

Whitehaven Solar Farm

Application Number: **02586**

Commencement Date:
09/09/2024

Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Whitehaven Solar Farm

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 *

25/08/2025

1.1.4 Estimated end date *

24/08/2075

1.2 Proposed Action details

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

Description of the Action

The Action would involve the construction of a Solar Farm, development of supporting infrastructure, and rehabilitation activities. Whitehaven Energy Pty Ltd (a wholly owned subsidiary of Whitehaven Coal Limited [Whitehaven]) (Whitehaven Energy) is the applicant for the Action.

The Action would take place on Whitehaven managed land, privately owned by Narrabri Coal Operations Pty Ltd (NCOPL) and Kurrajong Creek Road, administered by Narrabri Shire Council. The Action would be situated adjacent to the existing and approved Narrabri Mine, 25 kilometres (km) south-east of Narrabri in the Narrabri Shire Local Government Area in New South Wales (NSW) (Figure 1). The current Project Area is approximately 97.6 hectares (ha) (as provided in Section 2.1 of this form).

The Project includes the construction, operation, decommissioning and rehabilitation of the proposed solar farm and Battery Energy Storage System (BESS) to provide behind-the-meter electricity supply to the Narrabri Mine via the existing 66 kV ETL. The indicative general arrangement is provided on Figure 2.

Other key activities which would form part of the Action include:

- installation of sediment and erosion control measures (e.g. silt fencing);
- site clearing, grubbing and stripping;
- access road and laydown area construction;
- installation of office and maintenance areas;
- delivery and lay down of Project components;
- perimeter security fencing and entrance gate installation;
- foundation construction (substation and inverter stations);
- racking, east-west tracking system and photovoltaic panel installation;
- construction of an Electricity Transmission Line (ETL) to connect the project to existing Narrabri Mine ETL;
- installation of inverters, intermediate step-up transformers (note these would generally be located next to the photovoltaic arrays), substation, communication towers and lighting;
- electrical cable installation (underground and/or aboveground);
- installation of BESS;
- site restoration, re-vegetation and landscaping;
- planned intermittent maintenance of photovoltaic panels and other installed infrastructure informed by remote monitoring;
- occasional unscheduled maintenance/repairs;
- remote monitoring of electricity production; and
- grounds keeping, including implementation of vegetation management beneath solar panels potentially including agrisolar grazing beneath and in the vicinity of the panels, and bushfire management activities in line with a site bushfire management plan which would be prepared for the Project.

Activities Not Included in the Action

For the avoidance of doubt, the Action (which is the subject of this Referral) does not include:

- Narrabri Coal Mine activities whether approved under EPBC (2009/5003) or proposed under EPBC (2019/8427);
- initial development activities that may support the Action that involve only minor ground disturbance, including, but not limited to, survey and demarcation activities, exploration, archaeological, environmental and geotechnical investigations and installation of temporary buildings and fencing;
- maintenance and use of existing infrastructure including access tracks; and
- existing agricultural activities.

Purpose of the Action

The Action would allow for the supply of 26 MW DC, 20 MW AC of solar electricity generation to the Narrabri Mine via the existing ETL. The Action would provide for increased supply of solar electricity to the Narrabri Mine that can help meet the Commonwealth Government's greenhouse gas emissions reduction

targets.

The design operational life of the Action is 50 years, at which point the Action would be reconditioned with updated technology or decommissioned. As the Narrabri Mine, which is currently permitted to operate to 2044 (note determination of EPBC 2019/8427 currently pending), is expected to close prior to the expiration of the design life of the solar farm, Whitehaven would look at opportunities to divest the solar farm to third parties or decommission the Project at that earlier stage.

Likely Direct, Indirect Impacts and Avoidance Area

The Action Area put forth as part of this EPBC Referral includes the disturbance footprint which is provided in Figures 3 and 4 and is approximately 88.4 hectares (ha). Approximately 97.4 % (86.08 ha) of the total Action Area is located in areas previously cleared (Figure 3) for agricultural use (containing either non-vegetation or secondary grassland). The Project would require complete clearance of 19.52 ha of native vegetation and partial clearance (removal of trees/shrubs) of 2.87 ha of native vegetation. This native vegetation is more widespread in the area surrounding the Action, and no threatened ecological communities (TECs) would be cleared (Figure 4).

The Project has been designed to avoid and minimise clearance of native vegetation/ habitats. The key measures to avoid and/or minimise impacts are:

- avoidance of clearance of any TECs;
- avoidance of water ways (except for unavoidable crossings) for access;
- locating the proposed Project largely within areas previously cleared for agricultural use;
- minimising the clearance of native vegetation (woodland and derived native grassland) by re-arranging and moving solar arrays; and
- adoption of a partial clearing management zone where only trees and shrubs would be removed leaving understory and ground cover.

Indirect impacts identified for the Project include:

- Inadvertent impacts on habitat or vegetation adjacent to the Action Area.
- Trampling of Threatened Flora Species (e.g. during maintenance activities or grazing associated with agrisolar).
- Reduced viability of adjacent habitat due to edge effects.
- Reduced viability of adjacent habitat due to noise, dust or light spill.
- Transport of weeds and pathogens from the Action Area to adjacent vegetation.
- Increase in pest animal or predatory species populations.

Indirect impacts would be managed through the following measures:

- Site induction/Access limits.
- Clearing limits.
- Temporary fencing/Signage on sensitive areas.
- Weed hygiene protocol.
- Weed control.
- Pest animal management.

Indirect impacts effecting the viability of adjacent habitat including noise, dust and light are unlikely to significantly impact any local fauna populations. The vegetation adjacent to the Action Area is mostly open derived native grassland.

Direct and indirect impacts would be further assessed in the New South Wales (NSW) Environmental Impact Statement (EIS) prepared in support of the Project.

Land Tenure

The proposed solar farm would be located approximately 25 kilometres (km) south-east of Narrabri and approximately 60 km north-west of Gunnedah, within the Narrabri Shire Local Government Area (LGA), in the New England North West region of NSW (Figure 1).

The Action would take place on Whitehaven managed land, privately owned by Narrabri Coal Operations Pty Ltd (NCOPL) and Kurrajong Creek Road, administered by Narrabri Shire Council.

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? *

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Action is being referred to the Commonwealth Minister for the Environment and Water for consideration as to whether the Action is a 'controlled action' and requires approval under the EPBC Act (i.e. this Referral).

The *Matters of National Environmental Significance: Significant impact guidelines 1.1 Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia, 2013) have been considered when preparing this Referral.

NSW Environmental Planning and Assessment Act 1979

The EP&A Act and the *NSW Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) establish the framework for planning and environmental assessment in NSW.

Development consent for the Action is being sought under the State significant development (SSD) provisions of the EP&A Act. The Action is SSD by virtue of the fact that:

- under section 4.36(2) of the EP&A Act, development may be declared to be SSD under a State Environmental Planning Policy; and
- Schedule 1, clause 20 of the *State Environmental Planning Policy (Planning Systems)* (2021) (NSW) provides that development for the purpose of electricity generating works (using any energy source, including solar) that has an estimated development cost of more than \$30 million will be SSD. The Action will have a capital investment value of approximately \$55 million.

In December 2023, Whitehaven Energy lodged a Scoping Report that provided a description of the proposed Whitehaven Solar Farm to the then NSW Department of Planning and Environment (now Department of Planning Housing and Infrastructure [DPHI]). The Scoping Report and associated documents can be accessed on the NSW Planning Portal website (NSW Government, 2024). The Whitehaven Solar Farm seeks planning approval under NSW law for the activities proposed as part of the Action.

The Planning Secretary's Environmental Assessment Requirements (SEARs) were issued for the Whitehaven Solar Farm on 14 February 2024 under State Significant Development (SSD) 66542218.

Biodiversity Conservation Act 2016

The Action would require the clearing of approximately 19.52 ha of native vegetation and partial clearance (removal of trees/shrubs) of approximately 2.87 ha of native vegetation in order to construct the solar panels and associated infrastructure. Therefore, potential impacts to biodiversity would be offset in accordance with the NSW *Biodiversity Conservation Act 2016* (BC Act).

Section 7.9 of the BC Act requires that an EIS for a project declared as a SSD to be "accompanied by a biodiversity development assessment report [BDAR] unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values. In accordance with Section 7.9 a Biodiversity Development Assessment Report (BDAR) is being prepared for the Project and will be attached to the EIS.

Other Legislation, Planning Frameworks and Policy Documents

Other relevant legislation, planning frameworks and policy documents relevant to the Action are described in the Whitehaven Solar Scoping Report (Att 1 – Whitehaven Solar Farm Project Scoping Report – see Attachment B, pages B-1 to B-5).

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. *

Whitehaven Energy has consulted with a range of stakeholders including State and local government agencies, infrastructure and service providers and the local community including Indigenous stakeholders, to obtain feedback on the proposed assessment approach, and the potential impacts and proposed mitigation and management measures to be considered in the Whitehaven Solar Farm. Community engagement that has been undertaken as part of the Project is described in the Scoping Report (Att 1 – Whitehaven Solar Farm Scoping Report, Section 5, pages 16-18). Regular consultation is being conducted through the preparation of the EIS (from June 2023 onwards). Consultation will continue up to and following lodgement of the EIS in approximately Quarter 3 2024.

Advice was provided by relevant government agencies on the Whitehaven Solar Farm Scoping Report, and assessment requirements based on the comments received will be addressed in the Environmental Impact Statement. Advice is available on the Major Projects website and was received from the following government agencies:

- Department of Planning and Environment (now DPHI and NSW Department of Climate Change, Energy, the Environment and Water [DCCEEW]);
- Heritage NSW (now NSW DCCEEW – Environment and Heritage Group);
- NSW Environment Protection Authority;
- NSW Department of Climate Change, Energy, the Environment and Water – Water Group;
- NSW Mining, Exploration and Geoscience;
- NSW Resources Regulator;
- NSW Biodiversity, Conservation and Science Directorate;
- NSW Department of Primary Industries (DPI) – Agriculture;
- NSW DPI Fisheries;
- NSW DPHI – Crown Lands;
- Transport for NSW; and

- Commonwealth Department of Climate Change, Energy, the Environment and Water.

Whitehaven Energy has and/or will consult with the following local stakeholders:

- Narrabri Shire Council;
- NSW Rural Fire Service;
- Aboriginal stakeholders;
- TransGrid;
- Essential Energy;
- Community Consultative Committee; and
- Nearby land holders.

An Aboriginal Cultural Heritage Assessment (ACHA) has been prepared for the Project by Whincop Archaeology Pty Ltd. Findings of the ACHA indicated potential for direct heritage impact to one site, and indirect impacts to 10 sites at the local level but no impacts to matters of national environmental significance were identified. Registered Aboriginal Parties were invited to comment on the Proposed Methodology and draft ACHA between 1 February 2024 – 5 March 2024 and 31 May 2024 – 5 July 2024 respectively. No comments or feedback was received for either document.

1.3.1 Identity: Referring party

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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.

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	35672844281
Organisation name	WHITEHAVEN ENERGY PTY LTD
Organisation address	259 George Street, Sydney NSW 2000

Referring party details

Name	Scott Mitchell
Job title	Manager Approvals
Phone	0407223813
Email	Smitchell@whitehavencoal.com.au
Address	Connadily Street

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? *

Yes

Person proposing to take the action organisation details

ABN/ACN	35672844281
Organisation name	WHITEHAVEN ENERGY PTY LTD
Organisation address	259 George Street, Sydney NSW 2000

Person proposing to take the action details

Name	Scott Mitchell
Job title	Manager Approvals
Phone	0407223813
Email	Smitchell@whitehavencoal.com.au
Address	Connadily Street

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. *

No past or present proceedings under Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of nature/resources have been commenced in relation to Whitehaven Energy Pty Ltd. Whitehaven Energy Pty Ltd has not made a previous EPBC Referral, nor has it been responsible for undertaking an action referred under the EPBC Act. Refer to 1.3.2.18 for details on Whitehaven's Corporate Environmental Policy.

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

Whitehaven Energy Pty Ltd is a wholly-owned subsidiary of Whitehaven Coal Mining Pty Ltd (Whitehaven) and would carry out operations pursuant to Whitehaven policy. Whitehaven is committed to operate as an environmentally and socially responsible corporate entity. Whitehaven strives to be a valued and respected

member of the communities in which it operates.

Whitehaven has a documented Health, Safety & Environment Policy (refer to Att 2 – WHC-POL-Health, Safety and Environment, Page 1) that applies to the Whitehaven Solar Farm.

1.3.3 Identity: Proposed designated proponent

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

Yes

Proposed designated proponent organisation details

ABN/ACN	35672844281
Organisation name	WHITEHAVEN ENERGY PTY LTD
Organisation address	259 George Street, Sydney NSW 2000

Proposed designated proponent details

Name	Scott Mitchell
Job title	Manager Approvals
Phone	0407223813
Email	Smitchell@whitehavencoal.com.au
Address	Connadily Street

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	35672844281
Organisation name	WHITEHAVEN ENERGY PTY LTD
Organisation address	259 George Street, Sydney NSW 2000
Representative's name	Scott Mitchell
Representative's job title	Manager Approvals
Phone	0407223813
Email	Smitchell@whitehavencoal.com.au
Address	Connadily Street

✔ 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.

Same as Referring party information.

✔ 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

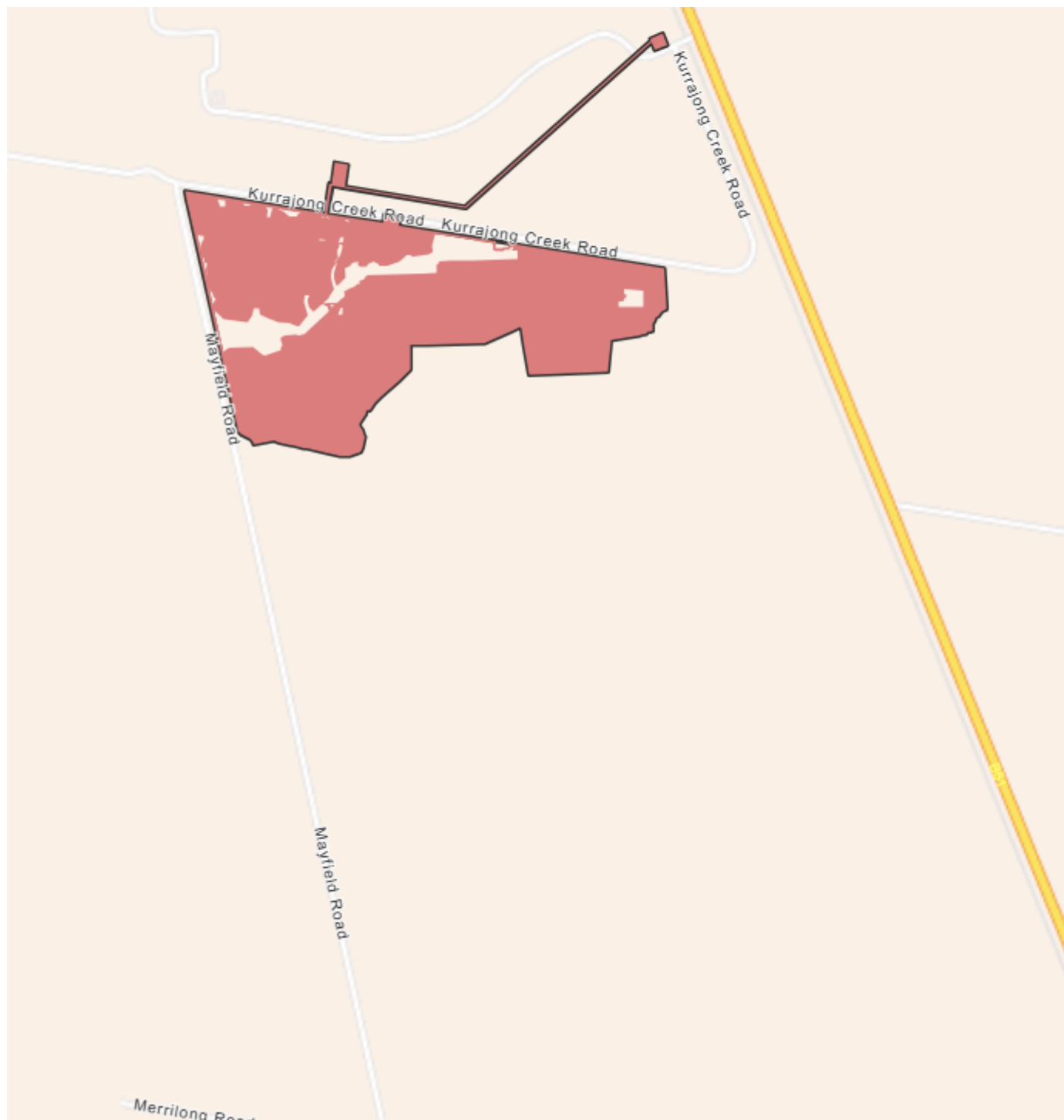
1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint





Project area: 97.57 Ha

Disturbance footprint: 88.35 Ha

Maptaskr © 2024 -30.519636, 149.964499

Powered By Esri - Sources: Esri, TomTom, Garmin, F...

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

117 Kurrajong Creek Road, Lot 9 of DP 757104, Baan Baa, NSW 2390

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

New South Wales

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 Action Area is located on freehold Narrabri Coal Operations Pty Ltd (NCOPL) owned land. NCOPL is a joint venture entity which includes Whitehaven as the majority owner. NCOPL has provided landowner's consent for the Project. Currently the land is being leased for agricultural purposes. The site access road and electricity transmission line would be built on/above Kurrajong Creek Road. Whitehaven Energy has acquired Landowner's Consent from Narrabri Shire Council for the Project.

3. Existing environment

3.1 Physical description

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

The Action Area is comprised of land which is generally flat topography, predominantly (approximately 97.2 %) cleared of vegetation for agricultural use. The habitat in the previously cleared areas is limited by the poor structural complexity and is subjected to existing agricultural use in most areas.

Some portions of the Project would be located within areas of scattered native vegetation. The native vegetation areas range in quality from high to low and are mostly degraded due to fragmentation from agricultural activities, including fodder crop production and livestock grazing. The native vegetation present is in various broad condition states of Belah Woodland (Plant Community Type [PCT] 55), Poplar Box - Belah Woodland (PCT 56), Pilliga Box - Buloke Woodland (PCT 88) (Att 3 – Site Pictures – Plate 1, page 1) and Poplar Box Grassy Woodland (PCT 101) (Att 3 – Site Pictures – Plate 2, page 1).

In terms of distances to nearest major towns, the Whitehaven Solar Farm Project is located approximately 25 kilometres (km) south-east of Narrabri and approximately 60 km north-west of Gunnedah, NSW.

The Action Area is zoned RU1 (Primary Production) under the *Narrabri Local Environmental Plan 2012* Land Zones, an example of this land can be seen in Att 3 – Site Pictures – Plate 3, page 2. No changes to the land zoning under these instruments are proposed to be requested from the local planning authorities.

The land immediately adjoining the Action Area is consistent with the zoning described above (i.e. RU1 zoned land). The land uses on boundaries of the Project are mostly cleared agricultural land.

The existing road network would be used to provide access to construct and operate the Project (i.e. the Kamilaroi Highway via Kurrajong Creek Road).

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

The Project has been deliberately placed on land largely cleared and used for agriculture in very close proximity to the Narrabri Mine, which is where the renewable energy generated would be used.

Photovoltaic Panel Disturbance Areas and Associated Electricity Generation/Battery Infrastructure

As described above, the proposed photovoltaic panel disturbance component of the Action would be largely located on land previously cleared (Figure 3) for agricultural use (containing either non-vegetation or secondary grassland). While NCOPL privately owns all land associated with the development area excluding Kurrajong Creek Road where the ETL would be built on/above. At the time of this referral, a singular lessee currently utilises the land for agricultural practices (e.g. grazing and cropping). The Project's design would include accommodation of agri solar practices, particularly sheep grazing, which would be subject to an initial trial to confirm suitability and carrying capacity on the Project land.

In addition, some portions of the additional photovoltaic panel development disturbance component of the Action would be located within areas associated with scattered native vegetation.

Electricity Transmission Line

The proposed ETL mostly traverses cleared land. Some clearance of woodland along Kurrajong Creek Road is unavoidable as the proposed ETL needs to connect from the solar panels to the mine. Kurrajong Creek Road is administered by Narrabri Shire Council.

Access Road

The access/internal road and associated intersection with Kurrajong Creek Road has been designed to avoid mature Eucalypt trees (PCT 88 Good). The intersection would be designed/constructed to be consistent with Austroads guidelines.

Security Fence

A perimeter security fence would be constructed around the outside of the Action. A clearance width of approximately 10 metres has been incorporated in the Action Area where possible, for asset protection.

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

State conservation areas in the broader landscape include the Leard Community Conservation Area which is located approximately 16.5 km south-east of the Action and the Pilliga East Conservation area located approximately 6 km south-west of the Action. The Action Area is devoid of significant natural features and areas of important or unique values and would not adversely impact the surrounding conservation areas.

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 Project area is comprised of generally flat topography, predominantly cleared of vegetation for agricultural use.

The topography in the vicinity of the Project is characterised by the vegetated, hilly country of Jacks Creek State Forest and Pilliga East State to the west, grading down to the alluvial plains associated with Namoi River to the east. The eastern section of the Jacks Creek State Forest and Pilliga East State Forest attains a maximum elevation of approximately 400 m AHD.

3.2 Flora and fauna

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

Appendices C, D and E of Attachment 4 provides a list of all recorded flora and fauna in the Action Area during flora and fauna surveys. No flora or fauna species listed under the EPBC Act were recorded during surveys (refer to Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – see Appendices C, D and E – pages 70-95).

Photovoltaic Panel Disturbance Areas and Associated Electricity Generation/Battery Infrastructure

The proposed photovoltaic panel disturbance component of the Action would be largely located on land previously cleared for agricultural use (containing either non-vegetation or secondary grassland) (refer to Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – see Figures 1 2, 3-3, 3 5 and 3-6, pages 7, 39, 41 and 42). However, some portions of the additional photovoltaic panel development disturbance component of the Action would be located within areas associated with native vegetation (refer to Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – see Figure 3 1, page 33).

This native vegetation includes:

- Belah Woodland (Good) (PCT 55)
- Belah Woodland (Semi-Cleared) (PCT 55)
- Derived Grassland (Poor) (PCT 55)
- Poplar Box - Belah Woodland (Good) (PCT 56)
- Pilliga Box - Buloke Woodland (Semi-Cleared) (PCT 88)
- Pilliga Box - Buloke Woodland (Revegetation) (PCT 88)
- Poplar Box Grassy Woodland (Semi-Cleared) (PCT 101)
- Derived Grassland (Poor) (PCT 101)

The habitat in the disturbance area land is typical of the surrounding landscape (i.e. generally cleared land used for agriculture) and loss of the habitat in the Action Area is unlikely to significantly impact any local fauna populations due to lack of fauna populations and quality habitat.

The proposed photovoltaic panel disturbance component of the Action provides limited refuge or habitat for fauna. Any fauna habitat features within the photovoltaic panel disturbance component of the Action are limited to the small areas associated with native vegetation (refer to Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – see Figures 3-7 and 3-8, pages 45-46).

Electricity Transmission Line

The proposed ETL mostly traverses cleared land. Some clearance of woodland along Kurrajong Creek Road is unavoidable as the proposed ETL needs to connect from the solar panels to the mine.

The habitat in the disturbance area land is typical of the surrounding landscape (i.e generally cleared land used for agriculture) and loss of the habitat in the Action Area is unlikely to significantly impact any local fauna populations due to lack of fauna populations and quality habitat.

Access Road

The access/internal road is a logical alignment from Kurrajong Creek Road through the Project layout. The site access road was moved to avoid mature Eucalypt trees (PCT 88 Good).

The habitat in the disturbance area land is typical of the surrounding landscape (i.e generally cleared land used for agriculture) (refer to Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – see Figures 1 2, 3-3, 3 5 and 3-6, pages 7, 39, 41 and 42) and loss of the habitat in the Action Area for EPBC listed species is unlikely to significantly impact any local fauna populations due to lack of fauna populations and quality habitat.

Security Fence

The perimeter security fence would be constructed around the outside of the development. A clearance width of approximately 10 metres has been incorporated in the Action Area where possible, for asset protection.

The habitat in the disturbance area land is typical of the surrounding landscape (i.e generally cleared land used for agriculture) (refer to Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – see Figures 1 2, 3-3, 3 5 and 3-6, pages 7, 39, 41 and 42) and loss of the habitat in the Action Area is unlikely to significantly impact any local fauna populations due to lack of fauna populations and quality habitat.

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

No Matters of National Environmental Significance are present in the Action Area.

Vegetation

The proposed photovoltaic panel disturbance component of the Action would not impact any Matters of National Environmental Significance and would be largely located on land previously cleared for agricultural use (containing either non-vegetation or secondary grassland). However, some portions of the additional photovoltaic panel development disturbance component of the Action would be located within areas associated with native vegetation.

The Electricity Transmission Line mostly traverses cleared land. Some clearance of woodland along Kurrajong Creek Road is unavoidable as the proposed ETL needs to connect from the solar panels to the mine.

The access/internal road is a logical alignment from Kurrajong Creek Road through the Project layout. The site access road was moved to avoid mature Eucalypt trees (PCT 88 Good) and would be located on land previously cleared for agricultural use (containing either non-vegetation or secondary grassland).

The perimeter security fence would be constructed around the outside of the development on land previously cleared for agricultural use (containing either non-vegetation or secondary grassland).

Att 3 – Site Pictures – pages 1-2, provides a number of photos of vegetation in the indicative Project Area which shows the generally cleared nature of the site, which is used for agricultural purposes.

Geology and Soils

The Action Area is located within the Mullaley Sub-basin, which forms part of the larger Gunnedah Basin. Soil surveys have been undertaken in the Subject land by Minesoils (2024). Minesoils (2024) describes two dominant soil units within the Subject land – Sodosols and Dermosols.

SEED Great Soil Group mapping indicates that the Action Area intersects grey, brown and red clays, black earths and red-brown earths.

Bushfire

According to NPWS Fire History dataset, the Action Area has not experienced wildfire in the last 100 years (State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water, 2010).

Weeds

A third of all plant species recorded by Ausecology Pty Ltd (Ausecology) (2024) (Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – see Appendix C, pages 71-77) were weeds and 10 High Threat Exotic species were recorded, including Black-jack (*Bidens Pilosa*), Noogoora burr (*Xanthium*

occidentale), Great brome (*Bromus diandrus*) Rhodes grass (*Chloris Gayana*), African lovegrass (*Eragrostis curvula*), Guinea grass (*Megathyrus maximus*), Dallis grass (*Paspalum dilatatum*), Unknown sp., African boxthorn (*Lycium ferocissimum*), Common Prickly Pear (*Opuntia stricta*).

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.

There are no Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area. No known items of historic heritage significance occur within the Action Area.

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

The Action Area is thought to have been previously occupied by the Kamilaroi (or Gamilaraay) language group.

Six Indigenous heritage sites have been identified by the Aboriginal Heritage Information Management System (AHIMS) within a 1 km radius of the Action Area. Four of the six identified sites have salvaged from the Action Area

An Aboriginal Cultural Heritage Assessment (ACHA) prepared in accordance with the relevant NSW Government guidelines has been prepared for the Action. As per the ACHA (Att 5 – Whitehaven Solar Farm Project Aboriginal Cultural Heritage Assessment – part1, Section 8.6, Table 6, page 51), 11 sites have been identified within the Project Area (these sites exclude the six AHIMS sites identified within a 1 km radius of the Project Area). The 11 sites comprise six isolated artefacts, three artefact scatters and two grinding grooves. All sites are low significance, excluding one grinding groove with moderate significance (Att 5 – Whitehaven Solar Farm Project Aboriginal Cultural Heritage Assessment – part1, Section 10.1.2, Table 8, page 71).

No areas of intangible cultural significance were identified during the ACHA cultural values assessment.

The Project has been designed to avoid 10 of 11 Aboriginal cultural heritage sites. One Isolated Artefact of low significance would experience unavoidable direct disturbance (Att 5 – Whitehaven Solar Farm Project Aboriginal Cultural Heritage Assessment – part1, Section 11.3, page 78). Cultural heritage management measures would be implemented at the site as part of a Construction Environmental Management Plan.

3.4 Hydrology

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

Surface Water

The Action is located directly north of Kurrajong Creek, which is a tributary of the Namoi River Catchment, which covers an area of about 42,000 square kilometres. The Namoi River is located approximately 7 km east of the Project.

The creeks and drainage lines in the Action Area are ephemeral, with flow likely occurring only during heavy rainfall events (Att 3 – Site Pictures – Plate 4, page 2). There is an unnamed 1st order ephemeral drainage line to Kurrajong Creek which occurs in the Action Area, with no defined banks and it would be avoided by the Action. Contour banks have been constructed as part of historical agricultural practices to divert catchment flow into the tributary. Other ephemeral first order drainage lines would be traversed by the proposed ETL.

There are no rivers, estuaries or wetlands in the Subject land or assessment area. There are no State or Commonwealth mapped wetlands on, or adjacent to, the Subject land. No indirect / downstream impacts on rivers/wetlands have been identified as a result of the Project.

Ground Water

There are no registered groundwater bores located within the Project Area. Mapping provided by the NSW Government was reviewed for groundwater vulnerability within and surrounding the Project Area. There are no groundwater vulnerability areas mapped for the Project Area. Groundwater resources, including GDEs, are not expected as a result of this Action as no material excavations would be required and the groundwater table would not be intercepted during Project construction.

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

EPBC Act section	Controlling provision	Impacted	Reviewed
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	No	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 sites within the vicinity of the Action Area that would be directly or indirectly impacted by the Action.

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.

*

There are no National Heritage sites within the vicinity of the Action Area that would be directly or indirectly impacted by the Action.

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.

Direct impact	Indirect impact	Ramsar wetland
No	No	Banrock Station Wetland Complex
No	No	Riverland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland

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 Wetlands within the vicinity of the Action Area that would be directly or indirectly impacted by the Action.

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	Anomalopus mackayi	Five-clawed Worm-skink, Long-legged Worm-skink
No	No	Anthochaera phrygia	Regent Honeyeater
No	No	Aphelocephala leucopsis	Southern Whiteface

Direct impact	Indirect impact	Species	Common name
No	No	<i>Aprasia parapulchella</i>	Pink-tailed Worm-lizard, Pink-tailed Legless Lizard
No	No	<i>Bertya opponens</i>	
No	No	<i>Cadellia pentastylis</i>	Ooline
No	No	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper
No	No	<i>Calidris ferruginea</i>	Curlew Sandpiper
No	No	<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo
No	No	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat
No	No	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (south-eastern)
No	No	<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)
No	No	<i>Dichanthium setosum</i>	bluegrass
No	No	<i>Falco hypoleucos</i>	Grey Falcon
No	No	<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe
No	No	<i>Grantiella picta</i>	Painted Honeyeater
No	No	<i>Hemiaspis damelii</i>	Grey Snake
No	No	<i>Hirundapus caudacutus</i>	White-throated Needletail
No	No	<i>Lathamus discolor</i>	Swift Parrot
No	No	<i>Leipoa ocellata</i>	Malleefowl
No	No	<i>Lepidium aschersonii</i>	Spiny Peppercress
No	No	<i>Lepidium monoplacoides</i>	Winged Pepper-cress
No	No	<i>Lophochroa leadbeateri leadbeateri</i>	Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo
No	No	<i>Melanodryas cucullata cucullata</i>	South-eastern Hooded Robin, Hooded Robin (south-eastern)
No	No	<i>Neophema chrysostoma</i>	Blue-winged Parrot
No	No	<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat, South-eastern Long-eared Bat

Direct impact	Indirect impact	Species	Common name
No	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)
No	No	Polytelis swainsonii	Superb Parrot
No	No	Pteropus poliocephalus	Grey-headed Flying-fox
No	No	Rostratula australis	Australian Painted Snipe
No	No	Stagonopleura guttata	Diamond Firetail
No	No	Swainsona murrayana	Slender Darling-pea, Slender Swainson, Murray Swainson-pea
No	No	Vincetoxicum forsteri	

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions
No	No	Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
No	No	Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland
No	No	Poplar Box Grassy Woodland on Alluvial Plains
No	No	Weeping Myall Woodlands
No	No	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

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

No

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

*

A protected matters search was undertaken on the Action Area, below is a list of the protected matters expected in the Action Area. Whitehaven have undertaken a Baseline Flora and Fauna study of the Action Area. No flora or fauna species listed as threatened or migratory under the EPBC Act were recorded in

surveys undertaken as a result of this study (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project – Flora and Fauna Baseline Report– Section 4, page 49), notwithstanding that they have been identified by the spatial mapping tool as being in the locality. Indirect impacts to these species and/or their habitat as a result of the Action could include construction noise, dust, light spill, trampling, edge effects, transport of weeds, increase in pest or predatory species, or fauna starvation. It should be noted that these impacts are unlikely to occur due to lack of presence of threatened species and ecological communities. Notwithstanding, these impacts would be mitigated and managed in accordance with a Construction Environmental Management Plan.

No Potential Habitat or Records of Threatened Species

No potential habitat and no records of the following species occur in the Action Area:

- Ooline (*Cadellia pentastylis*)
- Coolabah Bertya (*Bertya opposens*)
- Pink-tailed Legless Lizard (*Aprasia parapulchella*)
- Five-clawed Worm-skink (*Anomalopus mackayi*)
- Grey Snake (*Hemiaspis damelii*)
- Malleefowl (*Leipoa ocellata*)
- Australian Painted Snipe (*Rostratula australis*)
- Latham's Snipe, Japanese Snipe (*Gallinago hardwickii*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Curlew Sandpiper (*Calidris ferruginea*)
- Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*)
- Blue-winged Parrot (*Neophema chrysostoma*)
- Superb Parrot (*Polytelis swainsonii*)
- Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) (*Dasyurus maculatus maculatus*)

Cleared Habitat and No Records of Threatened Species

The Action occurs across a number of paddocks that were cleared of native vegetation historically for farming, and presently used for a mix of livestock grazing and dry land cropping (oats, barley and/or wheat). Some limited potential habitat for this species occurs in minor portions of the Action Area, however the habitat is degraded and no records of the following species occur in the Action Area or surrounds despite detailed targeted surveys (see Ausecology 2024 – Att 4 – Whitehaven Solar Farm Project – Flora and Fauna Baseline Report– Sections 2.3.6 and 2.3.7, Tables 2-5, 2-6 and 2-7, pages 16-19, 21, and 24-26). Therefore, the Action would not significantly impact these species:

- Bluegrass (*Dichanthium setosum*)
- Spiny Peppercress (*Lepidium aschersonii*)
- Slender Darling-pea (*Swainsona murrayana*)
- Winged Pepper-cress (*Lepidium monophloides*)
- Vincetoxicum forsteri (syn. Tylophora linearis)
- Grey Falcon (*Falco hypoleucos*)
- Brown Treecreeper (south-eastern) (*Climacteris picumnus victoriae*)
- Southern Whiteface (*Aphelocephala leucopsis*)
- Painted Honeyeater (*Grantiella picta*)
- South-eastern Hooded Robin, Hooded Robin (south-eastern) (*Melanodryas cucullata cucullate*)
- Diamond Firetail (*Stagonopleura guttata*)
- Large-eared Pied Bat, Large Pied Bat (*Chalinolobus dwyeri*)

Other Threatened Species

South-eastern Glossy Black-Cockatoo (*Calyptorhynchus lathami lathami*)

As part of the Flora and Fauna Baseline Report for the Whitehaven Solar Farm (Ausecology, 2024) (Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 2.3.1, Table 2-3, pages 11-12), Ausecology underwent surveys for the South-eastern Glossy Black-Cockatoo.

Surveys for signs of feeding and potential breeding places were undertaken in November 2022. Surveys of potential breeding places for breeding activity were undertaken in January and September 2023.

Searches for animals included observation during all site surveys in November 2022, January 2023, and September 2023, as well as noting signs of orts indicating feeding.

Spotlighting, targeting the two potential breeding hollows in the Study Area, were undertaken on 28 - 30th August 2023 and 19 - 21st September 2023.

Searches for signs of breeding was undertaken in August from 3pm - 6pm, and again in September, from 4pm - 6:50pm at two potential nest locations, looking and listening for signs of foraging and breeding including: begging birds of any age or sex; males returning to feed females in nests, or an occupied nest.

No evidence of individuals or breeding was found, and the potential nest hollows were very low quality and suitability, therefore species polygons were not defined for the Southern Glossy Black Cockatoo (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 3.6, Page 47).

As there is little evidence of recent/current occurrence of the species in the Action Area, it is therefore unlikely that the Project would impact the species.

Swift Parrot (*Lathamus discolor*)

The Action Area is not within a mapped important habitat area for this species (NSW Department of Climate Change, Energy, the Environment and Water [DCCEEW], 2024). Nearest Important Habitat Area mapped greater than 90 km south-east of the Action Area.

White-throated Needletail (*Hirundapus caudacutus*)

Bird Surveys were undertaken in the Action Area by Ausecology (2024). *Hirundapus caudacutus* was not identified Whitehaven Solar Farm Project Flora and Fauna Baseline Report .

Regent Honeyeater (*Anthochaera Phrygia*)

The Subject land is not within a mapped important habitat area for this species (NSW DCCEEW, 2024). Survey not required – not Important Habitat Area. Nearest Important Habitat Area mapped approximately 75 km east of the Action Area (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 2.3.7, Table 2-7, pages 21 and 24-26, respectively).

Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus*)

Ausecology (2024) undertook targeted Koala SAT surveys (Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 2.3.7, Table 2-7, pages 21 and 24-26, respectively) in the Action Area. The target koala SAT surveys did not detect evidence of koalas in the Study Area, most likely due to the fragmented nature of the potential habitat.

Grey-headed Flying-fox (*Pteropus poliocephalus*)

Habitat constraint of breeding camps (NSW DCCEEW, 2024) absent. No nearby camps, the nearest known Grey headed Flying-fox camp is near Tamworth approximately 120 km away (Department of Agriculture, Water and the Environment, 2020).

Corben's Long-eared Bat, South-eastern Long-eared Bat (*Nyctophilus corbeni*)

Microbat surveys included call identification (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 3.6, page 47). The bat specialist advised that:

...the Nyctophilus calls probably belonged to N. geoffroyi and/or N. gouldi, not the threatened N. corbeni, which typically occurs only in large tracts of relatively undisturbed forest...

Ecological Communities

The following TECs were identified as having potential for being directly impacted by the proposed Action due to activities associated with construction of the solar farm. Indirect impacts could include weeds and/or pests from adjacent disturbance areas (in the absence of appropriate mitigation).

Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions

Coolibah-Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Penepine and Mulga Lands Bioregions is absent because neither of the key indicator species Coolibah (*Eucalyptus coolabah*) and Black Box (*E. largiflorens*) are present (Ausecology, 2024 – Att 4– Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Sections 2.3.3 and 3.2, pages 13 and 31, respectively).

Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland and Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia

The potential presence of TECs listed under the BC Act and/or EPBC Act were considered by Ausecology (2024) (Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 2.3.3, page 13) before and after PCT identification mapping survey was completed. Field observations did not identify either species as present in the Action Area.

Whitehaven Solar Farm Project Flora and Fauna Baseline Report Poplar Box Grassy Woodland on Alluvial Plains

Field observations (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 3.2, page 31) demonstrated the presence of Poplar Box Grassy Woodland on Alluvial Plains in the Action Area. The areas of the site considered to be the TEC cover a total of 1.5 hectares (ha)

across two patches Poplar Box Grassy Woodland (Good) (PCT 101) (1.17 ha). The TEC extends beyond the Study Area following the creek. This Threatened Ecological Community would be avoided by the Action (Figure 4).

Weeping Myall Woodlands

Field observations (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 3.2, page 31) demonstrated the presence of Weeping Myall Woodlands in the Action Area. Approximately 0.08 ha of an approximately 3 ha patch is situated in the Action Area. This 0.08 ha area of Weeping Myall Woodlands would be avoided by the Action (Figure 4).

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland is absent from the Action Area (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report – Section 3.2, page 31).

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	<i>Actitis hypoleucos</i>	Common Sandpiper
No	No	<i>Apus pacificus</i>	Fork-tailed Swift
No	No	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper
No	No	<i>Calidris ferruginea</i>	Curlew Sandpiper
No	No	<i>Calidris melanotos</i>	Pectoral Sandpiper
No	No	<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe
No	No	<i>Hirundapus caudacutus</i>	White-throated Needletail
No	No	<i>Motacilla flava</i>	Yellow Wagtail
No	No	<i>Myiagra cyanoleuca</i>	Satin Flycatcher

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.

*

No flora or fauna species listed as threatened or migratory under the EPBC Act were recorded in the Action Area (Ausecology, 2024 – Att 4 – Whitehaven Solar Farm Project Flora and Fauna Baseline Report– Section 4, page 49), and therefore no impacts to these species are considered to occur.

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 Action does not involve nuclear actions.

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 Commonwealth Marine Area within the vicinity of the Action Area that would be directly or indirectly impacted by the Action.

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 Great Barrier Reef is not located within proximity to the Action Area and would not be directly or indirectly impacted by the Action.

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 Action does not involve coal mining development or coal seam gas.

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 Action would not have a direct or indirect impact on any Commonwealth Land in the dataset for Commonwealth Owned Estate by the Commonwealth Department of Finance .

No Commonwealth Land is associated within proximity to the Action Area and would not be directly or indirectly impacted by the Action.

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 Action is situated on mainland Australia and would not directly or indirectly impact Commonwealth Heritage Places Overseas.

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:

None

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)
- Threatened Species and Ecological Communities (S18)
- 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. *

A number of alternatives to the proposed Project have been considered by Whitehaven to date and have not been adopted, including:

- alternatives to the arrangement and inverter capacity of the proposed Project;
- location of the Project and electrical infrastructure;

- not proceeding with a BESS for the Project; and
- not proceeding with the Project.

The above alternatives have not been adopted, as they had potential outcomes that were not aligned with Whitehaven's objectives for the Project. Further discussion of these alternatives, and why they were not adopted for the Project are further detailed below.

Alternatives to Project Arrangements and Inverter Capacity

The Project has been designed to approximately match the average electricity demand of the Narrabri Mine during a winter scenario during solar hours (i.e. the worst case scenario for solar electricity production).

The Project has also been designed to maximise the use of areas previously cleared for agriculture to minimise new disturbance, and minimise impacts to isolated stands of trees and other native vegetation.

Key changes to the Project layout have been made during the environmental assessment review, including:

- removal of Project areas to avoid clearance of any TECs (Myall Woodland Endangered Ecological Community [EEC] under the BC Act and EPBC Act, as well as the Poplar Box Grassy Woodland EEC under the EPBC Act);
- avoidance of all native vegetation in the *NSW State Vegetation Type Map* (DPE, 2023);
- avoidance of water ways (except for unavoidable crossings); and
- avoidance of Aboriginal heritage sites identified during Aboriginal cultural heritage surveys undertaken for the Project ACHA where possible.

Alternative solar farm configurations with reduced indicative capacity were also considered. However, any solar not developed as part of the Project would lead to average demand not being matched in winter during solar hours resulting in the need for electricity to be produced and offset by others off-site.

Overall, in consideration of the above alternatives, Whitehaven Energy considers the current Project design as the most environmentally beneficial whilst also meeting the Project objectives.

Alternatives to Project Location

The Project is a behind-the-meter electricity supply proposal for the Narrabri Mine. Therefore, the location and extent of the Project is driven by the location of the Narrabri Mine Infrastructure Area, including the Narrabri Mine substation and associated electrical infrastructure and Whitehaven-managed land, while having regard to environmental constraints (such as Kurrajong Creek).

A Project comprising the construction and operation of an electrical infrastructure area additional to the Narrabri Mine substation area was considered. However, as the existing Narrabri Mine substation and associated electrical infrastructure would be required to provide the behind-the-meter solar energy to the Narrabri Mine, this would not provide an efficient use of infrastructure areas.

The existing Narrabri Mine 66 kV ETL and switchyard is located to the south of the Mine Infrastructure Area. Given the land use constraints to the west (Narrabri Mine existing and approved longwall mining) and east (Kamilaroi Highway and Werris Creek Mungindi Railway), the proposed location is to the south of the Narrabri Mine Infrastructure Area, at the location shown in Figure 1.

The Project is able to utilise the existing Narrabri Mine Infrastructure Area, and therefore construction and use of additional electrical infrastructure was not considered further.

Alternatives of No Battery Energy Storage System

The Project has been designed to approximately match the average electricity demand of the Narrabri Mine during a winter scenario during solar hours (i.e. the worst case scenario for solar electricity production).

The proposed BESS would provide the ability to store power generated by the Project for use during periods when solar generation is not optimal and to help stabilise the Project's electricity supply.

A Project that excludes the construction and operation of a BESS was considered during the Scoping phase of the Project. The Project excluding a BESS would still provide a behind-the-meter electricity supply to the Narrabri Mine. However, the inclusion of a BESS would provide the ability to store power generated by the Project for use during periods when solar generation is not optimal and to help stabilise the Project's electricity supply and would increase potential supply percentage of locally generated renewable energy.

In consideration of the above, proceeding with construction and operation of a BESS was considered to provide material benefits and, ultimately, a BESS was included in the Project.

"No Project" Scenario

If the Project were not to proceed, the Scope 2 emissions from the Narrabri Mine would continue to be offset (where reasonable and feasible), however the energy would be produced and offset by others off-site.

The Large-Scale Solar Energy Guideline (DPE, 2022), recognises the value of solar energy including:

- Reduction of reliance on fossil fuels, thereby contributing to a reduction in greenhouse gas emissions and air pollution.
- The potential for jobs and investment in regional NSW by increasing economic benefits in regional communities.
- Contribution to Commonwealth and State framework regarding reduced greenhouse gas emissions.

The Project would be consistent with the Large-Scale Solar Energy Guideline (DPE, 2022) as:

- the Project has been developed in a manner that considers the benefits and consequences of the development for regional and national scales;
- the Project would result in the following benefits for the local area, NSW and for the national economy;
- enable Whitehaven to produce locally generated renewable energy;
- reduced demand on the local electricity service provider network which would extend the life of their equipment with an ongoing benefit to the wider community; and
- support the continuation of current operation employment at the Narrabri Mine of approximately 520 personnel, and generation of approximately 65 jobs during peak construction for the region, with many more indirect jobs.

The consequences of not proceeding with the Project include:

- The Project would not contribute to the decarbonisation of NSW's electricity network.
- The Project would not contribute to the NSW Government's transition to renewable energy to help reduce reliance on fossil fuels, air pollution and greenhouse gases.
- The economic and social benefits of further investment in the Narrabri Shire LGA would not be realised.
- The potential impacts of the Project along with the Project management measures and offsets, would not occur.
- The Narrabri Mine would continue to offset the Scope 2 emissions with energy that is produced and offset by others off-site and would not contribute to the National or State greenhouse gas emission

reduction targets.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

Type	Name	Date	Sensitivity	Confidence
#1.	Document Figure 1 - WSF EPBC Referral.pdf Figure 1 shows the Whitehaven Solar Farm's Regional Location.	09/09/2024	No	High
#2.	Document Figure 2 - WSF EPBC Referral.pdf Figure 2 shows the Whitehaven Solar Farm's General Arrangement.	09/09/2024	No	High
#3.	Document Figure 3 - WSF EPBC Referral.pdf Figure 3 shows the Whitehaven Solar Farm's Action Area.	09/09/2024	No	High
#4.	Document Figure 4 - WSF EPBC Referral.pdf Figure 4 shows the Whitehaven Solar Farm's Disturbance Footprint in relation to surrounding Threatened Ecological Communities.	09/09/2024	No	High

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att 1 - Whitehaven Solar Farm Project Scoping Report.pdf Attachment 1 - The Scoping Report contains an overview of the Whitehaven Solar Farm and relevant legislation, planning frameworks and policy documents.		No	High

1.2.7 Public consultation regarding the project area

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att 1 - Whitehaven Solar Farm Project Scoping Report.pdf Attachment 1 - The Scoping Report contains an overview of the Whitehaven Solar Farm and relevant legislation, planning frameworks and policy documents.		No	High

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

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att 2 - WHC-POL-Health-Safety-&-Environment.pdf Attachment 2 provides the Whitehaven Coal Health,		No	High

Safety and Environmental Policy.

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 3 - Site Pictures.pdf Attachment 3 provides pictures of land where the Whitehaven Solar Farm is proposed.		No	High

3.1.2 Existing or proposed uses for the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 3 - WSF EPBC Referral.pdf Figure 3 shows the Whitehaven Solar Farm's Action Area.	08/09/2024	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 4 - REDACTED - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 - REDACTED provides a version of the Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd with sensitive ecological information redacted.		No	High
#2.	Document	Att 4 - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 provides the Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd.		Yes	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 3 - Site Pictures.pdf Attachment 3 provides pictures of land where the Whitehaven Solar Farm is proposed.		No	High
#2.	Document	Att 4 - REDACTED - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 - REDACTED provides a version of the Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd with sensitive ecological information redacted.		No	High
#3.	Document	Att 4 - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 provides the Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd.		Yes	High

3.3.2 Indigenous heritage values that apply to the project area

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att 5 - REDACTED - Whitehaven Solar Farm Project Aboriginal Cultural Heritage Assessment - part1.pdf Attachment 5 - REDACTED (part 1) provides the first half of the Aboriginal Cultural Heritage Assessment undertaken for the Whitehaven Solar Farm Project by Whincop Archaeology Pty Ltd in 2024 with sensitive information redacted.		No	High
#2.	Document Att 5 - REDACTED - Whitehaven Solar Farm Project Aboriginal Cultural Heritage Assessment - part2.pdf Attachment 5 - REDACTED (part 2) provides the second half of the Aboriginal Cultural Heritage Assessment undertaken for the Whitehaven Solar Farm Project by Whincop Archaeology Pty Ltd in 2024. This attachment includes consultation records and AHIMS site cards that accompany the main text of the Aboriginal Cultural Heritage Assessment provided in Attachment 5 part 1 with sensitive information redacted.		No	High
#3.	Document Att 5 - Whitehaven Solar Farm Project Aboriginal Cultural Heritage Assessment - part1.pdf Attachment 5 (part 1) provides the first half of the Aboriginal Cultural Heritage Assessment undertaken for the Whitehaven Solar Farm Project by Whincop Archaeology Pty Ltd in 2024.		Yes	High
#4.	Document Att 5 - Whitehaven Solar Farm Project Aboriginal Cultural Heritage Assessment - part2.pdf Attachment 5 (part 2) provides the second half of the Aboriginal Cultural Heritage Assessment undertaken for the Whitehaven Solar Farm Project by Whincop Archaeology Pty Ltd in 2024. This attachment includes consultation records and AHIMS site cards that accompany the main text of the Aboriginal Cultural Heritage Assessment provided in Attachment 5 part 1.		Yes	High

3.4.1 Hydrology characteristics that apply to the project area

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att 3 - Site Pictures.pdf Attachment 3 provides pictures of land where the Whitehaven Solar Farm is proposed.		No	High

4.1.4.3 (Threatened Species and Ecological Communities) Why your action is unlikely to have a direct and/or indirect impact

Type	Name	Date	Sensitivity	Confidence
#1.	Document Att 4 - REDACTED - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 - REDACTED provides a version of the		No	High

Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd with sensitive ecological information redacted.				
#2.	Document	Att 4 - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 provides the Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd.	Yes	High

4.1.5.3 (Migratory Species) Why your action is unlikely to have a direct and/or indirect impact

Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 4 - REDACTED - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 - REDACTED provides a version of the Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd with sensitive ecological information redacted.	No	High
#2.	Document	Att 4 - Whitehaven Solar Farm Project Flora and Fauna Baseline Report.pdf Attachment 4 provides the Baseline Flora and Fauna Report undertaken for the Whitehaven Solar Farm by Ausecology Pty Ltd.	Yes	High

4.3.8 Why alternatives for your proposed action were not possible

Type	Name	Date	Sensitivity	Confidence
#1.	Document	Figure 1 - WSF EPBC Referral.pdf Figure 1 shows the Whitehaven Solar Farm's Regional Location.	08/09/2024 No	High

5.2 Declarations

✔ Completed Referring party's declaration

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

ABN/ACN	35672844281
Organisation name	WHITEHAVEN ENERGY PTY LTD
Organisation address	259 George Street, Sydney NSW 2000
Representative's name	Scott Mitchell

Representative's job title	Manager Approvals
Phone	0407223813
Email	Smitchell@whitehavencoal.com.au
Address	Connadily Street

- ☒ 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, **Scott Mitchell of WHITEHAVEN ENERGY 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.

Same as Referring party 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, **Scott Mitchell of WHITEHAVEN ENERGY 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, **Scott Mitchell of WHITEHAVEN ENERGY PTY LTD**, the Person proposing the action, consent to the designation of **Scott Mitchell of WHITEHAVEN ENERGY PTY LTD** 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. *

☒ 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, **Scott Mitchell of WHITEHAVEN ENERGY 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. *