

Title of Proposal - Pilbara Transmission Project

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Energy Generation and Supply (non-renewable)

1.2 Provide a detailed description of the proposed action, including all proposed activities.

Pilbara Energy Company Pty Ltd (PEC), a wholly owned subsidiary of Fortescue Metals Group Limited (Fortescue) proposes to develop the Pilbara Transmission Project (the Project), a high voltage power transmission network in the Pilbara bioregion of Western Australia. The Project comprises approximately 375 km of nominal 220 kV overhead transmission infrastructure, terminals and substations.

The Project would be developed within a Development Envelope, which generally follows existing Fortescue rail infrastructure alignments from Port Hedland to Fortescue's Chichester and Solomon mining hubs. FMG Iron Bridge (Aust) Pty Ltd approved North Star mine (EPBC 2012/6689) will connect to the network via transmission infrastructure within North Star's approved infrastructure corridor.

The Project will utilise existing disturbance areas associated with Fortescue's rail infrastructure wherever practicable, reducing the requirement for new clearing disturbance. Poles/towers would typically be placed at every change in direction or every 200 – 400m along the straight sections. The transmission infrastructure will be a combination of sections that will be either single or dual circuit, with up to 6 conductors and 2 optical earth wires. The majority of the wires will be suspended by steel poles or steel lattice towers. The height of the poles above ground level will typically range between 30 and 40 m. Poles and/or footings will nominally be installed 6 - 8 m below ground level.

The infrastructure would generally be operated remotely, with maintenance activities occurring as required.

Up to 305 ha of clearing is required for the Proposal. Of this, approximately 160 ha would require only limited disturbance (being targeted removal and pruning of tall vegetation (5m+) within the infrastructure corridor), to ensure specified clearances between vegetation and powerlines are maintained. Lines will preferably be strung above vegetation using helicopters, rather than pulled at ground level, to reduce the clearing required for the Project.

Clearing will be undertaken by mechanical means to remove vegetation for construction and operation of the facilities. Each pole or tower structure will require a cleared pad, nominally a 10 x 10 m area, or as required for the pole or tower structure used at individual locations. Access tracks will be cleared between the existing rail access road and the poles/towers as required to construct and operate the facilities. These tracks will generally be single vehicle width.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
General Area	1	-20.361199674241	118.50878014136
General Area	2	-20.33544783146	118.65709557105
General Area	3	-22.54410631862	119.98644127417
General Area	4	-22.198685552159	117.80565514136
General Area	5	-20.381798056425	118.50878014136
General Area	6	-20.361199674241	118.50878014136

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The Project extends 250 km south from Port Hedland, Western Australia to meet Fortescue's Cloudbreak mine site. A 125 km spur extends from Fortescue's Solomon mine to a terminal that adjoins the network at 175 km chainage. The Project will be developed parallel to Fortescue's existing rail infrastructure. Land affected includes pastoral, unallocated crown land, File Notation Areas and Special Category Land, including the ANCA Wetlands Fortescue Marshes.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

305 ha

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Mining Act 1978 tenure

1.8 Primary Jurisdiction.

Western Australia

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 07/2019

End date 10/2068

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

The Project will be developed within multiple Miscellaneous Licences under the Mining Act 1978 (WA), which overlap various other land categories. Applications for the Miscellaneous Licence tenure have been lodged with the Western Australian Department of Mines, Industry Regulation and Safety. Land affected includes Pastoral Leases, unallocated crown land, File Notation Areas and Special Category Land, including the ANCA Wetlands Fortescue Marshes. Various reserves are affected including C class reserves for pipeline, pastoral, for preservation of Aboriginal Cultural Material and for the Use & Benefit of Aborigines. The applications affect both third party tenement holders and Heritage Survey Areas. General Leases (as leased under the Land Administration Act (WA)) are contained and the applications overlap other Special Category Land such as State Government Purchased former leases and groundwater/surface water areas.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Consultation with government and non government stakeholders has commenced. Consultation groups include local pastoralists and station managers, traditional owners representing the Banjima, Yindjibarndi, Kariyarra and Palyku, as well as Commonwealth, State and Local Government departments that include the Department of Environment and Energy, the Department of Water and Environment and Regulation, the Town of Port Hedland, and the Shires of Ashburton and East Pilbara. Pre-referral meetings have been undertaken with the Western Australian Department of Water and Environment and Regulation, Environmental Protection Authority Services (EPA) and DoEE, and PEC will continue to consult with relevant stakeholders to develop the Project.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

The Project has been referred to the EPA under Section 38 of the Environmental Protection Act 1986 (WA). It is anticipated that the EPA will make a decision regarding the level of assessment of the Project during December 2018.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The [interactive map tool](#) can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

- [Profiles of relevant species/communities](#) (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- [Significant Impact Guidelines 1.1 – Matters of National Environmental Significance](#);
- [Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies](#).

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

Yes

2.3.1 Impact table

Wetlands	Impact
Fortescue Marshes	The Fortescue Marsh occurs as a single land system unit, associated with the Marsh Land System. The study area does not intersect the land system but does fall within the 5 km buffer, in the vicinity of Fortescue's Cloudbreak mining operations. None of the vegetation types within the study area are characterised by Samphire species (Tecticornia species in the

Wetlands	Impact
	Chenopodiaceae family) or otherwise halophytic species that are associated with the Marsh Land System. The Project will not directly or indirectly impact the Fortescue Marsh.

2.3.2 Do you consider this impact to be significant?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Northern Quoll	Northern Quoll habitat within the Development Envelope is comprised of Granite outcrops, River, Creekline and Drainage Lines. Within the Development Envelope: 22.23 ha is assessed as highly suitable habitat; 45.19 ha is assessed as moderately suitable habitat; and, 42.57 ha is assessed as lowly suitable habitat. Clearing of up to 6.3% of the Development Envelope may be required. Clearing will generally avoid habitat for Northern Quolls, as typically rocky outcrop or watercourse habitat is unsuitable for pole/tower installations. Exceptions to this are where access tracks are required to meet a pole/tower position from the rail access road, or minor clearing or pruning that is required to ensure vegetation clearances to powerlines are maintained for safety.
Greater Bilby	Greater Bilby habitat within the Development Envelope is comprised of Granite Sandy/loamy Plains with Spinifex Grassland, Sandy/loamy Plains with mixed Shrubland, Major River, Minor Drainage and Minor Creekline. Within the Development Envelope: 208.09 ha is assessed as highly suitable habitat; 127.84 ha is assessed as moderately suitable habitat; and, 357.19 ha is assessed as lowly suitable habitat. Clearing of up to 6.3% of the Development

Species	Impact
	<p>Envelope may be required. Clearing will generally be avoided through river and drainage line habitat, as these areas are typically unsuitable for positioning of poles/towers. Exceptions to this are where access tracks are required to meet a pole/tower position from the rail access road, or minor clearing or pruning that is required to ensure vegetation clearances to powerlines are maintained for safety. Clearing within Sandy and Loamy Plains will include the establishment of small cleared pads (nominally 10x10m) and access tracks between the adjacent rail access road and pole/tower positions.</p>
Pilbara Leaf-nosed Bat	<p>No diurnal or nocturnal roost habitat and no caves or large overhangs have been recorded from within 1km of the Development Envelope. Foraging activity can occur across all habitat types, with distance from suitable roost structures considered the main limitation. Clearing of up to 305 ha may be required to develop the Project. It is considered unlikely that collision with transmission infrastructure would be a risk due to echolocation navigation by the species. Electrocutation risk will be mitigated by maintaining suitably large separation of energized and earthed components of the infrastructure.</p>
Ghost Bat	<p>No diurnal or nocturnal roost habitat and no caves or large overhangs have been recorded from within 1km of the Development Envelope. Foraging activity can occur across all habitat types, with distance from suitable roost structures considered the main limitation. Clearing of up to 305 ha may be required to develop the Project. It is considered unlikely that collision with transmission infrastructure would be a risk due to echolocation navigation by the species. Electrocutation risk will be mitigated by maintaining suitably large separation of energized and earthed components of the infrastructure.</p>
Night Parrot	<p>Habitats present within the study area do not provide suitable conditions for Night Parrot roosting or foraging, as frequent large-scale fires limit the availability of long-unburned habitats. The mapped habitats inside the corridor such as Sandy/loamy Plains with</p>

Species	Impact
	Spinifex Grassland, Stony Plains and Low Rises with Hummock Grassland and Spinifex covered Hills could potentially provide suitable roosting habitat if protected from fire and allowed to form large spinifex clumps. There is also a lack of foraging habitat within the Development Envelope. Sandy/loamy Plains with Spinifex Grassland, Stony Plains and Low Rises with Hummock Grassland and Spinifex covered Hills comprise 2888 ha (60%) of the Development Envelope. Clearing of up to 6.3% of the Development Envelope may be required to develop the Project.
Pilbara Olive Python	Pilbara Olive Python Habitat within the Development Envelope comprises major river and creeklines. There are no areas within the Development Envelope that have been assessed as highly suitable habitat; and 48.53 ha and 17.93 ha has been assessed as moderately suitable habitat and lowly suitable habitat, respectively. Clearing of up to 6.3% of the Development Envelope may be required. Clearing will generally be avoided through river and drainage line habitat, as these areas are typically unsuitable for positioning of poles/towers. Exceptions to this are where access tracks are required to meet a pole/tower position from the rail access road, or minor clearing or pruning that is required to ensure vegetation clearances to powerlines are maintained for safety.
North-western Coastal Ctenotus	The species has been recorded from the coast north of the study area where samphire shrubland is present around the mangroves and salt marsh. The North-western Coastal Ctenotus is a habitat specialist which is highly restricted to specific habitats. The study area does not contain any suitable habitat for the species. Based on the consistency of the habitat requirements across all records made to date it is highly unlikely that the species occurs inside the study area.

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

Yes

2.5.1 Impact table

Species	Impact
Wood Sandpiper	Wood Sandpiper is known from, or likely to occupy habitats with the Study Area. Suspended wires may pose a collision risk, however the use of diverters is expected to largely mitigate the risk of collision. Electrocutation risk will be mitigated by maintaining suitably large separation of energized and earthed components of the infrastructure.
Common Sandpiper	Common Sandpiper is known from, or likely to occupy habitats with the Study Area. Suspended wires may pose a collision risk, however the use of diverters is expected to largely mitigate the risk of collision. Electrocutation risk will be mitigated by maintaining suitably large separation of energized and earthed components of the infrastructure.
Common Greenshank	Common Greenshank is known from, or likely to occupy habitats with the Study Area. Suspended wires may pose a collision risk, however the use of diverters is expected to largely mitigate the risk of collision. Electrocutation risk will be mitigated by maintaining suitably large separation of energized and earthed components of the infrastructure.
Oriental Pratincole	Oriental Pratincole is known from, or likely to occupy habitats with the Study Area. Suspended wires may pose a collision risk, however the use of diverters is expected to largely mitigate the risk of collision. Electrocutation risk will be mitigated by maintaining suitably large separation of energized and earthed components of the infrastructure.
Fork-tail Swift	Fork-tailed Swift is almost entirely aerial and is not expected to utilise any terrestrial habitats associated with the study area. Suspended

Species	Impact
	wires may pose a collision risk, however the use of diverters is expected to largely mitigate the risk of collision. Electrocution risk will be mitigated by maintaining suitably large separation of energized and earthed components of the infrastructure.

2.5.2 Do you consider this impact to be significant?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

Significant Vegetation

No vegetation within the Mine Development Envelope is known to represent a Threatened Ecological Community (TEC). The south western portion of the Development Envelope (adjoining the Solomon Hub) is located approximately 20km from the nearest mapped occurrence of the West Australian listed *Themeda grasslands* on cracking clays (Hamersley Station, Pilbara) TEC.

It is considered that some likely or potential Groundwater Dependent Ecosystem vegetation exists within the Development Envelope.

Flora

No Threatened Flora, as listed under the EPBC Act or the *Wildlife Conservation Act 1950* have been identified within the Development Envelope.

Fourteen Priority Flora taxa are known or likely to occur within the Development Envelope:

- *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P1)
- *Aristida jerichoensis* var. *subspinulifera* (P3)
- *Eragrostis crateriformis* (P3)
- *Euphorbia clementii* (P3)
- *Glycine falcata* (P3)

- *Gomphrena leptophylla* (P3)
- *Gymnathera cunninghamii* (P3)
- *Heliotropium muticum* (P3)
- *Phyllanthus hebecarpus* (P3)
- *Rothia indica* subsp. *Australis* (P3)
- *Stylidium weeliwolli* (P3)
- *Bulbostylis burbridgeae* (P4)
- *Goodenia nuda* (P4)
- *Ptilotus mollis* (P4)

More broadly, one Threatened Flora, *Pityrodia* sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4) and fifty six Priority flora are known from within 10 km of the Development Envelope, including nine Priority 1, seven Priority 2, 33 Priority 3 and seven Priority 4 taxa.

Fauna

A total of 14 fauna habitat types were mapped from inside the study area, which include habitat for EPBC listed species discussed in Section 2:

- Sandy/Loamy Plain with Spinifex Grassland,
- Stony Plains and Low Rises with Hummock Grassland,
- Loamy/Stony Plain with mixed Shrubland,
- Sandy/Loamy Plains with mixed Shrubland
- Spinifex covered Hills,
- Clay Pan,
- Quarry,
- Mulga Woodland,
- Granite Outcrops,

- Major River,
- Minor Creekline,
- Minor Drainage Line,
- Rockface/Cliff and
- Cleared/Disturbed.

Several EPBC Act listed Threatened Fauna species were identified as potentially occurring within the study area:

- 4 mammal species; Northern Quoll, Greater Bilby, Pilbara Leaf-Nosed Bat and Ghost Bat
- 6 bird species; Wood Sandpiper, Common Sandpiper, Common Greenshank, Oriental Pratincole, Fork-tail Swift and Night Parrot
- 2 reptile species; Pilbara Olive Python and North-western Coastal Ctenotus

3.2 Describe the hydrology relevant to the project area (including water flows).

Pilbara creeks are typically ephemeral, and with the exception of pools and groundwater fed springs, are dry for the majority of the year. Pilbara soils typically have high initial infiltration rates for dry catchment conditions, when the antecedent moisture content of the soils is low. Significant streamflow usually occurs when antecedent moisture content of the soils is high, which is caused by significant rainfall in the days or weeks preceding a storm event. There are typically two different types of climatic events which cause flood response in the Pilbara, namely: Cyclonic activity/Tropical Low Pressure Systems and localised diurnal thunderstorms.

Cyclonic activity can result in severe and widespread flooding, generally on a river catchment scale. The occurrence of this flooding activity can be forecast in advance, allowing for catchment wide flood warnings to be issued. This type of flooding typically produces large peak flows and may result in damage to infrastructure due to the magnitude of flow. However, not all cyclones will result in severe flooding.

Isolated thunderstorms have the potential to create fast and localised flooding, referred to as flash flooding. These events are much harder to predict as they can occur in the upper reaches of catchments. These events generally have a lower potential for widespread damage as the extent and magnitude of flooding is much smaller than cyclonic events.

Heading south from Port Hedland, the Development Envelope initially passes through the floodplain area of South West Creek and winds southwards through the Chichester Plateau, avoiding the rugged peaks which rise steeply some 100 to 150m above the plain. Through this

plateau area, the Development Envelope initially crosses numerous floodplains and watercourses that are tributaries of the Turner and Yule Rivers (including the lower catchment areas of the Yule and Turner Rivers), which discharge northwards to the coast. As the Development Envelope continues south it passes towards the Chichester Range and the alignment crosses smaller drainages discharging from these ranges southwards to the Fortescue River. Drainage pathways through the Development Envelope area are largely characterised by typically smaller catchments, steeper gradients and steep sided valleys which respond and flow rapidly following rainfall, but for a comparatively short duration.

Along the Hamersley Rail line, located to the north side of the Fortescue River, the Development Envelope typically crosses perpendicular to the surface water flow directions, intersecting largely minor drainage features. The Development Envelope crosses the Fortescue River, which is a large floodplain typified by extended periods of standing water inundation, which is managed through the existing rail alignment culvert configuration.

Surface water movement is currently controlled by Fortescue's existing rail infrastructure, where water is channelled through culverts and across floodways. The Project will not control or disrupt any surface water movements, with power poles spaced typically 300m apart, adjusted as necessary to place poles outside of major creek flow paths.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

The study area is located entirely within the Pilbara biogeographic region that includes four subregions; Chichester, Fortescue Plains, Hamersley and Roebourne. The three principal subregions that intersect the study area (from north to south) are:

Roebourne:

Quaternary alluvial and older colluvial coastal and subcoastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera*. Uplands are dominated by *Triodia* hummock grasslands. Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands. Samphire, *Sporobolus* and mangal occur on marine alluvial flats and river deltas. Resistant linear ranges of basalts occur across the coastal plains, with minor exposures of granite. Islands are either Quaternary sand accumulations, or composed of basalt or limestone, or combinations of any of these three. The climate is arid (semi-desert) tropical with highly variable rainfall, falling mainly in summer. Cyclonic activity is significant, with several systems affecting the coast and hinterland annually. Subregional area is 2,008,983 ha.

Chichester:

The Chichester subregion (PIL 1) comprises the northern section of the Pilbara Craton. Undulating Archaean granite and basalt plains include significant areas of basaltic ranges. Plains support a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* (formerly *Triodia pungens*) hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on ranges. The climate is Semi-desert-tropical and receives 300mm of rainfall annually. Drainage occurs to the north via numerous rivers, including the De Grey, Oakover, Nullagine, Shaw, Yule and Sherlock rivers. Subregional area is 9,044,560 ha.

Fortescue Plains:

Alluvial plains and river frontage. Extensive salt marsh, mulga-bunch grass, and short grass communities on alluvial plains in the east. Deeply incised gorge systems in the western (lower) part of the drainage. River Gum woodlands fringe the drainage lines. Northern limit of Mulga (*Acacia aneura*). An extensive calcrete aquifer (originating within a palaeo-drainage valley) feeds numerous permanent springs in the central Fortescue, supporting large permanent wetlands with extensive stands of River Gum and Cadjeput Melaleuca woodlands. The climatic conditions are semi-desert tropical, with average rainfall of 300 mm, falling mainly in summer cyclonic events. Drainage occurs to the north-west. Subregional area is 2,041,914 ha.

A small fraction of the south western fringe of the study area also occurs along the boundary of the Fortescue and Hamersley subregions in the vicinity of the Solomon Hub.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The study area intersects a number of significant drainage lines along its length including the Turner River, Turner East River, Yule River and Coonarie Creek along the Main Line Rail section and the Fortescue River Flats along the Hamersley Rail component. The Fortescue River flats section also corresponds with a portion of the mapped extent of the Fortescue Marshes within the Commonwealth Directory of Important Wetlands (Australian Government & Department of the Environment and Energy 2018) (Map 4). The study area also falls partly within the Fortescue Marsh draft proposed RAMSAR area at the Cloudbreak end of the study area as provided within the DBCA Ramsar Sites (DBCA-010) spatial dataset.

Areas of significant vegetation are intersected by the Development Envelope that include the Wona Land System Priority Ecological Community (Priority 1 or 3 depending on vegetation subtype), sheet flow dependant vegetation and groundwater dependant ecosystems.

3.5 Describe the status of native vegetation relevant to the project area.

No EPBC Act listed Threatend Ecological Communities occur within the Development Envelope and no Threatend Flora are known from the Development Envelope.

One Threatened Flora, *Pityrodia* sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4) and fifty six Priority flora are known from within 10 km of the Development Envelope, including nine Priority 1, seven Priority 2, 33 Priority 3 and seven Priority 4 taxa.

Existing linear rail infrastructure disturbances exist within the Development Envelope.

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

Not applicable.

3.7 Describe the current condition of the environment relevant to the project area.

Approximately 1,420 ha of existing clearing disturbance exists within the Development Envelope, which is associated with Fortescue's rail infrastructure. Remaining vegetated areas are generally in good condition, though weeds are common.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

No Commonwealth Heritage Places are relevant to the Project.

3.9 Describe any Indigenous heritage values relevant to the project area.

The Development Envelope contains, or is intersected by, 195 registered heritage sites registered by the Western Australia Department of Planning, Lands and Heritage under the Aboriginal Heritage Act 1972 ("AHA"). Sites registered include both ethnographic and archaeological sites, comprising artefact scatters, grinding patches, engravings, paintings, rockshelters and ceremonial sites.

The Development Envelope has been comprehensively surveyed for ethnographic and archaeological heritage sites. The Project disturbance footprint has been designed to minimise impact on known heritage places. Fortescue is committed to ongoing consultation with the appropriate Traditional Owners and protection of heritage values within all operation areas. There will be no impact to a heritage place without further consultation with the Traditional Owners in accordance with FMG Land Access Agreements. If required an S18 application under the AHA will be submitted seeking Ministerial Consent to use the Land for a Purpose.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The Project will be developed on *Mining Act 1978* tenure. Applications for numerous Miscellaneous Licences under the *Mining Act 1978* (WA) comprise the Development Envelope. Land affected includes Pastoral Leases, unallocated crown land and File Notation Areas. Various reserves are affected including C class reserves for pipeline, preservation of Aboriginal Cultural Material and for the Use & Benefit of Aborigines. The applications affect both third party tenement holders and DAA Heritage Survey Areas. General Leases (as leased under the Land Administration Act) are contained and the applications overlap other Special Category Land such as CALM Purchased former leases and groundwater/surface water areas.

3.11 Describe any existing or any proposed uses relevant to the project area.

The Project will be developed along side the existing Pilbara rail infrastructure that is owned and operated by Fortescue Metals Group Limited. The land use of the Development Envelope is generally aligned to the tenure of the region and includes pastoralism, mineral and petroleum related activities, Aboriginal reserves and general public use areas.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

A hierarchy of mitigation controls will be applied to the Project to avoid, minimise and rehabilitate impacts that result from the Project.

Avoid

Where ever practicable the Project will use existing disturbed areas associated with Fortescue's rail corridor.

Design and placement of infrastructure will aim to avoid disturbance of significant fauna habitats.

Minimise

Diverters will be installed on wires spanning watercourses and other avian fauna migration risk areas that are identified along the corridor. These are expected to reduce the occurrence of avian fauna collisions with wires.

Separation between conductors and earthed elements will be maximised to minimise risk of electrocution of fauna.

Rehabilitate

Any areas disturbed during construction that are not required for operations will be rehabilitated in accordance with a Mine Closure Plan, approved by the Department of Mines, Industry Regulation and Safety.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

For matters protected by the EPBC Act that may be effected by the Project, the Action will not:

- Lead to a long-term decrease in the size of a population.

- Reduce the area of occupancy of the species.
- Fragment an existing population into two or more populations.
- Adversely affect habitat critical to the survival of a species.
- Disrupt the breeding cycle of a population.
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
- Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.
- Interfere with the recovery of the species.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

No

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

For matters protected by the EPBC Act that may be effected by the Project, the Action will not:

- Lead to a long-term decrease in the size of a population.
- Reduce the area of occupancy of the species.
- Fragment an existing population into two or more populations.
- Adversely affect habitat critical to the survival of a species.
- Disrupt the breeding cycle of a population.
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
- Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.
- Interfere with the recovery of the species.

Further, habitat for listed threatened species is common through-out the development envelope and region.

Disturbance is of a low magnitude and will not impede fauna movements. Fauna will in most cases adapt to maintain ecological functions around the infrastructure and will integrate with the infrastructure.

Potential impacts can be associated with avian fauna collisions will be substantially mitigated.

It is considered that the Project is not likely to have a significant impact on matters protected by the EPBC Act.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Pilbara Energy Corporation Pty Ltd is a wholly owned subsidiary of Fortescue Metals Group Limited (Fortescue). Fortescue own and operate multiple iron ore mines and infrastructure in the Pilbara region of Western Australia and conduct its operations under an environmental governance framework for the purpose of meeting and exceeding its environmental performance obligations.

Fortescue conducts its operations under an Environmental Policy and implements an environmental management system. Through this system the company maintains its standing as an environmentally responsible operator.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

The Company is not the subject of any past or present proceedings under Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Fortescue operates under an Environmental Policy . The Policy is signed by the Chief

Executive Officer and is supported by the Board, and states that compliance with environmental laws and obligations is the minimum standard to which we operate. It is the responsibility of all

Fortescue employees and contractors to comply with the Environment Policy. Fortescue maintains a register of all environmental legal obligations, including commitments and conditions of approvals, as well as general legislative requirements.

Fortescue has Health, Safety, Environmental, and Security (HSES) Management Standards that define the mandatory requirements to which Fortescue shall conform. The standards are aligned with AS/NSZ4801 and ISO14001 and support Fortescue's commitment to continual improvement in HSES performance.

Fortescue's Environmental Management System specifies the actions and responsibilities necessary for Fortescue to implement the requirements of the HSES Management Standards and also the requirements of ISO14001:2004.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes

6.4.1 EPBC Act No and/or Name of Proposal.

Fortescue Metals Group and its subsidiary companies have submitted numerous referrals related to its iron ore and pilbara infrastructure projects, including, but not limited to the following:

2017/8024: Eliwana Iron Ore Mine

2014/7275: Solomon Iron Ore Project Expansion

2013/7055: Christmas Creek Iron Ore Mine Expansion Project

2013/6945: Nyidinghu Iron Ore Project

2012/6530: North Star Hematite Project

2010/5696: Cloudbreak Mine Expansion

2010/5567: Solomon Project

2005/2205: Cloudbreak Mine

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Vegetation and Flora Assessment	Very reliable. This assessment included the literature review of multiple surveys and assessments of vegetation and flora of the Project area. All surveys and assessments have been undertaken in accordance with relevant guidance, by reputable companies, using qualified persons.	None.
Terrestrial Fauna Assessment	Very reliable. This assessment included the literature review of multiple surveys and assessments of terrestrial fauna of the Project area. All surveys and assessments have been undertaken in accordance with relevant guidance, by reputable companies, using qualified persons.	None.

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

All alternatives, such as not taking the Action, are not considered feasible as they do not deliver the Project's objectives.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Group Manager - Environment

9.2.2 First Name

Brett

9.2.3 Last Name

McGuire

9.2.4 E-mail

bmcguire@fmgl.com.au

9.2.5 Postal Address

PO Box 6915
East Perth WA 6004
Australia

9.2.6 ABN/ACN

ABN

64624732878 - PILBARA ENERGY COMPANY PTY LTD

9.2.7 Organisation Telephone

(08) 6218 8888

9.2.8 Organisation E-mail

fmgf@fmgf.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date:

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Brett M'Curie, 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 of or for the benefit of any other person or entity.

Signature:..... Date: 21.12.18

I, Brett M'Curie, the person proposing the action, consent to the designation of PEC as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 30.11.18

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Group Manager - Environment

9.5.2 First Name

Brett

9.5.3 Last Name

McGuire

9.5.4 E-mail

bmcguire@fmgl.com.au

9.5.5 Postal Address

PO Box 6915
East Perth WA 6004
Australia

9.5.6 ABN/ACN

ABN

64624732878 - PILBARA ENERGY COMPANY PTY LTD

9.5.7 Organisation Telephone


(08) 6218 8888

9.5.8 Organisation E-mail

fmgl@fmgl.com.au

Proposed designated proponent - Declaration

I, Brett McGuire, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:  Date: 30.11.18

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Group Manager - Environment

9.8.2 First Name

Brett

9.8.3 Last Name

McGuire

9.8.4 E-mail

bmcguire@fmgl.com.au

9.8.5 Postal Address

PO Box 6915
East Perth WA 6004
Australia

9.8.6 ABN/ACN

ABN

64624732878 - PILBARA ENERGY COMPANY PTY LTD

9.8.7 Organisation Telephone

(08) 6218 8888

9.8.8 Organisation E-mail

fmgl@fmgl.com.au

Referring Party - Declaration

I, Brett McGuire, I 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.

Signature:  Date: 30.11.18

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. Development Envelope.zip
2. Location Map.pdf
3. Protected Matters Search.pdf
4. Referral form_FINAL.pdf
5. Submission letter_EPBC referral.pdf