

3 February 2026

IEAPM Ref: 2026-02-L2

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Director Resource Assessments
Department of Planning, Housing and Infrastructure
Via: Secretariat for IEAPM

IEAPM Advice on Hunter Valley Operations Continuation Project (SSD-11826681 and SSD-11826621)

On 10 December 2025, the NSW Department of Planning, Housing and Infrastructure (DPHI) requested the Independent Expert Advisory Panel for Mining (IEAPM, 'the Panel') to provide advice in relation to the two amended applications by HV Operations ('HVO') (SSD-11826681 and SSD-11826621).

The amendment by HVO includes the following changes relating to greenhouse gases (GHG) through changes in mining strategy compared to the original project:

- Avoidance of coal extraction within gas Domain 1 at HVO North mine pit;
- Reduction of the total run of mine (ROM) coal to be extracted from approximately 649 Mt to 429 Mt;
- Reduction of the proposed annual production limit at HVO South mine pit from 18 Mtpa to 13 Mtpa;
- Reduction of the annual production limit for the complex from 42 Mtpa to 26 Mtpa; and
- Reduction of the proposed life extension at HVO North by five years (from 2050 to 2045) and HVO South by three years (from 2045 to 2042).

1. Request for Advice

The DPHI has sought advice from the Panel on the following:

- *The impact of the revised application on the Panel's previous advice with respect to avoiding, mitigating and offsetting Scope 1 fugitive and diesel GHG emissions, and*
- *The nature and significance of new matters relating to Scope 1 fugitive and diesel GHG emissions, if any, that arise from the revised application and that are not covered by the Panel's previous advice.*

2. Panel Members

The Panel members convened to prepare the advice comprise:

- i. Dr Tim A Moore – Panel Convenor, Greenhouse Gas

- ii. Dr Ray Williams – Coal Seam Gas and Recovery
- iii. Prof Joan S Esterle – Greenhouse Gas
- iv. Mr Neil Alston – Mine Engineering

The Panel was briefed by DPHI on 22 December 2025.

The Panel members held online meetings on the following dates:

- 6 January 2026
- 20 January 2026

3. Documentation Reviewed by Panel for This Advice

- HVO Amendment Report (H190408 RP#18, Aug 2025)
- HVO Amendment Report – Appendix E Greenhouse gas assessment (H190408 RP1, Aug 2025)
- HVO Amendment Submissions Report ((H190408 RP#21; Nov 2025))
- EPA Advice – Amendment Report (NSW EPA DOC25/735725-12; Sept 2025)
- EPA Additional Advice on Information to Amendment Report (DOC25/1004627-2; 23 Dec 2025)

4. Background

The Panel's original recommendations to DPHI (IEAPM 202407-2) for Scope 1 emissions (fugitive and diesel) are summarised below:

4.1 Reservoir Assessment

1. Test source of nitrogen (N₂) and re-adjust methane (CH₄) levels if needed
2. Drill borehole 400 m from Hunter Valley dyke

4.2 Avoidance

3. Assess impacts of not mining gas Domain 1 coal
4. Every three years HVO produce a report on:
 - a. international status of diesel GHG emission reduction strategies
 - b. the initiatives by HVO to implement such strategies.

4.3 Mitigation

5. Desktop study on gas drainage
6. Evaluate gas reservoir properties in greater detail
7. Conduct trial of gas drainage (within 3 years)
8. Investigate methods/issues of conversion of CH₄ to carbon dioxide (CO₂)
9. Issue a three-year management plan for GHG
10. Produce reports for mitigation efforts every three years.

5. Analysis

5.1 DHPI Request #1: *“The impact of the revised application on the Panel’s previous advice with respect to avoiding, mitigating and offsetting Scope 1 fugitive and diesel GHG emissions”*

The Panel notes the following uptake by HVO which are consistent with advice given in our IEAPM 202407-2 report:

1. HVO has made a significant reduction in its Scope 1 GHG emissions through avoidance of mining coal in gas Domain 1. This reduces both CO₂ emission from diesel consumption as well as the fugitive emissions of CH₄ from coal. (see Table 3.13, p. 45; Appendix E Greenhouse gas assessment).
2. HVO has stated that reduction in diesel consumption will also be made through optimisation of haulage (see p. 72; Amendment Report).
3. HVO propose a pre-drainage trial of gas from coal seams in gassy areas. The design of the trial would be developed in consultation with relevant stakeholders and to the satisfaction of the Planning Secretary and would be submitted within two years of commencement of consent, should approval be granted for the Amended Project (see p 40-43; Appendix E Greenhouse gas assessment).
4. HVO has agreed in its Amendment Report (see p. 73) that it will review new technologies, and abatement measures every three years.

The Panel notes that the above efforts by HVO have addressed significant issues regarding *avoidance* and to a lesser degree *mitigation* of GHG emissions. These efforts, particularly the avoidance of mining gas Domain 1, will have a material reduction on any possible offsets needed to comply with the Safeguard Mechanism.

However, the Panel also notes there are several points that HVO has not addressed from previous advice. In addition, there are more considerations relevant to upcoming NSW EPA mitigation hierarchy as well as the timing of any pre-drainage testing that should be further considered. These points are addressed in section 5.2.

5.2 DHPI Request #2: *“The nature and significance of new matters relating to Scope 1 fugitive and diesel GHG emissions, if any, that arise from the revised application and that are not covered by the Panel’s previous advice.”*

5.2.1 Diesel Emissions

The Panel acknowledges diesel emission are now the dominant Scope 1 emission source, contributing 58% of total Scope 1 emissions for the life of mine (refer to Table 3.7 Appendix E Greenhouse gas assessment) and this is where mitigation should be a

priority. The Panel notes Section 3 of the EPA Advice on Amendment Report requesting the Applicant to consider biofuel blends and proposed expectations for the reduction in Scope 1 diesel emissions in the draft EPA Greenhouse Gas Mitigation Guide for NSW Coal Mines Consultation Draft dated July 2025. Stakeholder feedback on this guide is currently under review by the EPA. If implemented, it would mean that the EPA will mandate requirements and timeframes for reduction in Scope 1 diesel emissions across the NSW coal industry and this will incorporate the Amended Project. The Panel acknowledges the reduced scope of the Amended Project will materially reduce diesel emissions and that the EPA is likely to mandate requirements at all NSW coal mines in the near future.

5.2.2 Fugitive Emissions from Coal

Using information contained in 'Appendix E Greenhouse gas assessment' of the Amendment Report (August 2025), the Panel have undertaken check calculations and modelled the annual emissions of CO₂-e for the project duration. This was done utilising coal production, gas content, gas composition as well as gas densities, as stipulated in the latest NGER Measurement Determination. The reason for doing this was to model the effects of N₂ and gas drainage on resulting CO₂-e (see sections below). The Panel considers the Applicant's calculations for Scope 1 CO₂-e sufficient.

5.2.2.1 Pre-Drainage Trial

The Panel regards the potential for mitigation of emissions by gas drainage as being significant, warranting a carefully thought through approach encompassed in a prefeasibility study (PFS) for drainage of gas Domain 3. The Panel acknowledges the initial study undertaken by CoalBed (Appendix M CoalBed pre-drainage feasibility report, 6 Nov 2023; HVO EMM Submissions Report, November 2023) to investigate the feasibility of the capture of pre-drainage gas. The CoalBed study includes many issues to be considered if pre-drainage was undertaken at site. The extent to which permeability and gas saturation are modified through the removal of overburden and the concomitant reduction in stress has not been considered.

The various options available for pre-drainage should be assessed within a PFS. Of note, the PFS would include the plans and scope of a pre-drainage trial. Furthermore, the PFS would provide a framework for the next phase, that is, an in-depth feasibility study. DPHI will need to consider how and when the pre-drainage trial is planned to occur and how it will maximise pre-drainage of gas Domain 3.

In the Panel's assessment, various scenarios of gas drainage efficiency were applied to Zones 3 and 4 of gas Domain 3. At 30% gas drainage and assuming all the CH₄ produced is converted to CO₂ (during flaring or utilisation), fugitive emissions are reduced by 27%.

This results in an 11% reduction in Scope 1 emissions for the life of mine, over and above the reduction from gas Domain 1 avoidance.

The Panel recommends that should the project be approved, the intended pre-drainage trial scope and schedule be determined by way of a written plan and is agreed upon to the satisfaction of the Planning Secretary. It should consider the various issues raised by CoalBed's 2023 study, as well as the enhancement of permeability due to overburden removal and any learnings from open cut pre-drainage trials undertaken either at site or by industry elsewhere over the last 2 years. A prefeasibility scope is not onerous and the Panel recommends submission to DPHI within 2 months after determination.

The Panel recommends approval conditions should require an independent expert review of the actual prefeasibility report, to the satisfaction of the Planning Secretary.

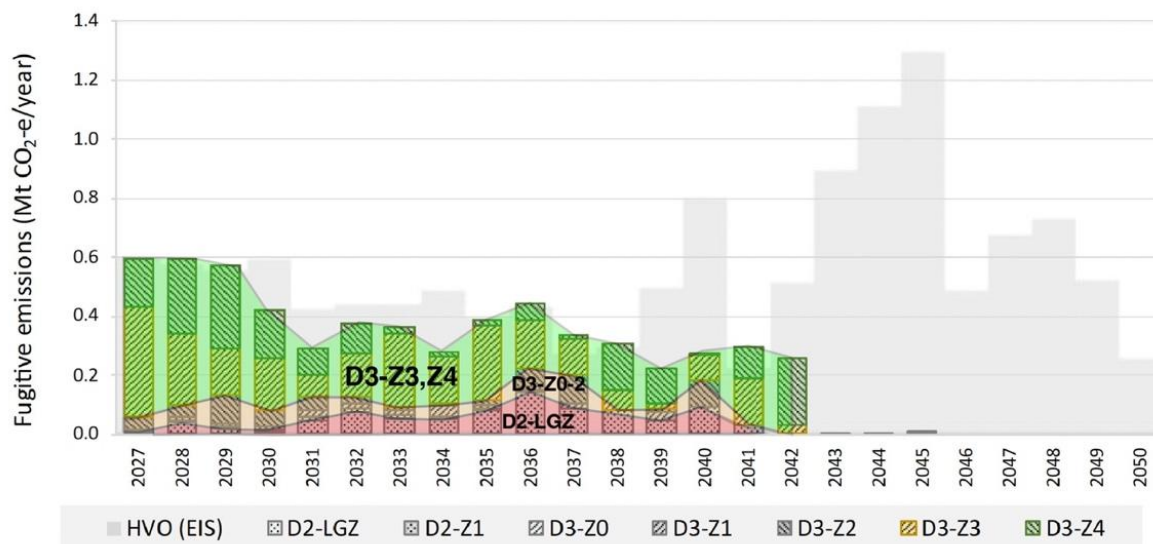


Figure 1: Highlighted figure taken from Appendix E Greenhouse gas assessment (Aug. 2025; figure 3.12) with Scope 1 CO₂-e emissions.

The Panel notes that mining in the higher gas zones of Domain 3 will occur in the period 2027 to 2029 (see Fig. 1 above), so *high priority needs to be given to the PFS*. In this regard, the Applicant should include in the PFS the proposed pathway and a schedule to potentially drain these higher gas zones.

5.2.2.2 Nitrogen

At present HVO has assumed all N₂ as reported in gas content tests is a natural part of the reservoir. This is debatable. Thus, the Panel modelled the increase in CH₄ and CO₂ that would occur if the N₂ were an artifact of sampling (i.e. air contamination). The amount of increase in Scope 1 CO₂-e emissions is small (~1%) such that the Panel believes further work to research this aspect by HVO is now unwarranted. The Panel

acknowledges that by including N₂ as a gas naturally inherent within the coal, HVO has not contravened the NGER reporting guidelines.

The Panel wishes to highlight that from an industry and scientific perspective, the origin of N₂ in gas testing could be significant and material in other projects and should be addressed by stakeholders in the future with some rigour.

5.2.2.3 Borehole Proximal to Hunter Valley Dyke

Given the changed shape of the pit shell with no mining in gas Domain 1, the Panel withdraws its recommendation to drill the gas content test borehole approximately 400 m northwest of the Hunter Valley Dyke.

5.2.3 Other Considerations

5.2.3.1 Zephyr Environmental Pty Ltd assessment

The Panel notes the Expert review by Zephyr Environmental Pty Ltd ('Zephyr') (Annexure E of Appendix E Greenhouse gas assessment' within the Amendment Report (August 2025).

The report states there were several queries resolved by discussion with HVO, but the details of the query, response and resolution were not given. The Panel recommends that the full response by HVO made to Zephyr on its findings be made explicit so that DHPI may sight them prior to determination.

5.2.3.2 Reporting on Technology Findings

Although HVO has stated that it will evaluate new developments in GHG mitigation and report on a three-year cycle (Amendment Report, August 2025; see p. 73), it has not explicitly cited how and to whom it will report. The Panel considers HVO should clarify this reporting structure. It is likely the three-year report would eventually be under the EPA's climate change mitigation and adaptation plan (CCMAP).

6. Summary

In summary, the Panel makes the following conclusions and recommendations:

Conclusions

1. HVO has made considerable reductions in Scope 1 CO₂-e emissions through avoidance of mining gas Domain 1.
2. HVO has made a commitment to further reduce CO₂-e emissions from diesel through optimisation of haulage.
3. The origin of N₂ in gas test results is not deemed material in the current HVO project.

INDEPENDENT EXPERT ADVISORY PANEL FOR MINING

Recommendations

1. A detailed, and material prefeasibility study should be prepared that addresses pre-drainage of gas Domain 3. Should the project be approved, the scope of this prefeasibility study should be submitted to DPHI within two months and agreed upon to the satisfaction of the Planning Secretary.
2. Due to the avoidance of mining gas Domain 1, a test gas content borehole is no longer needed adjacent to the Hunter Valley Dyke.
3. HVO should publish its responses to Zephyr's evaluation
4. Prior to determination, HVO should clarify how and to whom it will report the 3 yearly review of technology improvements for GHG mitigation.

Yours Sincerely

A handwritten signature in blue ink that reads "Tim A Moore". The signature is written in a cursive style with a horizontal line above the first name.

Tim A Moore

Panel Convenor, Greenhouse Gas