

Sandy Creek Solar Farm

Application Number: **01989**Commencement Date: **29/08/2023**Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

1.1.2 Project industry type *

1.1.3 Project industry sub-type

1.1.4 Estimated start date *

1.1.4 Estimated end date *

01/01/2069

1.2 Proposed Action details

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

Lightsource Development Services Australia Pty Ltd (LSbp) proposes to develop the Sandy Creek Solar Farm, which is a large-scale photovoltaic (PV) electricity generation facility and associated battery energy storage system (BESS) and infrastructure (the Project, or proposed action). The Proposed action lies approximately 25 kilometres (km) south-west of the township of Dunedoo, New South Wales (NSW) and is located within the local government areas (LGAs) of Warrumbungle Shire Council and Dubbo Regional Council. The proposed action is within the NSW Government-declared Central-West Orana (CWO) Renewable Energy Zone (REZ).

The electricity generated onsite will connect to the national electricity grid via the proposed CWO REZ Elong Elong Energy Hub being developed by the Energy Corporation of NSW (EnergyCo) as part of the Central-West Orana REZ Transmission Project (SSI-48323210; EPBC ID Number 2022/09353). The proposed action will contribute to the overall storage capacity and reliability of the National Electricity Market (NEM) and will also support State and Commonwealth emission commitments by facilitating renewable energy input into the grid network.

The Proposed action involves the development, construction and operation of a solar PV electricity generation facility and associated BESS. The proposed action comprises the following key components (the disturbance footprint) (refer to Att 1 – EPBC Referral Supplementary Report – 2023, Figure 1.1 and Figure 1.2):

- a disturbance footprint of approximately 1,707 ha (refer to Att 1-EPBC Referral Supplementary Report-2023, Figure 1.1 and Figure 1.2) comprising:
 - a network of approximately 1.5 million PV panels and associated mounting infrastructure with a generating capacity of up to 700 MW (AC)
 - either a DC or AC coupled BESS with a maximum capacity of 700 MW (AC) and a maximum duration of two hours
 - electrical and conversion systems including inverter, transformer units and a high voltage switchyard
 - ancillary infrastructure, including:
 - temporary construction compounds and operation maintenance facilities
 - a construction accommodation facility located within the Project boundary with a separate access point on Dapper Road
 - parking facilities
 - internal access roads and electrical cable trenching

- two internal bridge crossings over Sandy Creek
- a road upgrade corridor (i.e. area of direct impact for public road upgrade works to a portion of Dapper Road)
- construction footprint of the public road crossing of Sandy Creek Road (i.e. proposed intersection between internal access tracks and the public road to allow for construction and operational traffic and cable crossings between the east and west of the development footprint).

The Project area (comprised of 25 lots) is approximately 1,707 ha in size, comprising:

- 612.67 ha of native vegetation
- 1,081.83 ha of exotic vegetation
- 2.69 ha of planted native vegetation
- 0.84 ha of planted exotic vegetation
- 9.00 ha of cleared land, including farm structures and dams.

The area subject to the proposed action (disturbance footprint) is approximately 1,487 ha in size, comprising:

- 450.00 ha of native vegetation
- 1,030.12 ha of exotic vegetation
- 0.26 ha of planted native vegetation
- 0.80 ha of planted exotic vegetation
- 5.71 of cleared land, including farm structures and dams.

Refer to Att 1-EPBC Referral Supplementary Report-2023, Table 3.1, page 16.

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 legislation:

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, heritage places and water resources, namely, Matters of National Environmental Significance (MNES). These are:

- world heritage properties;
- places listed on the National Heritage Register;
- Ramsar wetlands of international significance;
- threatened flora and fauna species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- nuclear actions (including uranium mining); and
- water resources, in relation to coal seam gas or large coal mining development.

Under the EPBC Act, an action that may have a significant impact on a MNES is a 'controlled action' and can only proceed with the approval of the Commonwealth Minister for the Environment. An action that may potentially have a significant impact on a MNES is referred to the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) for determination as to whether or not it is a controlled action. If deemed a controlled action the project is assessed under the EPBC Act, and a decision made as to whether or not to grant approval.

The Proposed action has been referred (i.e. this referral) to the Commonwealth Minister for the Environment for potentially significant impacts upon MNES (threatened fauna species).

NSW legislation:

The Proposed action is declared State significant development (SSD) by the State Environmental Planning Policy (Planning Systems) 2021 (the Planning Systems SEPP), and approval for the Proposed action is required under Part 4, Division 4.7 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). An SSD application for the Proposed action is to be accompanied by an Environmental Impact Statement (EIS). The Warrumbungle Local Environmental Plan 2013 and Dubbo Regional Local Environmental Plan 2022 has zoned the Disturbance footprint as RU1 Primary Production within which the activities are permitted with consent.

To accompany the EIS, a detailed assessment of the biodiversity values and the likely biodiversity impacts of the Proposed action is being undertaken in accordance with the NSW Biodiversity Conservation Act 2016 (BC Act) and the Biodiversity Assessment Method (BAM) (DPIE, 2020a) and will be documented in a Biodiversity Development Assessment Report (BDAR). The BDAR will outline the measures taken to avoid, minimise and mitigate impacts to the vegetation and species habitat present within the disturbance footprint and methodologies to minimise impacts associated with the Proposed action. Residual unavoidable impacts of the Proposed action will be calculated in accordance with the BAM (DPIE, 2020a) and offset in accordance with the NSW Biodiversity Offset Scheme (BOS).

If the Proposed action is deemed by the Australian Government DCCEEW to be a controlled action, it is Lightsource bp's intention to use the NSW Assessment Bilateral Agreement (DCCEEW, 2023) to assess the Proposed action at both the state and Commonwealth level. The Australian Government supports the use of the NSW BOS and the BAM (DPIE, 2020a) as the underpinning methodology for assessment of biodiversity values, including the calculation of biodiversity credit requirements.

Strategic planning framework:

Commonwealth

Commonwealth Government Net Zero 2050: *Australia's Long-Term Emissions Reduction Plan (ALERP)* provides a pathway for Australia to meet its obligations under the Paris Agreement's global goals through a focus on implementing lower cost emissions technologies and accelerating their deployment. The Proposed action will directly contribute to ALERP by reducing greenhouse gas emissions by approximately 6 million tonnes (Mt) (CO₂e) over its operational life.

State and regional

NSW Electricity Strategy: The *NSW Electricity Strategy* is the NSW Government's plan for a reliable, affordably and sustainable electricity future that supports a growing economy and sets out an approach to respond to emerging challenges. Principle 1 of the *NSW Electricity Strategy* acknowledges renewables are the lowest cost form of reliable electricity generation and calls upon investment into these technologies to reduce electricity prices and ensure network reliability.

NSW Electricity Infrastructure Roadmap builds on the framework set out by the *NSW Electricity Strategy* and recognizes the findings of the 2020 ISP which finds that by mid-2030, NSW could need up to 2.3 GW of storage with 4-12 hours of duration to maintain system reliability and security under most scenarios. The proposed action will contribute to this need for additional energy storage by providing peak capacity of up to 150 MW that can be dispatched as required to meet demand.

Net Zero Plan Stage 1: 2020 – 2030 sets out how the NSW Government will deliver upon an objective to achieve net zero emissions by 2050 and has an objective to deliver a 50% cut in emissions by 2030 compared to 2005 levels. The proposed action will support this objective by generating renewable energy and allowing for energy dispatch during periods where intermittent generators are not generating energy.

Central West and Orana Regional Plan 2036: The *Central West and Orana Regional Plan 2036* guides land use planning priorities and decision making in the Central West and Orana region for the next two decades. The proposed action will directly contribute to Direction 9 (eg 'increase renewable energy generation') of Goal 1 of the Regional Plan (i.e. 'to become the most diverse regional economy of NSW').

Large-Scale Solar Energy Guideline: The *Large-Scale Solar Energy Guideline* identifies the key planning considerations for solar energy developments in NSW which are declared to be State significant development. It sets out guiding principles for a range of impacts, including the effects of renewable energy projects on agricultural activities. Site selection and impact assessment considerations detailed in the guideline have been and will continue to be used to inform the Project.

Local

Dubbo Regional Council Local Strategic Planning Statement (Dubbo LSPS): provides a 20-year vision for the future growth within the Dubbo Regional LGA and identifies 20 planning priorities for land use planning in the LGA within that timeframe. The proposed action will contribute to Planning Priority 3 ('Promote Renewable Energy Production') of the Dubbo LSPS by providing opportunities during the EIS stage for council, agencies and key landholders to collaboratively engage and assist in refining this key infrastructure project. The proposed action will directly contribute to Planning Priority 19 ('Create an Energy, Water and Waste Efficient City') of the Dubbo LSPS by providing renewable energy to the Australian Energy Market, which will reduce the reliance on non-renewable energy.

Warrumbungle Shire Council Local Planning Strategic Statement (Warrumbungle LSPS): identifies the main priorities and aspirations for future land use within the local government area and establishes objectives and strategies to achieve those objectives. Planning Priority 5 of the Warrumbungle LSPS is to support agricultural lands for future growth and resilience. The proposed action will contribute to Planning Priority 5 of the Warrumbungle LSPS and has been sited minimize impacts on productive agricultural land and visual amenity, where practicable.

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. *

LSbp has undertaken the following consultation regarding the Proposed action:

- A virtual meeting was held with Dubbo Regional Council on 5 August 2021, discussing the proposed action, indicative development footprint, cumulative impacts and community engagement
- A virtual meeting was held with the NSW Department of Planning and Environment (DPE) on 9 September 2021 and 10 March 2022 to discuss specific requirements prior to lodgement of the Scoping Report.
- A virtual meeting was held on 14 January 2022 with Warrumbungle Shire Council discussing the proposed action, indicative development footprint, cumulative impacts and community engagement
- Virtual meeting with Transport for NSW (TfNSW) providing an overview of the proposed action, including proposed routes used for transport and access
- An onsite meeting with Dubbo Regional Council and Warrumbungle Shire Council representatives to discuss project related issues and gain familiarization with the project setting (February 2022)
- An introductory online community consultation session was held online on 31 January 2022, while in-person community consultation sessions were held on 5 February 2022 in both Dunedoo and Gulgong
- Update to key stakeholder groups after the release of the Project Secretary's Environmental Assessment Requirements (SEARs) received from the Department of Planning and Environment (DPE) via online newsletter (September 2022)
- A website was established providing general information about the solar farm and the Proposed action (December 2022)
- A dedicated email address was established to enable two-way communication between LSbp and the community (December 2022) sandycreeksolar@lightsourcebp.com
- A dedicated phone number was established to enable two-way communication between LSbp and the community (December 2022)

Future consultation to be undertaken:

- EIS preparation (March 2022 – ongoing)
- Advertise and hold a drop-in community information session to provide further information and obtain feedback (October 2023)

1.3.1 Identity: Referring party

Privacy Notice:

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

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

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

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

See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint. Alternatively, email us at privacy@awe.gov.au.

Confirm that you have read and understand this Privacy Notice *

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details	
ABN/ACN	28141736558
Organisation name	EMM CONSULTING PTY LIMITED
Organisation address	2065 NSW
Referring party details	
Name	Jennifer Lindsay
Job title	Ecologist
Phone	0412086610
Email	Jlindsay@emmconsulting.com.au
Address	

1.3.2 Identity: Person proposing to take the action

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

No

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

Yes

Person proposing to take the action organisation details

ABN/ACN	26623301799
Organisation name	LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA PTY LTD
Organisation address	3000 VIC

Person proposing to take the action details

Name	Diana Mitchell
Job title	Head of Planning
Phone	0409 601 473
Email	diana.mitchell@lightsourcebp.com
Address	181 William St, Melbourne VIC 3000

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. *Record of responsible environmental management

LSbp is the applicant for the proposed action. LSbp currently has one operational solar project and four solar projects at various stages of operational construction in Australia. Each of these sites has bespoke environmental management plans which are prepared and approved prior to construction commencing and include, but are not limited to:

- Environmental Management Plans
- Biodiversity Management Plans
- Heritage Management Plans
- Construction Management Plans
- Waste Management Plans.

It is anticipated that a site-specific Environmental Management Plan will be a condition of the planning approval that is currently being sought for this proposed action.

LSbp has previously undertaken controlled actions under the EPBC Act and has satisfactorily implemented all conditions of previous Commonwealth and State approvals.

LSbp has no existing record of having been the subject of any prosecution or civil proceeding under NSW State or Commonwealth environmental or natural resources legislation which is relevant or material to this referral.

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

LSbp has a robust Integrated Management System, covering Health, Safety, Environment and Quality (HSEQ) (refer to Att 2 - LSbp Integrated HSE Policy). Under the Integrated Management System, LSbp commits to:

- Provide a safe and healthy working environment for all personnel, including employees, contractors and visitors, where hazards and risks associated with its operations are identified and risk management measures are implemented.
- Identify and comply with all applicable legislative requirements and maintain systems to meet these requirements in the countries the company operates.
- Maintain a consistent and documented Integrated Management System.
- Monitor the effectiveness of the Integrated Management System through periodic reviews, audits, customer feedback and other means as appropriate.
- Ensure that incidents and nonconformities are investigated, and corrective actions implemented to prevent reoccurrence.
- Take account of external bodies and local community issues related to its business activities.
- Take account of the implications of the HSEQ aspects of investment decisions.
- Protect the environment in all aspects of its business and operations, to prevent any adverse environmental effects.
- Minimise the environmental impact, for the life cycle of all plant, equipment and other physical assets under its control.
- Carefully select and use materials and resources in order to reduce waste to a minimum with a focus on striving to prevent pollution.
- Continually promote a Health and Safety awareness culture and environmental sustainability throughout the organization.
- Plan and conduct its activities responsibly and in a manner that will assure the protection and safety of its staff, contractors, visitors, members of the public and the environment.
- Ensure LSbp senior management always lead by example in HSEQ related issues.
- Actively promote the involvement of staff in all HSEQ related matters.
- Establish HSEQ targets, monitor key indicators and review and evaluate performance against these targets to drive continuous improvement.
- Provide awareness, training supervision and HSEQ expertise to maintain the Integrated Management System and to achieve the HSEQ targets.

The LSbp executive team and the respective Team Leaders are responsible for the implementation of this policy across the organization.

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	26623301799
Organisation name	LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA PTY LTD
Organisation address	3000 VIC

Proposed designated proponent details

Name	Diana Mitchell
Job title	Head of Planning
Phone	0409 601 473
Email	diana.mitchell@lightsourcebp.com
Address	181 William St, Melbourne VIC 3000

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	28141736558
Organisation name	EMM CONSULTING PTY LIMITED
Organisation address	2065 NSW
Representative's name	Jennifer Lindsay
Representative's job title	Ecologist
Phone	0412086610
Email	Jlindsay@emmconsulting.com.au
Address	

✔ Confirmed Person proposing to take the action's identity

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

ABN/ACN	26623301799
Organisation name	LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA PTY LTD

Organisation address	3000 VIC
Representative's name	Diana Mitchell
Representative's job title	Head of Planning
Phone	0409 601 473
Email	diana.mitchell@lightsourcebp.com
Address	181 William St, Melbourne VIC 3000

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

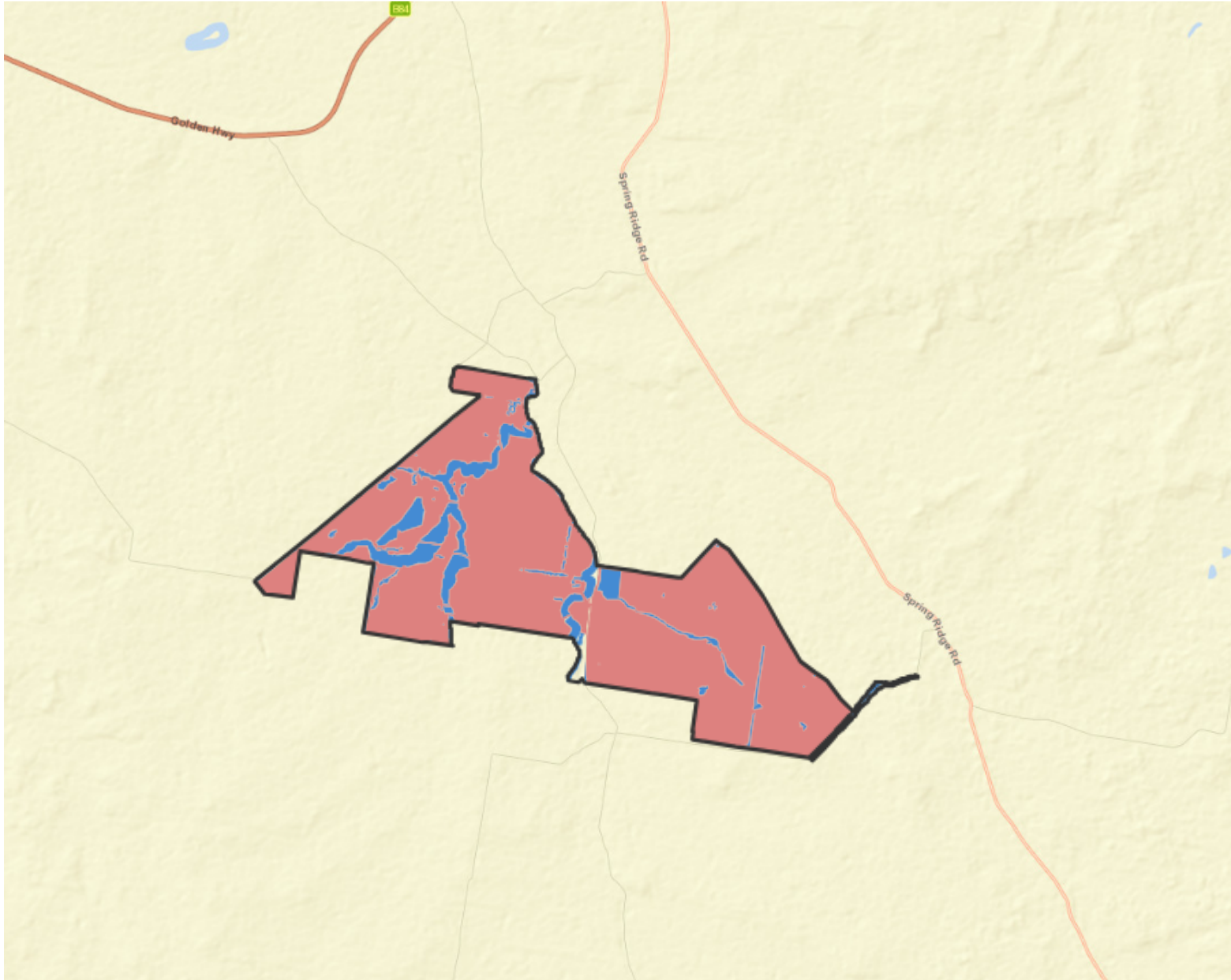
1.4 Payment details: Payment allocation

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



2.2 Footprint details

2.2.1 What is the address of the proposed action? *

1069 Sandy Creek Road, Cobbora

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 project area consists of 25 freehold land parcels owned by two separate landowners.

3. Existing environment

3.1 Physical description

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

The Project area is located at 1069 Sandy Creek Road, Cobbora, approximately 25 kilometres south-west of Dunedoo and 32 km north-west of Gulgong.

The Project area is zoned RU1 – Primary Production under the Warrumbungle Local Environmental Plan 2013 (Warrumbungle LEP) and Dubbo Local Environmental Plan 2022 (Dubbo LEP) and is primarily within an agricultural setting. Current land use within the Project area and immediate surrounds is primarily stock grazing and low intensity dry land cropping.

The locality of the Project area consists of highly fragmented native vegetation, often occurring in isolated patches surrounded by a matrix of agricultural land. This is consistent with the vegetation within the project area. Paddocks within the project area consist predominantly of sown areas of Barley (*Hordeum vulgare*) and exotic pasture grasses however, some areas of low to moderate condition derived native pasture are present within the Project area.

Fragmented patches of low condition woodland trees still exist within the project area however, most paddocks have been completely cleared of trees. The understorey in these areas was dominated almost entirely by exotic groundcover species.

Remnant woodland vegetation within the Dapper Road upgrade corridor is in good condition and provides moderate connectivity to other small woodland patches occurring to the south-west of the Project area.

The majority of the Project area has been classified as Category 1 – Exempt land under the Land Management Framework, and as defined under Section 60 H of the *Local Land Service Act 2013* (LLS Act). This categorization was endorsed by the Biodiversity Conservation Division (BCD) in September 2022. The woodland areas, scattered trees, riparian areas and moderate condition native pasture have been classified as Category 2 – Regulated land.

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

The Project area (comprising 25 freehold lots) is approximately 1,707 ha in size, comprising:

- 612.67 ha of native vegetation comprised of:
 - 456.26 ha of category 1 – exempt land (as endorsed by BCD)
 - 156.41 ha of category 2 – regulated land
- 1,081.83 ha of exotic pasture
- 2.69 ha of planted native vegetation
- 0.84 ha of planted exotic vegetation
- 9.00 ha of cleared land, associated with farm buildings and dams.

The area subject to the Proposed action (Disturbance footprint) is approximately 1,487 ha in size, comprising:

- 450.00 ha of native vegetation comprised of:
 - 431.52 ha of category 1 – exempt land (as endorsed by BCD)
 - 18.48 ha of category 2 – regulated land
- 1,030.12 ha of exotic pasture
- 0.26 ha of planted native vegetation
- 0.80 ha of planted exotic vegetation
- 5.71 ha of cleared land, associated with farm buildings and dams.

The proposed action involves the development, construction and operation of a solar PV electricity generation facility and associated BESS. The proposed action comprises the following key components (the disturbance footprint) (refer to Att 1 – EPBC Referral Supplementary Report – 2023, Figure 1.1 and Figure 1.2):

- a disturbance footprint of approximately 1,707 ha comprising:
 - a network of approximately 1.5 million PV panels and associated mounting infrastructure with a generating capacity of up to 700 MW (AC)
 - either a DC or AC coupled BESS with a maximum capacity of 700 MW (AC) and a maximum duration of two hours
 - electrical and conversion systems including inverter, transformer units and a high voltage switchyard
 - ancillary infrastructure, including:
 - temporary construction compounds and operation maintenance facilities
 - a construction accommodation facility located within the Project boundary with a separate access point on Dapper Road
 - parking facilities
 - internal access roads and electrical cable trenching
 - two internal bridge crossings over Sandy Creek

- a road upgrade corridor (i.e. area of direct impact for public road upgrade works to a portion of Dapper Road)
- construction footprint of the public road crossing of Sandy Creek Road (i.e. proposed intersection between internal access tracks and the public road to allow for construction and operational traffic and cable crossings between the east and west of the development footprint).

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

No areas of outstanding biodiversity value (AOBV) are present within the Project area.

There are no karsts, caves, crevices, cliffs or other areas of geological significance within the Project area.

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

The Project area is situated on a shallow valley floor within the Sandy Creek catchment and generally drains north to the Talbragar River. A largely flat site, it features a gently undulating topography ranging between 380 to 440 metres above sea level.

The Project will not be in a marine area.

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.

The Project area occurs within the Brigalow Belt South Interim Biogeographic Regionalisation for Australia (IBRA) Region and the Talbragar Valley IBRA Sub Region. In addition, the NSW South Western Slopes IBRA region and Inland Slopes IBRA Sub Region occur directly east of (but not within) the Disturbance footprint.

Six native plant community types (PCTs) have been recorded within the Project area, five of which have been recorded within the Disturbance footprint:

- PCT 81 Western Grey Box – cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion (49.93 ha in Project area, 35.77 ha in Disturbance footprint)
- PCT 201 Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion (299.62 ha in Project area, 193.75 ha in Disturbance footprint)
- PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion (116.34 ha in Project area, 108.48 ha in Disturbance footprint)
- PCT 281 Rough-Barked Apple – red gum – Yellow Boxwoodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion (4.44 ha in Project area, 0 ha in Disturbance footprint)
- PCT 468 Narrow-leaved Ironbark – Black Cypress Pine +/- Blakely's Red Gum shrubby open forest on sandstone low hills in the southern Brigalow Belt South bioregion (including Goonoo) (2.09 ha in Project area, 0.74 ha in Disturbance footprint)
- PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion (140.25 ha in Project area, 111.25 ha in Disturbance footprint).

Two areas of PCT 81 within the Project area align with Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions – Talbragar Valley, which is listed as endangered under the *Biodiversity Conservation Act 2016*. One of these areas also aligns with the Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-

eastern Australia, an endangered community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

One area of PCT 266 and three areas of PCT 599 align with White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions, listed as critically endangered under the BC Act. Two of these areas also align with White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland, listed as critically endangered under the EPBC Act.

One area of PCT 201 conforms to Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions.

Targeted threatened species surveys, undertaken to date, have identified the following EPBC Act and/or BC Act listed threatened fauna species within the Project area:

- Spotted Harrier (*Circus assimilis*)
- Speckled Warbler (*Chthonicola sagittata*)

In addition, the following BC Act listed threatened flora species have been recorded within the Project area:

- Pine Donkey Orchid (*Diuris tricolor*)

No EPBC Act listed threatened flora species were recorded within the Project area.

A Biodiversity Development Assessment Report (BDAR) in accordance with the Biodiversity Assessment Method (BAM) (DPIE 2020) is currently being prepared to accompany the SSD project application.

Refer to Attachment 1(Section 3, Figure 3.1, Figure 3.2, Figure 3.3).

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

The vegetation within the Project area is highly disturbed, having been historically cleared for grazing and cropping. Fragmented patches of woodland trees still exist within the Project area however, in most cases the paddocks have been completely cleared of trees with only one or two small to moderate sized trees remaining. The impacts of cattle were evident under the majority of trees. Within the grazing pasture areas, impacts of cattle were quite severe due to the general lack of shade trees across the Project area.

The woodland areas within the development footprint have been classified as low condition woodland areas, with the understorey in these areas dominated almost entirely by exotic groundcover species. Remnant woodland vegetation in good condition is only present within the road corridors.

Areas of native and exotic plantings were also present within the study area, primarily on fenced boundaries. Cleared paddocks were comprised of the following:

- sown areas of Barley (*Hordeum vulgare*) and exotic pasture grasses
- ripped and exotic paddocks
- low condition derived native pasture, presenting with low diversity of native species and high numbers of weeds
- moderate condition derived native pasture.

1. The majority of the Project area has been classified as Category 1 – Exempt land, as endorsed by the Biodiversity Conservation Division (BCD) in September 2022.

The Project area occurs within the Goonoo Slopes (Mitchell) Landscape. The Disturbance footprint is located in four soil landscapes:

- Ballimore (bm), mapped as Chromosols under the Australian Soil Classification (ASC)
- Mebule (me), mapped as Dermosols under the ASC
- Mitchell Creek (mi), classified as Sodosols under the ASC
- Lahey's Creek (lc), mapped as Kurosols (natric) under the ASC.

Land and soil capability (LSC) mapping across the study area shows high to moderate-low capability land. The LSC of the present soil landscapes is constrained by hazards including sodic soils, high erosion hazard under cultivation and existing isolated salinity, minor to moderate sheet erosion with moderate to severe gully erosion. Acid sulfate soils are unlikely to be present in the vicinity of the Project area.

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 listed heritage items within the project area, nor are any listed heritage items located in proximity.

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

The Project area is situated within the traditional boundaries of the Wiradjuri people and within the Dubbo Local Aboriginal Land Council (DLALC). A search of the NSW Native Title Vision identified no determined or registered native title claim or Indigenous Land Use Agreements (ILUAs) existing over the Project area.

A search of the AHIMS database identified 11 previously documented Aboriginal objects, sites or places within or on the immediate periphery of the project area. None of these sites have been declared.

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. *

Ground water:

The local hydrogeological regime within the study area comprises of:

- shallow, unconfined and temporary groundwater of limited extent associated with Quaternary-aged alluvium up to 12 metres thick and characterized by sandy gravel, interspersed with clay
- The porous rock aquifer located within Permo-Triassic sediments with varying capacities to transmit water, up to 150 m thick
- Fractured rock aquifers within the metamorphic basement rocks of the Lachland Fold Belt, characterized by metamorphosed sedimentary and volcanic rocks with very low permeability.

It is generally considered that the shallow systems associated with the Project area are episodically recharged during flooding events, while the underlying porous rock groundwater system is assumed to receive the majority of its recharge through direct rainfall in areas where the unit outcrops or subcrops below the shallow alluvial sediments.

Surface water:

The Project area is located within the Macquarie-Bogan River Catchment and the Talbragar River is approximately 4.5 km to the north of the Project area. Sandy Creek, a fifth order watercourse, transects the Project area, flowing in a northerly direction before joining the Talbragar River. Several tributaries of Sandy Creek, including two named watercourses (Broken Leg Creek and Spring Creek), also intersect the Project area.

Many of the watercourses within the study area are ephemeral, with Sandy Creek having the most reliable annual flow, though the seasonal reliability of this flow through the Project area is relatively unknown.

4. Impacts and mitigation

4.1 Impact details

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

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

4.1.1 World Heritage

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

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

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

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

No

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

No World Heritage properties were identified through the Protected Matters Search Tool (PMST).

The closest World Heritage site is the Greater Blue Mountains area, which is 95 km to the south-west of the Project area. Due to the considerable distance between the two sites, the Proposed action will not result in any direct or indirect impacts on a World Heritage site.

4.1.2 National Heritage

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

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

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

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

No

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

No National Heritage places were identified through the PMST.

The closest National Heritage site is Warrumbungle National Park, which is 90 km to the north-west of the Project area. Due to the considerable distance between the two sites, the Proposed action will not result in any direct or indirect impacts on a National Heritage site.

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

Direct impact	Indirect impact	Ramsar wetland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland
No	No	The Macquarie Marshes

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. *

The PMST identified four Ramsar Wetlands within proximity to the proposed action:

- Riverland
- the Macquarie Marshes
- Banrock Station
- the Coorong, and Lakes Alexandrina and Albert Wetland.

The closest of these, the Macquarie Marshes, is over 200 km to the north-west of the Project area. Due to the distance between the wetlands and the Project area, the Proposed action will not result in any direct or indirect impacts on a Ramsar Wetland.

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
No	No	<i>Androcalva procumbens</i>
No	No	<i>Anthochaera phrygia</i>
No	No	<i>Aphelocephala leucopsis</i>
No	No	<i>Aprasia parapulchella</i>
No	No	<i>Botaurus poiciloptilus</i>
No	No	<i>Calidris ferruginea</i>
No	No	<i>Callocephalon fimbriatum</i>
Yes	Yes	<i>Calyptorhynchus lathami lathami</i>
Yes	Yes	<i>Chalinolobus dwyeri</i>
No	No	<i>Climacteris picumnus victoriae</i>
Yes	Yes	<i>Crinia sloanei</i>
No	No	<i>Dasyurus maculatus maculatus</i> (SE mainland population)
No	No	<i>Delma impar</i>
No	No	<i>Dichanthium setosum</i>
No	No	<i>Euphrasia arguta</i>

Direct impact	Indirect impact	Species
No	No	Falco hypoleucos
No	No	Galaxias rostratus
Yes	Yes	Grantiella picta
Yes	Yes	Hirundapus caudacutus
No	No	Homoranthus darwinioides
Yes	Yes	Lathamus discolor
No	No	Leipoa ocellata
No	No	Lepidium aschersonii
No	No	Lepidium monoplocoides
No	No	Lophochroa leadbeateri leadbeateri
No	No	Macquaria australasica
No	No	Melanodryas cucullata cucullata
No	No	Neophema chrysostoma
No	No	Numenius madagascariensis
Yes	Yes	Nyctophilus corbeni
No	No	Pedionomus torquatus
Yes	Yes	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
Yes	Yes	Polytelis swainsonii

Direct impact	Indirect impact	Species
No	No	Pteropus poliocephalus
No	No	Rostratula australis
No	No	Stagonopleura guttata
No	No	Swainsona murrayana
No	No	Swainsona recta
No	No	Thesium australe
No	No	Vincetoxicum forsteri
No	No	Zieria ingramii

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
Yes	Yes	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

Direct impact	Indirect impact	Ecological community
Yes	Yes	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? *

Yes

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

Direct impact (removal of up to 3.64 ha of native vegetation that is suitable habitat), and an additional 1.04 ha in indirect impacts for the Proposed action will impact the following EPBC Act listed threatened species:

- *Chalinolobus dwyeri* (Large-eared Pied Bat)
- *Lathamus discolor* (Swift Parrot)
- *Phascolarctos cinereus* (Koala)
- *Crinea sloanei* (Sloane's Froglet)
- *Polytelis swainsonii* (Superb Parrot)
- *Anthochaera phrygia* (Regent Honeyeater)
- *Hirundapus caudacutus* (White-throated Needle-tail)
- *Nyctophilus corbeni* (Corben's Long-eared Bat)
- *Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo)
- *Grantiella picta* (Painted Honeyeater)

Two PCTs mapped within the Project area and disturbance footprint align with the EPBC Act listed White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box Gum Woodland) critically endangered ecological community (CEEC). Impacts are comprised of the removal of 0.82 ha of this CEEC, and an additional indirect impact to 0.16 ha of the CEEC.

One of the PCTs mapped within the Project area aligns to the EPBC Act listed Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (Grey Box Woodland) endangered ecological community (EEC). Anticipated impacts to this EEC are the removal of 1.13 ha of the EEC, and additional impacts to a further 0.26 ha of the EEC.

Refer to Att 1-EPBC Referral Supplementary Report-2023 (Section 5, Appendix B).

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

Yes

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

For those protected matters that were considered to have potential to occur within the Disturbance footprint, or that were recorded within the Disturbance footprint, assessments of significance were prepared, in accordance with Matters of National Environmental Significance. Significant Impact Guidelines 1.1 (DoE 2013), as presented in Att 1-EPBC Referral Supplementary Report-2023 (Appendix C).

The Proposed action is considered to have a significant impact on Box Gum Woodland CEEC due to:

- the reduction in the extent of the CEEC through the direct removal of 0.82 ha of the community
- increased fragmentation
- removal of habitat critical to the survival of the CEEC
- interference with the recovery of the CEEC

The Proposed action is also considered to have a significant impact on Grey Box Woodland EEC due to:

- a reduction in extent of the EEC due to the direct removal of 1.13 ha of the community
- increased fragmentation
- removal of habitat critical to the survival of the EEC
- interference with the recovery of the community.

The Proposed action's impact upon threatened species identified in section 4.1.4.2 is not considered to be significant.

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

Yes

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

The Proposed action is considered to have a significant impact on Box Gum Woodland CEEC, as listed under the EPBC Act due to the removal of 0.82 ha of the community.

The Proposed action is also considered to have a significant impact on Grey Box Woodland EEC, as listed under the EPBC Act due to the removal of 1.13 ha of the community.

It is considered that the Proposed action is likely to constitute a controlled action and require approval under the EPBC Act.

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

The hierarchy of avoid and minimise has been used in the design of the Proposed action; the project design has been through several iterations with biodiversity values being a key consideration in the design process. The Proposed action has been informed by iterative environmental constraint assessments comprising both desktop and field survey, with the aim to reasonably avoid and minimise significant impacts to biodiversity values. EMM Consulting (EMM) has been undertaking vegetation mapping, vegetation integrity assessment, habitat assessment, threatened species targeted survey, and providing ongoing advice between 2021-2023 to assist LSbp in this process (refer to Att 1-EPBC Referral Supplementary Report-2023, Section 2, Section 3).

The most important consideration in the selection of a solar farm location is the potential generating capacity of the land and efficient access to the grid. The ability to access to the site from the classified road network to import construction materials is another important consideration.

The Sandy Creek Solar Farm location was the subject of planning and environmental constraints analyses, which identified the key risks and constraints to the project based on preliminary design considerations, the planning and assessment framework and the environment both within and surrounding the project investigation area. The results of these analyses informed the basis for subsequent surveys and assessment and confirmed the suitability of this location for the proposed development.

The Sandy Creek Solar Farm location provides the following important benefits:

- proximity to the proposed Elong Elong Energy Hub (with capacity to export energy into the grid)
- within a renewable energy zone (REZ)
- zoned RU1 which is a prescribed zone where electricity generating works are a permissible land-use and the environmental and planning constraints can be effectively managed
- conveniently accessed from the Golden Highway
- adequate development footprint size
- suitable topography
- uses land that comprises mostly LSC 4 or higher
- landholder willingness to enter into legal agreements
- suitable distance from potentially sensitive receptors

- suitable distance from major townships (approximately 25 km)
- avoids areas of high biodiversity value where possible
- sited to minimise the visual impact to surrounding properties.

Alternate locations were considered in the screening process. None of these locations had all the attributes of this location and were not considered viable from technical, economic, social and/or environmental standpoints.

Several changes to the project layout have been made since LSbp first considered the proposed action, including:

- avoidance of PV panels within certain sections of first order watercourses where threatened species habitat exists
- avoidance of high value vegetation where it is possible to do so, and calculating offset liabilities for any necessary clearing
- avoiding the highest value land and soil capability (LSC) agricultural land (ie LSC 2) within the site and considering the continued use of the site post-construction for agricultural activities
- selection of 'portrait' orientation for PV panels (as opposed to 'landscape' orientation) – to minimise impact on footprint
- widening Spring Ridge Road and Dapper Road to 8.7 m instead of creating passing lanes
- positioning infrastructure to avoid Aboriginal cultural heritage sites within the development footprint as far as practicable
- siting of key infrastructure components to minimise hazard and bushfire risks, and in areas less visible from neighbouring properties.

Mitigation measures are proposed to reduce residual potential impacts on EPBC Act listed matters, including a Biodiversity Management Plan (BMP) for the Proposed action in accordance with the relevant NSW and Commonwealth legislation and/or policies. All works will be undertaken in accordance with general mitigation measures to be identified in the Environmental Management Strategy (EMS). Prior to construction, a BMP, forming part of the EMS, will be prepared and will include the management measures proposed. Key minimisation and mitigation measures for biodiversity will include (but are not limited to):

- employee education and training
- retention of vegetation and habitat where possible, including hollow-bearing trees
- delineation of 'no-go' zones around threatened flora occurrences
- rehabilitation of construction laydown areas following construction works
- fencing and access control
- traffic control measures
- weed and pest animal control
- erosion and sedimentation control
- minimising injury of all native animals during clearing and construction, via pre-clearance procedures using appropriately qualified ecologists
- installation of nest boxes or equivalent in areas of remnant woodland within the study area
- salvage of resources and habitat features (hollow logs, tree hollows, timber, rocks, seed collection) for use in retained habitat
- noise, light and dust controls.

Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 4.3.

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

Residual unavoidable impacts of the Proposed action will be calculated in accordance with the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Biodiversity Assessment Method (BAM) (DPIE 2020a). Offsets will be in accordance with the NSW Biodiversity Offset Scheme (BOS). Accordingly, the biodiversity offset strategy for the Proposed action will be developed in consultation with the NSW Department and Planning and Environment (DPE).

If the Proposed action is deemed by the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) to be a controlled action, Lightsource bp proposed to use the NSW Assessment Bilateral Agreement to assess the Proposed action at both the state and Commonwealth level. The DCCEEW supports the use of the NSW BOS and the BAM (DPIE, 2020a) as the underpinning methodology for assessment of biodiversity values, including the calculation of biodiversity credit requirements.

(Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 4.4).

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
No	No	Actitis hypoleucos
No	No	Apus pacificus

Direct impact	Indirect impact	Species
No	No	Calidris acuminata
No	No	Calidris ferruginea
No	No	Calidris melanotos
No	No	Gallinago hardwickii
Yes	Yes	Hirundapus caudacutus
No	No	Motacilla flava
No	No	Myiagra cyanoleuca
No	No	Numenius madagascariensis
No	No	Rhipidura rufifrons

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

Yes

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

Direct impact (removal of 3.64 ha of native vegetation that is habitat) for the Proposed action will impact the EPBC Act listed migratory species *Hirundapus caudacutus* (White-throated Needletail).

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

No

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

For those migratory species that were considered to have potential to occur within the Disturbance footprint, assessments of significance were prepared for White-throated Needletail, in accordance with the *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (DoE 2013).

The Proposed action's impact upon all threatened migratory species identified in section 4.1.5.2 is not considered to be significant.

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

No

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

For those migratory species that were considered to have potential to occur within the Disturbance footprint, assessments of significance were prepared for White-throated Needletail, in accordance with the *Significant Impact Guidelines 1.1 for Matters of National Environmental Significance* (DoE 2013).

The assessments concluded that the Disturbance footprint is unlikely to support an ecologically significant proportion of the populations of the migratory species. Therefore, the Proposed action is unlikely to disrupt the lifecycle of an ecologically significant proportion of the White-throated Needletail.

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

Alternate locations were considered in the screening process. None of these locations had all the desired attributes of this location and were not considered viable from technical, economic, social and/or environmental standpoints.

The avoidance and mitigation measures explained in Section 4.1.4.10 are also proposed to minimise any potential impacts upon Migratory species listed under the EPBC Act.

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

Residual unavoidable impacts of the Proposed action will be calculated in accordance with the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Biodiversity Assessment Method (BAM) (DPIE 2020a). Offsets will be in accordance with the NSW Biodiversity Offset Scheme (BOS). Accordingly, the biodiversity offset strategy for the Proposed action will be developed in consultation with the NSW Department and Planning and Environment (DPE).

If the Proposed action is deemed by the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) to be a controlled action, LSbp proposes to use the NSW Assessment Bilateral Agreement to assess the Proposed action at both the State and Commonwealth level. The DCCEEW supports the use of the NSW BOS and the BAM (DPIE, 2020a) as the underpinning methodology for assessment of biodiversity values, including the calculation of biodiversity credit requirements.

4.1.6 Nuclear

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

No

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

The Proposed action does not include any nuclear action, nor does the Project area or Disturbance footprint contain nuclear hazards.

4.1.7 Commonwealth Marine Area

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

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

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

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

No

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

The Proposed action is not proposed within or near a Commonwealth Marine Area and will not result in any direct or indirect impacts upon a Commonwealth Marine Area.

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 approximately 900 km north-east of the Project area; therefore, the proposed action will not result in any direct or indirect impacts on the Great Barrier Reef.

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

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

No

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

The Proposed action is not related to coal seam gas development or coal mining and will, therefore, not result in any direct or indirect impacts on water resources in relation to such actions.

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.

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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 Project area is not located on or near Commonwealth Land and will, therefore, not result in any direct or indirect impacts on such places.

4.1.11 Commonwealth Heritage Places Overseas

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

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

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

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

No

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

The Project area is not located near nor is it in relation to a Commonwealth heritage place overseas and will, therefore, not result in any direct or indirect impacts on such places.

4.1.12 Commonwealth or Commonwealth Agency

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

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

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

- Threatened Species and Ecological Communities (S18)

Conclusion on the likelihood of unlikely significant impacts

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

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

4.3 Alternatives

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

Yes

4.3.2 Do you have an alternative timeline you are proposing for your proposed action? *

No

4.3.3 Briefly describe why an alternate timeline for your proposed action was not possible. *

An alternate timeline is not possible for the Proposed action as the timing of the Proposed action would not contribute to meeting the objective of the Central West Orana (CWO) Renewable Energy Zone (REZ), namely, to encourage the development of renewable energy projects and to assist in achievement of State and Commonwealth renewable energy targets and greenhouse gas reductions.

4.3.4 Do you have an alternative location you are proposing for your proposed action? *

No

4.3.5 Briefly describe why an alternative location for your proposed action was not possible. *

The most important consideration in the selection of a solar farm location is the potential generating capacity of the land and efficient access to the grid. The ability to access to the site from the classified road network to import construction materials is another important consideration.

The Project location was the subject of planning and environmental constraints analyses, which identified the key risks and constraints to the project, based on preliminary design considerations, the planning and assessment framework and the environment both within and surrounding the project investigation area. The results of these analyses informed the basis for subsequent surveys and assessment and confirmed the suitability of this location for the proposed development.

The Project location provides the following important benefits:

- proximity to the proposed Elong Elong Energy Hub (with capacity to export energy into the grid)
- within a renewable energy zone (REZ)
- zoned RU1 which is a prescribed zone where electricity generating works are a permissible land-use and the environmental and planning constraints can be effectively managed
- conveniently accessed from the Golden Highway
- adequate development footprint size
- suitable topography
- landholder willingness to enter into legal agreements
- suitable distance from potentially sensitive receptors
- suitable distance from major townships (approximately 25 km)
- avoids areas of high biodiversity value where possible
- sited to minimise the visual impact to surrounding properties.

Alternate locations were considered in the screening process. None of these locations had all the attributes of this location and were not considered viable from technical, economic, social and/or environmental standpoints.

4.3.6 Do you have alternative activities you are proposing for your proposed action? *

No

4.3.7 Briefly describe why an alternative activity for your proposed action was not possible. *

A do-nothing option would avoid the residual environmental and social impacts outlined in this EIS; however, it would also prohibit the potential project benefits, including:

- the community would not be able to take advantage of the proposed low-cost renewable energy generation system able to deliver reliable renewable energy to the grid
- associated landowners would not be able to diversify their land-uses and realise the benefits that would accrue to them under the landowner agreements with LSbp
- opportunities for project-related regional employment (and associated regional spend) would not be realised
- direct and indirect benefits to the local and regional economy, including opportunities for local businesses and suppliers, improvements to public infrastructure and population growth
- diversification of local revenue streams
- Spring Ridge Road and Dapper Road would not be upgraded
- the Golden Highway/Spring Ridge Road intersection would not be upgraded
- the project would not contribute to meeting the objective of the CWO REZ, namely, to encourage the development of renewable energy projects and to assist in achievement of State and Commonwealth renewable energy targets and greenhouse gas reductions
- increased energy security.

4.3.4 Alternatives: Impact and mitigation

4.3.4.1 Do these alternatives have a different impact, avoidance, or mitigation measure compared to what you have already provided? *

Yes

4.3.4.2 On World Heritage properties *

No

4.3.4.4 On National Heritage places *

No

4.3.4.6 On the ecological character of a Ramsar wetland *

No

4.3.4.8 Listed threatened species, their habitat, or threatened ecological communities *

Yes

4.3.4.9 Describe how this alternative has different impacts or mitigations from the original proposal relating to listed threatened species, their habitat, or threatened ecological communities. *

The Proposed action and location would have a lesser impact than the same activity undertaken in a different location.

The majority of the Proposed activity is within a highly disturbed environment comprised of exotic agricultural areas and native vegetation in low condition.

Mitigation measures and refinements to areas of vegetation conforming to threatened ecological communities have resulted in the avoidance of 5.87 ha of Box Gum Woodland, listed as critically endangered under the EPBC Act, and 6.41 ha of Grey Box Woodland, listed as endangered under the EPBC Act.

4.3.4.10 Listed migratory species or their habitat *

No

4.3.4.12 Is a Nuclear action *

No

4.3.4.14 On Commonwealth Marine Areas *

No

4.3.4.16 Taking place in or flowing into the Great Barrier Reef Marine Park *

No

4.3.4.18 Impacts a water resource relating to a coal seam gas or large coal mining development *

No

4.3.4.20 On or near Commonwealth Land *

No

4.3.4.22 On Commonwealth heritage places overseas *

No

4.3.4.24 Action undertaken by the Commonwealth or a Commonwealth Agency *

No

4.3.5 Alternatives: Considered alternatives

4.3.5.1 Do you have any other alternative actions, including not taking the action, that you have considered but are not proposing as part of this referral? *

Yes

4.3.5.2 Describe the details of this possible alternative that you have considered but are not proposing. *

A do-nothing option would avoid the residual environmental and social impacts outlined in this EIS; however, it would also prohibit the potential project benefits, including:

- the community would not be able to take advantage of the proposed low-cost renewable energy generation system able to deliver reliable renewable energy to the grid
- associated landowners would not be able to diversify their land-uses and realise the benefits that would accrue to them under the landowner agreements with Lightsource bp
- opportunities for project-related regional employment (and associated regional spend) would not be realised
- direct and indirect benefits to the local and regional economy, including opportunities for local businesses and suppliers, improvements to public infrastructure and population growth
- diversification of local revenue streams
- Spring Ridge Road and Dapper Road would not be upgraded
- the Golden Highway/Spring Ridge Road intersection would not be upgraded

- the project would not contribute to meeting the objective of the CWO REZ, namely, to encourage the development of renewable energy projects and to assist in achievement of State and Commonwealth renewable energy targets and greenhouse gas reductions
- increased energy security.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	EPBC Referral Supplementary Report - 2023.pdf Supplementary report providing further details on the proposed action	23/11/2023	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	LSbp-Integrated-HSE-Policy.pdf Lightsource bp's overarching Health, Safety and Environment Policy	15/03/2022	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	EPBC Referral Supplementary Report - 2023.pdf Supplementary report providing further details on the proposed action	22/11/2023	No	High

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

Type	Name	Date	Sensitivity	Confidence
#1. Document	EPBC Referral Supplementary Report - 2023.pdf Supplementary report providing further details on the proposed action	22/11/2023	No	High

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

Type	Name	Date	Sensitivity	Confidence
#1. Document	EPBC Referral Supplementary Report - 2023.pdf Supplementary report providing further details on the proposed action	22/11/2023	No	High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

Type	Name	Date	Sensitivity	Confidence
#1. Document	EPBC Referral Supplementary Report - 2023.pdf Supplementary report providing further details on the proposed action	22/11/2023	No	High

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

Type	Name	Date	Sensitivity	Confidence
#1. Document	EPBC Referral Supplementary Report - 2023.pdf Supplementary report providing further details on the proposed action	22/11/2023	No	High

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

Type	Name	Date	Sensitivity	Confidence
#1. Link	Matters of National Environmental Significance Significant Impact Guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

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

Type	Name	Date	Sensitivity Confidence
#1. Link	Matters of National Environmental Significance Significant Impact Guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..		High

5.2 Declarations

Completed Referring party's declaration

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

ABN/ACN	28141736558
Organisation name	EMM CONSULTING PTY LIMITED
Organisation address	2065 NSW
Representative's name	Jennifer Lindsay
Representative's job title	Ecologist
Phone	0412086610
Email	Jlindsay@emmconsulting.com.au
Address	

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, **Jennifer Lindsay of EMM CONSULTING PTY LIMITED**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

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

Completed Person proposing to take the action's declaration

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

ABN/ACN	26623301799
Organisation name	LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA PTY LTD
Organisation address	3000 VIC
Representative's name	Diana Mitchell
Representative's job title	Head of Planning
Phone	0409 601 473
Email	diana.mitchell@lightsourcebp.com
Address	181 William St, Melbourne VIC 3000

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, **Diana Mitchell of LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

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

Completed Proposed designated proponent's declaration

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

Same as Person proposing to take the action information.

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

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

I, **Diana Mitchell of LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA 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. *