





PORT HEDLAND IRON PROJECT

RESPONSE TO SUBMISSIONS PORT HEDLAND IRON PTY LTD

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PREPARED FOR PORT HEDLAND IRON PTY LTD BY PRESTON CONSULTING PTY LTD



Document prepared for:

PORT HEDLAND IRON PTY LTD

Contact Person:	Mr Troy Park
Email:	troypark@posco.com
Phone:	+61 8 9486 7052
Street Address:	Level 48, Central Park, 152-158 St. Georges Terrace,
	Perth, Western Australia, 6000, Australia

Document developed by:

PRESTON CONSULTING PTY LTD

Gavin Edwards – Director
gedwards@prestonconsulting.com.au
www.prestonconsulting.com.au
+61 488 737 273
Level 1/226 Adelaide Terrace, Perth WA 6000
PO Box 3093, East Perth WA 6892

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ACKNOWLEDGEMENT OF COUNTRY

Preston Consulting acknowledges the Traditional Owners of the lands on which it works, in particular the Kariyarra people, the Traditional Custodians of the land on which the activity is proposed. Preston Consulting pays its respects to Elders past and present, to emerging community leaders and to all Aboriginal and Torres Strait Islander people.





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Authorisation	Troy Park – General Manager Port Hedland Iron Pty Ltd	Signature	30/05/2025





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Appendix 1: Air Quality Assessment Report (Ramboll, 2025)

Appendix 2: Dust Modelling Report (ETA, 2025)

Appendix 3: Social Surroundings Consultation Memo





1 INTRODUCTION

1.1 BACKGROUND

Port Hedland Iron Pty Ltd (PHI) is progressing the development of a large-scale downstream iron ore processing facility known as the Port Hedland Iron Project (the Proposal). The Proposal is located in the Boodarie Strategic Industrial Area (SIA) approximately 10 km southwest of Port Hedland in the Pilbara region. The Proposal will consist of a pellet plant and a Hot-briquetted Iron (HBI) Plant, consuming approximately 3-3.5 million tonnes per annuum (Mtpa) of iron ore.

The infrastructure to be developed within the Boodarie SIA for the Proposal will include:

- Iron ore processing facility (IOPF) comprising one pellet and one HBI plant producing approximately 2 Mtpa of HBI and 0.7 Mtpa of iron ore pellets;
- Hydrogen production and storage facilities for supply to IOPF;
- Nitrogen plant;
- Supporting infrastructure such as:
 - HBI and pellet handling and storage facilities;
 - Flux storage;
 - Administration and other non-process buildings;
 - Workshops;
 - Water storage and management areas;
 - Magnetite concentrate/ore handling facilities;
 - Power production, management and transmission;
 - Carbon capture, storage and transport infrastructure;
 - Drainage and sediment control; and
 - Access roads.

The HBI and iron ore pellets will be shipped out of the Port of Port Hedland (PoPH). The scope of the Proposal does not include any construction works at the PoPH or the export of pellets and HBI.

Water, power and natural gas will be supplied by third parties and subject to separate approvals by the relevant third-party and therefore not part of this referral. However, the referral includes an External Infrastructure Development Envelope (EIDE) to allow connection within the Boodarie SIA to third party suppliers, if needed, as well as development of access roads and drainage for the Proposal. The EIDE covers the infrastructure corridors identified in the Boodarie SIA Structure Plan. These infrastructure corridors will be managed by the Department of Energy and Economic Diversification (DEED), as the department that supersedes the Department of Jobs, Tourism, Science and Innovation (JTSI) in July 2025. The layout of the infrastructure within the EIDE will be determined once commercial arrangements with third-party suppliers have been finalised as well as consultation undertaken with DEED. The Proposal also excludes early works for communications infrastructure, laydown areas and access roads.

The Proposal was referred under Section 38 of the EP Act on 14 September 2023. The EPA released its decision to assess the Proposal as an Assessment on Referral Information, with additional information required under s. 40(2) (a), on 13 December 2023.





Legend



External Infrastructure Development Envelope

Plant Development Envelope

Railway (DPLH-058)

Imagery: Google Satellite

Freeways & Highways (LGATE-195)

7746500N

7743500N

7740500N

7737500N

AS



1.2 STRUCTURE

The responses to submissions received from the EPA have been collated into the following categories:

- Air Quality;
- Greenhouse Gas Emissions; and
- Social Surroundings.

The single anonymous public comment has also been addressed separately.

PHI's response to these submissions is presented in Section 2 of this document. Section 3 includes an updated cumulative impact assessment to support the Response to Submissions (RtS).





2 RESPONSE TO SUBMISSIONS

2.1 EPA COMMENTS

Table 1: Response to submissions - EPA Comments

No.	Revised submission and/or issue	Response to comment			
Air Q	Air Quality				
1.	 Comment The ERD states that the Port Hedland Power station is being considered for expansion but notes that there is not sufficient publicly available emissions information and stack release parameters to enable inclusion of the expansion of the Port Hedland Power Station into the cumulative air quality model. Given the expansion of the Port Hedland Power Station was approved in December 2024 through Ministerial Statement 1236, EPA Services expects the relevant information may now be available to be included into the cumulative air quality model. Cumulative impacts to air quality in the Boodarie Strategic Industrial Area was a key consideration in EPA Report # 1770 (Port Hedland Power Station). Action Please revise the cumulative air quality model to include emissions information relating to the expanded Port Hedland Power Station. 	The cumulative impact assessment in the Air Quality Assessment (Appendix 1) section has been updated based on the publicly available information on the EPA Website for the Pilbara Energy Project Expansion, and in particular the air quality modelling carried out by Northstar. Additional information on the changes to the cumulative impact assessment in Appendix 1 has been outlined in Section 3.2. Based on discussions with Ramboll, we believe there is an error in the exit velocities and emissions rates provided for PHPS A6 to A14 in the PHPS Section 38 Referral Supporting Document. Based on the exhaust information provided in the generator performance document which stipulates a wet exhaust gas volume of 19 401 Nm ³ /h and using assumed stack diameter of 0.6 m as described in the referral supporting document and a NO _x gas concentration of 190 mg/Nm ³ (STP dry 15%), we calculated an exit velocity of 44.8 m/s and a NO _x emission rate of 0.924 g/s (as compared to 4.5 m/s and 1.668 g/s respectively used in the referral supporting document). The revised modelling provided in Appendix 1 uses the updated emissions information in the modelling, based on our calculations, not what was included in the referral supporting document.			
2.	Comment EPA Services notes that only one operating scenario has been considered in the air quality assessment (Appendix 5 Air Quality Assessment). Action Provide justification for not including additional operating scenarios in modelling such as upset conditions, start-up and/or shut down.	The only non-routine emissions from the plant are associated with shutdown operations. After the plant is shutdown, the plant is depressurised and the remaining process gas in the system is purged and combusted in a flare for 30 seconds. The process gas contains a mixture of carbon monoxide, carbon dioxide, hydrogen gas, water nitrogen and methane with the methane and hydrogen components comprising the majority of the combustible fraction. The hourly averaged emission rate of NO_x (the main pollutant of concern) from the combustion of the process gas is 36.5 grams per second. Whilst this is above the NO_x emission rate from normal operations (19.1 g/s), the significantly increased effective release height of the emissions and increased buoyancy of the plume from the flare is likely to result in lower ground level concentrations at sensitive receptors when compared to normal operations. The upset conditions are also likely to make negligible difference to cumulative ground level			







No.	Revised submission and/or issue	Response to comment
		concentrations when considered in the context of regional emissions which have an emission rate of approximately 197 g/s of NO_x .
3.	CommentThe National Environment Protection Measures (NEPM) air quality 1-hour SO2 standard used in the ERD and air emissions assessment (Appendix 5) is outdated. From 1 January 2025 the standard for 1-hour SO2 is 0.075 ppm (214 µg/m³). The modelling results in the ERD and Appendix 5 have not been compared with the current (2025) standard.In addition, the SO2 concentrations predicted by the modelling scenarios in Appendix 5 (Table 8) have been compared with incorrect values for SO2 standards.ActionRevise all relevant sections to compare modelling results with the current NEPM air quality standards for SO2.	Section 3, Table 3 and Table 8 of Appendix 1 has been updated to include the new NEPC (2025) standard. This information is summarised Section 3.2.
4.	The $PM_{2.5}$ background value has been estimated from the $PM_{10}/PM_{2.5}$ ratios using BoM monitoring data. In order to identify $PM_{10}/PM_{2.5}$ ratios indicative of the industrial operations of the region it appears that the Taplin Street monitoring site would provide a more accurate representation of the dust generated by Port Hedland's operators compared to the BoM site.	The Dust Modelling Assessment (Appendix 2) has been updated to estimate the $PM_{2.5}$ background value from the $PM_{10}/PM_{2.5}$ ratios using the Taplin Street monitoring site data. The Taplin Street data was not used in the original report as it is more heavily influenced by shipping and rail emissions and will therefore have a higher percentage of $PM_{2.5}$ (a lot more combustion sources) than from purely material handling sources.
5.	Furthermore, the PM ₁₀ to PM _{2.5} ratio of 0.28 derived from BoM data (Table 7-4), is based on annual average data. However, we note that this ratio has also been applied to 24- hour average data. Action Estimate the PM _{2.5} background value from the PM ₁₀ /PM _{2.5} ratios using the Taplin Street monitoring site data. Calculate the above ratios separately for 24-hour and annual data using existing monitoring data to reduce uncertainties in estimating ground level concentrations (GLCs).	 As outlined in PEL (2015) the background file development for the PHIC CAM was only for PM₁₀ and the model has only been validated for this particle size. To assist in determining a potential PM_{2.5} background file the validated hourly data of PM₁₀ and PM_{2.5} from the Taplin Street monitor from 1 January 2020 to 31 December 2023 was obtained from PHIC. Further information on this has been provided in Section 3.3 and Table 2-5 of Appendix 2. The Dust Modelling continues to show that on a cumulative basis: There is no predicted change to the number of exceedances of the criteria at the Taplin Street receptor; There is no predicted change to the maximum predicted 24-hour PM₁₀ concentration at the Taplin St receptor; and There are no predicted changes to the maximum predicted 24-hour PM₁₀ concentration at either the Wedgefield or South Hedland receptors.
6.	The predicted GLCs of dust (PM_{10} and $PM_{2.5}$) and air pollutants (NO_2 and SO_2) in the ERD are only shown as contour graphs. To facilitate easy interpretation and comparison best practice is to present modelling results with relevant air quality standards at each sensitive receptor in tabular format. Action	Table 3 and Table 5 of this report compare the modelling results with relevant air quality standards at each sensitive receptor in tabular format.





No.	Revised submission and/or issue	Response to comment
	Please present the predicted GLCs (both in isolation and cumulatively) for each pollutant of concern at sensitive receptor locations compared against their respective ambient air quality criteria in a tabular format.	
Gree	enhouse Gas Emissions	
7.	Comment Section 8.9 of the ERD notes that the Safeguard decline rate may be subject to adjustment relating to trade exposure. It is understood that the Safeguard Mechanism provides for concessions for trade-exposed facilities, that ultimately reduce the required rate of emissions reductions. Action Provide clarification on the expected status of the proposal as a 'trade-exposed facility' and any related changes to emissions reductions requirements under the Safeguard mechanism.	Schedule 2 of the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 identifies the production variables that are 'trade-exposed'. Primary Iron (the main production variable of the Proposal) is identified as trade exposed. Under the Safeguard Mechanism trade exposed facilities that are at an elevated risk of carbon leakage (i.e., production is relocated outside Australia to jurisdictions that have a lower cost of compliance with emissions reduction obligations) may be eligible for reduced decline rates through Trade-Exposed, Baseline-Adjusted (TEBA) arrangements. Referred to as TEBA facilities, these facilities are sub-set of trade exposed facilities. Safeguard Facilities must apply to the Clean Energy Regulator for TEBA status, if granted a reduced decline rate (as low as 1%) may be applied for up to 3 years. The Proposal will be a manufacturing facility therefore it is required to calculate its Earnings Before Interest and Tax (EBIT) in line with the EBIT Guidelines (DCCEEW, 2024) when applying for TEBA status. Calculation of EBIT requires knowledge of revenue, expenses, interest expenses and income tax expenses or benefits. These variables are dependent on fiscal modelling that has not been completed and market economics that cannot be predicted with sufficient confidence to meaningfully predict when and if the EBIT, and subsequently TEBA arrangements may apply to the Proposal. At this stage of the Proposal, it is not possible to determine with any certainty, when or if TEBA status may be granted and if it is, how the decline rate may be adjusted. TEBA status aims to alleviate the cost of compliance with the Safeguard Mechanism obligations by slowing the decline of the baseline. Noting the proposed mitigation (i.e., relinquish ACCUs) to comply with the Safeguard Mechanism obligations until after 2049 and therefore TEBA status is unlikely to be applicable to the Proposal. Proposed emissions reductions are contingent on the development and commercial availability of mitigating technologie
8.	Comment Figure 8-9 of the ERD indicates that the calculated Safeguard baseline is comparatively high and is set at a level that is unlikely to drive any emissions reductions until close to 2050. Under the 'Low Carbon Case' scenario as presented, the proposal emissions comply with the Safeguard baseline until 2049, after which offsets are proposed. Based	In principle, the Safeguard Mechanism does not necessitate a reduction in emission from any proposal or Safeguard Facility rather it sets a baseline that responsible emitters must comply with. Facilities that emit above their baselines are required to offset their emissions through surrender of ACCUs or Safeguard Mechanism Credits or received





No.	Revised submission and/or issue	Response to comment
	on the 'Base Case' scenario, with no hydrogen integration, and no carbon capture and storage (CSS), annual average emissions are estimated to be approximately 1,1000,000 tCO ₂ -e per annum (from Figure 8-6). This indicates that the proposal could be implemented without major carbon abatement initiatives (hydrogen integration or CSS) through to 2041 and still remain consistent with the Safeguard baseline. Action In the context of the comparatively high Safeguard Baseline for 'Primary Iron', and consistent with the EPA's GHG factor guideline information expectations for 'Option A: Safeguard Mechanism confirmation', please provide further discussion on how emissions are anticipated to reduce over the life of the proposal through compliance with the Safeguard Mechanism, particularly for the years of operations prior to 2050.	penalty (note that other mechanisms for managing excess emissions exist: TEBA, borrowing baselines from the future, multi-year monitoring periods, exemptions etc.). As noted, the Proposal will be granted significant headroom from commencement of operations until 2049, this is a product of the Proposal utilising international best practice technology in the context of reduced iron manufacturing coupled with ambitious emissions reduction strategies, and DCCEEWs approach to setting the scope of the Primary Iron Production Variable in the context of Australian conditions and its aim to being technology agnostic. The result is a production variable that caters for much higher emissions intensity production pathways such as those that utilise coal (accounts for emissions relating to the production of coking coal, lime production, sinter production etc.). DCCEEW sets both a 'default emissions intensity value' and 'best practice benchmark' emissions intensity for Primary Iron. The best practice benchmark reflects the emissions intensity (1.77 t CO ₂ -e / t iron) best pathway for iron production in Australia. The Proposal will operate with an emissions intensity much lower (commencing at 0.49 t CO ₂ -e / t iron), and the headroom afforded under the Safeguard Mechanism is recognition of the Proposal utilising international best practice technology. Given the current state and national policy for decarbonisation, emissions reductions from the Proposal are likely to be driven by emissions reduction targets of product offtakes rather than legislated decarbonisation obligations. As noted above, the integration of hydrogen and CCUS includes consideration of its cost. PHI has undertaken extensive negotiation with the Federal and State governments on support for the development of the hydrogen industry in Australia. PHI considers it essential that through agencies such as the Australian Renewable Energy Agency, support is provided to both the end users of hydrogen (like the Proposal) as well as the producers of hydrogen to ensu
Socia	al Surroundings	
9.	Comment The proposal is located within the Kariyarra Native Title Determination Area (WCD2018/015), Pilbara, Western Australia. KAC and Kariyarra Traditional Owners are the relevant native title party to speak for this area, including Aboriginal heritage, Aboriginal sites and Kariyarra Aboriginal social and cultural heritage values. Several	Additional <u>confidential</u> information on consultation with Kariyarra Traditional Owners, through KAC, is provided in a memo in Appendix 3. This memo outlines consultation specific to Social Surroundings and includes a summary of the consultation and outcomes where relevant.





No.	Revised submission and/or issue	Response to comment
	registered Aboriginal sites have been identified within the external infrastructure development envelope.	
	EPA Services considers that potential impacts to Aboriginal cultural heritage (ACH) from the proposal have not been fully addressed in the ERD consistent with the EPA's Technical Guidance Environmental impact assessment of Social Surroundings – Aboriginal cultural heritage.	
	Where ACH is being assessed, the information outlined in sections 3.1 – 3.3 of the above guideline is usually needed by the EPA to assess the significance of impacts to ACH and consider whether reasonable conditions should be recommended.	
	Action	
	Revise social surroundings – Aboriginal cultural heritage information consistent with the EPA's Technical Guidance Environmental impact assessment of Social Surroundings – Aboriginal cultural heritage including but not limited to:	
	 Demonstration of reasonable steps taken to engage the Kariyarra Traditional owners in meaningful consultation relating to potential impacts to Aboriginal cultural heritage; and A summary of the consultation and outcome, as it relates to the proposal's physical or biological impacts on ACH values. 	
10.	Comment	Preston Consulting, on behalf of PHI, had a meeting with the PEOF Program Manager at DWER on 10 March 2025.
	engagement with the DWER PEOF team to ensure the use of PEOF is appropriate in what impacts to environmental values can or cannot be offset by contributing to PEOF.	The Program Manager confirmed that offset requirements for the Proposal can be met via contribution to the PEOF.
	Action	The Program Manager indicated that they would look to engage with PHI further once a
	Undertake consultation with the DWER PEOF team and demonstrate outcomes of consultation with respect to the capacity of PEOF to deliver offsets relevant to the values being impacted by the proposal.	Ministerial Statement is issued.
11.	Comment	PHI considers that the Proposal aligns with the EPA's Strategic advice on Cumulative
	Given the biodiversity values, economic importance, and rate of development in the Pilbara region the EPA expects to see development and implementation strategies that ensure the important values of the region are protected. The EPA identified a range of opportunities to do so in the <u>Cumulative environmental impacts of development in the</u>	environmental impacts of development in the Pilbara region. The Proposal has a small footprint (by Pilbara standards) and is located in a Strategic Industrial Area close to existing industrial development and therefore avoids impacts to pristine areas and further fragmentation of habitat in currently undeveloped parts of the Pilbara.
	<u>Pilbara region EPA Western Australia</u> advice.	Being located in a Strategic Industrial Area also allows the Proposal to utilise shared
	Action	approvals in place already. This means the Proposal does not need to develop its own
	Provide demonstration of how the EPA's Strategic advice on Cumulative environmental impacts of development in the Pilbara region has been considered.	standalone utilities and other infrastructure that would increase cumulative impacts in the Pilbara. This is discussed further in Section 3.1.





No.	Revised submission and/or issue	Response to comment
		The PEOF was established in response to the EPA's advice on cumulative impacts and PHI's offsets requirements will be delivered through a contribution to the PEOF.
12.	Comment A review of the Register of Places and Objects, as well as the Department of Planning Lands and Heritage (DPLH) Aboriginal Heritage database, concludes that the development envelope intersects with the actual boundaries of four registered sites (IDs 164, 764, 17023 and 25647). Based on the current information, and intersection of the development envelope with registered heritage sites approvals under the Aboriginal Heritage Act 1972 (AHA) may be required. Action EPA Services advises the proponent to liaise with DPLH to ensure early engagement on the requirement of approvals under the AHA.	 Noted. The four sites referenced include the following: Midden (ID: 164); Artefacts / Scatter, Camp, Midden, Other (ID: 764); Artefacts / Scatter, Midden, Shell, Water Source (ID:17023); and Midden, Shell (ID: 25647). All four sites occur within the EIDE and due to the flexible nature of planning the infrastructure locations in the EIDE, have the potential to be avoided. Changes to the corridors in the BSIA may also be utilised to avoid these sites. If the sites cannot be avoided, PHI will seek approval under the AHA. PHI understands it approvals responsibility under the AHA and will liaise with DPLH on this matter.
13.	CommentBased on the information provided in the ERD and supporting information the proposal will meet the criteria for a prescribed premises as described in Schedule 1 of the Environment Protection Regulations 1987 under the following category: <i>Category 44 – Metal smelting or refining: premises on which metal ore, metal ore concentrate or metal waste is smelted, fused, roasted, refined or processed.</i> ActionEPA Services advises the proponent to liaise with the Process Industries (DWER) to ensure early engagement on the requirements of any works approvals, permits and licences under Part V of the EP Act.	No action required for EPA process. Preston Consulting to organise a meeting DWER Process Industries to discuss Part V licensing. PHI notes that the Category 44 of Schedule 1 of the Environment Protection Regulations 1987 applies to the Proposal. Note that the Part V Works Approval is a secondary approval that is expected to be progressed later, after the Ministerial Statement is issued, once further detailed design work has been completed for the plant.
14.	Comment EPA Services notes that the referral document has limited information regarding the proposed infrastructure, processes and pollution controls measures that would be required to enable a detailed risk assessment of emissions and discharges under Part V of the EP Act. Action EPA Services advises that further detailed information will be required to be provided in support of an application made under Part V of the EP Act. This should include specific information for components such as stormwater controls, wastewater management from the brackish water reverse osmosis, dust controls for materials handling, air emissions and ambient monitoring, etc.	No action required for EPA process. As above, Part V Works Approval is expected to be progressed once detailed design work has been undertaken and additional information on the proposed infrastructure, processes and pollution controls is available. PHI notes the specific information noted in the action item is not unexpected or unusual for an application under Part V.







No.	Revised submission and/or issue	Response to comment
15.	Comment EPA Services advises the proponent to liaise with the Department of Biodiversity, Conservation and Attractions (DBCA) with regard to section 40 authorisation under the <i>Biodiversity Conservation Act 2016</i> (BC Act). Based on the information provided, section 40 authorisation under the BC Act may be required for the take of threatened fauna. It is important to note that the definition for the take of fauna under the BC Act includes both direct take (i.e. to kill, injure, harvest, or capture) and indirect take (i.e. to cause or permit any killing, injuring, capture or harvest).	The Bilby Management Plan includes pre-clearance surveys and relocation of bilbies if recorded. Confirmation of approval requirements will be confirmed through consultation with DBCA. As for Part V Works Approvals, any approvals under the BC Act are considered secondary approvals.
	Action Liaise with DBCA to ensure early engagement on the requirements of any s. 40	
	authorisation under the BC Act.	





2.2 PUBLIC SUBMISSIONS

 Table 2: Response to submissions – Public Submissions

Revised submission and/or issue	Response to comment
 A single anonymous submission was received. The submitter was largely supportive of the proposal provided the following items were considered during assessment: Odour and odour management; Management of waste; Tailings dam; Desalination water intake and outtake management; Native vegetation clearing; Native fauna; and Indigenous heritage. The proponent is asked to address the items above as relevant to the proposal. 	The Proposal is not expected to emit any odours that would impact on local residents and the community. The process does not utilise any reagents or produce materials that are known to emit strong odours. Therefore, odours have not been considered further. Industry standard controls for waste management will be implemented as per the Supplementary Document. No tailings dam is being proposed as part of the Proposal as no processing of ores is required. Water supply via desalination does not form part of the Proposal. Clearing of native vegetation has been assessed in Section 5 and 12 of the Supplementary Document (Flora and Vegetation and Cumulative Impact Assessment, respectively) and the clearing of native vegetation. Native fauna impacts have been assessed in Section 6 of the Supplementary Document, with a Bilby Management Plan proposed to be implemented and offsets proposed via a contribution to PEOF. PHI considers that Proposal can be implemented to meet the EPA's objective for Terrestrial Fauna. Indigenous heritage has been reviewed in Section 9 of the Supplementary Document.





3 ADDITIONAL INFORMATION

3.1 CUMULATIVE IMPACTS

PHI has completed a high-level review of the past, present, and reasonably foreseeable future activities in proximity to the Proposal, to assess the Proposal's contribution to impacts on relevant environmental values (Preston Consulting, 2024).

The cumulative impacts must be considered in the context of the Proposal being located within a Strategic Industrial Area (SIA). SIAs are set aside for industrial development in a sustainable manner with allowance for shared infrastructure corridors and a buffer zone to ensure development does not encroach on the industrial development. The SIA system is designed to avoid higher levels of cumulative impacts associated with multiple stand-alone industrial developments across a wider area.

The primary recommendation of the EPA is for the development of a strategic plan for biodiversity conservation in the Pilbara, and as such the Project follows the guidelines established in the BSIA Structure Plan (URBIS, 2017). The Structure Plan provides for the long-term strategic industrial development of the area and is intended to coordinate the detailed land use and development of the BSIA. The Structure Plan states that industry clustering is a critical element to allow for the development of synergies within the BSIA and the surrounding region.

3.2 AIR QUALITY MODELLING

Ramboll (2025) conducted AERMOD air dispersion modelling, which is used widely used in Australia and is accepted by the Department of Water and Environment Regulation (DWER). AERMOD is a current-generation air dispersion model that incorporates concepts such as planetary boundary layer theory and advanced methods for handling complex terrain. The utilisation of AERMOD is consistent with the considerations of EIA outlined in the EPAs Environmental Factor Guideline for Air Quality (EPA, 2020).

In 2025, the National Environment Protection Council (NEPC) modified ambient standards for several pollutants, based on international guidance (NEPC, 2025). Relevant changes to the standards for SO_2 include lowering the 24-hour average limits to 20 ppb, and the 1-hour standard further tightened to 75 ppb. The results pf the SO_2 modelling (1-hour averaging period) assessment against the revised guideline criteria are presented in Table 3.

The cumulative impact assessment has also been updated based on regulator comments. The revised modelling indicates that there will be no exceedances above NEPM criteria and therefore continues to meet the EPA objectives for Air Quality. There was no change to the cumulative emissions for CO and SO₂ as a result of the revisions to the model. There were increases in the NO₂ cumulative emissions of up to 33% for the 1 hr averaging period, however the predicted emissions were still well within the NEPM criteria with the highest emissions recorded (1-hr averaging period) only 66.4% of the guideline criteria.





Decentor	Guideline (µg/m³)	Maximum Predicted GLCs in Isolation		Background	Cumulative Maximum Predicted GLCs	
Receptor		AERMOD (μg/m ³)	% of Guideline	(μg/m³)1	AERMOD (μg/m ³)	% of Guideline
R1	196	6.3	3.2	2.6	8.9	4.5
R2	196	5.4	2.7	2.6	8.0	4.1
R3	196	5.1	2.6	2.6	7.7	3.9
R4	196	4.8	2.5	2.6	7.4	3.8
R5	196	5.0	2.5	2.6	7.6	3.9
R6	196	5.7	2.9	2.6	8.3	4.3
R7	196	5.3	2.7	2.6	7.9	4.0
R8	196	5.6	2.8	2.6	8.2	4.2
R9	196	4.5	2.3	2.6	7.1	3.6
R10	196	5.6	2.8	2.6	8.2	4.2

Table 3: Results of the SO₂ modelling (1 hr averaging period) against the revised guideline criteria

1. All values referenced at $25^{\circ}C$ and 1 atm

3.3 DUST MODELLING

ETA (2025) completed dust modelling using the PHIC CAM. This approach is consistent with the State Government approach for managing dust in Port Hedland. The PHIC model was established in 2010 and has been instrumental in the evaluation of dust impacts on the Port Hedland Community. The use of the PHIC CAM ensures that the assessment of dust emissions from the Proposal has been based on existing cumulative emissions.

As outlined in PEL (2015) the background file development for the PHIC CAM was only for PM10 and the model has only been validated for this particle size. To assist in determining a potential $PM_{2.5}$ background file the validated hourly data of PM_{10} and $PM_{2.5}$ from the Taplin Street monitor from 1 January 2020 to 31 December 2023 was obtained from PHIC. The following processes were undertaken to assist in determining a PM_{10} to $PM_{2.5}$ conversion factor:

- Hourly data was converted to a 24-hour average (from midnight to midnight);
- The PM₁₀ to PM_{2.5} ratio was calculated for each valid 24-hour monitoring period. A valid period occurs when:
 - $\circ~$ There is both a PM_{10} and $PM_{2.5}$ concentration for each 24-hour period;
 - $\circ~$ The $PM_{2.5}\,daily$ average concentration is above 0 $\mu g/m^3;$
 - $\circ~$ The $PM_{2.5}$ daily average concentration is less than the corresponding PM10 concentration.

This data is presented in Table 4 where it is apparent that there is some inter-annual variation in the ratio of PM_{10} : $PM_{2.5}$ an overall average ratio of 0.20 would be applicable. To obtain an indicative assessment of $PM_{2.5}$ in this assessment the PM_{10} model results, for both the existing and approved operations and the Project, were scaled using a factor of 0.20.





Table 4: Determining background PM2.5 from PM10 concentrations.

Year	Ratio	Data Point
2020	0.16	280
2021	0.20	352
2022	0.18	334
2023	0.20	267

The modelling shows that on a cumulative basis:

- There is no predicted change to the number of exceedances of the criteria at the Taplin Street receptor;
- There is no predicted change to the maximum predicted 24-hour PM_{10} concentration at the Taplin St receptor; and
- There are no predicted changes to the maximum predicted 24-hour PM₁₀ concentration at either the Wedgefield or South Hedland receptors.

Table 5: Predicted 24-hour average ground level concentrations of PM_{10} and $PM_{2.5}$ at Receptors ($\mu g/m^3$) with background

Pollutant	Assessment Criteria: Concentration ¹	Assessment Criteria: Concentration ²	Taplin St.	Neptune Pl.	South Hedland
PM _{2.5}	25 μg/m ³	23 μg/m ³	6.9	5.5	5.2
PM10	70 μg/m ³	-	34.4	37.8	25.8

1. Concentration referenced to 0°C

2. Concentrations referenced to $25^{\circ}C$

The Proposal continues to meet the EPA's objective for Air Quality.





GLOSSARY

Term	Meaning		
АСН	Aboriginal Cultural Heritage		
ACHIS	Aboriginal Cultural Heritage Inquiry System		
АНА	Aboriginal Heritage Act 1972		
BC Act	Biodiversity Conservation Act 2016		
BSIA	Boodarie Strategic Industrial Area		
CCS	Carbon Capture and Storage		
DBCA	Department of Biodiversity, Conservation and Attractions		
DEED	Department of Energy and Economic Diversification (Previously the Department of Jobs, Tourism, Science and Innovation)		
DPLH	Department of Planning Lands and Heritage		
EIA	Environmental Impact Assessment		
EIDE	External Infrastructure Development Envelope		
ЕТА	Environmental Technologies & Analytics Pty Ltd		
НВІ	Hot-briquetted Iron		
IOPF	Iron Ore Processing Facility		
JTSI	Department of Jobs, Tourism, Science and Innovation (now the Department of Energy and Economic Diversification)		
JV	Joint Venture		
КАС	Kariyarra Aboriginal Corporation		
NEPM	National Environment Protection Measures		
PEOF	Pilbara Environmental Offsets Fund		
РНІ	Port Hedland Iron		
РоРН	Port of Port Hedland		
Preston Consulting	Preston Consulting Pty Ltd		
Proposal	Port Hedland Iron Project		
RtS	Response to Submissions		
SIA	Strategic Industrial Area		
SoW	Scope of Works		
ТО	Traditional Owner		





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