one or more impact pathway diagrams (IPDs) derived from an evidence-based ecohydrological conceptualisation to illustrate the collective and interacting impacts that may arise from this project. These IPDs should link predicted drawdown, mounding and other potential impacts to ecological values such as GDEs, riparian vegetation and aquatic biota and ecosystems, especially those supporting EPBC Act-listed species or classified as MSES.
- Collection of more baseline data from Tapplebang Creek on turtles, fish and invertebrates to complement the current data from 3-5 sites collected in 2018, enabling more robust assessment of the impacts of the dam and recovery after it is removed.

Consistent with the *Environment Protection and Biodiversity Conservation Regulations 2000*, advice will be published on the IESC's website within 10 business days of being provided to the regulators.

### **3. Other business**

#### **3.1 Nature Positive Legislative Package**

The Committee was given a brief opportunity to read some of the draft proposed environment laws and discuss them with Mahani Taylor and Tess Burdon from the Nature Positive Taskforce.

#### **3.2 IESC Information Guidelines**

Final updates to the *Information guidelines for proponents preparing coal seam gas and large coal mining development proposals* were discussed by the Committee.

#### **3.3 IESC Groundwater Monitoring Guidelines**

ANU responses to the Committee's comments on the draft *Information Guidelines Explanatory Note: Groundwater monitoring guidelines for coal seam gas and large coal mining development* were discussed by the Committee.

#### **3.4 IESC Ecohydrological Conceptual Models Explanatory Note**

Public comments received on the draft *Information Guidelines Explanatory Note: Using impact pathway diagrams based on ecohydrological conceptualisation in environmental impact assessment* were discussed by the Committee.

### **4. Close of Meeting**

The meeting closed at 3.00pm on Thursday 9 November 2023.

### **Next Meeting**

The next meeting is scheduled as a videoconference on 13 – 14 December 2023.

Minutes confirmed as true and correct:

Dr Chris Pigram AM, FTSE

IESC Chair

21 November 2023