

# Turner River Solar Hub

Application Number: **02841**

Commencement Date:  
**25/03/2025**

Status: **Locked**

## 1. About the project

### 1.1 Project details

#### 1.1.1 Project title \*

Turner River Solar Hub

#### 1.1.2 Project industry type \*

Energy Generation and Supply (renewable)

#### 1.1.3 Project industry sub-type

Solar Farm

#### 1.1.4 Estimated start date \*

01/02/2029

#### 1.1.4 Estimated end date \*

01/02/2052

## 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 Turner River Solar Hub (the Proposed Action), comprising a solar farm and supporting infrastructure, located approximately 120 km south of Port Hedland and about 25 km west of Fortescue's North Star Project (refer to Attachment 1 Figure 1-1, p.11).

The Proposed Action will require clearing of up to 1,108.2 ha for the construction of renewable infrastructure, supporting electrical infrastructure and supporting infrastructure, within a Proposed Action area of 1,416.6 ha (refer to Attachment 1, Figure 2-1 p.15). The Proposed Action area is separated across two areas (northern and southern area), located approximately 3.7 km apart and linked via an existing unsealed access road.

The Proposed Action involves the installation of solar PV modules and substation, with a total capacity of up to 644 MW and supporting infrastructure. The proposed 220 kV transmission line spurs will integrate the solar farm into Fortescue's Pilbara Energy Connect (PEC) system, enabling energy supply across Fortescue operations in the Pilbara and forms part of Fortescue's objective to achieve carbon neutrality across its operations by 2030.

The solar modules will be mounted onto a tracking system, either fixed or tilting positioned 0.1 m – 4 m above ground level. The tracking structure will be secured to the ground using embedded piers, which will typically be embedded 1.5 - 2.5 m below the surface level, depending on the geotechnical conditions at the location. It is anticipated that the solar panels will be arranged in rows, with access tracks between them to facilitate ongoing maintenance. An optimised solar panel layout will be determined during a later detailed design phase (refer to Attachment 1, Figure 2-2, p. 19).

The Proposed Action will also include temporary infrastructure such as fuel storage, construction laydown areas and site offices, and permanent supporting infrastructure such as communications towers, and a series of access roads. Water will be obtained from the adjacent North Star operations using existing and approved water infrastructure for construction and operations. Transfer and storage of water across the area will consist of water pipelines and turkey's nests for construction and operations.

The Proposed Action is expected to operate for 25-30 years, and with asset life extension, can operate indefinitely. Decommissioning and rehabilitation are intended to restore the environmental values of the Proposed Action area post-operation. Decommissioning requirements will be determined through stakeholder consultation, and activities will include removal of all infrastructure, recycling or disposal of waste and rehabilitation of disturbed areas.

Rehabilitation activities will ensure all tracks are reprofiled back to the natural terrain, and any excavations backfilled and recontoured to achieve a gentle slope consistent with the surrounding natural landscape to reduce erosion. Vegetation and topsoil removed during construction will be spread over cleared areas, and all potentially contaminated soil will be removed to an appropriately licensed facility, and rubbish will be removed from the site and disposed of appropriately. All compacted areas will be ripped / scarified to loosen compacted soil and promote vegetation.

All decommissioning activities will be developed in consultation with relevant stakeholders for Post-Development Land Use.

Refer to Attachment 1, Section 2, pp. 13 - 20 for further details.

The Proposed Action area is situated on the Kangan pastoral lease (refer to Attachment 1, Figure 1-2 p. 12). The Kangan homestead is located outside of the Proposed Action area. The Proposed Action area is also located within the Kariyarra native title determination area and is relevant to the Kariyarra People (WCD2018/015).

Note that a full reference list is provided for sources cited within the referral form in Attachment 1, Section 10 (References) pp. 136 - 138

**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 the Kariyarra native title determination area and is relevant to the Kariyarra People (WCD2018/015).

### *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 *Rhinonictes 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).

#### **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.

### *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.

**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. 22 – 23 provides further details of relevant stakeholders. A summary of stakeholder consultation undertaken to date is provided in Attachment 1, Section 3.3 (consultation outcomes) and Table 3-2 (consultation summary), pp. 24 – 35.

Key stakeholders include:

- Government Agencies:
- Native Title holders:
  - Kariyarra People and Elders
  - Kariyarra Aboriginal Corporation – native title body corporation representative of the Kariyarra Native Title Determination Area.
- Local Government: Town of Port Hedland
- Land holders: Kangan Pastoral Station
- Community and Special Interest Groups:

## 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.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint.

Alternatively, email us at [privacy@awe.gov.au](mailto:privacy@awe.gov.au).

☒ **Confirm that you have read and understand this Privacy Notice \***

### 1.3.1.1 Is Referring party an organisation or business? \*

Yes

## Referring party organisation details

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

## Referring party details

<b>Name</b>	Sofie Springer
<b>Job title</b>	Senior Environmental Advisor
<b>Phone</b>	+ 08 6218 8888
<b>Email</b>	sofie.springer@fortescue.com
<b>Address</b>	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 2.

**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 2). 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 specific approval 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

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

#### Proposed designated proponent details

<b>Name</b>	Jarrod Pittson
<b>Job title</b>	Group Manager Environment and Closure
<b>Phone</b>	+61 8 6218 8888
<b>Email</b>	jarrod.pittson@fortescue.com
<b>Address</b>	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	Jarrold 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

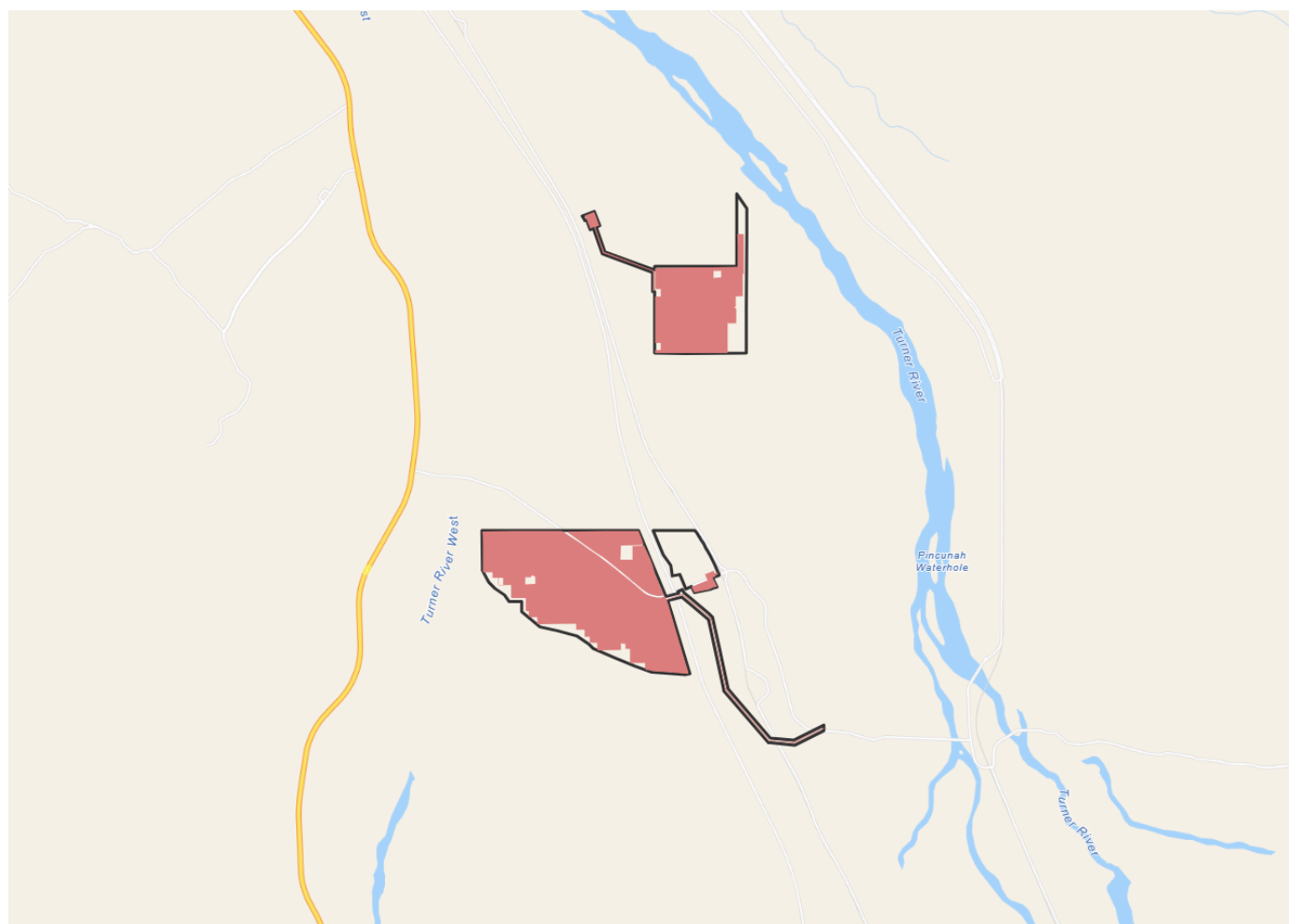
## 1.4 Payment details: Payment allocation

### 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:** 1420.41 Ha **Disturbance Footprint:** 1111.17 Ha

## 2.2 Footprint details

### 2.2.1 What is the address of the proposed action? \*

1.7 km east/southeast from great northern highway 91 km south of Port Hedland, 6 km east/sou

### 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 is located within the Kangan Pastoral Station (Lease N049839) which is managed under the *Land and Administration Act 1997* (LA Act). Areas that overlap mining tenure and are managed under the WA Mining Act are provided below.

- E 4506324 Pilbara Energy (Generation) Pty Ltd
- E 4506325 FMG Pilbara Pty Ltd
- AL 7000001 The Pilbara Infrastructure Pty Ltd
- L 4500293 FMG Magnetite Pty Ltd
- L 4500294 FMG Magnetite Pty Ltd
- L 4500317 Pilbara Water and Power Pty Ltd
- L 4500332 Pilbara Gas Pipeline Pty Ltd
- L 4500359 FMG Magnetite Pty Ltd
- L 4500360 Pilbara Water and Power Pty Ltd
- L 4500366 FMG Magnetite Pty Ltd
- L 4500462 Pilbara Energy Company Pty Ltd
- L 4500475 Pilbara Energy Company Pty Ltd
- L 4500515 Pilbara Energy (Generation) Pty Ltd
- L 4500625 Pilbara Water and Power Pty Ltd
- L 4500692 Pilbara Energy (Generation) Pty Ltd
- L 4500693 Pilbara Energy (Generation) Pty Ltd
- L 4500694 Pilbara Energy (Generation) Pty Ltd
- L 4500729 Pilbara Energy (Generation) Pty Ltd

Large sections of the Proposed Action area are included within amended purpose clearing permits issued to Roy Hill Infrastructure Pty Ltd and IB Operations Pty Ltd. One expired purpose permit held by Atlas Iron Limited also extends across part of the Proposal area. Historical exploration activity has also occurred within the Proposed Action area, including reconnaissance geological mapping and stream sediment surveys, however no mineral exploration has been recorded.

# 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 approximately 120 km south of Port Hedland, in the town of Port Hedland and is strategically located approximately 25 km west of Fortescue's existing North Star Magnetite Project and less than 3km to the existing North Star Junction Camp. The Proposed Action area is located within the Kangan pastoral station (Lease N049839) (refer to Attachment 1, Figure 1-2, p. 12) which is managed under the *Land Administration Act 1997* (LA Act) and is separated across two distinct areas (north and south area) approximately 3.7 km apart and linked via an existing unsealed access road, adjacent to Fortescue's existing mainline rail.

The Proposed Action is situated within the Kariyarra Native Title Determination (WCD2018/015) (refer to Attachment 1, Figure 1-2 p. 12). The registered Native Title body corporate for the Kariyarra Traditional Owners is the Kariyarra Aboriginal Corporation (KAC). All consultations and engagements with Kariyarra Traditional Owners were facilitated through KAC.

The Proposed Action is located in a predominantly undisturbed area, however, evidence of existing disturbances includes weeds, cattle, some existing roads or cleared areas and railway tracks. Fire is a regular occurrence in the Pilbara, with large tracts of vegetation burning, particularly during the late dry season, start of the wet season. Parts of the area have been impacted by recent fires, with vegetation significantly impacted and fire scars evident.

Two introduced flora species, Kapok Bush and Buffel Grass, were recorded within the Proposed Action area, though none are listed as Declared Pests or Weeds of National Significance (WoNS).

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

The Proposed Action is located within the Town of Port Hedland in an area zoned as 'Rural' under the Port Hedland Local Planning Scheme 7. Port Hedland is a key regional centre in the Pilbara region, with several surrounding towns that contribute to its diverse community. In addition to Port Hedland itself, the main towns include South Hedland, Wedgefield and Cooke Point and Aboriginal communities including Kariyarra, Nyamal and Palyku.

The Proposed Action is situated in a remote area between the Turner River and Turner River West, within the Kangan pastoral lease (N049839). Consultation with Kangan lease holders will continue during the life of the Proposed Action. The surrounding land is predominantly rural outback, with mining related infrastructure and pastoral activities.

The area surrounding the Proposed Action is a highly prospective iron ore mining district and there are numerous proposed and operating mining ventures, including Fortescue's existing Iron Bridge Magnetite Project, located approximately 25 km east.

Large sections of the Proposed Action area are included within amended purpose clearing permits issued to Roy Hill Infrastructure Pty Ltd and IB Operations Pty Ltd and one expired purpose permit held by Atlas Iron Limited also extends across part of the area. Historical exploration activity has also occurred within the Proposed Action area, including reconnaissance geological mapping and stream sediment surveys, however no mineral exploration has been recorded.

### **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 does not intersect any identified conservation reserves. The nearest conservation area is Mungaroona Range Nature Reserve, which is located 50 km south-west of the Proposed Action and is vested under the Conservation Commission of Western Australia.

The Proposed Action does not intersect with any nationally significant wetlands or RAMSAR Wetlands. The closest wetland of national significance is the Fortescue Marsh, located approximately 100 km south of the Proposal, in the Fortescue IBRA sub-region.

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

The topography of the Proposed Action area is relatively consistent. Turner River West runs 600m to the west of the Proposed Action area and is a major tributary that flows towards the north to Port Hedland. Turner River is located approximately 3.3km east of the Proposed Action area, running parallel to Turner River West, and also flows north to Port Hedland. There is also a significant stream that intersects Turner River approximately 3.5km east of the Proposed Action area.

The southern area has low relief and very gently-sloping land gradients, with land sloping downwards from south-east to northwest at an average gradient of  $<1^\circ$ . The northern area has similar characteristics, sloping from south-east to north-west at an average gradient of  $<1^\circ$ , and is located slightly lower in the landscape. The highest elevation in the landscape is 196m in the south-east, and lowest elevation is 154m in the north-west.

A slope analysis conducted over the Proposed Action area found that the majority of the Proposed Action area is comprised of surfaces with a gradient of  $0-5^\circ$ , with a minor proportion comprised of gradients of  $5-10^\circ$ . There are very isolated locations across the Proposed Action area with gradients  $>10^\circ$  which are associated with exposed bedrock, drainage line channels, and existing disturbed features ( $<0.1\%$  or 1ha).

## 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. 36 - 95 for a complete description of flora and fauna within the Proposed Action area. A summary of the attachment is provided below.

### **Flora**

A range of flora and vegetation surveys have been completed within the Proposed Action area and surrounding area to determine the baseline environment and inform the design of the Proposed Action (refer to Attachment 1, Table 4-1 page 37).

The Detailed Flora and Vegetation Assessment Consolidated Report is provided in Attachment 3 - SLR 2025.

No flora listed as Threatened under the EPBC Act were identified within the survey areas or considered to have a medium or high likelihood of occurrence within the survey areas.

Further details of survey effort expended and the baseline flora knowledge are provided in Attachment 1, Section 4.2.8, p. 63.

### **Fauna**

Detailed terrestrial vertebrate fauna surveys were completed across the entire Proposed Action area, including a targeted Greater Bilby survey, to determine the baseline environment and inform the design of the Proposed Action (refer to Attachment 1, Table 4-2, p. 40).

The following fauna assessment reports are provided as attachments to this referral.

- Attachment 4 - North Star Junction Vertebrate Fauna Assessment Report - 360 Environmental 2023
- Attachment 5 - North Star Junction West Detailed Terrestrial Vertebrate Fauna Assessment Report - Spectrum 2025
- Attachment 6 - Turner River Solar Hub Targeted Bilby Survey Report - Spectrum 2025.

360 Environmental and Spectrum (Attachment 5, Section 3.2, p. 46) mapped six broad fauna habitats (excluding cleared areas) within the Survey Areas (9,291 ha). All six habitats extend beyond the survey area and are considered typical of the Pilbara bioregion.

The Granite Outcrops and the Drainage Line/River/Creek (Major and Minor) habitats are considered the highest value for conservation significant fauna, followed by the Plain (sand) habitat (valued by burrowing species such as the Greater Bilby and Brush-tailed Mulgara)..

Design of the Proposed Action area has completely avoided the Drainage Line/River/Creek (major) habitat and the IDF has avoided any direct impact on Granite Outcrop habitat. Habitats within the Proposed Action area are as follows:

- Plain (stony/gibber): 86.16 ha (6.09%)
- Plain (sand): 1,283.76 ha (90.63%)
- Granite Outcrops: 0.04 ha (<0.01 %)
- Hills/Ranges/Plateaux: 6.75 ha (0.48%)
- Drainage Line/River/Creek (minor): 6.52 ha (0.46%)
- Cleared: 33.26 ha (2.35%).

A search of the Protected Matters Search Tool (PMST) identified 10 Threatened fauna species and 14 Migratory fauna species within the search area, including:

- Four threatened mammal species.
- Five threatened bird species.
- One threatened reptile species; and
- 14 migratory bird species.

The detailed vertebrate fauna assessments completed by 360 Environmental and Spectrum determined the likelihood of occurrence of each species in the Proposed Action area and surrounding area (refer to Attachment 1, Table 4-10 p. 74 for the Likelihood of occurrence criteria).

Four species listed under the EPBC Act were recorded within the Proposed Action area and a further two are considered highly likely to occur. These species are listed below. Further details, such as habitat preference, threats and species description are provided in Section 4.2.12.2, pp. 75 to 95 of Attachment 1.

Species with a likelihood of 'Medium' or lower, have an infrequent occurrence in the locality and/or limited suitable habitat and are therefore unlikely to be significantly impacted by the Proposed Action. This includes all Migratory species who were allocated a likelihood of 'low' or 'very low' and have therefore not been considered further as impacts are not expected.

#### **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
- Ghost Bat (*Macroderma gigas*) – Vulnerable

#### **High likelihood of occurrence**

- Grey Falcon (*Falco hypoleucos*) - Vulnerable
- Pilbara Olive Python (*Liasis olivaceous barroni*) – Vulnerable.

### **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 of Attachment 1 pp. 43 - 62 for a complete description of the vegetation within the Proposed Action area. A summary of the attachment is provided below.

The Proposed Action Area is located within the Pilbara Bioregion as described by the Interim Biogeographic Regionalisation for Australia (IBRA). Pre-European vegetation mapping based on Beard (1975; 1990) describes two vegetation associations within the Proposed Action area which form part of the Abydos Plain – Chichester system as described below. Refer to Attachment 1, Section 4.2.2.2, Table 4-5 and Figure 4-5, pp. 47-49 for further detail.

- 'Abydos Plain – Chichester 93' (VA: 93.4): comprises most of the DE (1,416.5 ha, or 99.99%). This vegetation association is predominantly limited to the Pilbara IBRA region and the Chichester (PIL01) subregion and is estimated to have 99.86% of its pre-European extent remaining (DBCA, 2019).
- 'Abydos Plain – Chichester 626' (VA: 626.1): intersected by the southeast corner of the northern DE area and comprises just 0.13 ha (<0.01%) of the DE. This vegetation association is restricted to the Chichester (PIL01) subregion and has an estimated 99.55% of its pre-European extent remaining (DBCA, 2019).

No vegetation types considered representative of any State or Commonwealth-listed Threatened Ecological Communities or Priority Ecological Communities were identified within the Proposed Action area (Attachment 3, Section 4.3.8.1, p. 56). The nearest known occurrence is a Priority 1 PEC, approximately 20 km west-northwest of the northern Proposed Action area.

Most vegetation in the survey areas were comprised of xerophytic species (no interaction with groundwater). Four vegetation units (EcAtTe, EcMgTlo, MaAcpCi, and EvAtTlo) within the survey areas were considered to be GDE or potential GDEs based on the presence of obligate (groundwater dependent) or facultative (infrequent or partial use of groundwater) phreatophyte taxa (Attachment 3, Section 4.3.8.2, p. 56).

No potential groundwater dependent ecosystems (GDEs) are located within the Proposed Action area as the boundary has been designed to avoid any direct disturbance to GDE or potential GDE communities.

Field surveys mapped 23 vegetation types across five broad landforms within the survey areas (Attachment 3, Section 4.3.5, p. 40). However, only eleven of these vegetation types intersect with the Proposed Action as described in Attachment 1, Table 4-4 and shown in Figure 4-6.

Vegetation condition of the Proposed Action ranges from excellent to completely degraded (cleared) as indicated in Attachment 1, Table 4-7 p.59 and shown in Figure 4-7 p.60, with 98% of the Proposed Action area and 97% of the IDF in Very Good or Excellent condition. Evidence of disturbance included existing clearing (recent and historical), weeds, and introduced fauna scats and tracks (notably cattle).

## 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.

Surveys conducted to date are outlined in Section 4.3.1, p. 96, of Attachment 1.

The Proposal is located within the Kariyarra Native Title Determination Area and is relevant to the Kariyarra People (WCD2018/015). Fortescue has undertaken consultation with the Kariyarra People regarding the social surroundings values within and surrounding the Proposed Action area. This consultation will continue throughout the life of the Proposed Action.

### **Aboriginal Cultural Heritage**

A search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Cultural Heritage Inquiry System (ACHIS) on 1 August 2024 identified 21 registered and 40 lodged Aboriginal heritage places within a 2 km buffer of the Proposed Action. No Registered Sites, Lodged Places or Historic Places (stored data) were identified within the Proposed Action area. A review of Fortescue's internal heritage database system was also undertaken. A total of 15 Heritage Places and one Heritage Restriction Zone (HRZ) are located within the Proposed Action area, however none of these known places are located within the IDF. Refer to Section 4.3.2.1 of Attachment 1, p. 96 – 98.

### **Culturally Significant Water Sources**

Fortescue recognises, through consultation with the Kariyarra Traditional Owners, the significant cultural value of water sources. During heritage surveys and social surrounds consultation, several culturally significant water sources were identified around the Proposed Action. No culturally significant water sources have been identified within the Proposed Action area itself, although known in the near surrounds. The identified sources include:

- Turner River (west) (DPLH ID 6653): Located west of the southern area, this water source has ethnographic and spiritual significance and was historically a travel route for Kariyarra Traditional Owner ancestors.
- Turner River Tributaries (HRZ-1367): Situated south of the southern area, these tributaries are essential for maintaining the natural flow of the Turner River West.
- Turner River (DPLH ID 6653): Located east of the northern area, this water source also holds ethnographic and spiritual significance and served as a travel route for Kariyarra Traditional Owner ancestors.

These sources are protected as part of Fortescue's efforts to safeguard the Kariyarra Traditional Owner cultural heritage and have been excluded from the Proposed Action area.

### **Culturally Significant Flora and Fauna**

Flora and fauna of cultural value and significance identified within the survey area included 59 flora species and nine fauna species of traditional use by the Kariyarra Traditional Owners. Flora and fauna species were categorised as either being used for food, medicine, ceremonial use and/or 'other'.

#### **Flora**

Forty (40) of the 59 flora species were identified as having traditional and contemporary use, of which twelve species were identified as having traditional use only as structural components (such as baskets, fishing nets etc), food uses and medicinal practices. Two species, parsnip bean (*Vigna lanceolata*) and kapok bush (*Aerva javanica*) were identified to have contemporary use only.

Eighteen of the flora species were identified as being culturally significant. Two of the 18 species were identified as having increased cultural significance to the Kariyarra People (Biologic, 2024) including Mirli (*Melaleuca argentea*) and Parrkalya (*Acacia trachycarpa*). Both species are primarily found along drainage lines and watercourses.

#### **Fauna**

Nine fauna species were identified as having traditional use by Kariyarra Traditional Owners. With the exception of jartunmarra (Northern quoll – *Dasyurus hallucatus*), all species are still used today, particularly for bush tucker and ceremonial purposes. The Northern quoll is no longer hunted for food in modern times due to the availability of larger and more abundant fauna species such as kangaroo, emu and bustard, as well as modern-day food options.

Five fauna species were identified as having cultural value to the Kariyarra Traditional Owners in ceremony and as food sources within the survey area. Of these species, one species (Greater Bilby) was identified of being of increased cultural significance used as a totemic species of cultural significance in tribal lore for young men. Additionally, the bilby serves as a valuable indicator of the health of the land, as its low population numbers suggest impacts from introduced animals such as cats, foxes, and cows, or the loss of suitable habitat.

The species and their cultural values are provided below:

- Greater bilby (Pirtirra): Important totemic species and are used in tribal lore for young men.
- Northern Quoll (Jartunmarra): bush tucker and indicator of country health
- Brush-tailed mulgara (Unknown\*): Important totemic species and are used in tribal lore for young men.
- Euro, wallaroo (Jarlungmarra / wijunu): bush tucker, Important food sources as they can feed large parties and their skins, fur and feathers can be used for clothing, bedding or decoration.
- Emu (Jarnkurna): Bush tucker, important food sources as they can feed large parties, and skins and feathers used for clothing and bedding.
- Australian bustard, bush turkey (Partukalara): bush tucker, Important food sources as they can feed large parties and their skins, fur and feathers can be used for clothing, bedding or decoration.
- Spiny-tailed monitor (Warntijurri / maranthu): bush tucker.
- Perentie (Purrangura): bush tucker.
- Pilbara Olive Python (Marilya): bush tucker and indicator of country health.

## 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. \***

The Proposed Action is located in the Pilbara region, within the Pilbara Groundwater Area and Pilbara Surface Water Area, which are both proclaimed under the *Rights in Water and Irrigation Act 1914* (WA). The Proposed Action does not intersect any Public Drinking Water Source Areas.

### Surface Water

A Baseline Surface Water Assessment was completed by Fortescue (Attachment 7) to characterise the current hydrological regime of the Proposed Action. This included hydrological and hydraulic modelling of the 1% Annual Exceedance Probability (AEP) event for both the Turner River West and Turner River catchments and local catchments contributing to flooding in the Proposed Action area. The aim of this assessment was to ensure the siting of key infrastructure was located outside of the floodplain to minimise potential impacts associated with the Proposed Action.

The Proposed Action is located within the Turner River and the Turner River West catchments. The Turner River West catchment is considered generally hydrologically similar to the Turner River catchment upstream of the Pincunah gauge. Both catchments are relatively flat with mainstream equal area slopes of 2.1 and 1.6 m/km, respectively (Attachment 7, Section 2.2, p. 8). Soils are similar, with both catchments dominated by Monzogranite groups with some colluvial/alluvial deposits in watercourses. Their adjacency results in mostly identical climatic conditions, and both catchments are of a similar order of magnitude.

The hydrology of the Proposed Action area is influenced by flat terrain that facilitates substantial rainfall infiltration. Major river systems in the vicinity, such as the Turner River, experience flow predominantly following heavy rainfall events often associated with summer thunderstorms and tropical cyclones. Annual rainfall in this region ranges from 250 mm to 450 mm, with the majority occurring in the summer months. This leads to intermittent river flows and the potential for flash flooding. The Turner River catchment covers an area of about 500,000 ha, with a mainstream length of 116 km and an average slope of 2.05 m/km (LandCorp, 2013), factors that significantly influence surface runoff patterns and flood potential.

The Proposed Action will not significantly alter the existing landform geometry and is not expected to impede surface water flows as runoff can move under and between the solar array structures. As a consequence, surface water flow paths, depths and velocities are not expected to change significantly from natural conditions and will still ultimately flow into the Turner River and Turner River West. Where access tracks cross significant drainage lines, culverts or floodways will be installed to maintain continuity of flow.

Given the above, and the current semi-natural and pastoral conditions of the catchment, the hydrological regime and water quality is likely to be unaffected by proposed activities, though there is no baseline data in the Proposed Action area for comparison.

### Groundwater

Groundwater levels in the Pilbara region can be highly variable and are typically influenced by the sporadic nature of rainfall that leads to irregular recharge through surface infiltration. Field monitoring and other hydrogeological assessments for similar projects in the Proposed Action area indicate that the groundwater table in fractured rock aquifers can range from 6 metres below ground level (mbgl) to 53 mbgl. Groundwater flow in this region generally follows a southeast to northwest hydraulic gradient, consistent with the broader topographic slopes and drainage patterns. Given that the Proposed Action is in the upper catchment areas, the groundwater throughflow is likely to be limited.

The local hydrogeology is defined by the fractured rock aquifers which yield moderate volumes of groundwater stored within fissures and fractures of the rock matrix. Additionally, there are alluvial aquifers located along riverbeds and floodplains that offer significant water storage. These alluvial aquifers are recharged predominantly during episodic flooding events related to the Turner River's flow, though their shallow nature makes them susceptible to seasonal fluctuations.

Water for the Proposed Action (construction and operation) will be sourced from existing and approved production bores approximately 2.5 km east of the Proposed Action area at very low volumes (<3 l/s). As a result, there will be no new applications for groundwater abstraction associated with this Proposed Action as the project will make use of existing groundwater bores nearby. It is therefore expected that development of the Proposed Action will have no impact on groundwater.

## 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	No	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.

—

#### 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.

—

#### 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.

—

**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
No	No	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper
No	No	<i>Calidris ferruginea</i>	Curlew Sandpiper
Yes	Yes	<i>Dasyurus hallucatus</i>	Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu]
No	No	<i>Erythroriorchis radiatus</i>	Red Goshawk
Yes	Yes	<i>Falco hypoleucos</i>	Grey Falcon
Yes	Yes	<i>Liasis olivaceus barroni</i>	Pilbara Olive Python
Yes	Yes	<i>Macroderma gigas</i>	Ghost Bat
Yes	Yes	<i>Macrotis lagotis</i>	Greater Bilby
No	No	<i>Pezoporus occidentalis</i>	Night Parrot
No	No	<i>Polytelis alexandrae</i>	Princess Parrot, Alexandra's Parrot
Yes	Yes	<i>Rhinonicteris aurantia</i> (Pilbara form)	Pilbara Leaf-nosed Bat
No	No	<i>Rostratula australis</i>	Australian Painted Snipe

### Ecological communities

—

**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. \***

## Threatened Fauna

### **Northern Quoll (*Dasyurus hallucatus*) – Endangered**

The Northern Quoll was recorded to the east and west of the Southern area habitat, through secondary camera recordings, captures and scat evidence. All records were located outside of the Proposed Action area within the Granite Outcrops (boulder piles) habitat. The IDF has excluded much of the Granite Outcrop in the local area to avoid impacts to the Northern Quoll.

Potential direct impacts to the Northern Quoll in relation to the Proposed Action include fragmentation and clearing of potential species habitat, including potential critical dispersal, foraging and breeding habitat, other dispersal habitat and other foraging habitat; and injury or loss of Northern Quoll individuals through vehicle and machinery movements and strikes.

Potential indirect impacts to the Northern Quoll in relation to the Proposed Action include degradation of Northern Quoll habitat, including fragmentation and edge effects resulting in; restricted access to habitat or water resources, increased competition for resources, increased exposure to predators, degradation of habitat through greater penetration of invasive species, reduction in species richness and diversity, Increased numbers of feral or invasive species.

(Further information is provided in Attachment 1, Table 4-11 pp. 75 -78, Section 5.1.1.6, pp. 121 -125 and Figure 4-10, p. 78)

### **Greater Bilby, Dalgte (*Macrotis lagotis*) – Vulnerable.**

The Greater Bilby has been recorded within, and in close proximity to the Proposed Action area. Figure 4-11 p.82 Attachment 1 displays all recordings within and adjacent to the Proposed Action area. Greater Bilby diggings were recorded in the far west corner of the southern area and the targeted Greater Bilby survey recorded possible evidence of the species (old, ambiguous diggings and burrows) at two locations in the northern area (one within the IDF) and three locations in the southern area (two within the IDF).

Direct and indirect impacts which may arise from implementing the Proposed Action include: habitat loss due to clearing; altered behaviour due to noise and light emissions during construction; increased predation by feral predators (foxes and cats) due to provision of artificial water, food waste and shelter; introduction and spread of weeds leading to habitat degradation; altered fire regimes leading to habitat degradation and greater risk of predation in post-fire landscape; direct loss or injury of individuals during clearing, vehicle movements; cumulative impacts to fauna and available habitat from the Proposed Action and other regional development.

(Further information is provided in Attachment 1, Table 4-12 pp. 79-83, Section 5.1.1.1, pp. 99–104; Figure 4-11, p.82)

### **Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) Vulnerable.**

Pilbara Leaf-nosed Bat (PLNB) calls were recorded during the fauna surveys, predominantly recorded outside of the Proposed Action area. Call patterns from the surveys indicate that the areas are only used for foraging, and no suitable roost sites were recorded. Potential direct impacts to PLNB include loss of potential foraging habitat from clearing activities.

(Further information is provided in Attachment 1, Table 4-13 pp. 84 - 85, Section 5.1.1.2, pp. 105 - 106; Figure 4-13, p.86)

### **Ghost Bat (*Macroderma gigas*) – Vulnerable.**

Within the Proposed Action area, the species is considered to potentially utilise all habitat types for infrequent foraging. However, the Plain (sand and stony/gibber) habitat was considered to be of low foraging suitability. The species was not recorded within the Proposed Action area, and no critical habitat was identified within the Proposed Action area. However it is noted that the species can be difficult to detect, given limited suitable survey methods and the lack of calls the species makes during hunting.

Potential direct impacts to the Ghost Bat in relation to the Proposed Action include; clearing of potential foraging habitat and injury or loss of Ghost Bat individuals through vehicle and machinery movements and strikes.

Potential indirect impacts to the Ghost Bat in relation to the Proposed Action include; degradation of Ghost Bat habitat, including fragmentation and edge effects resulting in; Restricted access to habitat or water resources, increased competition for resources, increased exposure to predators, degradation of habitat through greater penetration of invasive species, reduction in species richness and diversity, increased numbers of feral or invasive species. Altered species behaviour, due to noise, dust, light, and increased traffic or movement within the site and cumulative impacts from other projects within the region.

(Further information is provided in Attachment 1, Table 4-14 pp. 87 - 88, Section 5.1.1.3, pp. 106–111; Figure 4-14, p. 88)

#### **Pilbara Olive Python (*Liasis olivaceous barroni*) – Vulnerable.**

One Pilbara Olive Python individual was observed during field surveys for the Proposed Action next to a permanent water pool along a major drainage line, outside of the survey area and Proposed Action area. This individual was located approximately 11.2 km east of the northern Proposed Action area, across the Turner River. Note, no permanent water pools occur within the Major Drainage habitat recorded within proximity to the Proposed Action area, however, the record indicates that individuals may use this habitat, particularly during the wet season when surface water is more likely to be present.

Potential direct impacts to the Pilbara Olive Python in relation to the Proposed Action include; fragmentation and clearing of potential species habitat, including potential critical dispersal, foraging and breeding habitat, other dispersal habitat and other foraging habitat and injury or loss of Pilbara Olive Python individuals through vehicle and machinery movements and strikes.

Potential indirect impacts to the Pilbara Olive Python in relation to the Proposed Action include: Degradation of Pilbara Olive Python habitat, including fragmentation and edge effects resulting in; restricted access to habitat or water resources, degradation of habitat through greater penetration of invasive species, reduction in species richness and diversity, increased numbers of feral or invasive species, altered species behaviour, due to noise, dust, light, and increased traffic or movement within the site, cumulative impacts from other projects within the region.

(Further information is provided in Attachment 1, Table 4-16 pp. 93 - 94, Section 5.1.1.5, pp. 116–120; Figure 4-16, p.95)

#### **Grey Falcon (*Falco hypoleucos*) – Vulnerable.**

Grey Falcon was not recorded within the Proposed Action area but was sighted twice during the Proposed Action surveys along Drainage Line/River/Creek (major) habitat to the west of the southern area. A pair were also observed south of the southern area along the powerlines adjacent to the Fortescue Main Line Rail. Within the Proposed Action area, the species is considered to potentially use Eucalyptus trees within the Drainage Line/River/Creek habitat for breeding and utilise all habitats for hunting.

Direct and indirect impacts which may arise from implementing the Proposed Action include: habitat loss due to clearing; habitat degradation as a result of fragmentation, altered behaviour due to noise and light increased predation by feral predators (foxes and cats) due to provision of artificial water, food waste and

shelter; introduction and spread of weeds leading to habitat degradation; altered fire regimes leading to habitat degradation; direct loss or injury of individuals during clearing and vehicle movements; cumulative impacts to fauna and available habitat from the Proposed Action.

(Further information is provided in Attachment 1, Table 4-15 p. 90 - 91, Section 5.1.1.4, pp. 111–116; Figure 4-15, p.92).

**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 Fauna

### **Northern Quoll (*Dasyurus hallucatus*) – Endangered**

No records of the Northern Quoll were located within the Proposed Action area, however potential habitat is present. Critical dispersal and foraging habitat for the Northern Quoll will be cleared through implementation of the Proposed Action, however, all habitat types recorded within the Proposed Action area are considered well represented in the surrounding region. It is considered likely that the Proposed Action area is marginal habitat for Northern Quoll and without a resident population and avoidance of breeding and denning habitat, **implementation of the Proposed Action is therefore unlikely to significantly impact the Northern Quoll.**

(Further information is provided in Attachment 1, Section 5.1.1.6, pp. 121 -125)

### **Greater Bilby, Dalgte (*Macrotis lagotis*) – Vulnerable.**

The Proposed Action has the potential to have a significant impact on the Greater Bilby, based on the significant impact assessment and impacts to mapped critical Greater Bilby habitat and potential breeding habitat within the DE. However, suitable habitat for this species occurs widely in the surrounding landscape. Over 99.5% of potential Greater Bilby habitat and critical habitat remains within the broader Pilbara IBRA region. Following assessment and application of appropriate mitigation measures **it is anticipated that the Proposed Action is not likely to have a significant impact on the Greater Bilby.**

(Further information is provided in Attachment 1, Section 5.1.1.1, pp. 99–104).

### **Pilbara Leaf-nosed Bat (*Rhinonictis aurantia* Pilbara form) Vulnerable.**

The Proposed Action poses no risk to the conservation of the PLNB at a local or regional level. No diurnal roosts are recorded within the Proposed Action area and the species has been recorded visiting the area infrequently, either to forage or disperse between diurnal roosts. **The loss of foraging habitat within the IDF is not a significant impact to the PLNB.**

(Further information is provided in Attachment 1, Section 5.1.1.2, pp. 105 - 106)

### **Ghost Bat (*Macroderma gigas*) – Vulnerable.**

No Ghost Bat roosts were identified within the Proposed Action area, although the Granite Outcrops (boulder piles) habitat provides potential intermittent transient roosting for the species. No Granite Outcrop will be disturbed by the Proposed Action. No critical habitat for the species has been identified within the Proposed Action area and the foraging habitat is considered low quality. **As a result, it's anticipated the Proposed Action is unlikely to have a significant impact on the Ghost Bat.**

(Further information is provided in Attachment 1, Section 5.1.1.3, pp. 106–111)

### **Pilbara Olive Python (*Liasis olivaceous barroni*) – Vulnerable.**

The Proposed Action will result in direct impacts to the species habitat, through a loss of up to 2.05 ha of potential foraging and/or dispersal habitat. However, extensive areas of suitable foraging and dispersal habitat will remain post-clearing. Further, the lack of critical habitat within the Proposed Action area, the avoidance of Major Drainage and the lack of a resident Pilbara Olive Python population, suggests **implementation of the Proposed Action is therefore unlikely to have a significant impact on the Pilbara Olive Python.**

(Further information is provided in Attachment 1, Section 5.1.1.5, pp. 116–120)

**Grey Falcon (*Falco hypoleucos*) – Vulnerable.**

The Grey Falcon was not recorded within the Proposed Action area, however, multiple sightings were recorded within the broader survey area. It is considered likely that the species breeds in the vicinity on a regular basis and utilises all habitats within the Proposed Action area for hunting. No nesting trees were identified within the Proposed Action area. Suitable nesting habitat may be present within the Eucalyptus trees of the Drainage Line/River/Creek (minor) but this habitat has minor representation within the Proposed Action area (6.52 ha) and is not restricted to the Proposed Action area. It is not considered that the Grey Falcon is restricted or dependent on the habitat present within the Proposed Action area and given the lack of records identified, **implementation of the Proposed Action is therefore unlikely to result in a significant impact on the species.**

(Further information is provided in Attachment 1, Section 5.1.1.4, pp. 111–116).

**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 the Greater Bilby and Northern Quoll 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 following potentially significant residual impacts are expected after mitigation measures are applied:

- Clearing of 2.07 ha of drainage line/river/creek (minor) habitat which is critical dispersal and foraging habitat for Northern Quoll and critical burrowing and foraging habitat for Greater Bilby.
- Clearing of 1,027.63 ha of plain (sand) habitat which is critical burrowing and foraging habitat for Greater Bilby.
- Clearing of 51.04 ha of plain (stony/gibber) habitat which is critical burrowing and foraging habitat for Greater Bilby.
- Clearing of 6.75 ha of Hills/Ranges/Plateaux habitat which is critical dispersal and foraging habitat for Northern Quoll.

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. \***

During the planning and design process for the Proposed Action, the mitigation hierarchy (avoid, minimise and rehabilitate) was applied to assess, avoid and minimise potential impacts to terrestrial fauna as far as practicable. Following completion of the fauna surveys, the data was reviewed against the project design to avoid/minimise clearing of significant species habitat. The Proposed Action boundary and IDF was significantly reduced in size and has been designed to avoid areas that may support significant biodiversity values or heritage values such as drainage lines and granite outcrops.

#### *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:
  - The Proposed Action location was relocated north of the Drainage Line (Major) which constitutes important fauna habitat for conservation significant species.
  - The Proposed Action area was further reduced in size throughout the design phase to avoid and minimise impacts.
  - Avoidance of conservation significant fauna, where practicable, avoiding all existing records of conservation significant fauna.
- Prior to conducting ground disturbance activities, ensure known locations of environmentally sensitive areas (such as areas of critical habitat) to be retained and protected from disturbance are identified on the ground by appropriate signage, fencing or flagging.

Further information detailing how the mitigation hierarchy is being applied to the Proposed Action is provided in Attachment 1, Section 6 (Avoidance and Mitigation Measures), pp. 126 - 129 and Figure 6-1 p. 130.

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

As outlined in earlier sections, the Proposed Action may result in significant residual impacts on MNES habitat. In response to these potential impacts, Fortescue proposes to use the Pilbara Environmental Offsets Fund (PEOF) as the offset's mechanism for the Proposed Action with the intention of maximising regional biodiversity benefits.

Fortescue will prepare an Impact Reconciliation Procedure (IRP) tailored and proportionate to the scale and significance of the residual environmental impact.

Further information regarding offsets, refer to Attachment 1, Section 7, pp. 131-132.

#### **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
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper
No	No	Charadrius veredus	Oriental Plover, Oriental Dotterel
No	No	Glareola maldivarum	Oriental Pratincole
No	No	Hirundo rustica	Barn Swallow
No	No	Motacilla cinerea	Grey Wagtail
No	No	Motacilla flava	Yellow Wagtail

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

No

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

\*

The Proposed Action is unlikely to have direct or indirect impacts on Migratory Species due to lack of suitable habitat and species identified. The Protected Matters Search Tool identified 14 Migratory Species within the search area, however, through the likelihood assessment, all species were assigned a likelihood of occurrence of 'medium', 'low' or 'very low' due to lack of suitable habitat present. Further, some species were excluded from the assessment due to proximity from the coastline.

Through the design process, all suitable habitat for migratory species have been excluded from the Proposed Action area including granite outcrops and major drainage. Suitable habitat for these species is well represented in the surrounding area.

Given that migratory bird species are unlikely to utilise the Proposed Action area, and that no habitat is present within the IDF, impacts associated with habitat loss are not considered to be significant. The individuals that may fly over or occasionally use terrestrial habitat outside of the Proposed Action area are in low numbers and do not rely on the habitat for survival. The drainage lines/river/creek (major) habitat has all been excluded from the IDF, and surrounding areas which may provide foraging or dispersal habitat will not be impacted.

#### **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.

—

**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.

—

**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. As shown in Attachment 1, Figure 6-1 p. 130, the Proposed Action area was significantly reduced in size to avoid areas that may provide habitat for threatened fauna species or are culturally significant.

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 8 pp. 133 - 134 for further detail.

## 5. Lodgement

## 5.1 Attachments

## 1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1 - EPBC Referral Supporting Document.pdf Turner River Solar Hub supporting document for the EPBC Act Referral	04/04/2025	Yes	High
#2.	Document	ATT 1 Redacted - EPBC Referral Supporting Document.pdf Turner River Solar Hub supporting document for the EPBC Act Referral with sensitive information redacted		No	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 2_Fortescue Environment Policy.pdf Fortescue Environment Policy (100-PO-EN-0001)	30/07/2022	No	High

## 3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 3 -Detailed Flora and Veg Assessment Turner River Consolidated.pdf Detailed Flora and Vegetation Assessment Consolidated Report	05/02/2025	Yes	High
#2.	Document	ATT 3 Redacted -Detailed Flora and Veg Assessment Turner River Consolidated.pdf Detailed Flora and Vegetation Assessment Consolidated Report sensitive information redacted.		No	High
#3.	Document	ATT 4 Redacted -Vertebrate Fauna Assessment North Star Junction.pdf Vertebrate Fauna Survey 2023 sensitive information redacted		No	High
#4.	Document	ATT 4 -Vertebrate Fauna Assessment North Star Junction.pdf Vertebrate Fauna Survey 2023	10/04/2023	Yes	High
#5.	Document	ATT 5 - North Star Junction West Detailed Terrestrial Vertebrate Fauna Assessment.pdf Detailed Terrestrial Vertebrate Fauna Assessment	20/01/2025	Yes	High

#6.	Document	ATT 5 Redacted - North Star Junction West Detailed Terrestrial Vertebrate Fauna Assessment.pdf Detailed Terrestrial Vertebrate Fauna Assessment sensitive information redacted	No	High
#7.	Document	ATT 6 - Wodgina Project Targeted Bilby Survey.pdf Targeted Bilby Survey Report	24/01/2025 Yes	High
#8.	Document	ATT 6 Redacted - Wodgina Project Targeted Bilby Survey.pdf Targeted Bilby Survey Report sensitive information redacted	No	High

## 3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	<a href="https://catalogue.data.wa.gov.au/dataset/dbca-st..">2018 Statewide Vegetation Statistics incorporating the CARReserve Analysis</a> <a href="https://catalogue.data.wa.gov.au/dataset/dbca-st..">https://catalogue.data.wa.gov.au/dataset/dbca-st..</a>			High

## 3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 7 - Baseline Surface Water Assessment North Star Junction West Solar Farm.pdf Baseline surface water assessment		Yes	High
#2.	Document	ATT 7 Redacted - Baseline Surface Water Assessment North Star Junction West Solar Farm.pdf Baseline surface water assessment sensitive information redacted		No	High

## 4.3.8 Why alternatives for your proposed action were not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	<a href="https://www.epa.wa.gov.au/sites/default/files/Po..">Environmental Factor: Greenhouse Gas Emissions.</a> <a href="https://www.epa.wa.gov.au/sites/default/files/Po..">https://www.epa.wa.gov.au/sites/default/files/Po..</a>			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	Jarrold 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, **Jarrold 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, **Jarrold 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. \*