East Pilbara Generation Hub

Application Number: **02909** Commencement Date: **09/05/2025** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

East Pilbara Generation Hub

1.1.2 Project industry type *

Energy Generation and Supply (renewable)

1.1.3 Project industry sub-type

Wind Farm

1.1.4 Estimated start date *

30/08/2026

1.1.4 Estimated end date *

30/08/2060

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

Pilbara Energy (Generation) Pty Ltd (PEG), a wholly owned subsidiary of Fortescue Ltd (Fortescue), is proposing to develop the East Pilbara Generation Hub (the Proposed Action), comprising a wind farm, supporting infrastructure and a 220 kV (kilovolt) transmission line for power supply.

The Proposed Action will involve the installation of up to 200 wind turbines and five substations, with a target installed capacity of approximately 2.1 GW (Gigawatts), which could increase depending on the efficiency of the turbine equipment throughout the life of the Proposed Action. The proposed 220 kV transmission line will be built to enable energy transfer to Fortescue's mining operations from the wind farm. Fortescue has identified a 2 km (kilometre) wide transmission corridor to Iron Bridge to allow for deviations for any identified environmental, heritage and/or social sensitive receptors. The Proposed Action includes a Proposed Action Area of 98,772.61 ha within which an Indicative Disturbance Footprint (IDF) of 2,331.36 ha is anticipated. The Proposed Action Area is detailed in Attachment 1, Figure 1-1 p. 13.

The Proposed Action Area is situated on the Eginbah, Panorama and Corunna Downs pastoral leases. The Panorama, Eginbah and Corruna homesteads are outside of the Proposed Action Area. The Eginbah homestead building is in ruins and not occupied and the Corruna homestead is permanently closed. The Proposed Action Area is also located within Nyamal People #1 and #10 native title determination areas and is relevant to the Nyamal People (Nyamal). Refer to Attachment 1, Figure 1-2, p. 14.

The Proposed Action will also include temporary infrastructure such as fuel storage, construction laydown areas and site offices, and permanent supporting infrastructure such as water infrastructure (i.e., turkey's nests, abstraction bores and pipelines), accommodation camps, operations support offices, communications towers, and a series of access roads and corridors for overhead electrical reticulation.

The spacing and proposed design layout of the proposed wind turbines has been informed by an assessment of existing topography, and the collection of ongoing wind and climate data by Fortescue, specific to the Proposed Action Area. Site data has been used to undertake energy modelling for the wind farm, with wind turbines positioned to optimise efficiency and power output.

The Proposed Action will require clearing of native vegetation of up to 2,318.80 ha (excluding cleared areas), including 1,290.68 ha of permanent clearing and 1,028.12 ha of temporary clearing for the construction of renewable infrastructure, supporting electrical infrastructure and supporting infrastructure. The Proposed Action will also require approximately 700 ML/annum and ~ 50 ML/annum of water for construction and operation activities, respectively.

The Proposed Action is expected to have a life of 25-30 years and, with asset life extension, can operate indefinitely. It is intended to restore the environmental values of the area following the lifespan of the Proposed Action. Requirements for decommissioning will be established through consultation with relevant stakeholders. The result will be a decommissioning management plan, which will be developed in the years leading up to decommissioning the Proposed Action.

Refer to Attachment 1, Section 2, pp. 16 to 29 for further details.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

The following Commonwealth and State legislation, regulations and policies apply to the Proposed Action.

Commonwealth Legislation

***Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**

The EPBC Act is the Commonwealth Government's primary environmental legislation and is the principal statute for the protection and management of Matters of National Environmental Significance (MNES). The EPBC Act forms the legislative basis for this EPBC Act Referral Supporting Information Document (SID).

Under the EPBC Act, any action that is likely to have a significant impact on MNES must not be taken without the approval of the Minister for the Environment. The Proposed Action will impact MNES, which triggers the Commonwealth environmental assessment and approval process.

Native Title Act 1993

The NT Act acknowledges the rights and interests of Aboriginal and Torres Strait Islander peoples in land and waters based on their traditional laws and customs. It also creates Prescribed Bodies Corporate to oversee and safeguard native title rights and interests. The NT Act facilitates negotiations between public, private, and native title holders regarding potential developments on land, waters, and sea, such as Indigenous Land Use Agreements. The Proposed Action is located within Nyamal People #1 and #10 native title determination areas and is relevant to the Nyamal People (Nyamal).

Guidelines and Guidance

EPBC Listed Threatened Species Management / Recovery Plans and Conservation Advice

Recovery plans are enacted under the EPBC Act and remain in force until the species is removed from the threatened species list. Conservation advice provides guidance on immediate recovery and threat abatement activities that can be undertaken to facilitate the conservation of a listed species or ecological community. The following documents were considered through the impact assessment and proposed mitigation actions of this Proposed Action:

- Conservation Advice Macrotis lagotis Greater Bilby (TSSC, 2016b)
- Recovery Plan for the Greater Bilby (*Macrotis lagotis*) (DCCEEW, 2023a)
- Conservation Advice *Macroderma gigas* ghost bat (TSSC, 2016c)
- Conservation Advice *Falco hypoleucos* Grey Falcon (TSSC, 2020)
- Conservation Advice *Rhinonicteris aurantia* (Pilbara form) (TSSC, 2016d)
- Approved Conservation Advice for *Liasis olivaceus barroni* (Olive Python - Pilbara subspecies) (DEWHA, 2008b)
- Conservation Advice *Pezoporus occidentalis* night parrot (TSSC, 2016a)
- National Recovery Plan for the Northern Quoll *Dasyurus hallucatus* (Hill & Ward, 2010)
- Wildlife Conservation Plan for Migratory shorebirds (DoE, 2015b).
- Conservation Advice for *Calidris acuminata* (Ssharp-tailed Ssandpiper) (DCCEEW, 2024c)
- Conservation Advice *Pezoporus occidentalis* Nnight Pparrot (TSSC, 2016a)
- Conservation Advice for *Tringa nebularia* (Ccommon Ggreenshank) (DCCEEW, 2024b)
- Wildlife Conservation Plan for Migratory shorebirds (DoE, 2015b).

Matters of National Environmental Significance – Guideline 1.1

This referral has been prepared in accordance with Significant Impact Guidelines 1.1 to determine if the Proposed Action is likely to have a significant impact on Matters of National Environmental Significance (MNES), such as to threatened and migratory species.

Wind farm collision risk for birds: Cumulative risks for threatened and migratory species.

This report centres on threatened and migratory species listed under the Environment Protection and Biodiversity Conservation Act 1999EPBC Act. It was used as guide to assess the risk of windfarm collision for birds and an explanation of the rationale that underlies these processes.

EPBC Act Policy Statement 2.3: Wind farm industry

The wind farm industry policy statement is designed to assist operators in the wind farm industry to decide whether or not proposed actions require assessment and approval under the EPBC Act. It has beenwas used as a guide to assess how the EPBC Act may apply to specific places, species, ecological communities or industry sectors and activities.

Western Australian Legislation

***Environmental Protection Act 1986* (EP Act)**

The *Environmental Protection Act 1986* (EP Act) is the key legislative tool for environmental protection in WA. The EP Act provides for the prevention, control and abatement of pollution and environmental harm; and for the conservation, preservation, protection, enhancement and management of the environment. The Proposed Action has been referred under Part IV of the EP Act (environmental impact assessment), which is administered by the Environmental Protection Authority (EPA) and the WA Minister of Environment.

***Biodiversity Conservation Act 2016* (BC Act)**
The BC Act provides for the conservation and protection of biodiversity in WA, including Threatened flora, fauna and ecological communities. Additionally, the BC Act covers important matters including habitats, communities, threatening processes, environmental pests and weeds. The Proposed Action will impact threatened flora and fauna species protected under the BC Act.

***Aboriginal Heritage Act 1972* (AH Act)**
The AH Act protects and manages Aboriginal cultural heritage by requiring approval for activities that may impact or cause harm. The AH Act recognises Aboriginal cultural sites and objects of significance and makes specific provision for traditional use. Prior to submitting a section 18 notice, consultation with Nyamal will occur on the location, importance and significance of any Aboriginal heritage: strategies for the protection and management of any Aboriginal heritage, and comments on the section 18 application, including any objection, support and/or any suggested conditions and mitigation strategies.

Rights in Water and Irrigation Act 1914

The *Rights in Water and Irrigation Act 1914* make provision for the regulation, management, use and protection of water resources, and for related purposes. The Proposed Action will require groundwater abstraction for dewatering during construction and abstraction of construction water, it will also require construction of watercourse crossings and/or floodways.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

Fortescue has identified relevant government, Aboriginal Traditional Owners, pastoral, mining and community stakeholders with an interest in the Proposed Action and consultation has been undertaken since 2023 and will continue throughout the life of the Proposed Action.

Attachment 1, Section 3 (Stakeholder Engagement), pp. 30 - 33 provides further details of relevant stakeholders. A summary of stakeholder consultation undertaken to date is provided in Attachment 1, Section 3.2.1 (Stakeholder Consultation) Table 3-2, pp. 33-48.

Key stakeholders include:

- Government Agencies:
  - Department of Planning, Lands and Heritage (DPLH)
  - Department of Biodiversity, Conservation and Attractions (DBCA)
  - Department of Water and Environmental Regulation (DWER) – EPA services, Licensing, regional services.
  - Pilbara Development Commission (PDC)
  - Department of Energy, Mines, Industry and safety (including Worksafe) (DEMIRS)
  - Department of Climate Change, Energy, the Environment and Water (DCCEEW)
  - WA Treasury
- Native Title holders
  - Nyamal People and Elders
  - Nyamal Aboriginal Corporation – native title body corporation representative of the Nyamal Native Title Determination Area.
- Local Government:Shire of East Pilbara
- Land holders: Corunna Downs Pastoral Station, Eginbah Pastoral Station and Panorama Pastoral Station
- Community and Special Interest Groups
  - Association of Mining and Exploration Companies (WA)
  - Chamber of Minerals and Energy (WA)
  - Beeliar Group
  - Conservation Council WA
  - Australian Conservation Fund
  - Wildflower Society
  - World Wildlife Fund (Australia)
  - Greening Australia
  - Kimberley Pilbara Cattemen’s Cattlemen’s Association
  - Pilbara Mesquite Management Committee
  - Rangelands NRM
  - Save the Bilby Fund
  - The Wilderness Society of WA Inc.
  - Birdlife WA
  - Australian Wildlife Conservancy
  - Care for Hedland.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

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Alternatively, email us at privacy@awe.gov.au.

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	31631303305
Organisation name	PILBARA ENERGY (GENERATION) PTY LTD
Organisation address	6000 WA

Referring party details

Name	Sofie Springer
Job title	Senior Environmental Advisor
Phone	+ 08 6218 8888
Email	sofie.springer@fortescue.com
Address	Ground Floor, 256 St Georges Tce, Perth WA 6000

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	31631303305
Organisation name	PILBARA ENERGY (GENERATION) PTY LTD
Organisation address	6000 WA

Person proposing to take the action details

Name	Jarrod Pittson
Job title	Group Manager Environment and Closure
Phone	+61 8 6218 8888
Email	jarrod.pittson@fortescue.com
Address	Ground Floor 256 St Georges Terrace, Perth WA 6000

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Fortescue has a demonstrated satisfactory public record of responsible environmental management. The company has met statutory requirements for environmental management and compliance reporting for mining and infrastructure projects it has implemented to date. Fortescue has a significant presence in the Pilbara where it owns and operates the Eliwana, Cloudbreak, Christmas Creek and Solomon Iron Ore Mines, as well as large-scale dedicated Port and rail infrastructure.

Fortescue has not been subject to any convictions or proceedings under Commonwealth, State or Territory Law for the protection of the environment or the conservation and sustainable use of natural resources.

The Proposed Action will be implemented in accords with Fortescue's ISO14001-aligned Environmental Management System and Environment Policy. The Fortescue Environment Policy is provided as Attachment 11.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Fortescue implements and maintains an Environmental Management System (EMS) that aligns with the principles of ISO14001 International Standard for Environmental Management Systems. Fortescue also maintains an Environment Policy that is publicly available on the Fortescue website (refer to Attachment 11).
The Policy is endorsed by the Chief Executive Officer and the Board, stating that compliance with environmental laws and obligations is the minimum standard to which Fortescue will operate. It is the responsibility of all Fortescue employees and contractors to comply with the Environment Policy.

The Fortescue environmental management framework is managed by environmental personnel, within corporate, site operations and projects. Position descriptions for relevant environmental personnel outlines the requirements to manage and implement Fortescue's EMS sitewide. Fortescue identifies the environmental aspects of its projects and operations through a systematic risk assessment process. Environmental risks are reviewed and updated annually with Environmental Improvement Plans (EIPs) established for high risk environmental aspects.

Operational controls (management plans, procedures, guidelines and work instructions) will be identified and developed for each environmental risk. Environmental management programs established at Operational and Project sites detail the implementation of operational controls and monitoring of its effectiveness. Effectiveness of critical environmental controls implemented for high risk environmental aspects are audited annually to identify improvement opportunities that may reduce the consequence or likelihood of occurrence of environmental risks or gaps.

All Fortescue employees, including supervisors, receive training during inductions outlining their responsibilities in relation to complying with the Environment Policy. Environmental personnel at Operational Sites and Projects deliver targeted training on specific regulatory requirements, site specificapproval conditions and use of Fortescue management plans and procedures to ensure that personnel understand their environmental responsibilities when undertaking their day to day work.

Fortescue maintains a database that is accessible to all Fortescue personnel to capture, maintain and report details of non-compliances and corrective actions. Performance against compliance targets are monitored and internally reported to management on a monthly basis, ensuring that non-compliance triggers and adverse environmental trends are identified and appropriate corrective and remedial actions can be implemented. Monthly analysis and reporting to Senior Managers is undertaken for environmental incidents and actions completed. Regular biennial reporting of environmental performance to regulators is undertaken in accordance with the Statutory Reporting Schedule.

Environmental personnel at Operational and Project sites undertake monthly auditing against high risk environmental obligations (those obligations where non-compliance could potentially lead to environmental harm). Results of audits are internally reported to Senior Managers, with corrective actions arising from non-compliance captured, reviewed and reported.

Records relating to environmental management (including compliance, monitoring and reporting) are maintained within Fortescue in accordance with Fortescue's Record Keeping Policy.

Continuous improvement of Fortescue EMS and environmental performance is driven through the environmental governance processes within the business, including monthly reporting to Senior Managers, quarterly reporting to the Board and quarterly environmental management review meetings with

Site and Head Office management. Improvement actions identified on Fortescue EMS effectiveness and environmental performance are identified through the Senior Environmental Management team.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	31631303305
Organisation name	PILBARA ENERGY (GENERATION) PTY LTD
Organisation address	6000 WA

Proposed designated proponent details

Name	Jarrod Pittson
Job title	Group Manager Environment and Closure
Phone	+61 8 6218 8888
Email	jarrod.pittson@fortescue.com
Address	Ground Floor 256 St Georges Terrace, Perth WA 6000

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	31631303305
Organisation name	PILBARA ENERGY (GENERATION) PTY LTD
Organisation address	6000 WA
Representative's name	Sofie Springer
Representative's job title	Senior Environmental Advisor
Phone	+ 08 6218 8888
Email	sofie.springer@fortescue.com
Address	Ground Floor, 256 St Georges Tce, Perth WA 6000

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	31631303305
Organisation name	PILBARA ENERGY (GENERATION) PTY LTD
Organisation address	6000 WA
Representative's name	Jarrod Pittson
Representative's job title	Group Manager Environment and Closure
Phone	+61 8 6218 8888
Email	jarrod.pittson@fortescue.com
Address	Ground Floor 256 St Georges Terrace, Perth WA 6000

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

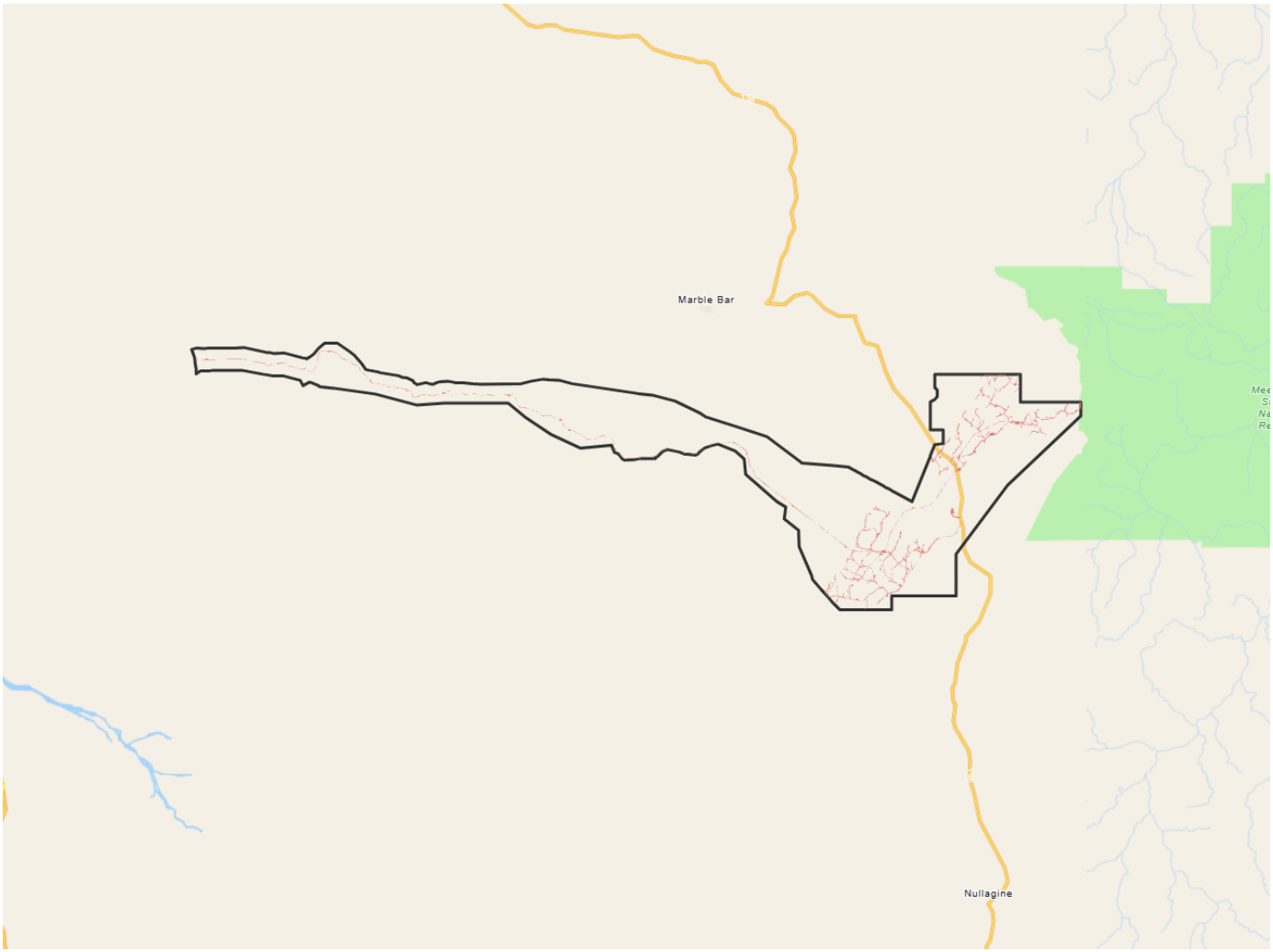
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Proposed designated proponent

2. Location

2.1 Project footprint



Project Area: 98904.97 Ha **Disturbance Footprint:** 2334.06 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

110km SSE from Port Hedland. It extends from the iron bridge mine eastward for 100 km where

2.2.2 Where is the primary jurisdiction of the proposed action? *

Western Australia

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The Proposed Action will utilise tenure under the WA *Mining Act 1978.*

Other underlying land use of the area include pastoral activities. The Proposed Action is located across three pastoral stations; Eginbah, Corunna Downs and Panorama Station which are managed under the *Land and Administration Act 1997.*

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The Proposed Action is located in the Shire of East Pilbara approximately 40 km south-east of Marble Bar and 90 km east of Fortescue's Iron Bridge site (Refer to Attachment 1, Figure 1-1 (p. 13) and Figure 1-2 (p. 14)). The main town sites in the Shire are Newman, Marble Bar and Nullagine, with a number of Aboriginal Communities: Goodabinya, Irrungadji, Jigalong, Kiwirrkurra, Kunawarritji, Parngurr, Punmu and Warralong.

The main access to the Proposed Action will be via Marble Bar Road, which will enable transport of turbines and other infrastructure to the Proposed Action Area from port facilities at Port Hedland. The main internal tracks providing access from Marble Bar Road into the Proposed Action Area will allow for associated traffic and delivery of major components. An internal network of site access tracks will connect the Proposed Action's infrastructure for construction and operational activities. Approximately 250 km of internal access tracks will be required and will connect to the public road network (Marble Bar Road) at a suitable location. The layout of the access roads will minimise the overall track length required to provide access to all turbines, while also balancing cut to fill quantities.

The East Pilbara dominant land uses include grazing on native pastures, conservation reserves and mining leases. There are 109 active iron ore mines with the East Pilbara producing half of the Pilbara's total iron ore production and generating $57.6 billion in commodities in 2020. One WA state and territory reserve, Mentheena Station, is situated towards the eastern extent of the Proposed Action Area, which was declared in 1999 and is currently in the National Reserve System (NRS), with gazettal in progress. Mentheena Station was previously a cattle station but has been transformed into a retreat for war veterans.

Overall, the vegetation within the Proposed Action is well preserved, containing about 99% of remaining pre-European vegetation, consisting of 6 vegetation associations. The vegetation composition within the Pilbara region is influenced by the frequency and intensity of the fire, since the region is a fire-prone environment and most of the area is burnt at least once a year. According to the DBCA Fire History (DBCA, 2024), almost all the Proposed Action Area had one or more fire events between 2006 and 2013, totalling 78,144.71 ha (79.2%).

3.1.2 Describe any existing or proposed uses for the project area.

The Proposed Action Area is located in a remote area approximately 40 km south-east of Marble Bar and 90 km east of Fortescue's Iron Bridge site in the Pilbara region of WA (Attachment 1, Figure 1-1, p. 13). The Proposed Action is located in the Shire of East Pilbara. The main town sites within the Shire are Newman, Marble Bar and Nullagine, with a number of Aboriginal Communities: Goodabinya, Irrungadji, Jigalong, Kiwirrkurra, Kunawarritji, Parngurr, Punmu and Warralong.

The Shire is rich in mining and pastoral activities, providing a significant contribution to the State and National economies. There are 109 active iron ore mines with the East Pilbara producing half of the Pilbara's total iron ore production and generating $57.6 billion in commodities in 2020.

The Proposed Action is sited within the Marble Bar locality. The closest conservation area, approximately 75 km from the Proposed Action, is Mungaroona Range Nature Reserve, which is important regionally due to its natural and cultural values. One WA state and territory reserve, Mentheena Station, is situated towards the eastern extent of the Proposed Action Area, which was declared in 1999 and is currently in the National Reserve System (NRS), with gazettal in progress. Mentheena Station was previously a cattle station but has been transformed into a retreat for war veterans.

Dominant land uses in the region include grazing on native pastures, conservation reserves and mining leases. The Proposed Action Area is situated on the Eginbah, Panorama and Corunna Downs pastoral leases.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

The Proposed Action Area does not intersect any legislated conservation lands or waters or lands of conservation interest. The closest conservation area, approximately 90 km from the Proposed Action Area, is the Mungaroona Range Nature Reserve, which is important regionally due to its natural and cultural values.

The Proposed Action does not intersect or is within 20 km of any Important Wetlands nor Ramsar Wetlands. The closest wetland, De Grey River, is located 60 km north of the Proposed Action Area.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

According to the 1:250,000 scale topographic Map Index, the Proposed Action Area has a topography ranging from 250 AHD to 400 AHD. The Proposed Action Area is defined by two areas: the Transmission Line area and the Generation Hub area. The Transmission Line ranges from 158 – 390 m AHD and the Generation Hub area ranges between 256-340 m AHD.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Refer to Section 4.2 of Attachment 1 pp. 49 - 121 for a complete description of flora and fauna within the Proposed Action area. A summary of the attachment is provided below.

Flora

A desktop Flora and Vegetation assessment was undertaken by Focused Vision (2024), followed by a two-phase detailed flora and vegetation assessment and supplementary assessment (Refer to Attachment 1, Section 4.2.1 p. 49). The two-phase detailed assessment was completed between 5-13 April 2022 (Phase 1) and 8-14 May 2023 (Phase 2). The Supplementary Assessment was conducted following the Phase 1 between 14-19 October 2022. Additionally, targeted searches for introduced flora, particularly Declared Pests Plants and Weeds were carried out by the Centre for Invasive Species Solutions.

One threatened EPBC flora species was recorded by Focused Vision (2024): *Quoya zonalis* (Pilbara Foxglove). This species is listed as Endangered and was recorded on 28 occurrences, totalling 109 individuals within the Proposed Action Area. Refer to Attachment 1, section 4.2.3 pp. 78 - 80 for further details.

The detailed Flora and Vegetation Assessmsent Report (Focused Vision 2024) is provided in Attachment 2.

Fauna

Ecoscape (2024) undertook a Detailed Terrestrial Vertebrate Fauna Assessment for the Proposed Action. The assessment incorporated data collected during eight field surveys comprising: detailed terrestrial vertebrate fauna of Transmission Line (3-18 April 2022); detailed terrestrial vertebrate fauna of Generation Hub area (13 – 28 June 2022); detailed survey of the Transmission Line area (3-18 May 2022 and 21-31 March 2024), detailed survey of Generation Hub area (13-28 June 2022 and April-2 May 2024) and targeted surveys (17-23 October 2023 and 12-15 Dec 2023). The Terrestrial Fauna Assessment Report (Ecoscape 2024) is provided in Attachment 3.

Seasonal bird and bat site utilisation surveys were undertaken within the Generation Hub area by Spectrum (2024) to collect bird and bat species data suitable for informing potential impacts, including the risk of collision with turbine blades. Background research and data sources were reviewed to identify all bird and bat species records within 20 km of the Proposed Action Area. Refer to Attachment 1, Figure 4-1, p. 51 for bird and bat survey site locations. The Bird and Bat Assessment - year 1 Report is provided in Attachment 4.

Ecoscape (2024) mapped seven broad fauna habitats (excluding cleared areas) which are considered critical or supporting habitat for at least 13 species listed under EPBC Act. Refer to Attachment 1, Section 4.2.4 pp. 81 - 86 for further details. The following habitat types were mapped within the Proposed Action Area. These are described in more detail in Attachment 1, Table 4-8, pp. 82 - 85. :

- **Drainage line/river/creek (major) – 6,152.35 ha**
    - Critical habitat for Grey Falcon, Pilbara Olive Python, Pilbara Leaf-nosed Bat (PLNB) and Ghost Bat.
    - Supporting habitat for Northern Quoll, Greater Bilby and migratory shorebirds.
- **Drainage line/river/creek (minor) – 5,703.33 ha**
    - Supporting habitat for Greater Bilby, Grey Falcon, PLNB, and Ghost Bat.
- **Plain (stony/gibber) – 8,045.51 ha**
    - Critical habitat for Greater Bilby
    - Supporting habitat for Grey Falcon, PLNB, and Ghost Bat
- **Plain (boulders) – 24,023.89 ha**
    - Critical habitat for Northern Quoll and Greater Bilby
    - Supporting habitat for PLNB, Ghost Bat, and Grey Falcon
- **Plain (sand) – 26,062.50 ha**

    - Critical habitat for Greater Bilby
    - Supporting habitat for Grey Falcon, PLNB, and Ghost Bat
- **Hills/ranges/plateaux– 26,780.18 ha**
    - Critical habitat for Pilbara Olive Python, and Northern Quoll
    - Supporting habitat for Grey Falcon, PLNB, and Ghost Bat
- **Rocky escarpments/ ridges/mesa– 1,916.74 ha**
    - Supporting habitat for Grey Falcon
    - Habitat critical for Northern Quoll, Ghost Bat, Pilbara Olive Python and PLNB.

The detailed vertebrate fauna assessment completed by Ecoscape (2024) determined the likelihood of occurrence of each species in the Proposed Action Area and surrounding area. Six species listed under the EPBC Act were recorded within the Proposed Action Area, a further two are highly likely to occur, and six more have a medium likelihood of occurrence. These species are listed below. Further details, such as habitat preference, threats and species description are provided in Attachment 1, Section 4.2.5.2, pp. 93 - 121.

Recorded within the Proposed Action Area

- Northern Quoll (*Dasyurus hallucatus*) – Endangered
- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) – Vulnerable
- Greater Bilby, Dalgyte (*Macrotis lagotis)* – Vulnerable
- Grey Falcon (*Falco hypoleucos*) - Vulnerable
- Oriental Pratincole (*Glareola maldivarum*) – Migratory
- Pilbara Olive Python (*Liasis olivaceous barroni*) – Vulnerable

High likelihood of occurrence

- Ghost Bat (*Macroderma gigas*) – Vulnerable
- Pacific Swift (*Apus pacificus*) – Migratory

Medium likelihood of occurrence

- Night Parrot (*Pezoporus occidentalis*) – Endangered
- Common Greenshank (*Tringa nebularia*) – Endangered and Migratory
- Common Sandpiper (*Actitis hypoleucos*) – Migratory
- Sharp-tailed Sandpiper (*Calidris acuminata*) – Vulnerable and Migratory
- Oriental Plover (*Charadrius veredus*) – Migratory
- Wood Sandpiper (*Tringa glareola*) – Migratory

During the first four surveys as part of the bird and bat utilisation survey (BBUS) programme undertaken for the Proposed Action, a total of 84 bird species were recorded. Four species were recorded at the over 220 m height range (above the proposed RSA) which were represented by Accipitridae and Falconidae, including Grey Falcon (EPBC Vulnerable). Across all 14 proposed impact and control sites, a total of 104 bird observations (from 14 species) and 38 bird observations (from three species) were recorded flying between 80-220 m (i.e. at RSA level) respectively. The vast majority of bird observations recorded across all four trips were between ground level (i.e. 0 m) and 40 m above the ground. This was consistent between both the proposed impact sites and control sites. Bird flight heights were also classified as ‘below’ (<80 m), ‘at’ (80 - 220 m), or ‘above’ (220 m) RSA height. A total of 32 observations of birds flying at RSA level were recorded in total. During the first four trips, three significant fauna species were recorded from the BBUS Survey Area:

- Pilbara Leaf-nosed Bat - *Rhinonicteris aurantia* [Pilbara form] (EPBC & BC Act, Vulnerable);
- Grey Falcon - *Falco hypoleucos* (EPBC & BC Act, Vulnerable); and
- Oriental Pratincole - *Glareola maldivarum* (EPBC & BC Act, Migratory).

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

Please refer to Section 4.2.2, pp. 52 - 77 of Attachment 1 for a complete description of the vegetation within the Proposed Action Area. A summary of the attachment is provided below.

Geology, Soil and Land Systems

The Proposed Action Area is comprised of 35 geographical units described in Attachment 1, Table 4-1 pp. 53 - 55. There are 12 land systems within the Proposed Action Area, of which Macroy system covers more than 55.0% of the total Proposed Action Area. Refer to Attachment 1, Table 4-2 pp. 55 - 56 for further details.

The vast majority of the Proposed Action Area (99.97%) is described as having a low or extremely low probability for occurrence of Acid Sulfate Soils (ASS). However, this classification has a confidence level 4, which means that this is a provisional classification inferred from surrogate data with no on-ground verification.

Vegetation

According to Focused Vision (2024), the Proposed Action Area overlaps six pre-European vegetation associations (VAs), mostly composed of VA 93 (67.1%), VA 587 (15.5%) and VA 171 (10.7%). All six VAs have more than 99% of the extent remaining within state, IBRA region, IBRA-subregion and Shire of East Pilbara.

The Protected Matters Search Tool (PMST) database did not identify any EPBC Act listed Threatened Ecological Communities (TECs) within the Proposed Action Area, or within 40 km of it. Additionally, Focused Vision (2024) did not record any vegetation representative of a TEC (Attachment 2).

A total of 39 vegetation units were mapped within the Proposed Action Area. The majority of the Proposed Action Area contains vegetation unit AiAaTe (23.48%), followed by AiCpTe2 (11.1%) and AiCpTw (9.76%). Of those 39 vegetation units, the following have ecological significance:

- 4 vegetation units (AtAhTe, ElCpTb, ElGwTw and TcSpTl) contain population of threatened (EPBC listed) species.
- 5 vegetation units (EcMa, EcTl, EvAtEb, EvCi and EvMlTe) have a role in maintaining an important ecological process, such as riparian, groundwater dependent and potentially groundwater dependent vegetation.
- 9 vegetation types have local significance (AaTw2, CcTe, ChTe, CspTb, EvCi, GwTw,TcAtTe, TcSpTl and Ts) due to small, isolated communities of limited extent and/or distribution.
- 2 vegetation units (AiAaTe and EcMa) have presence of undescribed flora species.

Overall, the vegetation condition within the Proposed Action Area ranges mainly from ‘Good’ to ‘Excellent’ (99.62%). A small portion of the Proposed Action Area is ‘Cleared’ (0.17%). Vegetation in ‘Excellent’ condition occurs predominantly on the hills, in gorges and in areas of higher elevation. The degradation observed within the area was mostly associated with drainage areas and plains in the eastern portion of the study area, where disturbance is consistent with grazing impacts from cattle and the presence of weed species (**Cenchrus ciliaris* (Buffel Grass) and **Calotropis procera* (Calotrope)). Refer to Attachment 1, Section 4.2.2.6 pp. 76 - 77 for further detail.

3.3 Heritage

3.3.1 Describe any Commonwealth Heritage Places Overseas or other places recognised as having heritage values that apply to the project area.

No Commonwealth heritage places occur within or adjacent the Proposed Action area. The Proposed Action Area lies entirely within the jurisdiction of Western Australia, therefore no places listed on the List of Overseas Places of Historic Significance to Australia (LOPHSA) are relevant to the Proposed Action. In addition, no places with European heritage value are known to occur within the Proposed Action Area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The Proposed Action Area is located within Nyamal #1 and #10 native title determination areas. Traditional Ecological Knowledge (TEK) surveys were undertaken to identify and record plants and animals of traditional use or cultural value to Nyamal. TEK surveys are still ongoing for the Proposed Action. Cultural associations to ecological features and areas containing these culturally significant species were also documented. These surveys are undertaken in consultation with Nyamal knowledge holders for the area. Archaeological and Ethnographic Surveys are also still ongoing and will continue to influence project design through identification of heritage sites within the Proposed Action Area.

Surveys conducted to date are outling in Section 4.3.1.1 p. 122, off Attachment 1.

Aboriginal Cultural Heritage

A search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Cultural Heritage Inquiry System (ACHIS) was undertaken on 11 August 2024, to identify any Registered Sites, Lodged Places, and Historic Places within the Proposed Action Area (DPLH, 2024). The search identified 10 Registered places and one Lodged place within the Proposed Action Area, of which nine are engraving sites, one is a camp, and one is a creation/dreaming narrative. A review of Fortescue's internal heritage database was also undertaken. Based on surveys completed at the time of writing this report, a total of 314 known Heritage Places are located within the Proposed Action Area, including 189 grinding patches. Refer to Table 4-26 and Table 4-27, pp. 122 - 124, of Attachment 1 for further details.

Culturally Significant Water Sources

Nyamal ascribe significant cultural values to water and watercourses. Several water sources within and surrounding the Proposed Action Area have been identified as culturally significant to Nyamal. Where these culturally significant water sources may not meet the criteria under the AH Act as a Heritage Place, they have been delineated as Heritage Restriction Zones (HRZs), which will be avoided.

Culturally significant rivers and creek lines (including associated tributaries) identified by Nyamal within and surrounding the Proposed Action Area include:

- Shaw and Coongan Rivers
- Sandy, Camel, Honeyeater and Ram Creek
- Channels leading into Yandicoogina, Soak, Cattle and House Creeks.

Culturally Significant Flora

Forty-nine (49) plant species used by Nyamal were observed during the TEK survey.The plants recorded are broadly categorised into use for food, medicine, tools/other, or for ceremony. Of the species identified to date:

- 33 species are edible,
- 19 have medicinal properties,
- 25 are used as tools or for other reasons, and
- 11 are used in ceremony.

One plant species identified in the Proposed Action Area is considered of additional cultural significance to Nyamal: *Melaleuca argentea* (Silver Cadjeput / Paperbark; 'jalkupurta' / 'gulawar'). It has multiple uses to Nyamal, such as to cook meat and fish, providing cool shade and shelter, and is an indicator of sub-surface water presence and healthy Country. Leaves, stems and branches of the two shrub *Melaleuca* species (*Melaleucaglomerata* and *Melaleuca linophylla*) are also used to splay cooked meat out on for feasts.

Wood, branches and/or bark from the following ten plant species are used to make ceremonial tools, dancing sticks, and weapons (spears, shields, boomerangs):

- *Acacia coriacea (*Wire Wattle),
- *Acacia ancistrocarpa* (Fitzroy Wattle),
- *Acacia tumida* (Pindan Wattle; mukarli),

- *Corymbia hamersleyana* (Bloodwood; punara),
- *Terminalia circumalata,*
- *Acacia ampliceps* (Salt Wattle; walykarri),
- *Eucalyptus leucophloia* (Snappy Gum),
- *Eucalyptus victrix* (Blackheart Gum; piyarr),
- *Melaleuca argentea* (Silver Cadjeput / Paperbark; jalkupurta / gulawar), and
- *Tinospora smilacina* (Snake vine).

Six species recorded in the Proposed Action Area are used in ceremonies for decoration and body painting:

- *Acacia inaequilatera* (Camel Bush; partirri) and Honey Hakea (*Hakea lorea* subsp. *lorea*, H. *chordophylla*; marruwa): the black bark is used to make a blackened paint for ceremony.
- *Grevillea pyramidalis* (Caustic Bush; wirliny): yellow paint from bark, branches, and leaves and caustic green seeds are used for men's scarring in the lore ceremony.
- Flowers and/or vegetative parts of Honey Hakea (*Hakea lorea* subsp. *lorea*, H. *chordophylla*; *marruwa*), *Atalaya hemiglauca* (Whitewood), and *Cassytha filiformis* (Dodder Vine / Love Vine; yukurli/ yugali) are used for decoration.
- *Nicotiana benthamiana* (purlku; native tabacoo) is chewed and smoked and is used for healing and in ceremonies.

Other species noted during social surrounds consultation were Sandpaper fig (*Ficus coronate*) used by Nyamal ancestors to sand down wooden artefacts using rough leaves, and Bush tomatoes (*Solanum orbiculatum*) used as a common food source in the area.

The known locations of these culturally significant flora species within the Proposed Action Area will be avoided.

Culturally Significant Fauna

Six animal species of traditional use by and/or cultural value to Nyamal were documented or recorded during the survey within the Proposed Action Area. The species and its cultural values are described below:

- Euro (widjinu / wiyunu) and Red Kangaroo (parlkarrakapu / warrinykura): food source, clothing and ceremony.
- Echidna (Manganya): eaten by ancestors.
- Emu (karlaya / galaya): food source, feathers.
- Australian Bustard / Bush Turkey (dardgee / karlgi / parntakura / parturra): food source, feathers.
- Ngarramukal / windigid: food source.
- Grubs (yamala): food source.

Two fauna species were identified by Nyamal as being of additional cultural value:

- Emu (karlaya / galaya): Emu feathers are used in ceremonies. The men wear these on their heads and their arms. Emu is also an important food source. Feathers from other bird species are also used, such as those from Corellas and Bush Turkey (*Ardeotis australis*; parntakura).
- Pilbara olive python (*Liaisis olivaceus barroni*): This species was talked about in the context of the rainbow serpent, for which the moonlight shines on the scales and shows the rainbow in the sky. It is a culturally significant species to Nyamal and is the basis of a men's only song.

The Greater Bilby was also identified as another fauna species of value to Nyamal, while Herons were noted as spiritually significant given their representation in rock art. White cockatoo feathers are used in lore ceremonies and the sparrow bird noted as weather indicator when high river levels are expected.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Surface Water

Two baseline hydrological assessments were undertaken by Advisian (Attachment 5) and Worley (Attachment 6), to assess the existing surface waters and their flow regime. Following this, a post development hydrological assessment (Attachment 7) evaluated the potential impacts of the Proposed Action design and layout on the existing surface water flow regime. The Proposed Action Area is located within the Pilbara Surface Water Area proclaimed under the RIWI Act, but outside any Public Drinking Water Source Areas.. The closest Ramsar site is the Fortescue Marshes (Proposed Ramsar Addition), which is 117 km away from the Proposed Action Area. The Proposed Action occurs within the De Grey River Basin and overlaps three catchments; Coongan River, Shaw River, and Strelley River.

The De Grey River has the highest mean annual discharge of all rivers in the Pilbara. The flow in the De Grey River system is the primary recharge into the alluvial aquifer, which is an important water supply source in Pilbara. The alluvial aquifer is located approximately 70 km north of the Proposed Action Area. The other main rivers, Coongan, Shaw and Strelley, are very wide, sandy and sometimes braided, with permanent and semi-permanent pools, and flow intermittently in the northwest direction. These rivers typically flow only two or three times during the summer, mostly following cyclonic and other major rainfall events.

The Proposed Action Area overlaps 12 major and minor non-perennial watercourses (there are other minor non-perennial watercourses however they are unnamed). These watercourses include the Coongan River (Major River), Shaw River (Mainstream), and Yandicoogina Creek (a tributary of Talga River). The Talga River discharges into the Coongan River approximately 55 km downstream of the Proposed Action Area. The headwaters of the Coongan River are located in the Chichester Range. The Coongan river flows in a northerly direction past Marble Bar then through the Gorge Range before discharging into the De Grey River, approximately 115 km downstream of the Proposed Action Area. Major tributaries of the Coongan River include Camel Creek, Talga River and Emu Creek. The Coongan River catchment contains one DWER gauging station at Marble Bar (DWER ref: 710204), which has been in operation since 1966. Inspection of the 1:250,000 topography maps and Fortescue's internal environmental datasets within these river basins show no permanent pools within these sub-catchments in the Generation Hub area of the Proposed Action Area (Attachment 7). The minor and major watercourses within the Proposed Action Area are:

- Transmission Line area:
    - Minor, non-perennial watercourse: Brockman Hay Cutting Creek, Camel Creek, Coongan River, Glen Herring Creek, Honeyeater Creek, Sandy Creek and Shaw River.
    - Major, non-perennial watercourse: Camel Creek, Coongan River, Sandy Creek and Shaw River.
- Generation Hub area:
    - Minor, non-perennial watercourse: Cattle Creek, House Creek, Ram Creek, Soak Creek and Yandicoogina Creek.
    - Major, non-perennial watercourse: Sandy Creek, Shaw River and Yandicoogina Creek.

Within the Transmission Line area, the main water courses are the Coongan River and Shaw River which are ephemeral and flow in a northerly direction before discharging into the De Grey River. The area upstream of the transmission corridor represents approximately 47% of the total catchment area of the Coongan River (7,090 km² (Attachment 8) and approximately 77% of the total catchment area of the Shaw River (7,900 km2 (Attachment 9)).

The catchments within the Generation Hub area generally drain in a north-westerly direction towards the Coongan/Talga Rivers. The baseline hydrology study by Advisian (Attachment 5) notes that within the southern portion of the Generation Hub area, higher hydraulic intensities were typically limited to the Sandy Creek and Emu Creek watercourses due to their larger contributing catchment areas and hence higher runoff generating potential. Other creeks such as Ram Creek and Camel Creek were predicted to be

generally of lower hydraulic intensity. Flood behaviour in the northern portion of the Generation Hub area is typified by higher hydraulic intensities in Yandicoogina Creek due to the large upstream catchment area. Peak velocities in the smaller creek systems flowing through the development site are predicted to have typically lower hydraulic intensities.

Flow gauging data across the region indicates the Coongan River (and creeks nearby) are ephemeral with runoff limited to significant rainfall events (Attachment 7). Typically, over three quarters of the annual streamflow occurs during January, February and March with local rivers usually drying up around July or August. The Marble Bar gauging station covers a catchment area of 3,736 km2. Surface flow data indicates variable annual and monthly flows with several order of magnitude differences between minimum and maximum values. The Coongan River median annual flow at Marble Bar is in the order of 144 GL/year which represents an average runoff yield of about 11% of the median annual rainfall of 344 mm/year.

Groundwater

The Proposed Action Area is located within the Pilbara groundwater area, which is a proclaimed groundwater area under the RIWI Act (1914). Groundwater resources in the Pilbara groundwater area are managed through the Pilbara Groundwater Allocation Plan, which covers an area of 200,000 km2, including Port Hedland and extends inland, covering Marble Bar, Wittenoom, Nullagine, Tom Price and Newman.

The groundwater resources within Pilbara are a mix of alluvial, sedimentary and fractured rock aquifers. These resources can be grouped into three categories; Tertiary Alluvials, Fractured weathered bedrock and Intermediate depth sheared zones within the greenstone belt (Attachment 8).

The Proposed Action Area is expected to feature a superficial aquifer of limited thickness (approximately 3-10 m) hosted in the alluvial sequence, overlying potential weathered and fractured rock aquifers linked to faults and fractures in the Granite basement (Fortescue, 2024b). The site is bisected in the south by a major dyke striking southwest-northeast, which may compartmentalise the aquifer systems, and/or potentially facilitate groundwater flow across its margins. The northern and southern areas of the site are separated by a greenstone belt which likely host aquifers associated with shearing. The underlying fresh granitic bedrock likely has little to no storage and permeability in absence of secondary features (Attachment 9).

Locally, there is limited data to identify potential groundwater resources. The main sources of information are shallow pastoral bores (5-10 m deep), DWER's Water Information Reporting database and nearby projects (Attachment 8). Although there are up to 54 known bores within the Proposed Action Area, many of them have been destroyed or abandoned, and there is limited groundwater data available.

From those bores with available information, static water levels (SWL) are within 0 – 5 metres below ground level (mbgl) with some bore recording SWL between 5 - 10 mbgl, suggesting that these bores are screened into the top alluvial cover. Salinity ranges increase with deeper SWL and generally towards the west of the Proposed Action Area (Attachment 8). The water quality is fresh to brackish, and generally complies with the Australian Drinking Water Guideline, except for fluoride and nitrate, likely due to its stock purpose and possible contamination by livestock (Attachment 8).

Simulations of groundwater drawdown were undertaken using the numerical model to estimate the impacts to identified receptors (Other Groundwater Users; Groundwater Dependent Ecosystems; and Subterranean Fauna) due to abstraction of construction water. The model used existing production bore EPGH-PB012, as well as four additional scenarios with different abstraction rates, timeframes and hydraulic conductivity (Attachment 9).

Modelled predictions indicate a sustainable abstraction volume of 0.31 GL/yr, approximately 46% of the required construction volume, is available in the southern section of the Generation hub area within the Proposed Action Area. The impacts of abstraction related drawdown at this rate are not predicted to reach any of the key receptors, including pastoral wells, known stygofauna habitats or areas of groundwater dependent vegetation. No impacts to groundwater quality are anticipated during the Proposed Action.

It is recognised that Fortescue will need to source the remainder of the water requirement from alternative sources, as the modelled abstraction accounts for only 46% of the total required construction volume. The risk of impacts from excessive drawdown related to the Proposed Action is relatively low given the short-term nature of the construction period (approximately 2 years), and the negligible water requirements during the operational phase of the Proposed Action. The water supply will be supplemented with alternate supply sources and limit abstraction volumes to ensure no adverse impacts occur. In addition, through design avoidance measures implemented throughout the design process, there are limited environmental values within the Proposed Action Area that could be impacted by the quantity of abstraction proposed. It is also expected that groundwater levels will recover relatively rapidly at the conclusion of abstraction.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no World Heritage properties within or near the Proposed Action area. Impacts (direct or indirect) to World Heritage Properties are therefore not anticipated to occur. No further information is provided.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action area does not intersect, or lie adjacent to any national heritage places and will therefore not impact this protected matter. No further information is provided.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no Ramsar sites within or near the Proposed Action area. The closest Ramsar site is 117 km southwest of the Proposed Action area, and therefore, impacts (direct or indirect) to Ramsar sites are therefore not anticipated to occur. No further information is provided.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
Yes	Yes	Calidris acuminata	Sharp-tailed Sandpiper
Yes	Yes	Calidris ferruginea	Curlew Sandpiper
Yes	Yes	Dasyurus hallucatus	Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu]
No	No	Erythrotriorchis radiatus	Red Goshawk
Yes	Yes	Falco hypoleucos	Grey Falcon
Yes	Yes	Liasis olivaceus barroni	Pilbara Olive Python
No	No	Liopholis kintorei	Great Desert Skink, Tjakura, Warrarna, Mulyamiji
Yes	Yes	Macroderma gigas	Ghost Bat
Yes	Yes	Macrotis lagotis	Greater Bilby
Yes	Yes	Pezoporus occidentalis	Night Parrot
No	No	Polytelis alexandrae	Princess Parrot, Alexandra's Parrot
Yes	Yes	Quoya zonalis	Pilbara Foxglove
Yes	Yes	Rhinonicteris aurantia (Pilbara form)	Pilbara Leaf-nosed Bat
No	No	Rostratula australis	Australian Painted Snipe

Ecological communities

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4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Flora

The Proposed Action activities that may impact threatened flora species include:

- Temporary clearing for the laydown of wind turbine and transmission line infrastructure,
- Water abstraction during construction and operational activities, and
- Movement of construction vehicles and machinery around the site.

The IDF does not contain records of the Pilbara Floxglove (*Quoya zonalis*), therefore no direct impacts are expected. Potential indirect impacts to the species include fragmentation of sub-population, edge effects on one individual of Pilbara Floxglove, dust deposition, introduction and/or spread of weed species and increased risk of bushfires.

Fragmentation of sub-population

The roads and transmission lines within the Proposed Action area are linear in nature and can therefore fragment vegetation and/or create edge effects. Habitat fragmentation can interfere with the functional connectivity between individuals of a species if they become separated across an impassable barrier, such as preventing the exchange of genes through pollen and seed flow, which is essential for maintaining sufficient genetic diversity and ensuring adaptative potential. Due to the linear nature of the transmission line and associated road infrastructure, clearing will occur between Pilbara Foxglove (*Quoya zonalis*) sub-populations, which has the potential to act as a barrier preventing genetic transfer.

Edge effects

Edge effects due to clearing activities can cause changes in plant communities and flora habitat through abiotic conditions (light, temperature and humidity), preventing dispersal of seeds and potential increase of weeds. The EP Act defines vegetation within 50 m of threatened individuals as an Environmentally Sensitive Area. Therefore, a 50 m buffer from the IDF was used to assess edge effects on the recorded individuals of conservation significant species. The assessment identified the Proposed Action may indirectly impact one individual of *Quoya zonalis* (EN) in the Transmission Line section of the Proposed Action Area.

Introduction and/or spread of weed species

Weed species identified within the Proposed Action Area (refer to section 4.2.2.5, pp. 73 - 75 of Attachment 1) can be spread through the movement of soil or vegetative matter on boots, vehicles and machinery or the movement of topsoil and other bulk earthworks material. Additionally, rehabilitation activities pose a risk of spreading or introducing new weed species due to the re-use or importation of topsoil or other possible contaminated materials, such as tubestock/seedlings. Construction and operational activities, such as clearing activities, traffic movements, and putrescible wastes, have the potential to introduce or spread weed species within the area.

Increased risk of bushfires

Wind turbines pose a risk of fire incidents, mostly associated with lightning strikes (acting as conductors) and mechanical failures, often exacerbated by the presence of combustible material. Similarly, transmission lines can cause wildfires through failures, pole top or transformer fires and may also experience outages due to wildfires.

Increased frequency and intensity of fire incidents can affect vegetation through removal or reduction of biomass, alteration of vegetation structure, increase of weeds due to decrease of competition for resources and alteration of seed dispersal and germination, consequently affecting the vegetation composition within the affected area.

Fauna

Refer to Attachment 1, Section 5.2, pp. 130 - 163 for detail on the potential direct and indirect impacts to the EPBC Act listed Threatened fauna species likely to occur within the Proposed Action Area. Threatened fauna species that were recorded or are likely to occur within the Proposed Action Area and their conservation status include:

- Common Grennshank (*Tringa nebularia*) – Endangered and Migratory
- Ghost Bat (*Macroderma gigas*) – Vulnerable
- Greater Bilby, Dalgyte (*Macrotis lagotis)* – Vulnerable
- Night Parrot (*Pezoporus occidentalis*) – Endangered
- Northern Quoll (*Dasyurus hallucatus*) – Endangered
- Sharp-tailed Sandpiper (*Calidris acuminata)* – Vulnerable and Migratory
- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) – Vulnerable
- Pilbara Olive Python (*Liasis olivaceous barroni*) – Vulnerable

The cause of these potential direct and indirect impacts associated with the Proposed Action without the implementation of avoidance, management and/or mitigation measures are summarised below:

Habitat loss

The Proposed Action includes the construction of up to 200 wind turbines and associated infrastructure. Each turbine will require up to 2 ha of clearing for construction, which includes a permanent cleared footprint of 1 ha. Overall, the total clearing for the Proposed Action is expected to be 2,318.80.69 ha of habitat (excluding existing cleared areas), including 1,290.68 ha of permanent clearing and 1,028.12 ha of temporary clearing that will be progressively rehabilitated on completion of construction.

Bird and Bat collision with the operational wind farm infrastructure

Wind turbines and the transmission line infrastructure pose a collision risk for avifauna, specifically bats and birds. This risk is mainly due to rotating wind turbine blades; however, collisions with turbine towers and motionless blades can also occur, especially among birds. Results from the bird and bat utilisation surveys (BBUS) recorded two bird species listed as Vulnerable under the EPBC Act; the Grey Falcon and Sharp-tailed Sandpiper. A further four EPBC Act listed threatened species are likely to occur in the Proposed Action Area including the Night Parrot, Common Greenshank, Ghost Bat, and Pilbara Leaf-Nosed Bat.

The potential collision impacts on avifauna and bats are related to the rotor swept area (RSA) during operation of the wind turbine rotor. The RSA refers to the area swept by the rotating blades during turbine operation. For the Proposed Action, this is anticipated to be between 90 m above ground level (i.e., minimum ground clearance) and 290 m above ground level (i.e., the maximum blade tip height). Therefore, species typically flying below 90 m or above 290 m in flight height will be at a lower risk of collision with the operational turbines, even in the event that they fly directly across any given turbine location. The potential collision impacts are discussed in further detail in Section 5.2.1.1 of Attachment 1.

Increased risk of vehicle strike

Light vehicle movements will increase through the Proposed Action Area, mainly during the construction phase, increasing the risk of vehicle strikes within the area. Heavy plant and machinery required during clearing activities will also increase the risk of vehicle strike. These risks will be reduced during the operational phase as onsite personnel will be significantly reduced from 1,000 personnel to a ~100 personnel for maintenance and operational activities.

Habitat fragmentation and project infrastructure acting as a barrier to fauna movement.

The Proposed Action will lead to habitat fragmentation for some of the EPBC listed species due to permanent clearing for new roads and access tracks within the IDF. The wind turbine locations may result in the loss of fauna habitat and fragmentation by creating physical barriers and causing some species to no longer utilise the area. This is particularly true for birds and bats, which may avoid flying between turbine blades and as well as non-flying wildlife foraging or moving throughout the infrastructure.

Increasing access and attraction of scavenger and feral animals.

The camp, which is anticipated to accommodate up to 1,000 personnel during construction, and up to 100 personnel during operational activities, may increase the attraction of scavenging and feral fauna species, if waste disposal is not appropriately managed. Additionally, animal carcasses from roadkill or wind turbine collision can also attract scavenger and feral animals within the Proposed Action Area. This can result in an increased pressure on the surrounding populations of native fauna species, including increased predation of threatened species by feral animals.

Disruptions to the behaviour of nocturnal fauna due to artificial light

Artificial light can impact nocturnal threatened species by changing predator and prey dynamics and movement, interfering with navigation, and impacting the physiology of circadian rhythm and reproduction.The construction of the Proposed Action will involve the use of artificial light to illuminate specific working areas, although the majority of the works are anticipated to occur during daylight hours. During operations, artificial lighting may be used for safety purposes and within facilities such as the accommodation camp.

Disturbance from noise and vibration

Noise and vibration impacts will mainly increase due to construction activities and are then expected to decrease to slightly above baseline levels during the operational phase. During construction, noise and vibration are expected from machinery, earthworks, and ground-disturbing activities, with minimal blasting anticipated. Operational noise and vibration will be relatively constant but low in intensity. Noise can affect animal behaviour and physiology, reducing survival and fitness and may also lower reproductive success or lead to area abandonment.

Alteration or creation of microclimates

Wind farms have the potential to influence local and regional climates due to their modification of surface-atmosphere exchanges and the transfer of energy, momentum, mass, and moisture within the atmosphere.The land in and around the wind farm infrastructure can experience related temperature changes. Some studies have shown evidence of cooling during the day and warming temperatures during the night. These differences in temperature can alter vegetation cover and consequently impact fauna habitat over the long term.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

Yes

4.1.4.5 Describe why you consider this to be a Significant Impact. *

Threatened Flora

Direct Impacts

No significant impacts to flora and vegetation are expected to occur from the Proposed Action. No clearing of nationally Threatened flora species will occur; therefore, no direct impacts are expected. The Signifcant Impact Assessment for the Pilbara Foxglove is provided in Attachment 1, Table 5-1 pp. 129 - 130.

Indirect Impacts

Fragmentation of sub-populations

The dispersal mechanism for the Pilbara Foxglove is not currently understood, however given the distances between individuals recorded in the Proposed Action Area, the pollination vector is likely wind, flying insects or birds. The linear elements of the Proposed Action infrastructure will result in an approximately 30 m wide area of clearing, which is unlikely to act as a barrier to pollination for this species due to the narrow clearing extent. In addition, given the transmission line is open span, and the extremely low amount of traffic expected, it is not anticipated that these elements would act as a physical barrier to pollination. Therefore, it is not expected that the Proposed Action will interfere with genetic connectivity or have a significant impact on the flora species recorded within the Proposed Action Area.

Edge effects on threatened flora species

One individual of Pilbara FoxGlove (*Quoya zonalis*) was recorded within a 50 m buffer of the IDF. This individual may be indirectly impacted[SS5] [DF6] from edge effects (i.e., increased vulnerabilities at the boundaries of cleared areas, leading to changes in microclimate, species composition, and ecological processes). However, any impact is likely to be short term given that 1,030.26 ha of the 2,327.88 ha cleared will be progressively rehabilitated throughout construction. The permanent clearing will be further from the recorded individual and is not expected to have long-term indirect impacts (i.e., from exposure to edge effects) on the species. Therefore, no significant impact is expected.

Threatened Fauna

There is a potential for significant impacts to Threatened Fauna species to occur. The complete fauna impact assessment is provided in Attachment 1, Section 5.2 , pp. 130 - 158, and potential significant impacts are summarised below.

Direct impacts - **Habitat loss**

The following critical and/or supporting habitat will be directly impacted by the Proposed Action:

- Common Greenshank (*Tringa nebularia*) – Endangered and Migratory
    - Supporting habitat – 30.34 ha
- Ghost Bat (*Macroderma gigas*) – Vulnerable
    - Critical Habitat – 37.83 ha
    - Supporting habitat – 2,290.40 ha
- Greater Bilby, Dalgyte (*Macrotis lagotis)* – Vulnerable
    - Critical Habitat– 2,037.21 ha
- Night Parrot (*Pezoporus occidentalis*) – Endangered
    - Supporting habitat – 427.70 ha
- Northern Quoll (*Dasyurus hallucatus*) – Endangered
    - Critical Habitat – 1,213.99 ha
    - Critical Supporting Habitat - 377.71 ha
    - Supporting habitat – 30.34 ha
- Sharp-tailed Sandpiper (*Calidris acuminata)* – Vulnerable and Migratory
    - Supporting Habitat – 30.34 ha

- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) – Vulnerable
    - Critical Habitat – 37.83 ha
    - Supporting Habitat – 2,290.40 ha
- Pilbara Olive Python (*Liasis olivaceous barroni*) – Vulnerable
    - Critical Habitat – 321.36 ha

The Proposed Action will therefore adversely affect habitat critical to the survival of these species and in-line with the MNES Significant Impact Criteria the Proposed Action will potentially result in a significant impact to these species.

4.1.4.7 Do you think your proposed action is a controlled action? *

Yes

4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

Without appropriate mitigation measures, the impacts associated with implementing the Proposed Action could potentially significantly impact Threatend fauna via direct loss of habitat and indirect impacts as a result of habitat degradation. The mitigation hierarchy will be applied while developing and implementing the Proposed Action to ensure that impacts to MNES species are minimised and managed appropriately long-term.

The Proposed Action is a controlled action due the loss of 2,318.80 ha of fauna habitat (not including cleared areas), some of which is considered critical habitat for EPBC Act listed species. Rehabilitation post construction will re-establish fauna habitat in temporarily disturbed areas. There will be some permanent loss of habitat for Plain (stony/gibber); Hills / ranges / plateaux; Plain (boulders); Drainage line/river/creek (major); Drainage line/river/creek (minor); Plain (sand); Rocky escarpments/ridges/mesa.

Critical habitat for Northern Quoll, Greater Bilby, Grey Falcon, PLNB, Pilbara Olive Python and Ghost Bat will be cleared. With regard to the MNES significant impact criteria relating to critical habitat, as the Proposed Action will adversely affect habitat critical to the survival of these species, the proposed clearing is considered to result in a potentially significant impact to these species. In addition, there is a possible reduction in the area of occupancy under the relevant significant impact criteria for Northern Quoll, Greater Bilby, Common Greenshank, Ghost Bat, and Pilbara Leaf-Nosed Bat. These impacts are considered in further detail in Section 5.2.1 and Section 5.2.2 of Attachment 1.

Whilst the Proposed Action may have a significant impact through clearing, significant impacts to populations of Threatened Fauna are not expected to occur given the extensive habitat present in the surrounding region.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Flora and Vegetation

Avoidance

- The IDF has been designed to avoid areas that may support significant biodiversity values or heritage values. Areas that have been avoided, where practicable, include:
    - Avoidance of major drainage / creek lines except where crossing locations are required. Consultation with Traditional Owners was undertaken to identify creek crossings to reduce potential environmental and heritage impacts.
    - Avoidance of Cultural Precinct, associated with granite outcrops. Through consultation with the Nyamal Traditional Owners, the Proposed Action Area was redefined and an exclusion area was created (the Cultural Precinct area) to protect culturally significant values.
    - Avoidance of conservation significant flora, where practicable. All but one species of conservation significant flora was able to be avoided during the design of the Proposed Action. Of the impacted conservation significant flora, only 7.5% of the mapped population in the Proposed Action Area is proposed to be impacted.
    - Avoidance of restricted / limited vegetation units as far as practicable.
- Clearing areas will be demarcated and inspected prior to construction activities to avoid clearing significant flora or vegetation close to the IDF, protecting conservation significant flora species and vegetation from impacts such as accidental clearing or disturbance.

Mitigation

- All clearing areas will be checked and confirmed post-clearing through inspection of aerial imagery of clearing areas and comparison to the IDF. Site inspection will be undertaken prior to and following clearing to confirm no-go areas are appropriately demarcated. Disturbance will be managed using Fortescue's Land Use Certificate system.
- Comprehensive weed hygiene management with all works undertaken in accordance with Fortescue's Weed Management Plan (Reference: 45-PL-EN-0033) as the standard operating procedure.
- Groundwater abstraction will be managed to minimise drawdown and potential impacts on groundwater dependent vegetation. This will be managed under the RIWI Act 5C water abstraction licence.
- Dust deposition will be managed through standard construction mitigation measures (e.g., water application) to minimise dust generation and avoid impacts on vegetation. The following standard dust mitigation measures will be implemented throughout construction phase:
    - use of dust suppression to manage dust generation from construction activities, access roads and cleared areas;
    - use of water sprays to manage dust generation from material transport and stockpiling;
    - limiting the number and height of stockpiles;
    - vehicles to be confined to designated routes with speed limits strictly enforced; and
    - adherence to Fortescue's Dust Deposition Monitoring Procedure (Reference: 45-PR-EN-0032).
- Implementation of fire risk management measures will be undertaken, including:
    - clearing activities will not be undertaken when fire danger ratings are extreme or above;
    - carefully managing and monitoring hot works through implementation of the hot works permit system;
    - ensuring appropriate disposal of potential fire-starting waste to minimise the risk of bushfires as a result of the Proposed Action;
    - firefighting equipment will be located around the site and in vehicles. Fire response procedures and personnel training, including site inductions on fire prevention and management, will also be provided; and
    - maintenance of cleared areas around turbine locations.

Rehabilitation

Rehabilitation of a total of 1,028.12 ha of cleared vegetation will be undertaken progressively after each phase of the construction activities to reduce impacts to flora and vegetation over time, including potential fragmentation. This will be undertaken in accordance with Fortescue's standard procedures including Rehabilitation and Revegetation Plan (Reference: 100-PL-En-0023); and Rehabilitation and Revegetation Monitoring Procedure (Reference: 45-GU-EN-0009).

Fauna

Avoidance

- The IDF has been designed to avoid areas that may support significant biodiversity values or cultural values. Areas that have been avoided, where practicable, include:
    - Avoidance of major drainage / creek lines except where crossing locations are required, which are associated with specific fauna habitats. Consultation with Nyamal Traditional Owners was undertaken to understand cultural values associated with creeks and creek crossings locations were determined through the consultation process.

Mitigation

- Clearing and ground disturbing activities limited to the defined clearing limits and boundaries described within the approval documentation. The extent of the approved clearing will be clearly communicated in documentation and site inductions. Pre-clearing photos to be documented and post clearing inspections to be undertaken.
- All site operatives and personnel attending the site will undergo an induction regarding threatened fauna and direct and indirect impacts (e.g., risk of vehicle strike, interaction with construction activities, waste management and introduction of feral animals).
- Strict speed limits will be enforced around the site in order to minimise the risk of fauna strikes during clearing and construction.
- Consideration will be given to the use of line marking along the transmission line route to increase visibility to birds and bats and improve their ability to accurately perceive depth in relation to power lines. Ultraviolet (UV) line marking, if available, should also be considered, particularly with a view to minimising risks of nocturnal collisions. The design of both power lines and poles will comply with recommendations developed by BirdLife International to minimise potential for impacts to birds.
- Comprehensive weed hygiene management with all works undertaken in accordance with Fortescue's Weed Management Plan (Reference: 45-PL-EN-0033) as the standard operating procedure.
- Implementation of fire risk management measures will be undertaken, including:
    - Clearing activities would not be undertaken when fire danger ratings are extreme or above.
    - Where increased risk of fire is identified, fire-resistant barriers like screens will be employed to confine sparks generated by welders and other hot work activities.
    - Carefully manage and monitor hot works through implementation of hot works permit system.
    - Ensure appropriate disposal of potential fire-starting waste to minimise the risk of bushfires as a result of the Proposed Action.
    - Firefighting equipment will be located around the site and in vehicles. Fire response procedures and personnel training, including site inductions on fire prevention and management, will also be provided.
- All food waste will be removed from site at the end of each shift. Waste will be stored at the depot and regularly removed to minimise attraction of feral animals.
- Lighting will be designed and managed in accordance with the National Light Pollution Guidelines for Wildlife.These include:
    - Permanent lighting will be installed only where required, within operational areas.
    - Permanent and temporary lighting will be shielded to minimise light spill. This includes directional or shielded lighting, the mounting of light fittings as low as practicable, or louvered

lighting on low-level bollards.
    - Automatic timers or photovoltaic switches.
    - Black-out blinds on windows in accommodation camps.
    - Permanent and temporary lighting will be directed away from sensitive areas where possible such as areas of critical habitat (e.g. significant caves).
- Standard construction noise management measures will be implemented, including:
    - Machinery and vehicles are regularly services and operated/maintained in accordance with the manufacturer's specifications, and preferential use of modern equipment that generally operate more quietly.
    - Using techniques that reduce noise, such as employing hydraulic, rather than impact, methods. Training workers on best practices for minimizing noise.
    - Plant and machinery on site will be switched off and not left idling when not in use.
    - Planning the construction schedule so that the noisiest tasks occur during times when they will cause the least disturbance.
- Operational measures to reduce potential impacts associated with collision of the wind turbines includes:
    - Large turbines are more visible and have lower blade rotational speeds than smaller turbines. Collision rates also appear to be related to ease of visibility. The Proposed Action will incorporate some of the largest turbines available.
    - Turbines are designed to be widely spaced to reduce the diversionary responses by birds and bats.
    - Design and implementation of a bird and bat monitoring programme and the Bird and Bat Adaptive Management Plan. The monitoring programme will record bird and bat activity in the Proposed Action Area during construction and operation. This will include best practice estimation of actual mortality rates using current techniqueS.

Rehabilitation of 1,028.12 ha after each phase of the construction activities will reduce impacts to fauna habitat over time, including potential fragmentation impacts.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Fortescue proposes to use the Pilbara Environmental Offsets Fund (PEOF) as the offsets mechanism for the Proposed Action with the intention of maximising regional biodiversity benefits. The complete offset strategy is outline in Section 7, pp. 167 - 173 of Attachment 1. The significant residual impacts and offset fund contribution is summarised below.

Fauna

- Permanent clearing of up to 1,213.99 ha of habitat that is identified as habitat critical to the survival of the Northern Quoll.
- Permanent clearing of up to 2,037.21 ha of habitat that is identified as habitat critical to the survival of the Greater Bilby.
- Permanent clearing of up to 30.34 ha of habitat that is identified as habitat critical to the survival of the Grey Falcon.
- Permanent clearing of up to 37.83 ha of habitat that is identified as habitat critical to the survival of the PLNB.
- Permanent clearing of up to 321.36 ha of habitat that is identified as habitat critical to the survival of the Pilbara Olive Python.
- Permanent clearing of up to 37.83 ha of habitat that is identified as habitat critical to the survival of the Ghost Bat.

Offset Fund Contribution

Based on the Pilbara Environmental Offsets Fund Implementation plan, it is expected that Fortescue will be required to pay a rate per hectare of impact to the critical habitat for the Northern Quoll, Greater Bilby, Grey Falcon, PLNB, Pilbara Olive Python and Ghost Bat. The total estimated contribution is $$4,290,791.28 for a total permanent clearing area of 1,297.88 ha.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
Yes	Yes	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
Yes	Yes	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper
Yes	Yes	Charadrius veredus	Oriental Plover, Oriental Dotterel
Yes	No	Glareola maldivarum	Oriental Pratincole
No	No	Hirundo rustica	Barn Swallow
No	No	Motacilla cinerea	Grey Wagtail
No	No	Motacilla flava	Yellow Wagtail
Yes	Yes	Tringa glareola	Wood Sandpiper

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.5.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The PMST search found 10 migratory species that might occur within the Proposed Action Area. Two of them (Sharp-tailed Sandpiper and Common Greenshank) are also classified as Threatened species, and are discussed and assessed under the Threatened species criteria in Attachment 1, Section 4.2.5.2. Of those eight, three were assessed as 'recorded' or having 'high' or 'medium' likelihood of occurrence in the area. Additionally, two species (the Pacific Swift and Wood Sandpiper) were also assessed as likely to occur within the Proposed Action Area. These species and their species profile, describing their background information, habitat, threats and habitat importance within the Proposed Action Area are described in Attachment 1, Section 4.2.5.3 pp. 117 - 121.

Potential direct/and or indirect impacts to migratory bird species are similar to those described for threatened species. The Proposed Action activities that may impact migratory fauna include:

- Habitat loss from direct clearing of migratory fauna habitat in the disturbed footprint to accommodate the Proposed Action infrastructure, including access roads, turbine pads, transmission lines and substations.
- Fauna mortality and disturbance due to increased vehicle movement during the construction and operational phases.
- Habitat fragmentation and behavioural change due to the long-term (25-30 years) operation of the wind farm, which includes the turbine movements and operation of the transmission line infrastructure.
- Behavioural change resulting from disturbance associated with general construction and operational-related activities (i.e., noise, increase of human activities).

To summarise, these potential direct and indirect impacts associated with the Proposed Action without the implementation of avoidance, management and/or mitigation measures include:

- Direct impacts:
    - Habitat loss
    - Bird and Bat collision with the operational wind farm infrastructure
    - Increased risk of vehicle strike
- Indirect impacts:
    - Habitat fragmentation and Proposed Action infrastructure acting as a barrier to fauna movement
    - Increasing access and attraction of scavenger and feral animals
    - Increased risk of weed introduction
    - Disturbance from noise and vibration
    - Alteration or creation of microclimates
    - Increased risk of bushfires

Unlike the nationally threatened fauna, the migratory species that may occur in the Proposed Action Area are diurnal. Due to their daytime habits and their transient nature, as these species do not establish roosting or nesting sites within the area, the increase in artificial light is not expected to have an impact.

Habitat loss

The Proposed Action includes construction of up to 200 wind turbines and associated infrastructure. Each turbine will require up to 2 ha for construction, which includes a permanent footprint of 1 ha. Overall, the total clearing is expected to be 2,318.80 ha of habitat, including 1,290.68 ha of permanent clearing and 1,028.12 ha of temporary clearing that will be progressively rehabilitated on completion of construction.

Table 5-10, pp. 159 - 160, Section 5.3.1 of Attachment 1 describes the migratory species habitat clearing within the Proposed Action Area.

Bird and Bat collision with the operational wind farm infrastructure

The presence of wind turbines and transmission lines is a potential risk for bird and bat collision during operational activities. This risk is mainly due to rotating wind turbine blades; however, collisions with turbine towers and motionless blades can also occur, especially among birds. Based on initial survey feedback with regard to bird species in the Proposed Action Area, the utilisation surveys recorded three EPBC Act Migratory species (Common Sandpiper, Wood Sandpiper, and Oriental Pratincole) listed under the EPBC Act. A further two EPBC Act Migratory species are considered likely to occur including Pacific Swift and Oriental Plover.

The potential collision impacts associated with the Proposed Action on avifauna and bats are related to the rotor swept area (RSA) for the proposed wind turbines. That is the area swept by the rotating blades during turbine operation. For the Proposed Action, this is anticipated to be between 90 m above ground level (i.e., minimum ground clearance) and 290 m above ground level (i.e., the maximum blade tip height). Therefore, species typically flying below 90 m or above 290 m in flight height will be at a lower risk of collision with the operational turbines, even in the event that they fly directly across any given turbine location. The potential collision impacts are discussed in further detail in Attachment 1, Section 5.3.1, pp. 160 -162.

Increased risk of vehicle strike

Mainly during the construction phase, vehicle movements will increase through the Proposed Action Area, associated with the transit of personnel, increasing the risk of vehicle strikes within the area. Heavy plant and machinery during clearing activities are also a risk during clearing activities. This risk will be reduced during the operational phase, given the decrease of 1,000 personnel to a maximum of 100 personnel for maintenance and operational activities.

Habitat fragmentation and Proposed Action infrastructure acting as a barrier to fauna movement

The Proposed Action will lead to habitat fragmentation due to permanent clearing for new roads and access tracks within the Indicative Disturbance Footprint. The wind turbine locations may result in the loss of fauna habitat and fragmentation by creating physical barriers and causing some species to avoid the area. This is particularly true for birds and bats, which may avoid flying between turbine blades, as well as non-flying wildlife, with changes to foraging or movement within habitat near the infrastructure.

Increasing access and attraction of scavenger and feral animals.

The camp to accommodate up to 1,000 personnel during construction, and up to 100 personnel during operational activities, will increase the risk of attraction of scavenging and feral fauna species, if waste disposal is not appropriately managed. Additionally, animal carcasses resulting from roadkill or collision can also attract scavenger and feral animals within the Proposed Action Area. These can result in increased pressure on the surrounding populations of native fauna species, including increased predation of Migratory species by attracted introduced feral animals.

Increase risk of weed introduction

Construction activities for 290 km of roads to access infrastructure and the main access via Marble Bar Road can increase the risk of weed introduction through machine and personnel movements. Weed introduction can also result from edge effects on vegetation due to clearing activities. Increasing weed presence can reduce the ability of fauna to transverse through their associated habitat and impact on their ability to forage, attract feral herbivores causing further land degradation and spreading of weed species and significantly increase the risk of fire.

Disturbance from noise and vibration

Noise and vibration will mainly increase due to construction activities and decrease slightly above baseline levels during the operational phase. During construction, noise and vibration are expected from machinery, earthworks, and ground-disturbing activities, with minimal blasting anticipated. Operational noise and vibration will be constant but low in intensity. Noise can affect animal behaviour and physiology, reducing survival and fitness, and may also lower reproductive success or lead to area abandonment, such as caves.

Alteration or creation of microclimates

Wind farms have the potential to influence local and regional climates due to their modification of surface-atmosphere exchanges and the transfer of energy, momentum, mass, and moisture within the atmosphere. The land in and around the wind farm infrastructure can experience related temperature changes. Some studies have shown evidence of cooling during the day and warming temperatures during the night. These differences in temperature can alter vegetation cover and consequently impact fauna habitat.

4.1.5.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

Habitat loss

Four of the five migratory bird species that are likely to occur within the Proposed Action Area may utilise the Drainage line/river/creek (major) as foraging and/or dispersal habitat for the species. The Oriental Plover may also utilise all other habitat for the same activities and, exceptionally, the Pacific Swift has flying behaviour and does not rely on terrestrial habitat for survival. The following migratory fauna habitat will be directly impacted by the Proposed Action:

- Common Sandpiper (*Actitis hypoleucos*) – 30.34 ha of supporting habitat
- Oriental Plover (*Charadrius veredus*) – 2,328.23 ha of supporting habitat
- Oriental Pratincole (*Glareola maldivarum*) – 30.34 ha of supporting habitat
- Pacific Swift (*Apus pacificus*) - Does not rely on terrestrial habitat
- Wood Sandpiper (*Tringa glareola*) – 30.34 ha of supporting habitat

Refer to Table 5-10, pp. 159 - 160, Section 5.3.1 of Attachment 1 for the complete description of migratory fauna habitat clearing within the Proposed Action Area.

The Proposed Action will impact 30.34 ha of drainage line/river/creek (major) habitat of which 15.04 ha will be rehabilitated after construction activities. Therefore, 15.30 ha will be permanently impacted by the Proposed Action. This represents 0.49% of the total habitat within the Proposed Action Area (6,152.35 ha).

Given that migratory birds species may utilise the Proposed Action Area occasionally, that the habitat within the IDF is not a critical habitat for the species and that the total habitat loss represents 0.49% of the Proposed Action Area, this impact is not significant for the species.

Additionally, given that the Oriental Plover does not have a restricted habitat for foraging and dispersal activities within the Proposed Action Area, the habitat loss as consequence of the Proposed Action do not present a significant impact, due to the extent of available habitat within the regional area.

Bird and Bat collision with the operational wind farm infrastructure

With regard to the relevant Migratory fauna species with potential to occur in the Proposed Action Area (Common Sandpiper, Oriental Plover, Oriental Pratincole, Pacific Swift, and Wood Sandpiper), given the low abundance of these species recorded in the Proposed Action Area, and therefore relatively low number of mortalities anticipated as a result of the Proposed Action, significant impacts at a population level would not be anticipated. Further detail is provided in Section 5.3.1, pp. 160 - 162 of Attachment 1.

Increased risk of vehicle strike

The migratory species that occur within the Proposed Action Area will occasionally use the drainage line/river/creek (major) habitat for foraging and dispersal. However, given their sporadic use of terrestrial habitat and the relatively low abundance of these species within the Proposed Action Area, the risk of vehicle strikes to migratory bird species is minimal. It is therefore unlikely that vehicle strikes will significantly impact these species.

Habitat fragmentation and Proposed Action infrastructure acting as a barrier to fauna movement

For the migratory bird species likely to occur in the Proposed Action Area, fragmentation is generally not considered to be a significant issue given they can easily traverse from one area to another. As discussed above, the proposed clearing will be spread out over a large area and will be relatively narrow associated primarily with the access roads and turbine pads and is therefore not anticipated to result in significant fragmentation impacts or act as a substantial barrier for these species. Following construction, the rehabilitation of cleared areas will reduce any potential fragmentation or barrier impacts.

Increasing access and attraction of scavenger and feral animals

Feral predators (i.e., foxes and cats) are known to thrive in areas of reduced vegetation, as it removes vegetation cover for native fauna and improves hunting success. Given the existing nature of the Project Area (incorporating vast expanses of open spaces), it is considered that clearing associated with the Proposed Action will not significantly increase accessibility to the area for feral animals due to the openness of the current landscape and existing presence of feral animals in the area.

Waste associated with the accommodation camp during construction and operation activities can attract scavenging and feral fauna species. However, as part of the standard operation of the camp, food waste will be removed at the end of each shift and waste stored at the depot and regularly removed. Given the existing presence of feral animals in the area, the Proposed Action is not anticipated to substantially increase feral animal activity and no significant impacts from feral animals on migratory species are anticipated. Migratory species are also highly mobile and do not rely on the habitat within the Proposed Action Area, minimising risk of interaction with feral animals. Therefore, no significant impacts on migratory species are anticipated.

Increase risk of weed introduction

Weed infestation is not considered a particularly high-risk threat to the Migratory species likely to occur in the Proposed Action Area. These species are highly mobile with their use of the Proposed Action Area being sporadic and they do not rely on the habitat within the Proposed Action Area. No significant impacts are anticipated for these Migratory species with regard to potential for introduction or spread of weeds within the Proposed Action Area.

Disturbance from noise and vibration

Noise from the Proposed Action could temporarily impact these Migratory species when they are active near construction areas. The highest noise levels, ranging from 120 to 150 dBZ, will occur during construction, potentially affecting nearby bird activity. However, this noise will be short term and localised. In addition, these species are highly mobile and only utilise the Proposed Action Area sporadically, therefore can move to adjacent areas in the event of any short term elevated noise levels. Operational noise is expected to be lower and not significantly above background levels, with fauna likely to habituate over time. Given the natural noise dissipation, and extensive surrounding habitats in the wider area, significant impacts on species during construction and operation are not anticipated.

Alteration or creation of microclimates

No significant impacts are anticipated with regard to alteration or creation of microclimates. It is unlikely that the Proposed Action can significantly change the drainage lines/river/creek (major) habitat in a way that can potentially impact migratory bird species within the Proposed Action Area. Additionally, the species recorded in the Proposed Action Area are well adapted to the extreme hot summers and low or occasionally variable rainfall events associated with the existing Pilbara climate, therefore any slight increases in temperature or rainfall events would not be likely to cause significant impact to the fauna species present within the Proposed Action Area.

Increased risk of bushfires

According to the DBCA Fire History, almost all the Proposed Action Area had one or more fire events between 2006 and 2013, totalling 78,144.71 ha (79.2%). In 2014, the Proposed Action Area had a fire event within 32.7% of the total area; since then, 2017 had the biggest fire event (12.1%), with the fire records decreasing to 0.8% in 2023 and 3.0% in 2023. Due to the extensive recent fire history throughout the Proposed Action Area, the potential fuel load for bushfires is substantially reduced, which lowers the risk of further bushfires occurring within the Proposed Action Area. In addition, fire risk will be managed in accordance with Fortescue standard control measures, which aim to minimise risks as far as practical and is therefore not expected to pose a significant risk to fauna habitat or any of the threatened species considered.

4.1.5.7 Do you think your proposed action is a controlled action? *

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action. *

As outlined in in Section 5.3, pp. 158 - 161 of Attachment 1, significant impacts to EPBC Act listed Migratory species are not anticipated as a result of the Proposed Action. Therefore, it is not considered a controlled action. Given that migratory birds species are only likely to utilise the Proposed Action Area occasionally, that the habitat within the Indicative Disturbance Footprint is not critical habitat for the species, and that the total habitat loss represents 0.49% of the Proposed Action Area, impacts associated with habitat loss are not considered to be significant for any of the migratory species likely to occur.

There is no important habitat for these species and none of the species that might occur within the Proposed Action Area are considered to be an ecologically significant proportion of their population. The individuals that might overfly or occasionally use terrestrial habitat within the Proposed Action Area are in low numbers and do not rely on the habitat for survival. The drainage lines/river/creek (major) habitat is supporting habitat for foraging and dispersal of the species and does not represent an important habitat, given the extent of remaining habitat within and on the surrounding area that can be used as foraging and dispersal for these species. Given this, the potential direct and indirect impacts to migratory species will not significantly affect the population of Common Sandpiper, Pacific swift, Oriental Pratincole, Oriental Plover and Wood Sandpiper.

4.1.5.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Avoidance and mitigation measures proposed for migratory bird species are similar to those proposed for threatened fauna species and have been summarised below for completeness.

Avoidance

- The IDF has been designed to avoid areas that may support significant biodiversity values.

Mitigation

- Clearing and ground disturbing activities limited to the defined clearing limits and boundaries described within the approval documentation. The extent of the approved clearing will be clearly communicated in documentation and site inductions. Pre-clearing photos to be documented and post clearing inspections to be undertaken.
- All site operatives and personnel attending the site will undergo an induction regarding migratory fauna and direct and indirect impacts (e.g., risk of vehicle strike, interaction with construction activities, waste management and introduction of feral animals).
- Strict speed limits will be enforced around the site in order to minimise the risk of fauna strikes during clearing and construction.
- Consideration will be given to the use of line marking along the transmission line route to increase visibility to birds and improve their ability to accurately perceive depth in relation to power lines. Ultraviolet (UV) line marking, if available, should also be considered, particularly with a view to minimising risks of nocturnal collisions.. The design of both power lines and poles will comply with recommendations developed by BirdLife International to minimise potential for impacts to birds.
- Comprehensive weed hygiene management through implementation of weed management measures. All works will be undertaken in accordance with Fortescue's Weed Management Plan as the standard operating procedure.
- Implementation of fire risk management measures will be undertaken, including:
    - clearing activities would not be undertaken when fire danger ratings are extreme or above.
    - Where increased risk of fire is identified, fire-resistant barriers like screens will be employed to confine sparks generated by welders and other hot work activities.
    - carefully manage and monitor hot works through implementation of hot works permit system.
    - ensuring appropriate disposal of potential fire-starting waste, e.g., cigarette butts to minimise the risk of bushfires as a result of the Proposed Action.
    - firefighting equipment will be located around the site and in vehicles. Fire response procedures and personnel training, including site inductions on fire prevention and management, will also be provided.
- All food waste will be removed from site at the end of each shift. Waste will be stored at the depot and regularly removed to minimise attraction of feral animals.
- Standard construction noise management measures will be implemented, including:
    - Machinery and vehicles are regularly services and operated/maintained in accordance with the manufacturer's specifications, and preferential use of modern equipment that generally operate more quietly.
    - Using techniques that reduce noise, such as employing hydraulic, rather than impact, methods. Training workers on best practices for minimizing noise.
    - Plant and machinery on site will be switched off and not left idling when not in use.
    - Planning the construction schedule so that the noisiest tasks occur during times when they will cause the least disturbance.
- Operational measures to reduce potential impacts associated with collision of the wind turbines includes:
    - Large turbines are more visible and have lower blade rotational speeds than smaller turbines. Collision rates also appear to be related to ease of visibility. The Proposed Action will incorporate some of the largest turbines available.

- Turbines are designed to be widely spaced to reduce the diversionary responses by birds and bats.
- Design and implementation of a bird and bat monitoring programme and the bird and bat adaptive management plan, which will record bird activity in the Proposed Action Area during construction and operation. This will include best practice estimation of actual mortality rates using current techniques.

Rehabilitation

Rehabilitation of a total 1,028.12 ha after each phase of the construction activities will reduce impacts to fauna habitat over time, including potential fragmentation impacts. Of the 1,028.12 ha rehabilitated, 15.30 ha are drainage line/river/creek (major) which is supporting habitat for migratory fauna species.

4.1.5.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are proposed since it is considered that no significant residual impacts on EPBC Act listed Migratory species will result of the Proposed Action.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not a nuclear action. Impacts (direct or indirect) as a result of nuclear actions are therefore not anticipated to occur. No further information is required.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no potential impacts to this Protect Matter from the Proposed Action. The Proposed Action area occurs onshore and does not intersect with a Commonwealth Marine Area. No further information is provided.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not located within or near to the Great Barrier Reef and therefore no impacts will occur. No further information is provided.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not a large coal mining development or coal seam gas project. Impacts (direct or indirect) to water resources due to those activities will not occur. No further information is provided.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action area does not overlap Commonwealth land. Impacts (direct or indirect) to Commonwealth land will not occur. No further information is provided.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not located in international waters or on international lands. The Proposed Action does not, therefore, overlap any Commonwealth heritage places overseas. Impacts (direct or indirect) to Commonwealth heritage places overseas will not occur. No further information is provided.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

- Threatened Species and Ecological Communities (S18)

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The Proposed Action area and IDF were subject to an iterative site selection process that assessed potential site locations and layouts using the hierarchy of risk management (avoid, minimise, mitigate) to reduce the Proposed Action's environmental risk profile.

Fortescue has previously considered alternative power supply sources. The greenhouse gas emissions associated with these alternatives are at odds with the Paris Agreement 2016, which aims to limit global warming to less than 2°C compared to pre-industrial levels. The alternatives were also inconsistent with the EPA's Greenhouse Gas Guidance (EPA, 2024). Alternative power options to the Proposed Action include:

- Extension of Fortescue River Gas Pipeline to provide gas-fired power generation specifically to FMG's Chichester Hub and North Star operations.
- Small scale solar farm infill in and around mining operations, constrained by mining and operational factors
- Utilisation of existing third-party power generation infrastructure.

Continued application of the mitigation hierarchy and ongoing consultation with the Kariyarra People will further avoid or minimise impacts to environment and cultural values.

Refer to Attachment 1, Section 9, pp. 176 - 177.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	09/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	09/05/2025	Yes	High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025		High

1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 11_Fortescue Environment Policy.pdf Fortescue Environment Policy (100-PO-EN-0001)	30/07/2022	No	High

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation’s environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 11_Fortescue Environment Policy.pdf Fortescue Environment Policy (100-PO-EN-0001)	29/07/2022		High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High
#2.	Link	Fire History Mapping https://catalogue.data.wa.gov.au/dataset/dbca-			High

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3.1.2 Existing or proposed uses for the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High
#2.	Document	ATT 2 Redacted_Flora and Vegetation Assessment Report Part 1 of 2.pdf EPGH Flora and Vegetation Assessment Report Redacted 1 of 2	27/02/2025	No	High
#3.	Document	ATT 2 Redacted_Flora and Vegetation Assessment Report Part 2 of 2.pdf EPGH Flora and Vegetation Assessment Report Redacted 2 of 2	27/02/2025	No	High
#4.	Document	ATT 2_Flora and Vegetation Assessment Report Part 1 of 2.pdf EPGH Flora and Vegetation Assessment Report 1 of 2	27/02/2025	Yes	High
#5.	Document	ATT 2_Flora and Vegetation Assessment Report Part 2 of 2.pdf EPGH Flora and Vegetation Assessment Report 2 of 2	27/02/2025	Yes	High
#6.	Document	ATT 3 Redacted_Terrestrial Fauna Survey Report.pdf EPGH Terrestrial Fauna Survey Report Redacted	17/03/2025	No	High
#7.	Document	ATT 3_Terrestrial Fauna Survey Report.pdf EPGH Terrestrial Funana Survey Report	17/03/2025	Yes	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf	08/05/2025	Yes	High

East Pilbara Generation Hub supporting document for the EPBC Act Referral

3.3.2 Indigenous heritage values that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 5 Redacted_EPGH Baseline Hydrology Study.pdf EPGH Baseline Hydrology Study Redacted	17/10/2022	No	High
#2.	Document	ATT 5_EPGH Baseline Hydrology Study.pdf EPGH Baseline Hydrology Study	17/10/2022	Yes	High
#3.	Document	ATT 6 Redacted_PTP Stage 6 Baseline Hydrology and Impact Assessment.pdf EPGH to PTP 6 Baseline Hydrology and Impact Assessment Report Redacted	20/08/2024	No	High
#4.	Document	ATT 6_PTP Stage 6 Baseline Hydrology and Impact Assessment.pdf EPGH to PTP 6 Baseline Hydrology and Impact Assessment Report	20/08/2024	Yes	High
#5.	Document	ATT 7 Redacted_EPGH Post Development Hydrology Study Part 1 of 2.pdf EPGH Post Development Hydrology Study Redacted 1 of 2	30/09/2024	No	High
#6.	Document	ATT 7 Redacted_EPGH Post Development Hydrology Study Part 2 of 2.pdf EPGH Post Development Hydrology Study Redacted 2 of 2	30/09/2024	No	High
#7.	Document				

ATT 7_EPGH Post Development Hydrology Study Part 1 of 2.pdf EPGH Post Development Hydrology Study 1 of 2			30/09/2024	Yes	High
#8.	Document	ATT 7_EPGH Post Development Hydrology Study Part 2 of 2.pdf EPGH Post Development Hydrology Study 2 of 2	30/09/2024	Yes	High
#9.	Document	ATT 8 Redacted_EPGH Desktop Groundwater Assessment.pdf EPGH Desktop Groundwater Assessment Redacted	19/10/2022	No	High
#10.	Document	ATT 8_EPGH Desktop Groundwater Assessment.pdf EPGH Desktop Groundwater Assessment	19/10/2022	Yes	High
#11.	Document	ATT 9 Redacted_EPGH Construction Water Supply Hydrogeological Assessment.pdf EPGH Construction Water Supply Hydrogeological Assessment Redacted	14/04/2025	No	High
#12.	Document	ATT 9_EPGH Construction Water Supply Hydrogeological Assessment.pdf EPGH Construction Water Supply Hydrogeological Assessment	14/04/2025	Yes	High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

4.1.4.5 (Threatened Species and Ecological Communities) Why you consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting	08/05/2025	No	High

		document for the EPBC Act Referral - Redacted			
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

4.1.4.8 (Threatened Species and Ecological Communities) Why you think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025		High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

4.1.5.2 (Migratory Species) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

4.1.5.6 (Migratory Species) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

4.1.5.9 (Migratory Species) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High

4.3.8 Why alternatives for your proposed action were not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 Redacted_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generation Hub supporting document for the EPBC Act Referral - Redacted	08/05/2025	No	High
#2.	Document	ATT 1_EPGH EPBC Supporting Doc_Rev0.pdf East Pilbara Generaiton Hub supporting document for the EPBC Act Referral	08/05/2025	Yes	High
#3.	Link	Environmental Factor Guideline - GHG https://www.epa.wa.gov.au/policies-guidance/envi..			High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	31631303305
Organisation name	PILBARA ENERGY (GENERATION) PTY LTD
Organisation address	6000 WA
Representative's name	Sofie Springer
Representative's job title	Senior Environmental Advisor
Phone	+ 08 6218 8888
Email	sofie.springer@fortescue.com
Address	Ground Floor, 256 St Georges Tce, Perth WA 6000

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ By checking this box, I, **Sofie Springer of PILBARA ENERGY (GENERATION) PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	31631303305
Organisation name	PILBARA ENERGY (GENERATION) PTY LTD
Organisation address	6000 WA
Representative's name	Jarrod Pittson

Representative's job title	Group Manager Environment and Closure
Phone	+61 8 6218 8888
Email	jarrod.pittson@fortescue.com
Address	Ground Floor 256 St Georges Terrace, Perth WA 6000

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Jarrod Pittson of PILBARA ENERGY (GENERATION) PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Jarrod Pittson of PILBARA ENERGY (GENERATION) PTY LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *