

**Independent Expert Scientific Committee on Coal Seam Gas and  
Large Coal Mining Development (IESC)  
Meeting 72, 8-10 December 2020**

**MINUTES  
Videoconference**

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**ATTENDANCE AND APOLOGIES**

**IN ATTENDANCE**

Dr Chris Pigram (Chair)  
Dr Andrew Boulton  
Dr Catherine Moore  
Professor Jenny Davis  
Dr Jenny Stauber  
Dr Rory Nathan  
Professor Wendy Timms

**APOLOGIES**

Professor Craig Simmons

**OFFICE OF WATER SCIENCE**

Peter Baker  
James Rae  
Jason Smith  
Nicola Smillie  
Praveen Sebastian  
Alannah Wood (Items 1, 2, 3.1 and 4)  
Alex Hannan-Joyner (Items 2.2, 4 and Day 3 of 2.1)  
Benjamin Klug (Items 2.2 and 3.2)  
Harrison Martin (Items 2 and 4)  
Kelly Strike (Items 2.2 and 4)  
Mio Kuhnen (Items 2.2 and 4)  
Misty Dawn Thorose (Items 1.1-1.4 and 2.1)

The meeting commenced at 9.00 am on Tuesday 8 December 2020.

## **1. Welcome and Introductions**

The Chair welcomed members of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) to the meeting.

### **1.1 Acknowledgement of Country**

The Chair acknowledged the traditional owners, past and present, on whose land this meeting was held.

### **1.2 Disclosure of Interests**

Before the meeting commenced, Committee members completed the Meeting Specific Declaration of Interests and a project advice specific declaration for the Narrabri Underground Mine Stage 3 Extension Project and the Central Queensland Coal Project.

### **1.3 Confirmation of Agenda**

The Committee endorsed the agenda for Meeting 72.

### **1.4 Confirmation of Out-of-Session decisions**

The Committee noted that:

- minutes of the Committee's seventy-first meeting on 5 November were agreed out-of-session and published.

### **1.5 Correspondence**

The Committee noted the status of correspondence to 26 November 2020.

### **1.6 Action Items**

Ongoing items were noted and an update was 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 for the first week of February 2021.

### **1.8 Environmental Scan**

Committee members and secretariat reported back on developments in recent months, including:

- Environmental approval for the Narrabri Gas Project, on which the IESC provided advice in 2017; and
- Refusal of Approval for the clearing of vegetation at Kingvale Station, Queensland.

## 2. Advice on Projects referred by governments

### 2.1 Narrabri Underground Mine Stage 3 Extension Project

The proposed Narrabri Underground Mine Stage 3 Extension Project (the project) is a longwall mining extension to the existing underground Narrabri Coal Mine, located in the Gunnedah Basin Coalfields of NSW. The project will produce 11 million tonnes per annum (Mtpa) of run-of-mine coal (a combination of thermal and pulverised coal injectate) and extend the mine's life from July 2031 to 2044. The proposal also includes expansion and upgrades of existing surface infrastructure.

The project is located within the Namoi Water Management Area, a region with one of the highest levels of groundwater extraction in the Murray-Darling Basin. Surface water resources in the area include the Namoi River, located approximately 5 km east of the proposed extension, and tributaries of the ephemeral Kurrajong and Tulla Mullen creeks that traverse the proposed development area. Known groundwater-dependent ecosystems (GDEs) adjacent to or within the project area include Mayfield, Hardys and Eather Springs, as well as several facultative terrestrial GDEs, some of which are mapped as 'high priority' GDEs in Water Sharing Plans relevant to the project area. There are also 40 farm dams within the project area that are potentially impacted by subsidence.

Key potential impacts from this project are:

- drawdown within the saturated alluvium and porous rock aquifers leading to potential long-term reduction of available groundwater for springs, other GDEs, and agricultural water resources;
- ground deformation above longwalls, including subsidence and mining-induced fracturing, which changes hydraulic parameters of porous rock aquifers and the groundwater flux within them and the hydraulically connected alluvium, producing a permanent area of groundwater drawdown (or groundwater sink) within the larger regional groundwater flow system. These changes can alter flow regimes and cause ponding in undermined ephemeral streams, as well as induce surface water losses from farm dams;
- extensive remnant and riparian vegetation dieback over longwall goafs due to subsidence;
- possible discharge of saline water into the Namoi River above EC Guideline Values; and
- potential loss or alteration of habitat for species such as the Koala (*Phascolarctos cinereus*) listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

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.

## 2.2 Central Queensland Coal Project

The proposed Central Queensland Coal Project (the 'project') is a greenfield development located in the Styx Basin, approximately 130 km northwest of Rockhampton in Central Queensland. The proposal is to produce up to 10 million tonnes per annum (Mtpa) of semi-soft coking coal and high-grade thermal coal from an open-cut mine for 18 years.

The IESC previously provided advice on this proposal in December 2017 (2017-091) and July 2018 (2018-094). As part of this previous advice, the IESC expressed numerous concerns that the project presents very significant risks to nationally and internationally recognised assets with high ecological values, including the Great Barrier Reef World Heritage Area (GBRWHA) and the Broad Sound Fish Habitat Area (Queensland's largest fish habitat area and is on the Directory of Important Wetlands in Australia) located approximately 10 km downstream of the site. Other high-value environments near the site, and which may be impacted by the project, include Tooloombah Creek, Deep Creek, the Styx River estuary as well as two state-listed wetlands. Although the proponent has undertaken substantial additional hydrological, water quality and ecological studies, many of the concerns noted in IESC (2017-091) and IESC (2018-094) remain. Results of the proponent's additional studies reinforce the IESC's extreme concern that the predicted impacts are not readily mitigated, especially the discharge of mine-affected water into Broad Sound and the GBRWHA. Proposed mitigation options primarily entail offsetting residual impacts (e.g. for the 8.35 km of stream-length that will be removed) and are likely to be completely inadequate for this region because of its relatively undisturbed setting.

Additional investigations, modelling and analyses will not alter the material risks associated with this project, in particular the potentially severe consequences for local and downstream water-related assets. The IESC cannot envisage any feasible mitigation measures, including offsets, that could safeguard these irreplaceable and internationally significant ecological assets and their associated water resources.

Key potential impacts from this project, also identified from IESC (2018-094), are:

- significant and irreversible damage to internationally valued estuarine and near-shore ecosystems subjected to mine-affected water;
- changes to surface water quality from controlled and uncontrolled discharges, with the potential to impact aquatic environments within, adjacent to, and downstream of the project site;
- from drawdown below some 165 ha of riparian groundwater-dependent ecosystems (GDEs) and to stygofaunal communities in the Styx River alluvium;
- from drawdown (of up to 4.7 m along sections of Tooloombah Creek and up to 60 m reduction along 11.8 km of Deep Creek) that will reduce the volume and persistence of dry-season pools and reduce baseflow in both creeks for decades post-mining;
- groundwater interaction with the backfilled voids that could mobilise contaminants from the waste rock and coal rejects within the voids and discharge these contaminants to surface waterways, posing a legacy water quality issue;
- direct loss of approximately 8.35 km of waterways that provide fish passage during periods of high rainfall and flood; and
- disturbance of sodic soils, which are prone to erosion, potentially increasing sediment loads in local waterways and contributing sediment to the GBRWHA.

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 Faults Explanatory Note**

The Committee discussed the progression of a draft Explanatory Note on the characterisation and modelling of geological fault zones. The Committee noted that the peer review of the draft Explanatory Note is nearing completion, with consultation with industry representatives likely to commence in early 2021.

#### **3.2 Virtual Explanatory Notes Symposium**

Given the uncertainty and restrictions imposed by COVID-19, the Committee discussed and supported hosting a virtual Explanatory Notes Symposium in mid-2021.

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

The Chair thanked everyone for their contribution to the meeting.

The meeting closed at 2.12 pm on Thursday 10 December 2020.

#### **Next Meeting**

The next meeting is scheduled for the first week of February 2021.

Minutes confirmed as true and correct:

Dr Chris Pigram AM, FTSE

IESC Chair

17 December 2020