Decision Report

Application for Works Approval

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

Works Approval Number	W6506/2021/1
Applicant	IB Operations Pty Ltd
ACN	165 513 557
File number	DER2021/000048
Premises	North Star Magnetite Project Power Station Marble Bar WA 6760 Legal description – Mining Tenement M45/1226 As defined by the coordinates in Schedule 1 of the works approval (delete if not applicable)
Date of report	09/05/2022
Decision	Works approval granted

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6506/2021/1 has been granted for a duration of 3 years.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application details

On 21 January 2021, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The applicant is proposing to construct a new back-up diesel fired power station at the existing North Star Magnetite Project (North Star MP) which is also referred to as the Iron Bridge Magnetite Project. The application relates to the construction, commissioning and operation of an electric power plant with a maximum energy generation capacity of 44.8 MW (opposed to annualised throughput) under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) as defined in works approval W6506/2021/1.

The use of the North Star MP Power Station for the supply of back-up power is not well defined within the application in terms of how this type of usage may differ from prime energy generation use. For the purposes of this assessment, back-up power has been considered and assessed as usage for up to a maximum of 400 hours in any calendar year for each energy generation unit.

Construction of the North Star Magnetite Power Station will occur in two stages. Stage 1 will involve construction works and the installation of 10 x 1.6 MWe Cat 3516B diesel generators, 2 x 110kL bulk diesel fuel tanks, a self-bunded waste oil tank, and associated pipe works, pumps and shut off valve infrastructure. The works include a transformer a switch room, site drainage infrastructure and concrete hardstand areas.

Stage 2 will involve the construction works and installation of an additional 20 x 1.6Mwe Cat 3516B diesel generators and 5 x 68kL build diesel storage tanks and associated infrastructure. The applicant has advised that they intend to undertake load commissioning and emissions specifications testing as part of the construction works for the site.

2.3 Background

IB Operations Pty Ltd is part of the Fortescue Metals Group Limited (FMG) group of companies that own a number of predominantly iron ore related businesses within the Pilbara Region of Western Australia. The FMG Group of companies are to be connected by a 257km electricity transmission infrastructure corridor (called the PEC, or Pilbara Energy Connect Project) which is currently under construction. The PEC Project will enable electricity to be distributed between a number of FMG sites including the Solomon Power Station, the Pilbara Energy Generation (PEG) Power Station, a proposed renewable energy solar and wind plant; and a proposed large scale battery system. The North Star MP Power Station will be part of this network.

The North Star MP Power Station is being constructed as a prime back-up generation plant,

rather than for standard or emergency back-up power generation, to supplement energy requirements for the North Star MP during periods when the sites main source of electricity, the PEG Power Station is unable to meet energy demands of the site over the short term. The PEG Power Station (currently being constructed under works approval W6516/2021/1) will not generate enough energy to supply the North Star MP when it is operating at full capacity. The shortfall in energy requirements will be sourced from a combination of other but linked off-site FMG Group owned power plants from the PEC network of companies.

The premises is approximately 110 km south of Port Hedland in the Pilbara Region.

2.4 Part IV of the EP Act

The Iron Bridge Magnetite Project is subject to Ministerial Statement (MS) 993 (EPA, 2015) and the back-up diesel power plant relevant to this application has not been specifically described within the Ministerial Statement. The applicant has advised the provision for back-up power, while not explicitly referenced in the Ministerial Statement, is implied through the general approval for the proposal under construction activities described as 'associated infrastructure'.

The majority of the energy requirements for the North Star MP is intended to be supplied from the PEG Power Station which was assessed separately by the Environmental Protection Authority (EPA) and is subject to MS 1161 (EPA, 2021). The PEG Power Station is required to report Green House Gas (GHG) emissions in accordance with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act).

Carbon dioxide equivalent (CO2-e) emissions from the back up diesel North Star MP Power Station, have not been assessed under the MS 993 to date. Should usage of the backup generators be for more than 400 hours in an annual period (i.e., no longer remains as 'backup' power for PEG Power Station), they will no longer be considered as 'associated', and the works approval holder will have to refer the change in usage to the EPA to ascertain if an alteration to the approval granted under Ministerial Statement 933 is required.

Greenhouse gas emissions

The State Government' *Greenhouse Gas Emissions Policy for Major Projects* (Major Projects GHG Policy) published in August 2019; and the EPA's *Environmental Factor Guideline - Greenhouse Gas Emissions* (April 2020) guides but does not bind government decision making for proposals with significant potential for GHG emissions. Instead, they provide a trigger value for proposals with emissions of over 100,000 tonnes of carbon dioxide equivalent (CO_2-e) per annum by which greenhouse gas reduction obligations should be considered under Part IV of the EP Act.

Reporting of GHG emissions from the North Star MP Power Station premises alone is unlikely to be required to be undertaken by the applicant each year in accordance with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act) because the emissions are expected to be limited. That is, under the NGER Act reporting scheme, given the intended use of the power station for back-up power supply use only, GHG emissions from the power station are expected to be below the threshold described by the Major Projects GHG Policy and as such they have not been subject of referral for assessment under Part IV of the EP Act by DWER.

It is therefore likely the reporting requirements under the NGER Act will be triggered for the overall North Star Magnetite Project following construction of the North Star MP Power Station, when cumulative emissions from all diesel generators are considered for the greater project area covered by MS 993. Cumulative GHG emissions for the North Star Magnetite Project as a whole is currently being considered by the EPA.

The Applicant has provided an estimate of GHGe predicted in tCO_2-e per annum and over the life of the power station operating as a backup power station. On the basis that the maximum

annual operating hours will be 400 hours, 11,104 tonnes of CO_2 per annum will be emitted.

If generators were operating at 100% loading 24 hours a day, 7 days a week annually: Cumulatively 243, 187 tonnes of CO_2-e would be generated which is 9, 727 tonnes of CO_2-e per single generator

3. 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.

3.1 Source-pathways and receptors

Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Fugitive Dust	Associated with vehicle movements and civil construction works	No pathway to sensitive receptors	Managed in accordance with the latest versions of the Mine and Rail Dust Management Plan and the Dust Monitoring Guidelines Timing of activities in accordance optimal with climatic data Visual monitoring and risk assessment Dust suppression measures if warranted Limited duration and extent of works
Noise	Associated with vehicle movements and minor constriction works	No pathway to sensitive receptors	All onsite machinery, inspected, maintained and serviced regularly Vehicles and generation units fitted with exhaust silencers Limited duration and extent of works

Emission	Sources	Potential pathways	Proposed controls
Contaminated storm water runoff	Associated with construction of cement hardstand area and civil construction works	Overland flow	Drainage channels, culverts diverting water away from infrastructure during dry periods Stormwater drainage infrastructure, location and design undertaken in accordance with the Management Actions outlined in the Surface Water Management Plan (100-PL-EN-1015) Limited duration and extent of works
Operation			
NOx SOx PM and CO_2	Combustion emissions from diesel fuel	Air/wind dispersion No pathway to nearest sensitive receptors Additive effects of global cumulative greenhouse gas emissions	The backup power station will only be operated for back up purposes in the event the main power supply is out of action. For calculation purposes, 400 hours per annum is a maximum estimate Generators to be emissions tested during load commissioning to ensure performance parameters meet emissions specification Equipment prioritised for usage in high fuel loading low emissions configuration Equipment inspected, maintained and serviced regularly Air emissions managed in accordance with the Greenhouse Gas Emissions and Energy Reporting Management Plan (100-PR-GH-0001)
Noise	Associated with operation of back up diesel generators	No pathway to sensitive receptors	Limited operating hours Self-contained electricity generation units fitted with duel exhausts and exhaust mufflers All generators, inspected, maintained and serviced regularly Generation units fitted with exhaust silencers

Emission	Sources	Potential pathways	Proposed controls
Diesel, engine oil, transformer oil, coolant	Accidental release	Direct discharge Overland flow Contaminated stormwater run-off Infiltration to soil	Containment and storage infrastructure constructed to meet requirements of: • AS 1940:2004; • AS/NZ 3933-1998; and • The latest version of the Hydrocarbon Storage procedure (45-PR-EN-0015) All chemicals and hydrocarbons to be stored in accordance with requirements of the specific Material Safety Data Sheet. Diesel storage tanks are double lined with bunds equivalent to 110% Generators and transformers contained on concrete hardstand area, located within sea containers, and bunded Spill management in accordance with Chemical and hydrocarbon spill procedure (45-PR-EN-004) that requires: • Staff training • Chemical specific spill kits for different types and volumes of chemicals • Spill management procedures including control, containment and disposal of spill recovered wasted to a Licensed waste facility and transported by a Licensed wasted contractor. • All spills are required to be investigated and reported internally. • Spill incidents that are managed in accordance with the Incident Event Management Procedure (100-PR-SA-0011) Waste Oil stored in accordance with the Chemical and Hydrocarbon Storage Procedure (45-PR-EN-0015) Handling and treatment of waste oil in accordance with the Waste Management Plan (45-PL-EN-0014) Potentially contaminated stormwater managed in accordance with the Chemical and Hydrocarbon Management Plan (100- PL-EN-0011)

Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection

of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 2 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).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Town of Port Hedland Pilga Homestead Panorama Homestead	110km north ~45km south ~45km north
Aboriginal sites of significance	Several small sites north (2), east (2 small one large) and west (1) greater than 500m
Environmental receptors	**Distance from prescribed activity**
Threatened fauna several listings (Northern Quoll, Pilbara Olive Python and Pilbara Leaf-nosed Bat)	>1.km
Groundwater Brackish- TDS 300-3,5000mg/L	~48mbgl
Surface water Ephemeral creek lines that flow following cyclonic weather events	~3.5km east and west

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Works approval W6506/2021/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 3: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Installation of back up diesel generation units including vehicle movements and minor construction works	Fugitive dust	Air / windborne pathway causing impacts to health and amenity No pathway. To nearest sensitive receptor	Town of port Hedland over 110km away.	Refer to Section 3.1	No pathway	Y	Condition 1 Condition 2 Condition 3	No additional regulatory controls imposed
	Noise			Refer to Section 3.1	No pathway	Y		
	Contaminated stormwater (sediment)	Overland flow inundation of vegetation	Nearby vegetation	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y		
Commissioning and Operation ***(including time-limited-operations operations)***								
Storage and use of diesel; fuel, coolant and transformer oils for operation of back up diesel generators	Accidental release	Direct discharge Overland flow Inundation and infiltration to soil	Seasonal minor creek 3.5km east Threatened fauna (closest 1km south-east)	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1 Condition 2 Condition 3	The Delegated officer considers that the Applicant's commitment to construct and manage the hydrocarbon storage and containment infrastructure to comply with AS 1940:2004 and AS/NZ 3933-1998. Secondary containment infrastructure, in the unlikely case that primary containment is compromised, will contain spills, discharges and breach containment. Additional infrastructure that will minimize accidental loss of containment includes level sensos within each tank, pipe pressure sensors and shut off valves. The site Chemical and hydrocarbon

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
								Management Plan; Chemical and Hydrocarbon Spill Management Plan and Incident Event Management Procedure as mentioned in section 3.1 will also be used to manage any accidental spills.
Operation of back up diesel generators	Noise	Air / windborne pathway No pathway.to nearest sensitive receptor	Town of port Hedland over 110km away Pilga and Panorama Homesteads approximately 45km away	Refer to Section 3.1	No pathway	Y	N/A	No regulatory controls imposed
	Air emissions from the combustion of diesel NOx SOx PM And CO_2	Air / windborne pathway No pathway. to nearest sensitive receptors	Town of port Hedland over 110km away Pilga and Panorama Homesteads approximately 45km away	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	N	Condition 1 Condition 2 Condition 3 Condition 4 Condition 6 Condition 7 Condition 8 Condition 9 Condition 10 Condition 11	The Delegated Officer has included process monitoring Condition 7 to authorise emissions from the specified discharge points only. Condition 8 requires the operating hours, fuel flow rate, percentage load and the amount of electricity generated to be monitored to so that the normal operating conditions of the power station can be assessed in accordance with the Applicant's claims the power station is for use as a back-up supply of energy only. Process monitoring of the generators in accordance with Condition 8 will also enable the Delegated Officer to determine if the GHG emissions from the power station comply with the 400 hour limit and/or if the emissions are significant such as to warrant the imposition of additional conditions under Part V of the EP Act; and/or if emissions are reportable in accordance with the NGER Act (singularly or cumulatively) across

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								the site. Process monitoring will also allow the Applicant to assess energy generation within FMG's PEC network and prioritise less emissions intensive power supply options. The Works Approval Holder has provided an undertaking to test air emissions under load to demonstrate operating specifications for the diesel generators are being met. The Delegated Officer considers this commitment suitable for inclusion as condition 9. The Delegated Officer has also determined Conditions 10 and 11 are suitable for inclusion to require that the specifications testing required under Condition 9 be undertaken in accordance with established sampling methodologies. Condition 12 of the works approval allows for time limited operations following the submission of compliance reporting documentation required by Condition 13.

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

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

4. Decision

Based on the information contained in this decision report, the delegated officer has determined that the application to grant W6506/2021/1 subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

In accordance with these considerations, the Delegated Officer has determined the construction installation and operation of the diesel back up power station that is not operated for more than 400 cumulative hours in any annual period, does not pose an unacceptable risk to human health or the environment when used as limited by the works approval

The *Guidance Statement: Licence Duration* has been considered in determining the duration of the Works Approval. In this regard the Delegated Officer has determined to issue the Works Approval for a period of 3 years from the date of issue.

5. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 20 August 2021	1 submission received – refer to Appendix 1	Refer to Appendix 1.
Department of Mines Industry Regulation and Safety	25/03/2021 The Mining Proposal (Reg. 88861) for the North Star power station is currently under assessment, therefore we are still evaluating how closely the 2020 MP and MCP guidelines were followed. Our focus will be on the ground disturbance and final closure of the power station and presume DWER will be the lead on matters such as emissions and contamination risks. Other relevant legislation regulated by DMIRS to consider for this project would include: *Dangerous Goods Safety Act 2004* (May require licensing) *Mines Safety and Inspection Act 1994* (require Project Management Plan)	Comments noted
Referred to Shire of Ashburton local government authority 5 March 2021	None received	NA
Applicant was provided with the draft works approval and decision	Applicant made no comments on the draft works approval and decision report and requested	Issue of Works Approval

report on 2 May 2022	the remaining 21-day comment period be waived.	

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia. Accessed at https://www.der.wa.gov.au/our-work/regulatory-framework
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia. https://www.der.wa.gov.au/our-work/regulatory-framework
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Risk Assessments*, Perth, Western Australia. https://www.der.wa.gov.au/our-work/regulatory-framework
4. EPA (2015) Ministerial Statement 993. Accessed at: https://www.epa.wa.gov.au/0993-north-star-magnetite-project
5. EPA (2021) Ministerial Statement 1161. Accessed at: https://www.epa.wa.gov.au/1161-pilbara-energy-generation-power-station
6. National Environmental Protection (Ambient Air Quality) Measure (NEPC, 2015). Accessed at: *http://nepc.gov.au/nepms*
7. Environmental Protection Authority (EPA) 2020, *Environmental Factor Guideline: Greenhouse Gas Emissions*, Environmental Protection Authority, EPA, Western Australia.
8. USEPA (2015) EPA's Air Quality Rules for Reciprocating Internal Combustion Engines and their Application to Combined Heat and Power. Accessed at: *https://www.epa.gov/sites/default/files/2015-07/documents/epas_air_quality_rules_for_reciprocating_internal_combustion_engines_rice_and_their_application_to_combined_heat_and_power.pdf*
9. FMG Chemical and hydrocarbon spill procedure (45-PR-EN-004) (DWER reference document A2080278)
10. FMG Waste Management Plan (45-PL-EN-0014)
11. FMG Chemical and Hydrocarbon Management Plan (100- PL-EN-0011)
12. FMG Hydrocarbon Storage procedure (45-PR-EN-0015) (DWER reference document A2080278
13. FMG Surface Water Management Plan (100-PL-EN-1015)
14. FMG Incident Event Management Procedure (100-PR-SA-0011)
15. FMG Mine and Rail Dust Management Plan and the Dust Monitoring Guidelines (DWER reference document A2080278).
16. Diesel Storage and Handling Procedure (100-SP-ME-0044)
17. Correspondence dated 21 April 2022 from Sean McGunnigle titled North Star 40MW Power Station Works Approval

Appendix 1: Summary of public submissions

Summary of comment	Department's response
The submitter indicated that the proposal fails to consider and manage impacts from greenhouse gas emissions (GHG) for • the prevention, control, abatement or mitigation of Pollution or environmental harm; • Impact of cumulative GHG emissions from this project associated with environmental harm associated with climate change The submitter also noted that the Part V works approval application was submitted while a Part IV EP Act 45C application was currently under assessment by the EPA. The submitter asserted that that no determination should be made on the Part V application prior to the Part IV application being finalised.	The State Government's Greenhouse Gas Emissions Policy for Major Projects (Major Projects GHG Policy) was published in August 2019. The Major Projects GHG Policy guides Government decision making under Part IV of the EP Act for new significant proposals that are designated large facilities under the Australian Government's Safeguard Mechanism (i.e. facilities with annual emissions of more than 100,000 tonnes of carbon dioxide equivalent (CO2-e)). The State Major Projects Policy endorses the application of a condition that sets out the requirements for a plan detailing the proponent's contribution towards achieving the Government's aspiration of net zero emissions by 2050. The EPA has developed the Environmental Guideline Factor: Greenhouse Gas Emissions (EPA 2020), for the purposes of assessment of GHG emissions associated with proposals referred to the EPA. This EPA Guideline also identifies emissions exceeding 100,000 tonnes of CO2-e as generally warranting assessment. GHG emissions from the proposed power station are estimated to be a maximum of 11,104 tonnes (CO2-e) per annual period. This equates to approximately 10% of the 100, 000 tonnes threshold described in the above EPA Guideline. Based on the above estimate, and information provided in the application which suggests the premises will remain operational for about 20-25 years, GHG emissions generated over the remaining life of the premises are expected to be in the order of 194,540 – 243,175 tonnes (CO2-e) used in back up power generating mode. The delegated officer has considered the above information and determined that GHG emissions from the premises shall be subject to process monitoring conditions to verify GHG emissions during the limited operations stage of the works approval. This information will then be used to inform a decision as to whether the emissions are significant and warrant the imposition of additional conditions under Part V of the EP Act. It is likely that cumulative GHG emissions from the North Star Magnetite Project Power Station and the Iron Bridge Magnetite Project will trigger the threshold criteria when operational. This matter is being considered by the EPA and does not limit the CEO of DWER from issuing this works approval for construction and time limited operations of a back-up power station.