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25 September 2025

Mr Jack Turner  
Department of Planning, Housing and Infrastructure  
PARRAMATTA NSW 2124

Via Major Projects Portal

**EPA Advice on Amendment Report – HVO North and HVO South Continuation Projects –  
SSD 11826681 & SSD 11826621**

Dear Mr Turner

I am writing in response to your request for the NSW Environment Protection Authority (EPA) to review the Amendment Report for the proposed HVO North and HVO South Continuation Projects (SSD 11826681 & SSD 11826621) at Lemington Road, Lemington.

The EPA has reviewed the following documents:

- Hunter Valley Operations Continuation Project Amendment Report August 2025 – EMM Consulting – 5 August 2025
- HVO Continuation Project Amendment Greenhouse gas assessment – EMM Consulting – 4 August 2025
- Hunter Valley Operations Continuation Project Amendment Noise Impact Assessment – EMM Consulting – 31 July 2025
- HVO Continuation Project Amendment Water Assessment – EMM Consulting – 25 July 2025
- HVO Continuation Project Amendment Air Quality Impact Assessment – Airen Consulting – 29 July 2025

The EPA has also considered the Independent Expert Advisory Panel for Mining's report (Advice No. IEAPM 202407-2, July 2024).

The Amendment Report presents amendments to the project previously presented in the Environmental Impact Statement (EMM, 2022) and Submissions Report (EMM, 2023). The EPA has provided comments based on these amendments compared with the previous assessments. The EPA understands the Amendment Report presents changes to the application including the following:

- Changes in the mine plan to avoid coal extraction in Domain 1 at HVO North.
- Reduction in the total run-of-mine (ROM) coal to be extracted by 220 million tonnes compared with the EIS.

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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](mailto:info@epa.nsw.gov.au)

**Website:**  
[epa.nsw.gov.au](http://epa.nsw.gov.au)

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

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



- Proposal to reduce the total complex production limit from 42 million tonnes per annum (Mtpa) to 26 Mtpa of ROM coal. Comprising 22 Mtpa from HVO North and 13 Mtpa from HVO South.
- Reduction in the mine life of 2050 in the EIS to 2045 at HVO North and 2042 at HVO South.
- Removal of coal extraction from the mine plan for the Riverview Southeast Extension, and South Lemington Pit 1 and 2 at HVO South.
- Removal of approval for the Lemington Coal Preparation Plant at HVO South.
- Expansion of the ROM coal stockpile and upgrades to product coal and other infrastructure at HVO North.
- Construction of Mitchell East levee for flood protection for final void of Mitchell Pit at HVO North and construction of the Cheshunt and Riverview flood protection levees at HVO South.
- Implementation of a revised water management system including construction of levees, clean water diversions and the Carrington West Wing low permeability barrier wall.

The complex (HVO South and HVO North) is currently subject to one environment protection licence (Licence No. 640) under the *Protection of the Environment Operations Act 1997* (POEO Act) for chemical production, chemical storage, coal works, crushing, grinding and separating, extractive activities and mining for coal under multiple clauses of Schedule 1 of the POEO Act. The EPA considers that a licence variation would be required if these SSD applications are approved.

The EPA has reviewed the Amendment Report and provides detailed comments in **Attachment A**.

The EPA recommends that DPHI request additional information to enable the EPA to complete its assessment prior to determination. The key matters are:

- Provide the following relating to greenhouse gas emissions:
  - proposed reduction rates for the period between 1 July 2029 to 1 July 2030.
  - GHG emission estimates for each financial year instead of calendar year.
  - Clarification and details of consideration of biodiesel fuel.
- Details of the reactive measures to address air quality exceedances.
- Review and clarification of background air quality data.
- Amendments to air quality contour mapping.
- Clarification of achievable noise levels at receivers.

For water and groundwater matters recommendations have been made for consideration of conditions if the applications are approved.

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



**Darren Wallett**  
**Manager, Environment Protection Planning**  
**Environment Protection Authority**

## **Attachment A – EPA comments on Amendment Report – HVO North and HVO South Continuation Projects (SSD 11826681 & SSD 11826621)**

### **Greenhouse gas emissions**

#### **Matters to be addressed prior to determination**

#### **1. Clarification of reduction rates for the period between 1 July 2029 to 1 July 2030**

The project is estimated to result in Scope 1 emissions above 100,000 tonnes CO<sub>2</sub>e per year for multiple years. This means the project will trigger obligations under the Safeguard Mechanism including maintaining their net emissions at or below their baseline. Baselines will decline in line with set reduction rates under the Safeguard Mechanism.

A summary of the Applicant's obligations and commitments in the GHG assessment is provided below:

<b>Safeguard reduction rate</b>	<b>HVO's proposed reduction rate</b>
<ul style="list-style-type: none"> <li>• 4.9% per year from 1 July 2023 to 1 July 2029</li> <li>• 3.285% per year thereafter.</li> </ul>	<ul style="list-style-type: none"> <li>• 5.9% per year from 1 July 2023 to 1 July 2029.</li> <li>• 4.0% per year from 1 July 2030 to 1 July 2034.</li> <li>• 2.58% per year thereafter</li> </ul>

The Applicant intends to adhere to higher declining rates than those set by the Safeguard Mechanism until 1 July 2034. However, it appears there is typographical error indicating a gap in the commitment between 1 July 2029 to 1 July 2030, which should be clarified.

**The EPA recommends DPHI request the Applicant clarify the proposed reduction rates for the period between 1 July 2029 to 1 July 2030.**

#### **2. Greenhouse gas emission estimates for financial years**

The greenhouse gas (GHG) assessment acknowledged that the emissions data in the Net Zero Emissions dashboard (dashboard) are presented for financial years and that the emissions data for the Amended Project are presented for calendar years.

To be consistent with the NSW Guide for large emitters (large emitters guide) (EPA, 2025) and to enable direct comparison with the dashboard, GHG emission estimates should be provided for each financial year.

**The EPA recommends DPHI request the Applicant provide the GHG emission estimates for each financial year instead of calendar year.**

#### **3. Clarification of biodiesel fuel considerations**

It is acknowledged that the GHG assessment considered the technological and commercial readiness of 20% biodiesel use and that the 20% biodiesel and catenary power are technologically ready but not as advanced on commercial readiness, hence not as readily adopted.

The EPA notes the independent reviewer's comments that the GHG assessment has provided evidence of investigation or commitment to adopt several measures noted in the EPA's draft Greenhouse Gas Mitigation Guide for NSW Coal Mines, which is currently on exhibition. It is acknowledged that the mitigation measures discussed in the draft Greenhouse Gas Mitigation Guide for Coal Mines to address fugitive methane and diesel consumption sources were considered in the GHG assessment.

For a more comprehensive evaluation of minimising emissions from diesel combustion, it is recommended that the GHG assessment include additional details on low carbon fuel substitution. More specifically, comments should be provided on technological and commercial readiness of use of biodiesel fuel blends below 20%.

**The EPA recommends DPHI request the Applicant to provide detail on whether various biodiesel blends (<20%) have been considered as an alternative to diesel while the proposed renewable fuel trials are underway.**

### **Air quality**

#### **Matters to be addressed prior to determination**

#### **4. Predicted 24-hour PM<sub>10</sub> exceedances**

The Air Quality Impact Assessment (AQIA) predicted additional 24-hour PM<sub>10</sub> exceedances at multiple receptors, including private residences without acquisition rights (AQIA Annexure C) such as receptor 614 which is predicted to have up to seven (7) PM<sub>10</sub> 24-hour criteria exceedances (no change from Continuation Project EIS/Submissions Report).

The AQIA states that modelling has shown that the implementation of modifying operations in response to trigger levels in the project's Air Quality Management Plan (AQMP) can reduce HVO's impact such that HVO would not be the cause of an exceedance. However, the modelling of reactive measures was done as a request for information from the EPA for the originally proposed Continuation Project (DOC23/57412-9).

The AQIA for the amended project, does not provide modelling of reactive measures or identify the triggers that are required for impacts to be compliant with impact assessment criteria based on the amended project. As the reduction of particulate impacts to below the EPA's impact assessment criteria for the amended project still relies on reactive measures, the AQIA needs to provide this information to transparently evaluate the amended proposal.

The AQIA has referred to modelling for the previous assessment where different meteorology, background air quality and project operations were used. Where required for compliance with EPA assessment criteria, the reactive measures (triggers and actions) need to be clearly outlined in the AQIA and included in the model that is reflective of what is achievable onsite. Without information relevant to the amended project there remains uncertainty as to the effectiveness and suitability of the reactive measures to ensure no additional exceedances.

**The EPA recommends DPHI request the Applicant demonstrates that the implementation of the existing reactive measures will not result in additional exceedances of the EPA's impact assessment criteria at any receptors by modelling the reactive measures scenario.**

**Details should be provided on:**

- a) What specific activities were and were not included in the model for reactive measures**
- b) What meteorological conditions were used and what number of hours/days this was applied to**
- c) What monitors and concentrations were used and what number of hours/days this was applied to (after addressing the background air quality issue 2)**
- d) Adequate justification of which receptors would be reasonably affected by the reactive measures undertaken**
- e) Details and evidence of any historic use of the proactive and reactive measures in mitigating dust impacts**

## 5. Background air quality data

The AQIA has used a derived air quality background (AQIA Figure 8) for PM<sub>10</sub> and PM<sub>2.5</sub> by adjusting measured data with modelled data. The AQIA states that this was done to determine the existing contributions and to establish background levels in the absence of modelled sources (i.e. mines). The AQIA submitted for the EIS (Jacobs, 9 November 2022) used a different methodology to derive a background that used the lowest non-zero PM<sub>10</sub> measurement from all the Department of Climate Change, Energy, Environment and Water (DCCEEW) monitors with the assumption that the lowest measurement is reflective of air quality not influenced by the project.

The summary of the background air quality data (AQIA Table 6) outlines that for PM<sub>10</sub>, there were three (3) days for Jerrys Plains and four (4) days for Maison Dieu where the measured PM<sub>10</sub> 24-hour average was above the criterion of 50 µg/m<sup>3</sup> in 2024. However, based on the adjusted background used for the cumulative analysis, the 24-hour PM<sub>10</sub> impacts predicted at Jerrys Plains (AQIA Annexure C) do not have any exceedance days for all modelled scenarios (current operations in 2024 and the three future scenarios) and only one (1) exceedance for Maison Dieu in a future scenario. Therefore, the adjusted background underpredicts the background air quality and is not site-representative.

The Approved Methods for the Modelling and Assessment of Air Pollutants in NSW require background air quality data to be obtained from monitoring data, ideally collected at the proposed site. As stated in the AQIA, there is an extensive air quality monitoring network in the Hunter Valley. There are four DCCEEW monitors in the vicinity of HVO, including two (Jerrys Plains and Maison Dieu) that are upwind/downwind of HVO for the dominant wind directions. Additionally, HVO operate five (5) TEOM monitors for PM<sub>10</sub> measurements as required by EPL conditions. Therefore, given the amount of monitors it appears that there would be at least one monitor at any given time that is recording air quality data that is not influenced by HVO and other mines that would not require manipulation based on modelling.

**The EPA recommends DPHI request the Applicant revises the background air quality data used in the assessment to be based on actual measured data and demonstrate that it is site-representative. Where the background air quality data is not based on a single monitor, the methodology for determining background air quality must be clearly outlined.**

## 6. Contour plot presentation

The AQIA has not presented predicted impacts with enough clarity for the EPA to evaluate. For example, the AQIA has only presented the contour plots for 24-hour PM<sub>10</sub> (AQIA Figure 12) with a single contour line of 50 µg/m<sup>3</sup>, which is the EPA's assessment criteria. The 50 µg/m<sup>3</sup> contour line extends beyond the boundary of the figure meaning the full extent of impacts is not presented.

AQIA Annexure C lists a number of receptors, particularly receptors not under acquisition rights, where exceedances of the EPA's assessment criteria have been predicted. These receptors were not identified in the contour plot figures.

**The EPA recommends DPHI request the Applicant provides all results in a clear and concise manner for evaluation. This includes contour plots with an adequate number of contour lines, map area and receptor locations to enable the degree of impacts to be evaluated.**

## **Noise**

### **Matters to be addressed prior to determination**

#### **7. Achievable noise levels**

The Noise Impact Assessment (NIA) contains 'achievable noise levels' (ANLs) for the complex (HVO North and South combined). The ANLs represent the noise levels that can be achieved through feasible and reasonable noise mitigation and proactive/reactive operational measures that include significant operational shutdowns under nominated meteorological conditions. The EPA acknowledges that the Applicant has committed to meeting the ANLs under all meteorological conditions.

The sensitive receivers surrounding the complex were grouped into eight (8) noise catchment areas (NCAs) that represent areas of similar acoustic environments for the purposes of deriving noise criteria. The NIA developed ANLs for each of the eight NCAs and appear to have been based on the worst affected receiver(s) in each NCA.

The proposed amendments appear to have resulted in a higher amount of time and/or weather conditions that the complex will need to modify activities to remain under the ANLs. The amended project also appears to have resulted in an increase in residential receivers being triggered under the Voluntary Land Acquisition and Mitigation Policy (VLAMP) (NSW Government, 2018) to mitigate residual noise impacts above the Noise Policy for Industry's (EPA, 2017) project noise trigger level (PNTL).

The EPA understands that NIA Tables 4.11 and 4.12 presents noise predictions for all receivers predicted to experience noise levels above the PNTL based on a cumulative distribution prediction method that uses the upper 10<sup>th</sup> percentile of noise predictions under 260 meteorological scenarios.

The Applicant has indicated that the ANLs apply to the complex and further that *"Some receptors will require the predicted ANL as noise limits when others do not, as key receptors determine the ANL in each NAG and there is variability across each NAG. However, results for all receptors meet or are below the ANL presented in Section 4.3.2. (Section 4.3.3)"*.

**The EPA recommends that DPHI requests that the Applicant supplies the ANLs that reflect what is achievable or committed to at each receiver listed in NIA Table 5.2.**

The EPA notes that the predicted noise levels in NIA Tables 4.11, 4.12, 4.14 and 4.15 appear to only reflect HVO North and South separately. While the NIA does include a cumulative assessment at NIA Section 4.8 and Attachment D, the predicted levels are presented as  $L_{Aeq, period}$  dB. The NIA does not appear to include maximum envelope predicted levels ( $L_{Aeq, 15min}$  dB) for the complex.

**The EPA recommends that DPHI should consider whether maximum envelope predicted levels for the complex should be provided so that VLAMP responsibilities may be considered further by the DPHI.**

## **Groundwater**

### **Matters to be addressed with conditions**

#### **8. Groundwater management plan**

Ongoing concerns regarding potential adverse effects on groundwater quality and flow regimes in proximity to the Hunter River have been proposed to be addressed through the construction of a Low Permeability Barrier Wall (LPBW). This engineered mitigation measure, which has received regulatory approval but remains unbuilt, is proposed for installation immediately south of the Carrington West Pit mining expansion zone, prior to the proposed Continuation project operations. The primary objectives of the LPBW are to attenuate hydraulic connectivity, minimise drawdown

impacts on the adjacent alluvial aquifer, and reduce the post mining risks of contaminant migration and seepage when the mine voids are backfilled.

The performance and verification of the LPBW is proposed to be assessed through ongoing review and updating of the project's Water Management Plan (WMP). The WMP is proposed to be expanded to incorporate additional groundwater monitoring infrastructure, specifically the installation of new monitoring bores within the vicinity of Carrington West Wing pit boundary and adjacent alluvium, located south of the LPBW alignment.

**To ensure the ongoing appropriate management of groundwater if the Application is approved, the EPA recommends that DPHI consider a condition that requires the Applicant to prepare and implement an updated Water Management Plan commensurate with the changes proposed under this application. The EPA considers that the updated WMP should as a minimum:**

- a) be prepared by a suitably qualified and experienced person(s)
- b) be prepared in consultation with the DCCEEW Water Group and the EPA
- c) detail water use, metering, disposal and management on-site
- d) detail the water licence requirements for the development
- e) contain a Groundwater Management Plan, including
  - i. baseline data on groundwater levels and quality
  - ii. a program to monitor groundwater levels and quality (including nutrients and pathogens), including details on:
    - the number, design and location for all monitoring bores
    - timelines for establishment and sampling regime(s) for the monitoring bores
    - monitoring frequency and suites of analytes to be monitoring
    - reporting requirements for the sampling results
  - iii. The construction and spatial details of all and any newly installed groundwater monitoring bores commensurate with Continuation projects
  - iv. groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts to aquifers and other groundwater users in the area
  - v. a protocol for the investigation and mitigation of identified exceedances of the groundwater impact assessment criteria
- f) contain an updated Surface Water Management Plan to reflect the changes in this amendment.

## **Surface Water**

### **Matters to be addressed with conditions**

#### **9. Sediment basin areas and overburden emplacement areas**

The EPA understands that there are variations to sediment basin locations, and the sequence of overburden emplacement has been revised in the Amendment. The project is already conditioned to implement erosion and sediment control measures consistent with relevant guidelines (Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Volumes 2A, 2C, and 2E (DECC, 2008) (Blue Book)).

The EPA notes that the EPL does not currently regulate sediment basin discharges from the site though Licenced Discharge Points, limits or monitoring conditions.

Newly constructed sediment dams managing active and new overburden emplacement areas should be managed through an updated Water Management Plan. Monitoring undertaken as part of this plan should assess if basin performance is consistent with the Blue Book requirements of only

discharging clean sediment after settling. The analytes would include salinity, major ions, bicarbonate, pH, nutrients and a suite of metals.

The EPA notes that Appendix I, Attachment B of the Water Assessment shows elevated levels of some analytes that are not sediment, including a range of metals, bicarbonate alkalinity and nitrates. In addition to pollution risks in controlled discharges, Blue Book basin sizing relates to sediment-only pollution risk and therefore the frequency of overflow appears to be too frequent for other pollutant types.

**In consideration of this, if the application is approved, EPA recommends DPHI consider a condition to require the Applicant to update the Water Management Plan to include:**

- a) ongoing monitoring of the existing and new sediment basins, including all pollutants present in discharges that pose a risk of non-trivial harm to human health or the environment, including but not limited to salinity, major ions, bicarbonate, pH, nutrients and a suite of metals**
- b) mitigation measures to ensure that only clean sediment is released in controlled discharges offsite**
- c) management, such as reuse or diversion to the mine water system or resizing basins to larger than Blue Book, of any pollutants in sediment basins other than clean sediment, e.g. any analytes that are above ANZG (2018) and (2000) guidelines in controlled discharges**

Table 2.6 of Amendment Water Assessment appears to incorrectly refer to the NSW Water Quality Objective for conductivity in lowland rivers (125 to 2,200  $\mu\text{S}/\text{cm}$ ). The ANZECC (2000) conductivity trigger range for NSW coastal rivers is 200 to 300  $\mu\text{S}/\text{cm}$ . However, the Hunter River catchment may have more naturally elevated salinity in some sub-catchments and its not clear in the assessment what electrical conductivity trigger values are relevant to sediment basin discharges.

**The EPA recommend that DPHI requests appropriate electrical conductivity trigger values are developed to assess salinity monitoring data for offsite discharges as part of the updated Water Management Plan.**

#### Minor matters

### **10. Mine water discharges**

The existing EPL (No 640) for the premises currently regulates mine water discharges via the Hunter River Salinity Trading Scheme (HRSTS).

The Amendment Report states that HVO currently holds 102 HRSTS salt credits and plans to increase this to 130 credits during 2026, and the modelled releases were stated to operate within conditions of the HRSTS, available credits and the existing EPL.

The EPA notes that the applicant will need to ensure that they hold sufficient HRSTS credits for their proposed discharges.