



Our ref: DOC25/71340-6

26 February 2025

Tegan Cole  
Department of Planning, Housing and Infrastructure

Via Major Projects Portal

**EPA Comment on Additional Information – Mt Arthur Coal Modification 2 –  
MP09\_0062-Mod-2**

Dear Tegan

I am writing in response to your request (PAE-79557956) for the Environment Protection Authority (EPA) to review the additional information provided by the Applicant for the proposed Mt Arthur Coal Modification 2 (pathway to 2030) (Application MP-09\_0062-Mod-2).

The EPA has reviewed the following documents:

- Letter from Sarah Bailey to Tegan Cole (DPHI), subject: Mt Arthur Coal – MOD 2 (Pathway to 2030) – MP09\_0062 – Mt Arthur Coal Pty Ltd – 24 January 2025
  - Annexure 1 - Letter to Sarah Bailey From Scott Thomson and Duncan Thomson – CoalBed Energy – 24 January 2025
- Letter from Sarah Bailey to Tegan Cole (DPHI), subject: Mt Arthur Coal – MOD 2 (Pathway to 2030) – MP09\_0062 – Mt Arthur Coal Pty Ltd – 13 December 2024
  - Annexure 1 - Letter to Sarah Bailey From Scott Thomson and Duncan Thomson – CoalBed Energy – 13 December 2024
  - Annexure 2 - Revised emissions based on CoalBed's further analysis

The EPA understands these letters were prepared in response to the EPA's comments on greenhouse gas matters in the Submissions Report (DOC24/622825-2). The EPA has also considered the Applicant's response to an information request sent by the Department of Planning, Housing and Infrastructure (DPHI) regarding the gas assignment model for fugitive emissions.

This modification was exhibited in October and November 2023. According to Section 2.2 of the NSW Guide for Large Emitters, the Guide does not apply to projects that have progressed beyond the environmental impact assessment stage of the planning process prior to May 2024. Therefore, this application falls beyond the scope of the Guide. However, consistent with the EPA's Climate Change Policy and Action Plan (2023-2026) released in January 2023, the EPA has assisted the consent authority in understanding greenhouse gas emissions, and avoidance and mitigation during the NSW Government planning process for this modification.

Previous EPA correspondence (DOC23/926399-5, DOC24/268332-5 and DOC24/622825-2) has addressed projected emissions in the context of the NSW Government's Net Zero Emissions dashboard and proposed mitigation measures. The remaining outstanding matter for greenhouse

NSW Environment Protection Authority

As the environmental steward and regulator of our State we are committed to a sustainable future. Join us on our mission to protect tomorrow together.

**Phone:**  
131 555

**Email:**  
info@epa.nsw.gov.au

**Website:**  
epa.nsw.gov.au

**Visit:**  
6 Parramatta Square  
10 Darcy Street  
Parramatta NSW 2150

**Mail:**  
Locked Bag 5022  
Parramatta NSW 2124



gas was the uncertainty of the input data and assumptions made to derive the emission factor for fugitive emissions, which is the subject of the most recent correspondence from the Applicant. This correspondence includes a high-level review of the gas assignment model from CoalBed Energy Consultants (CoalBed Review).

The EPA has considered the available information and expert advice from the Department of Climate Change, Energy, the Environment and Water's (DCCEEW) Net Zero Emissions Modelling (NZEM) team.

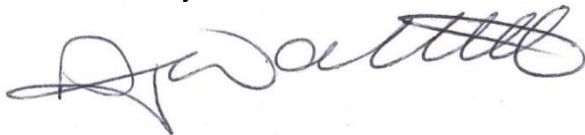
In summary, the EPA cannot be confident that the revised fugitive emissions provide a suitable estimate for Modification 2. The EPA believes there remains uncertainty regarding the basis for the gas domain and zone boundaries and a lack of justification for the exclusion of some data points. The EPA agrees with the recommendation of the CoalBed Review and advice from NZEM that the gas assignment model should be reviewed and updated considering all available data.

The EPA considers that the gas assignment model can be updated using the current version of Method 2 in the National Greenhouse and Energy Reporting (Measurement) Determination 2008 (NGER Determination) and without waiting for additional boreholes. Detailed comments are provided in **Attachment A**.

The EPA recommends that the Department of Planning, Housing and Infrastructure (DPHI) consider these comments in their assessment. If DPHI's determination approves the modification, the EPA requests to be consulted on conditions of consent for this modification.

If you have any questions about this request, please contact Chris Marsh via email at [environmentprotection.planning@epa.nsw.gov.au](mailto:environmentprotection.planning@epa.nsw.gov.au).

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Darren Wallett', with a stylized flourish at the end.

**Darren Wallett**  
**Manager-Environment Protection Planning**  
**NSW Environment Protection Authority**

## **Attachment A – Detailed Comments on Greenhouse Gas matters – Mt Arthur Coal Mine Modification 2**

### **Review of the Mt Arthur Coal Mine Gas Assignment Model**

The Applicant commissioned CoalBed Energy Consultants to undertake a high-level review of the gas assignment model. The EPA requested technical advice from Department of Climate Change, Energy, the Environment and Water's (DCCEEW) Net Zero Emissions Modelling team (NZEM) on the CoalBed review. NZEM's advice to the EPA identified matters that remain outstanding in the current gas assignment model and from CoalBed's review including:

- If and how the model considered changes to the pitshell from mining progress since the model was created;
- The sampling methodology for boreholes;
- A lack of appropriate justification for the exclusion of gas sampling data points; and
- Uncertainty in the basis for the spatial definition of gas zones, particularly for the proposed Modification 2 mining area.

The CoalBed review calculated a revised fugitive emission factor by disregarding all nitrogen present in gas samples. This resulted in a fugitive emission factor of 0.00398 tonnes CO<sub>2</sub>-e per tonne of run-of-mine coal (ROM), which is an increase compared with the Applicant's previous submissions that used 0.0022 tonnes CO<sub>2</sub>-e per tonne of ROM. The EPA and NZEM considers that whilst disregarding nitrogen present in gas samples is not a specific step under the *National Greenhouse and Energy Reporting (Measurement) Determination 2008* (NGER Determination) and *Guidelines for the Implementation of NGER Method 2 or 3 for Open Cut Coal Mine Fugitive GHG Emissions Reporting*, (Australian Coal Association Research Program, December 2011) (ACARP Guidelines), it represents best practice.

The CoalBed review recommends the Mt Arthur Coal Mine Gas Assignment Model is reviewed and updated, if required, after considering all available data, including data from two proposed additional fugitive emission boreholes, and the outcomes of the Commonwealth Government's review of Method 2 in the NGER Determination. The EPA understands that the Commonwealth review is unlikely to take place within a reasonable timeframe to inform a model update. Advice from NZEM also indicated that due to the progression of mining westward, gas distribution may be impacted. This in combination with the unknown location of the proposed boreholes means it is unclear how additional boreholes will improve the accuracy of fugitive emission estimates. The EPA considers that the model can be updated without waiting for additional boreholes or the Commonwealth review.

After considering all the information provided to date, including expert advice from NZEM, the EPA cannot be confident that the revised fugitive emissions provide a suitable estimate for Modification 2. The EPA considers the gas assignment model should be reviewed and after considering all available data updated as required.

### **Revised Scope 1 Emissions**

Scope 1 fugitive emissions were revised to include the updated emission factor (0.00398 t CO<sub>2</sub>-e / t ROM) derived by CoalBed Energy. The estimated total fugitive emissions for Modification 2, for the period between 2027 – 2030 is 0.36 Mt CO<sub>2</sub>-e.

The EPA acknowledges that despite the estimated increase in fugitive emissions due to the updated emission factor and the uncertainty in the current estimates, emissions from diesel-powered equipment continue to be the largest source of Scope 1 emissions for the project. The EPA has previously commented on potential emission reduction methods for diesel-powered equipment specifically for this project (DOC23/926399-5 and DOC24/268332-5).