Amendment Report

Application for Licence Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L9415/2023/1
Applicant	Pilbara Energy (Generation) Pty Ltd
ACN	631 303 305
File Number	APP-0027309
Premises	PEG Power Station Solomon Iron Ore Mine Legal description Part of Mining Tenement L47/901 As defined by the coordinates in Schedule 2 of the issued licence
Date of Report	17 July 2025
Decision	Revised licence granted

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1. Decision summary

Licence L9415/2023/1 is held by Pilbara Energy (Generation) Pty Ltd (PEG; the licence holder) a wholly owned subsidiary of Fortescue for the PEG Power Station (the premises), located at the Solomon Iron Ore Mine adjacent to the Solomon power station.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the premises. As a result of this assessment, revised licence L9415/2023/1has been granted. The revised licence issued as a result of this amendment supersedes the existing licence previously granted in relation to the premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the Department of Water and Environmental Regulation (DWER, the department) has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at DWER Regulatory documents | Western Australian Government.

2.2 Application summary

On 30 January 2025, the licence holder submitted an application to the department to amend licence L9415/2023/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The application relates to the installation and operation of two additional gas-fired engines within the existing engine hall to support Fortescue's power requirements, bringing the total number of engines at the premises to 16. The addition of these engines will increase the installed capacity from 156 Mwe to 186.5 Mwe per year. The engines to be installed are 12 MW Bergen units, consistent with those currently in operation at the premises.

2.3 Part IV of the EP Act

The proposal to construct and operate the PEG power station was referred to the Environmental Protection Authority (EPA) under Part IV of the EP Act on 22 May 2020 and was assessed through a Public Environmental Review (PER) assessment process. The EPA released its report and recommendation on the project (EPA Report 1686) in August 2020 and Ministerial approval for the proposal was granted through Ministerial Statement 1161 (MS 1161) on 1 February 2021. On 25 October 2024 MS 1161 was amended under section 45C(1) of the EP Act to alter the authorised extent of the proposal to 16 gas-fired reciprocating engines with an installed capacity of up to 186.5 MW.

The EPA's assessment of the PEG power station proposal considered the following key environmental factors relevant to the construction and operation of the power station:

- greenhouse gas emissions; and
- air quality.

EPA Report 1686 notes that the EPA consulted with the department 'with regard to the management of emissions from the PEG power station and is satisfied that Air Quality impacts can be managed as a prescribed premises (Category 52) through licensing under Part V of the EP Act'.

2.3.1 Ministerial Statement 1161

MS 1161 approved the implementation of the proposal subject to conditions. Condition 6 of

MS 1161 regulates greenhouse gas emissions including defining the maximum extent of greenhouse gas emissions for the premises, stipulating greenhouse gas emissions reporting requirements and the development of a Greenhouse Gas Management Plan.

3. Air quality modelling and review

The licence holder supplied an Air Quality Impact Assessment (AQIA) undertaken by SLR (SLR 2020) for their works approval application prior to construction of the premises. As noted in the decision report for their works approval W6516/2021/1 (DWER 2021), modelling indicated that the only pollutant of concern was NO_2 as it was the only pollutant indicating a potential for exceedance of the National Environment Protection (Ambient Air Quality) Measure (NEPM) standard (SLR 2020).

SLR has prepared a revised report (AQIA) on behalf of the licence holder presenting revised modelled ground level concentration (GLC) of toxicants considering the additional two engines for seven different operational scenarios. The dispersion modelling carried out as part of this updated AQIA report utilised the same WRF/CALMET/CALPUFF dispersion modelling system as was used in previous AQIA reports and considers cumulative emissions from the PEG power station (PEG PS) and existing Solomon power station (SPS).

GLC were recalculated using the ozone limited method and a background ozone concentration of 60 ppb was adopted for this analysis based on the Pilbara Air Quality Study, which included ozone monitoring data collected in 2004. Seven different scenarios were modelled for various operating conditions for the SPS, the PEG PS, and the concurrent operation of both stations under worst case meteorological conditions. Table 1 below provides a description of each scenario, along with the AQIA predicted maximum 1-hour average GLC of NO_2 at identified sensitive receptor locations. The scenarios include both existing operations with 14 engines and proposed operation incorporating two additional generators, resulting in a total of 16 engines.

Table 1: Maximum 1-Hour Average NO_2 predicted GLC (µg/m^3) at closest sensitive receptors – Comparison of existing operation (14 engines) and proposed operation including two additional generators (16 engines)

Operating Scenario modelled			Karijini National Park		Hamersley Gorge		Hamersley Station	
			14 engines	16 engines	14 engines	16 engines	14 engines	16 engines
SPS Only	Maximum load - Gas	1	96	96	49	49	13	13
	Maximum load - Diesel	2	154	154	83	83	21	21
	Typical Load - Gas	3	23	23	13	13	4	4
PEG PS Only	Maximum Load	4	40	88	41	69	5.9	12
Cumulative impacts of SPS and PEG PS	Scenarios 1 and 4	5	122	122	80	118	16	20
	Scenarios 2 and 4	6	160	**170**	124	152	24	27
	Scenarios 3 and 4	7	55	105	46	75	8.3	13

SLR conducted an ozone background sensitivity analysis to evaluate how variations in assumed ambient O_3 levels would impact predicted peak NO_2 concentrations at Karijini National Park for Scenario 6, identified as the worst-case scenario. The same analysis was undertaken for assessment of the initial licence application. The analysis examined less conservative ambient O_3 levels of 40 ppb and 50 ppb. SLR noted that the Woodside ambient monitoring network (2009–2015) considered 60 ppb as a conservative estimate for the Karratha/Dampier region and recorded 90th percentile O_3 values up to 35 ppb. Results from this sensitivity test are shown in Table 2 with further analysis of how it compares to the NEPM criterion for 1-hr NO_2.

Table 2: Results from background ozone sensitivity modelling compared to NEPM criteria for NO_2 at closest receptor

Assumed background ozone concentration (ppb)	Maximum 1-Hr average NO_2 predicted GLC for scenario 6 calculated using OLM at Karijini National Park (µg/m3)	Percentage of NEPM Standard for 1-Hr NO_2 (164 µg/m3)
60	170	104%
50	150	91%
40	130	79%

Additionally, SLR conducted a time-of-day analysis of predicted NO_2 concentrations at Karijini National Park. As shown in Figure 1 below, concentrations were generally predicted to be higher during the night (6 pm to 5 am) compared to the day (6 am to 6 pm), with the predicted maximum 1-hour average concentration reaching 170 µg/m³ at night and 154 µg/m³ during the day. SLR attributed this pattern to more stable atmospheric conditions at night that limit dispersion. SLR also noted that the absence of ozone production during the night, coupled with generally low background ozone levels, have likely resulted in an overestimation of predicted NO_2 concentrations presented in Table 1 due to reduced ozone-driven conversion.

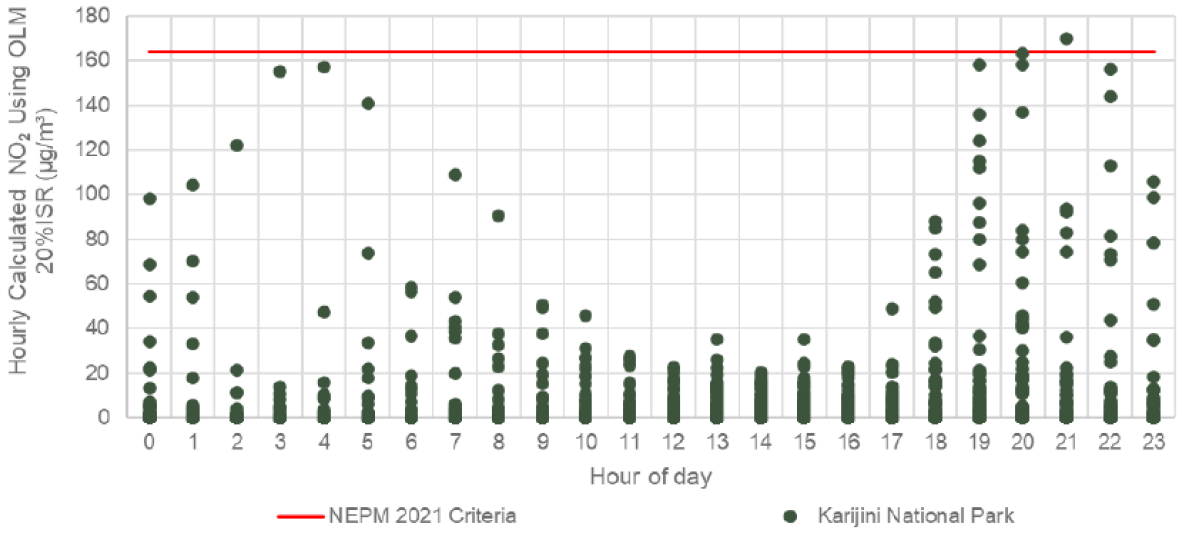

Figure 1: Hourly Calculated NO2 Using OLM (60 ppb O3) - Karijini National Park, Scenario 6

3.1 Technical review

The department's Air Quality Branch (AQB) reviewed the revised AQIA. The modelling approach, and use of the Ozone Limiting Method (OLM) are considered to be fit for purpose.

AQB agreed with the presented justification that the predicted exceedance of the 1-hour NO_2 guideline was driven by conservative assumptions, particularly the use of a 60 ppb background ozone concentration. The use of a lower percentile ozone value, such as the 90th percentile (35 ppb), is supported noting this remains conservative. It is considered unlikely that peak ozone would occur during nighttime stable atmospheric conditions under which the highest NO_2 concentrations were predicted per Figure 1. Consequently, it is concluded that the modelled exceedances of the NO_2 1-hour criterion at the NW corner of Karijini National Park is unlikely to occur.

4. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

4.1 Source-pathways and receptors

4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Amendment Report are detailed in Table 3 below.
Table 3 also details the control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 3: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Installation of two generators	Air/windborne pathway	None proposed, installation to occur within an engine hall therefore emissions not expected.
Noise			
Operation			
Air emissions	Operation of the two additional generators	Air/windborne pathway	• Each gas fired engine will be installed with an exhaust stack that is 26 m above floor level and have an internal diameter of 1.2 m. • Engines will be operated and maintained in line with manufacturer specifications to minimise emissions. • Annual stack testing of emissions to air, aligning with existing licensed monitoring requirements (NOx as NO_2; SO_2; PM; CO; Formaldehyde; Benzene; Toluene; Ethylbenzene; Xylene and Total VOCs) and with the same approved methods.

4.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the delegated officer has excluded employees, visitors and contractors of the licence holder from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)). Additionally, the location of PEG Power Station in regional context and identified receptors can be seen in Figure 2.

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Approximate distance from prescribed activity**
Hamersley Station	32 km south-west of the premises boundary
Tourists at Hamersley Gorge within Karijini National Park	12.3 km south of the premises boundary
Yindjibarndi Native Title area accessible to Traditional Owners for camping, use of water, perform ceremony etc.	Premises is within the Yindjibarndi Determination area where Native title exists (non-exclusive) and is 305 m east and 7200 m north-west of where Native title exists (exclusive).
Environmental receptors	**Approximate distance from prescribed activity**
Aboriginal heritage site	1.3 km west of the premises boundary
Karijini National Park	8 km south of the premises boundary
Hamersley Gorge	12.5 km south of the premises boundary
Priority 1 Ecological Community	12 km south-west of the premises boundary
Priority 2 Public Drinking Water Source Area (PDWSA) (Country Areas Water Supply Act 1947)	14 km west of the premises boundary

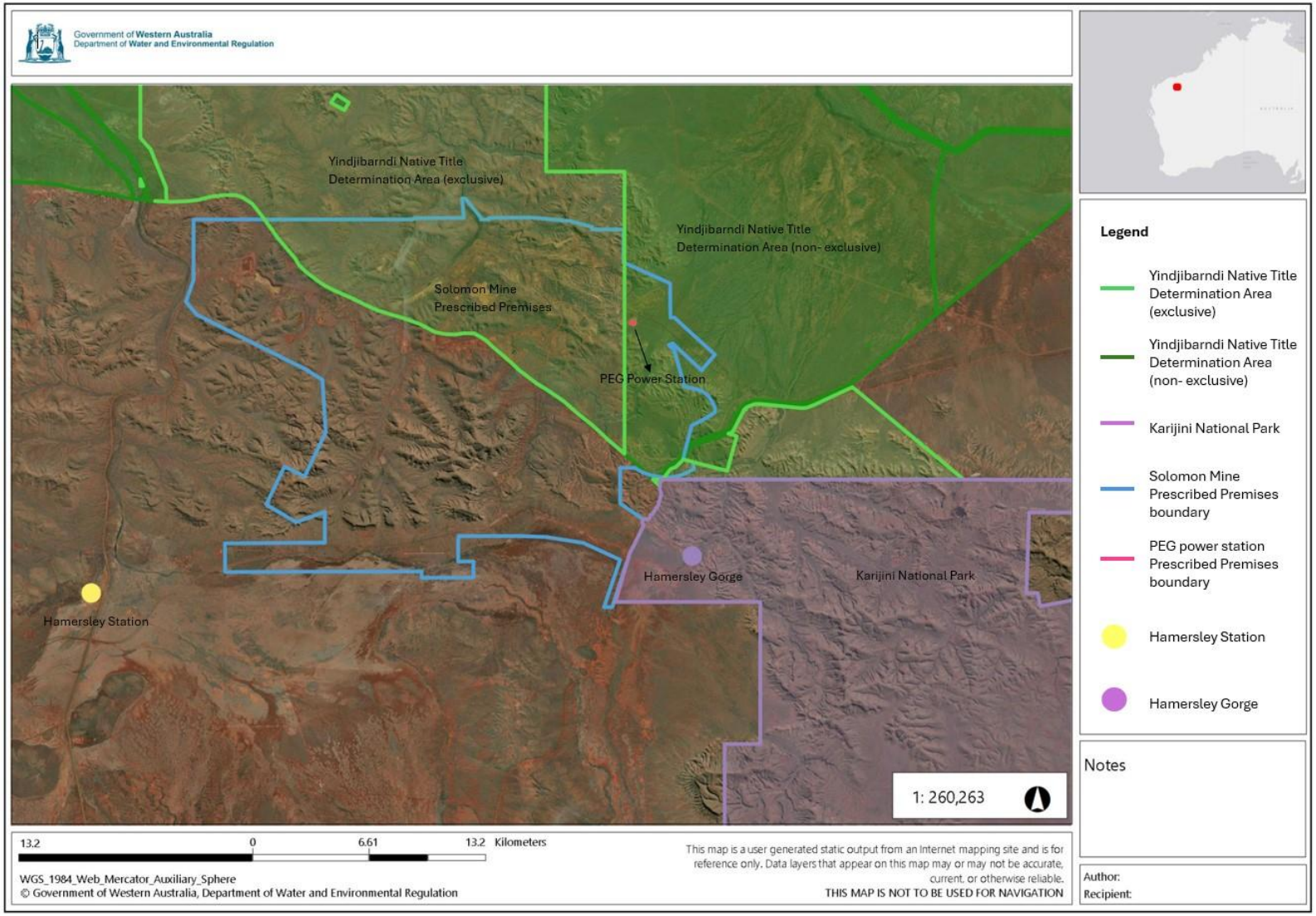

Figure 2: Location of PEG Power Station in regional context

4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section 4.1), these have been considered when determining the final risk rating. Where the delegated officer considers the licence holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

The revised licence L9415/2023/1 that accompanies this Amendment Report authorises emissions associated with the installation and operation of two additional gas fired engines at the premises.

The conditions in the revised licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5. Risk assessment of potential emissions and discharges from the Premises during construction, and operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Construction								
Installation of two gas engines	Dust Noise	Air/windborne pathway causing impacts to health and amenity	Yindjibarndi Native Title area accessible to Traditional Owners for camping, use of water, perform ceremony etc.	The Delegated Officer considers that the required installation works will generate minimal noise and dust as they will occur within the engine hall therefore are not expected to make a significant contribution to noise and dust emissions from the broader Solomon Mine Operation and are not subject to regulatory control.				
Operation								
Operation of two additional gas engines at the PEG Power Station	Air emissions (NOx, SOx, PM_{10}, VOCs, CO)	Air/windborne pathway causing impacts to health and amenity	Karijini National Park (Hamersley Gorge 12 km south east)	Refer to Section 5.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1, **2**, 3, 4, 5, 6, 7, 8, 10, **15 and 16**	As outlined in section 3 the updated AQIA (SLR 2025), predicts an exceedance of the 1-hour NEPM standard at the north western boundary of Karijini National Park, however the predicted GLC at the nearest sensitive human receptor, Hamersley Gorge, remains below the NEPM standard at 152 µg/m³ (92.7 percent). The predictions are based on the most conservative modelling scenario, which is considered unlikely to occur in practice, as supported by the time of day and ozone sensitivity analyses presented in section 3. The department's technical review of the AQIA agrees with this conclusion. The delegated officer therefore considers that NO_2 emissions from the PEG power station, including operation of the two additional generators (16 units total), are unlikely to exceed the NEPM standard at the closest sensitive receptor modelled for Karijini National Park. As the premises will contribute air emissions on an ongoing basis, controls are required to ensure that emissions remain within acceptable levels. The licence holder has proposed that the existing licence conditions applying to the current generators also apply to the two additional generators. These include annual NO_2

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
								monitoring, maintenance of stack heights consistent with those used in the AQIA modelling, and emission limits for NO_2 that reflect the modelled emission rates. The delegated officer considers these controls appropriate to manage the risk of air quality impacts, and they have been conditioned within the licence for the new generators to ensure emissions continue to meet acceptable standards. As per current licence conditions annual monitoring data and an interpretation of results will be required to be submitted to the department as part of the Biennial Environmental Report, to allow ongoing review of the premises' emission performance. To facilitate the construction of the two additional generators, a construction condition (Condition 1) has been included in the licence to ensure the engine models and stack heights align with those proposed and used as the basis for modelling. The condition also includes a requirement for Australian Standard monitoring ports to enable compliance with stack testing obligations. In addition, Conditions 2, 15 and 16 have been included to ensure that operation of the additional generators is only authorised once the licence holder submits the required compliance documentation confirming the infrastructure has been constructed in accordance with the requirements.
			Yindjibarndi Native Title area accessible to Traditional Owners for camping, use of water, perform ceremony.		C = Major L = Unlikely **Medium Risk**	Y		The delegated officer previously assessed the risk of air emissions to the Yindjibarndi Native Title area for the grant of licence L9415/2023/1. In the original assessment, Scenario 7 was used to represent a conservative operating case, assuming concurrent operation of the SPS at actual load (gas-fired) and the PEG power station at maximum load. This scenario predicted a limited area of exceedance of the 1-hour NEPM standard for NO_2 (164 µg/m³) within the Native Title area adjacent to the PEG premises (DWER, 2025). Although the predicted GLC exceeds the NEPM standard in part of this area, the delegated officer notes that the consequence criterion is based on population

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
								health thresholds, which do not directly reflect the known uses of the area (such as ceremony, camping, and water access). The consequence was assessed as major, but the likelihood of adverse impacts was considered unlikely due to the conservative modelling inputs as described in section 3, absence of permanent residences, and the localised nature of exceedances, most of which were within the Solomon Mine premises boundary. The overall risk is assessed as medium, and the applicant's controls are considered adequate to manage this risk and have been conditioned in the licence. While updated modelling contour maps were not generated as part of the revised AQIA submitted with this amendment the department's AQB advised that the small incremental change in maximum hourly NO_2 concentration that results from the inclusion of two additional generators is not expected to materially change the already assessed medium risk to the Native Title area. The delegated officer considers that, based on the available information and the conservative nature of the modelling as described in section 3, the proposal does not present an unacceptable risk to health or amenity within the Yindjibarndi Native Title area, given the application of the established controls being extended to the additional generators.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed licence holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

5. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Yindjibarndi Ngurra Aboriginal Corporation (YNAC) RNTBC advised of proposal on 13 March 2025	On 13 March 2025, the Yindjibarndi Ngurra Aboriginal Corporation questioned why the proposal was not publicly advertised, noting that as a gas-fired power generation project with associated carbon emissions, it would be in public interest. No further comments were provided.	The Delegated Officer determined that installing and operating two new generators did not involve substantial works and therefore did not warrant public advertising as per *Guideline: Industry Regulation Guide to Licensing* (DWER, 2019).
Wintawari Guruma Aboriginal Corporation RNTBC advised on 13 March 2025	No comments received.	N/A
Banjima Native Title Aboriginal Corporation RNTBC advised on 13 March 2025	On 13 March 2025, the Banjima Native Title Aboriginal Corporation advised that they had no comments on the proposal, following clarification of the application scope.	N/A
Wirlu-Murra Yindjibarndi Aboriginal Corporation advised on 13 March 2025	No comments received.	N/A
The applicant was provided with the draft documents on 7 July 2025	On 15 July 2025 the applicant advised they had no comments on the draft and requested to waive the remainder of the 21-day comment period.	N/A

6. Decision

The delegated officer has determined the proposal to install and operate two additional gas fired engines at the PEG power station, increasing the assessed maximum production capacity to 186.5 Mwe per year, does not pose an unacceptable risk of impacts to public health or the environment. The determination is based on the following:

- The revised AQIA (SLR 2025) is considered to have been undertaken with a high level of conservatism and demonstrates that predicted NO_2 concentrations at the Hamersley Gorge within Karijini National Park remain below the 1-hour NEPM standard under the most conservative worst-case modelled scenario.
- Advice of the department's Air Quality Branch that the small incremental change in maximum hourly NO_2 concentration from the additional generators is not expected to affect the previously assessed medium risk of air quality impacts to the Yindjibarndi Native Title area.
- The additional generators will be located within the existing power station, where controls for hydrocarbon spills and contamination are already in place as constructed

under works approval W6516/2021/1 and subject to existing conditions in the licence.

The licence holder's proposed construction and operational controls for the new generators, consistent with those applied to the existing units and critical to maintaining an acceptable level of risk to public health and the environment, have been imposed on the licence. These controls include construction requirements specifying the engine model and capacity consistent with those assessed in the AQIA, exhaust stack heights and monitoring port requirements as well as operating requirements, NOx emission limits, annual stack testing, and process monitoring applicable to operation.

7. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

7.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 7: Summary of licence amendments

Condition no.	Proposed amendments
Cover Page	Increase assessed production capacity from 165 to 186.5 Mwe per year
Condition 1	New condition to authorise the construction of 2 additional gas engines
Condition 2	New condition authorising operations of infrastructure installed under condition 1 following submission of appropriate compliance documentation
Condition 3 (Previously 1)	Increasing the number of generators under site infrastructure and equipment to 16
Condition 4 (Previously 2)	Including authorised discharge points A15 and A16
Condition 5 (Previously 3)	Including emission points A15 and A16 in the emission limits condition for NOx and NO_2
Condition 6 (Previously 4)	Including emission points A15 and A16 in the emission and discharge monitoring
Condition 8 (Previously 6)	Including emission points A15 and A16 in process monitoring
Condition 15	Inclusion of standard condition to prepare and submit Environmental Compliance Report
Condition 16	Inclusion of standard condition detailing minimum requirements for the Environmental Compliance Report
Figure 2	Figure updated to include emission points A15 and A16

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DWER 2021, Decision Report: Application for Works Approval W6516/2021/1, Perth, Western Australia
5. DWER 2025, Decision Report: Application for Licence L9415/2023/1, Perth, Western Australia
6. *SLR 2020, Air Quality Impact Assessment for PEG Power Project – Revised Power Station Design (SLR Ref: 675.11539-R03), December 2020.*
7. *SLR 2024, Air Quality Impact Assessment for PEG Power Station – Updated Version (675.11539-R04), January 2024.*