Silverleaf Solar Farm

State Significant Development Assessment SSD-9358

April 2022

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Executive Summary

International Power Australia (ENGIE) proposes to develop a new 120 megawatt (MW) solar farm approximately 4 kilometres (km) north of Narrabri in the Narrabri Shire Council local government area.

The Department exhibited the Environmental Impact Statement (EIS) for the project and received five public submissions (two objections, two supporting and one providing comment). In addition, 13 government agencies provided advice on the project, including Narrabri Shire Council (Council).

In response to the agency advice and submissions on the project, ENGIE undertook additional assessments and made several minor amendments to the proposed project. These minor amendments would not affect the generating capacity of the project and would lead to better outcomes by avoiding impacts on native vegetation, including Poplar Box woodland.

The key assessment issues for the project are land use compatibility and biodiversity.

The project site current land uses are primarily grazing, with some cropping. No Biophysical Strategic Agricultural Land (BSAL) would be disturbed by the project. The proposed development footprint predominantly comprises Class 5 soils (i.e. moderate-low capability), with 31 ha (8%) of Class 2 land and 15 ha (4%) of Class 3 land, both of which occur in the transmission line corridor.

The project would not significantly reduce the overall agricultural productivity of the region and the Department is satisfied that the site could be returned to agricultural uses in the future.

The project has been designed and refined to avoid and minimise biodiversity impacts, and would avoid any impacts to the Endangered Ecological Communities (EECs) identified during surveys (Brigalow-Belah Open Forest/Woodland EEC). The project also largely avoids impacts to the habitat of five threatened fauna species (black falcon, grey-crowned babbler, eastern freetail bat, little pied bat and yellow-bellied sheathtail-bat) relevant to the project area.

However, it would result in clearing of 0.69 ha of native woodland and 181.46 ha of native grassland, most of which is Category 1 which means it is low quality and does not generate offset credits. The project would also impact on 0.69 ha of woodland habitat for threatened species. All impacts to vegetation and fauna habitat would be offset in accordance with the *Biodiversity Conservation Act 2016*.

The Department has also undertaken a comprehensive assessment of the full range of other potential impacts, including noise, water, dust, visual, heritage, hazards, decommissioning and rehabilitation, land value, workforce accommodation, and community contributions. The Department has recommended a range of detailed conditions, developed in conjunction with agencies and Council, to ensure all potential impacts are effectively minimised, managed or offset.

Overall, the Department considers the site to be suitable for the project as it has good solar resources and available capacity on the existing electricity network and is consistent with the Department's *Large-Scale Solar Energy Guideline*. The project site is located in close proximity to the Newell Highway in a rural area, with relatively limited impacts on surrounding land uses.

The project is consistent with the Commonwealth's *Renewable Energy Target* and NSW's *Climate Change Policy Framework* and the *Net Zero Plan Stage 1: 2020 – 2030*, as it would contribute 120 MW of renewable energy to the National Electricity Market.

The project would also provide flow-on benefits to the local community, including up to 120 construction jobs and capital investment of $191 million. The project would result in benefits to the State of NSW and the local community and is therefore in the public interest.

Contents

1 Project

International Power Australia Pty Ltd (ENGIE), proposes to develop a new State significant development solar farm and associated electricity transmission line, approximately 4 kilometre (km) north of Narrabri in the Narrabri local government area (LGA) (see **Figure 1**).

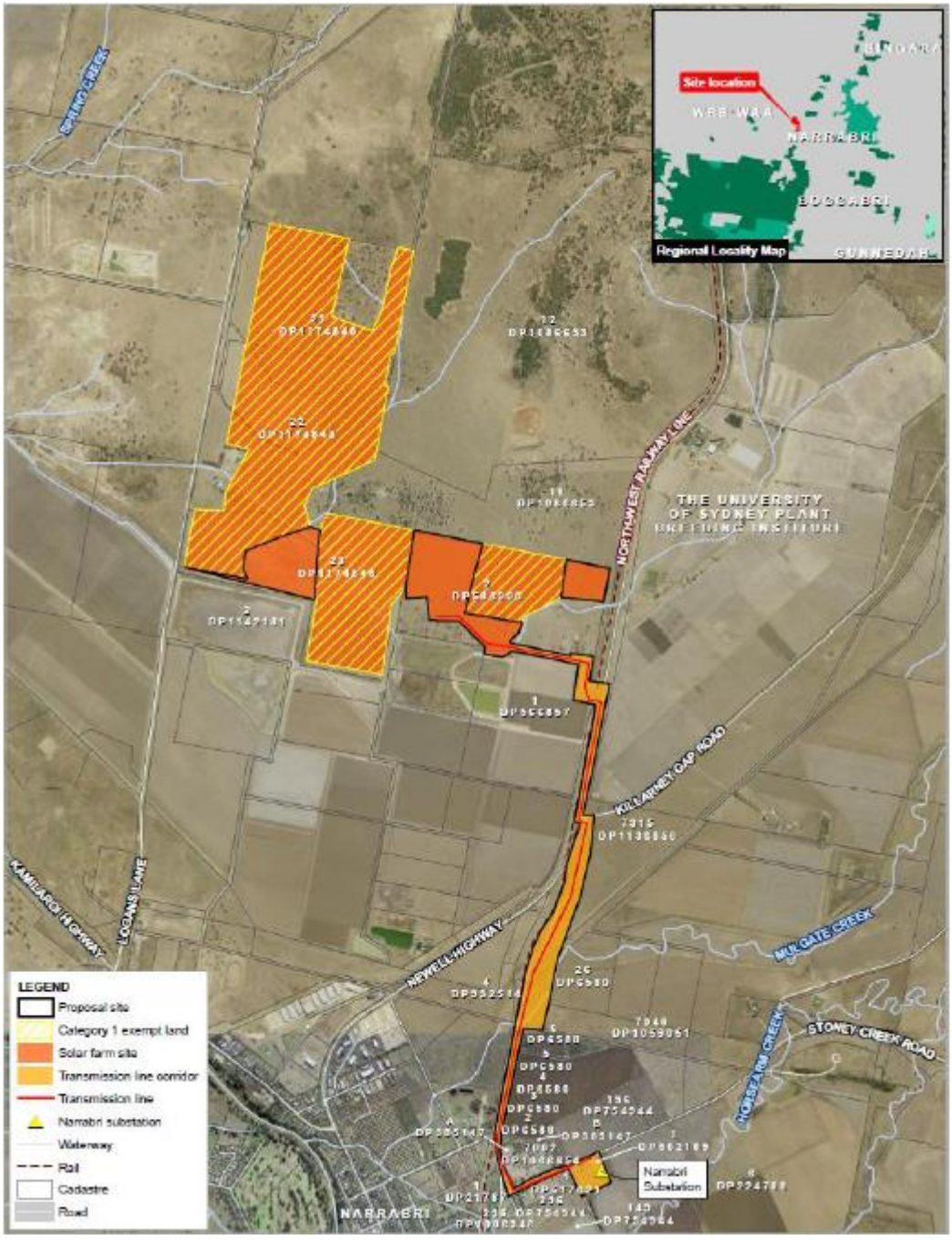


Figure 1 | Regional Context

The project involves the construction of a new solar farm with a generating capacity of approximately 120 MW. It also involves the upgrading and decommissioning of equipment over time. While the capacity of the project may increase over time as technology improves, the footprint of the development would not be permitted to increase without further planning approval.

The key components of the project are summarised in **Table 1**, shown in **Figure 2** and described in the Environmental Impact Statement (EIS) (see **Appendix B**), Submissions Report (see **Appendix E**), Amendment Report (see **Appendix F**) and additional information provided during the Department's assessment of the project (see **Appendix C**).

Table 1 | Main Components of the Project

Aspect	Description
Project summary	The project includes: • a generating capacity of approximately 120 MW; • approximately 240,000 solar panels mounted on single-axis tracking system (up to 4 m high) supported by approximately 34 inverter stations (up to 2.5 m high); • an on-site step-up substation to allow connection to a new 132 kV overhead transmission line to connect to Transgrid's sub-station (located approximately 5 km south-east of the site); and • internal access tracks, an operational and maintenance office (up to 6.75 m high), site storage building (up to 9 m high), staff amenities, vegetation screening, laydown areas, car park and security fencing.
Project area	• Development site footprint: 396.34 ha
Access route	The proposed haulage route is from via Newell Highway, Kamilaroi Highway and Logans Lane
Site entry and road upgrades	• Site entry would be via an existing access point located on Logans Lane and would be sealed. • Upgrades to Logans Lane to a standard that allows heavy vehicle movements, including re-grading and seal extending north for 1.2 km from its intersection with Kamilaroi Highway. • Upgrades to the intersection of Logans Lane and the Kamilaroi Highway with a Basic Right Turn (BAR) treatment.
Construction	• The construction period would be approximately 12 months with a peak period of 5 months. • Construction hours limited to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm.
Operation	The expected operational life of the infrastructure is approximately 35 years. However, the project may involve infrastructure upgrades that may extend the operational life.
Decommissioning and rehabilitation	The project also includes decommissioning at the end of the project life, which would involve removing all infrastructure.
Hours of operation	Daily operation and maintenance would be undertaken Monday to Friday 7am to 6pm, and Saturday 8am to 1pm.
Employment	Up to 120 construction jobs and 6 operational jobs.
Capital investment value	$191 million

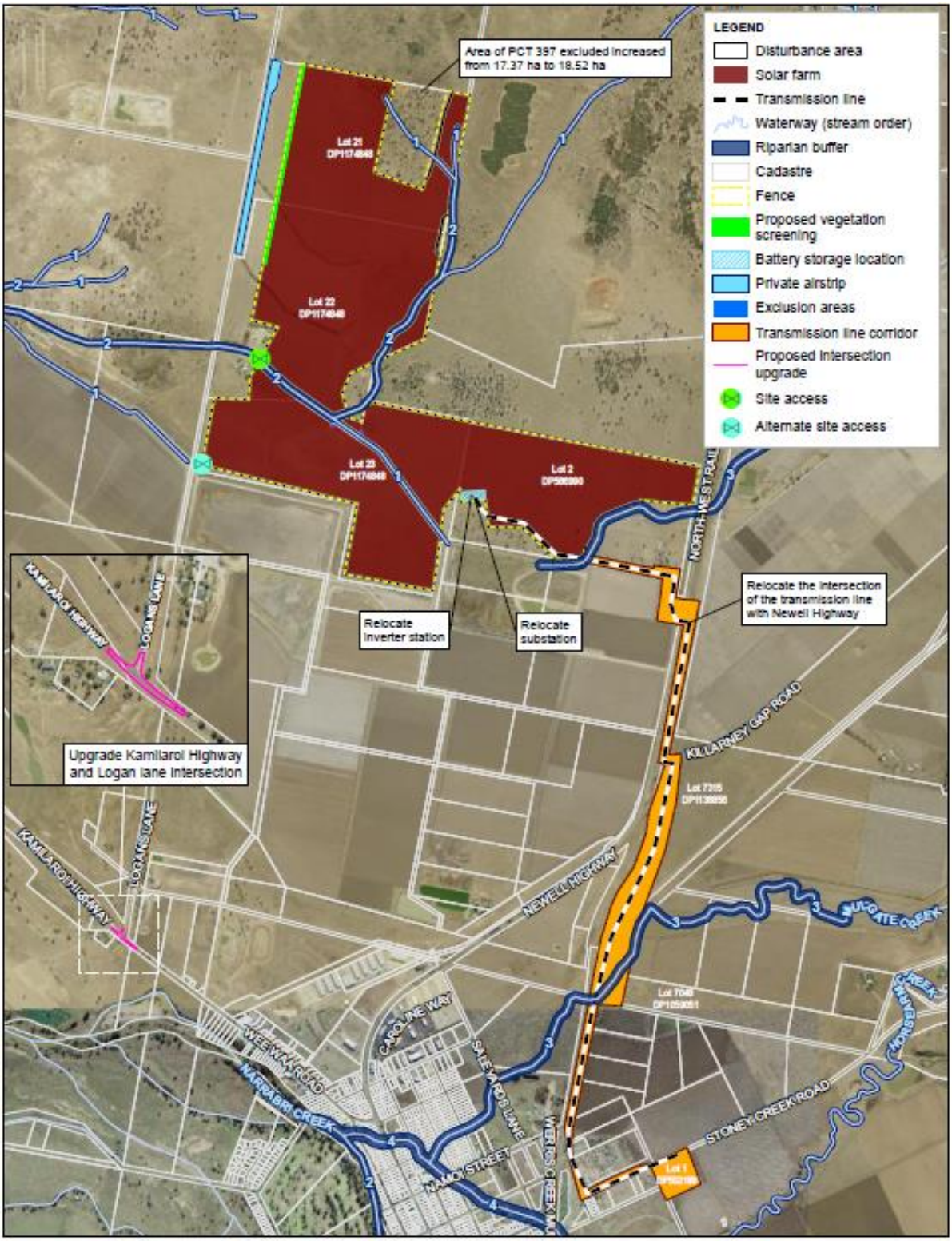


Figure 3 | Project Layout

2 Strategic Context

2.1 Site and Surrounds

The project is located on a 396 ha site in the New England North West region of NSW. The site is zoned RU1 (Primary Production) under the *Narrabri Local Environmental Plan 2012* (Narrabri LEP) and is used for agricultural purposes; predominantly grazing, with some cropping. The surrounding land is also zoned RU1 and used for agricultural purposes (cropping and livestock grazing).

Native vegetation within the development footprint is predominantly disturbed grassland (181.46 ha), with small areas of native woodland (0.69 ha). Approximately 214.19 ha of non-native vegetation within the development footprint includes exotic vegetation, cropped lands, and planted vegetation. The proposed development footprint was designed to avoid site constraints, including Endangered Ecological Communities (EEC) identified during surveys (Brigalow-Belah Open Forest/Woodland EEC) and Aboriginal heritage items.

The site comprises low lying and generally flat topography, predominantly cleared of vegetation for agricultural use. The site is located within the Spring Creek Catchment and is traversed by a number of constructed and natural ephemeral drains.

The project would include a new 132 kV transmission line approximately 5 km long, which would connect to the existing Transgrid substation located on Stoney Creek Road to the south. The transmission line would follow the alignment of the North-West Railway Line, before turning east to the existing substation. The transmission line corridor contains cleared lands and exotic grassland as well as existing transmissions lines. Transgrid has confirmed that the proposed connection into the electricity network via the substation is feasible and has capacity.

The Newell Highway is located to the east of the site, and runs adjacent to the transmission line corridor. Logans Lane is located adjacent to the western boundary of the site.

The development footprint is irregular in shape as it was designed to largely avoid or minimise impacts to mapped BSAL, EEC, native woodland, identified Aboriginal cultural heritage items, farm dams and riparian zones along drainage lines (see **Figure 3**).

Australian Rail Track Corporation's operational North-West Railway Line is adjacent to a portion of the eastern boundary of the site at its closest point. Land zoned IN2 (light industrial) and R1 (general residential) are located in proximity to the Narrabri township. However, these areas are located more than 2 km from the project site.

There are four non-associated dwellings located within 2 km of the solar arrays component of the project. The closest non-associated dwelling to the solar arrays (R005) is located 372 m from the western boundary of the development footprint. The remainder of the non-associated dwellings are located between approximately 2 and 4 km from the solar arrays, with a number of additional dwellings located near the southern portion of the transmission line corridor and Narrabri township.

A privately-owned airstrip known as the Oakville Aerodrome, operated by Aircair Aviation, is located adjacent to the western boundary of the project site. Commercial receiver (R004) associated with the Oakville Aerodrome is located approximately 123 m to the west of the site.

There is existing electricity transmission infrastructure surrounding the site, with a number of transmission lines located to the east and south of the project site, as well as the existing Transgrid substation located approximately 5 km south of the site on Stoney Creek Road.

A Petroleum Exploration Licence (PEL) 238 is held over the project site. The licence holder did not raise any concerns about the project.

2.2 Other Energy Projects

The New England North West region of NSW has attracted interest from solar, wind and energy storage developers given the presence of major transmission lines and existing electricity substations. There is one approved and one proposed solar farm within approximately 30 km of the project site (see **Table 2** and **Figure 4**). There are another four solar farms in the region, between 75 km and 115 km from the project site.

Table 2 | Nearby Solar Farms

Project	Capacity (MW)	Status	Approximate distance from the project (km)
Narrabri South Solar Farm	60	Approved	11
Wee Waa Solar Farm	55	Proposed	30

Given the distance of the Silverleaf Solar Farm from all approved and proposed projects in the region, there would not be material cumulative visual or noise impacts (see **Figure 4**).

Other potential cumulative impacts at a regional level relate to a loss in agricultural land and workforce accommodation. The broader potential cumulative impact on agricultural land in the region is discussed further in **section 5.2**, and workforce accommodation is addressed in **section 5.4**.

An application has not yet been submitted for Wee Waa Solar Farm, and it is therefore unlikely the construction period for this project would overlap with the Silverleaf Solar farm construction. However, construction of the project may overlap with the construction of the approved Narrabri South Solar Farm. Workforce accommodation for this project would likely be sourced from the local and wider region, including neighbouring towns (Narrabri and Gunnedah) and LGAs, as discussed further in **section 5.4**.

In addition, while the surrounding regional road network may experience an increase in traffic numbers, there would be no significant cumulative impact on the local roads along the proposed transport route from these projects, as discussed further in **section 5.4**.

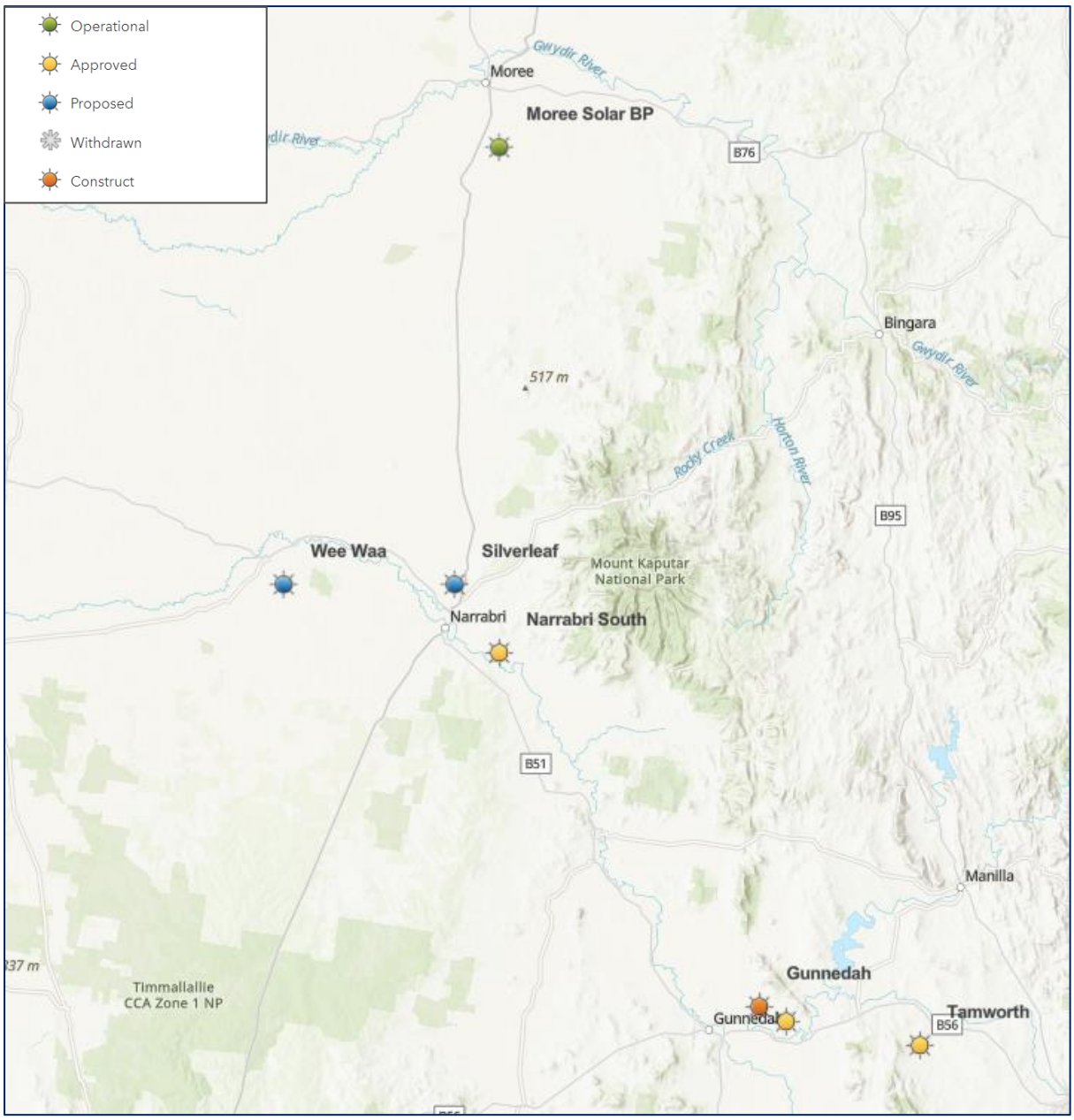


Figure 4 | Other Energy Projects

2.3 Energy Context

The United Nations Framework Convention on Climate Change has adopted the Paris Agreement, which aims to limit global warming to well below 2°C, preferably to 1.5°C, compared with pre-industrial levels. Australia's contribution towards this target is a commitment to reduce greenhouse gas emissions by 26% to 28% below 2005 levels by 2030.

Leading into the United Nations Climate Change Conference of the Parties (COP26) in Glasgow, on 26 October 2021 the Commonwealth government released *Australia's Long Term Emissions Reduction Plan*, setting a pathway to net zero emissions by 2050. The Commonwealth government also communicated an updated Nationally Determined Contribution to the United Nations Framework Convention on Climate Change secretariat, affirming Australia's net zero emissions by 2050 ambition, and its commitment to meeting its existing 2030 target.

At the State level, the NSW Climate Change Policy Framework, released in November 2016, sets an aspirational objective for NSW to achieve net zero emissions by 2050. The *NSW Net Zero Plan Stage 1: 2020 – 2030* (March 2020) builds on the framework and sets out how the NSW Government will deliver on this objective and fast-track emissions reduction over the next decade.

The NSW Government is aligning its 2030 emissions reduction objectives to the projections reported in the *Net Zero Plan Stage 1: 2020-2030 Implementation update* (September 2021) which aims to reduce emissions by 50% below 2005 levels by 2030.

In 2020, NSW derived approximately 20.4% of its energy from renewable sources. The rest was derived from fossil fuels, including 72.8% from coal and 3.1% from gas. However, there are currently no plans to develop new coal power stations in NSW, and the development of renewable energy sources, like wind and solar farms, is experiencing rapid growth.

NSW is one of the nation's leaders in large-scale solar, with 14 major operational projects and 10 under construction or planned to be under construction.

In March 2018, the NSW Government's *Transmission Infrastructure Strategy* identified 10 potential Energy Zones across three broad regional areas including the New England, Central West and South West regions of NSW. The identified energy zones aim to encourage "*investment in new electricity infrastructure and unlocking additional generation capacity in order to ensure secure and reliable energy in NSW*."

Building on this, the NSW Government announced the *NSW Electricity Infrastructure Roadmap* in November 2020, which proposes to deliver Renewable Energy Zones (REZs) including the New England Region REZ. The strategy proposes NSW Government support for this REZ to unlock regional investment and new energy generation infrastructure and for the development of new transmission infrastructure to connect low cost generation to the electricity system.

The New England REZ was declared in December 2021 and is the first step in formalising the REZ under the *Electricity Infrastructure Investment Act 2000*.

The project's alignment with existing Commonwealth and State policies and strategies are considered in **Section 5.1**.

2.4 NSW Solar Guideline

The Department released the *Large-Scale Solar Energy Guideline* in December 2018 to provide the community, industry, and regulators with guidance on the planning framework for assessing large-scale solar projects and identifying the key planning considerations relevant to solar energy development in NSW.

The Guideline recognises that large-scale solar projects could help to reduce reliance on fossil fuels, thereby contributing to reduction in air pollution and greenhouse gas emissions, while also supporting regional NSW through job creation and investment in communities that may not have similar opportunities from other industries.

3 Statutory Context

3.1 State significant development

The project is classified as State significant development under Section 4.36 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This is because it triggers the criteria in Clause 20 of Schedule 1 of *State Environmental Planning Policy) (State and Regional Development) 2011* (SRD SEPP), as it is development for the purpose of electricity generating works with a capital investment value of more than $30 million.

Consequently, the Minister for Planning is the consent authority for the development. However, under the Minister's delegation of 9 March 2022, the Director, Energy Assessments, may determine the development application as Council did not object, there were less than 15 objections from the general public and a political donations disclosure statement has not been made**.**

3.2 Amended Application

In accordance with Clause 55 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulations), a development application can be amended at any time before the application is determined. ENGIE has sought to amend its application, the details of which are summarised in **Section 4.4** of this report.

Under Clause 55 of the EP&A Regulation, an application can be amended with the agreement of the consent authority (i.e. the Minister for this development), however, under the delegation of 9 March 2022, the Director, Energy Assessments can agree to amendments to an application.

The Department has accepted the amended application for the following reasons:

- the project amendments have reduced the impacts of the project as a whole;
- the amended application directly responds to the key issues raised in submissions received by the Department during the exhibition of the original application;
- ENGIE assessed the impacts of the amended project (see **Appendices E** and **F**); and
- the Department made the additional information available online and sent it to the relevant agencies for comment.

3.3 Permissibility

The project site is located wholly within land zoned RU1 – Primary Production under *Narrabri Local Environmental Plan 2012* (LEP), the provisions of which are discussed in **section 5.2.** The RU1 zone includes various land uses that are permitted with and without consent.

As electricity generating works are not expressly listed as permitted with or without consent, they are a prohibited land use under a strict reading of the LEP. However, the LEP expressly references the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) and acknowledges electricity generating works are regulated by the Infrastructure SEPP rather than the LEP. Under the Infrastructure SEPP, electricity generating works are permissible on any land in a prescribed rural, industrial or special use zone, including land zoned RU1 – Primary Production. Consequently, the project is permissible with development consent.

3.4 Integrated and Other Approvals

Under Section 4.41 of the EP&A Act, a number of other approvals are integrated into the State significant development approval process, and therefore are not required to be separately obtained for the proposal.

Under Section 4.42 of the EP&A Act, a number of further approvals are required, but must be substantially consistent with any development consent for the proposal (e.g. approvals for any works under the *Roads Act 1993*).

The Department has consulted with the relevant government agencies responsible for the integrated and other approvals, considered their advice in its assessment of the project, and included suitable conditions in the recommended conditions of consent to address these matters (see **Appendix H**).

3.5 Mandatory Matters for Consideration

Section 4.15 of the EP&A Act outlines the matters that a consent authority must take into consideration when determining development applications. These matters are summarised as:

- the provisions of environmental planning instruments (including draft instruments), development control plans, planning agreements, and the EP&A Regulations;
- the environmental, social and economic impacts of the development;
- the suitability of the site;
- any submissions; and
- the public interest, including the objects in the EP&A Act and the encouragement of ecologically sustainable development (ESD).

The Department has considered all of these matters in its assessment of the project, as well as ENGIE's consideration of environmental planning instruments in its EIS, as summarised in **section 5** of this report. The Department has also considered relevant provisions of the environmental planning instruments in **Appendix G**.

4 Engagement

4.1 Department's Engagement

The Department publicly exhibited the EIS from 4 September 2019 to 1 October 2019 and advertised the exhibition in the *Narrabri North West Courier* and *Wee Waa News,* and notified adjoining landowners adjacent to the property boundary.

The Department also consulted with Council and the relevant government agencies throughout the assessment.

The Department notified and sought comment from Transgrid and Transport for NSW (TfNSW) in accordance with the Infrastructure SEPP, as discussed further in **sections 4.5** and **5.4**.

4.2 ENGIE's Engagement

ENGIE undertook engagement with the local community as detailed in the EIS, including a newspaper advertisement, community meetings, individual meetings with landowners and made information available about the project via project briefing letters and fact sheets. ENGIE also undertook consultation with the Department and relevant government agencies during the assessment process.

4.3 Submissions and Submission Report

During the exhibition period of the EIS, the Department received five public submissions (two objecting, two supporting and one comment).

Advice was also received from 13 government agencies, including Narrabri Shire Council.

Full copies of the agency advice are attached in **Appendix D**.

ENGIE provided a response to matters raised in submissions on the project (see **Appendix E**) and has also provided additional information during the Department's assessment (see **Appendix C**).

4.4 Amended Application

Following consideration of submissions on the project, ENGIE amended its application in January 2021, as detailed in the Amendment Report (see **Appendix F**).

The amended application includes:

- confirmation of site access via Logans Lane;
- removal of solar panels to avoid clearing of Brigalow-Belah Open Forest/Woodland EEC; and
- increased extent of the proposed substation, however, the revised extent would remain within the site boundary and amended extent of surface disturbance.

Despite the proposed changes, the generating capacity of the project would remain unchanged at 120 MW.

The Department provided the Amendment Report to relevant government agencies for review and comment and made it available on the Department's website. As the project amendments refer to a reconfiguration and reduction in the site footprint within the previously provided project site, the Department did not exhibit the Amendment Report.

4.5 Key Issues – Government Agencies

Table 2 | Summary of Government Agency and Utility Provider submissions

Agency	Key Issues	Position	Consideration in this report
Narrabri Shire Council	Road upgrades, biodiversity and weed management, water management and flooding, construction works, bushfire management, rehabilitation and decommissioning, and developer contributions	Comment	Section 5.2, 5.3 and 5.4
Biodiversity Conservation and Sciences	Confirmed the biodiversity development assessment report had been appropriately prepared, and made recommendations regarding the retirement of biodiversity credits	Comment	Section 5.3
Transport for NSW	Recommendations including road and intersection upgrades, particularly at Logans Lane and Kamilaroi Highway	Comment	Section 5.4
Heritage NSW	Confirmed the Aboriginal Cultural Heritage Assessment had been appropriately prepared, and supports ENGIE's approach to mitigation including avoidance of impacts to two isolated Aboriginal Heritage items	Comment	Section 5.4
Water Group	Water sources and licencing, watercourses, flooding and erosion and sediment controls	Comment	Section 5.4
Regional NSW – Mining, Exploration & Geoscience	Petroleum Exploration Licence (PEL) on site and recommended the proponent consult with the titleholder to discuss potential impacts to exploration activities	Comment	Section 5.4
Rural Fire Service	Recommended consent conditions relating to fire management, asset protection zone management, water storage tank specifications and fencing to facilitate property protection activities	Comment	Section 5.4
Heritage Council of NSW	Potential for visual impacts of the new transmission infrastructure on the Old Narrabri Cemetery, a locally listed heritage item, and recommended consent conditions requiring further exploration of mitigation options	Comment	Section 5.4
Hunter New England Population Health	Noted that the importation of potable water to the site may require a Quality Assurance Program (QAS) under the *Public Health Act 2010* and recommended that the proponent prepare a Construction Environmental Management Plan (CEMP)	Comment	Noted
Department of Primary Industries – Agriculture, Environment Protection Authority and Transgrid	No issues	-	Noted

4.6 Key Issues – Community

The Department received five submissions (two objections, two in support and one comment) from the public. The two public submissions objecting to the project were from residents of Narrabri, with the nearest submitter owning land (no dwelling) located adjacent to the site. The other objecting submission was from a resident with a dwelling located approximately 1.7 km from the site.

The key issues raised in the objections relate to land use compatibility, water management and flooding, visual impacts, and concerns about the level of consultation undertaken by the proponent.

The Department's consideration of land use compatibility is detailed in **section 5.2;** water management, flooding and visual impacts are discussed in **section 5.4**; and proponent consultation is discussed in **section 4.2.**

The key issue raised in the commenting submission was that existing overland flows may be affected by the project. Flooding is discussed in **section 5.4.**

The two supporting submissions included views that the project would contribute to NSW's energy demands and assist in the transition from fossil fuels, and that the project would benefit the local economy by generating local employment.

5 Assessment

The Department has undertaken a comprehensive assessment of the merits of the project. This report provides consideration of key assessment issues, namely land use compatibility and biodiversity.

The Department has also considered the full range of potential impacts associated with the project and has included a summary of the conclusions relating to these in **section 5.4.** A list of the key documents that informed the Department's assessment is provided in **Appendix A.**

5.1 Energy Transition

The project aligns with a range of national and state policies, which identify the need to diversify the energy generation mix and reduce the carbon emissions intensity of the grid while providing energy security and reliability.

With a generating capacity of 120 MW, the solar farm would generate enough electricity to power about 44,000 homes. This is consistent with the *NSW Climate Change Policy Framework* of achieving net zero emissions by 2050.

The project, whilst not located in the declared New England REZ, is in an area with direct access to the transmission network with available capacity and abundant solar resources in the New England North West region on land where solar development is permissible with consent under the Infrastructure SEPP.

5.2 Compatibility of Proposed Land Use

Provisions of the Narrabri LEP

The site is located wholly within the RU1 Primary Production zone under the LEP. As discussed in **section 3.3**, a solar farm is a prohibited land use under a strict reading of the LEP. However, based on a broader reading of the LEP, and consideration of the objectives of the RU1 zone and other strategic documents for the region, the Department considers that there is no clear intention to prevent the development of a solar farm on the project site.

Firstly, the LEP expressly references the Infrastructure SEPP and acknowledges that electricity generating works are regulated by the Infrastructure SEPP, rather than the LEP. As described above, a solar farm is permitted with consent on land zoned RU1 under the Infrastructure SEPP.

Secondly, the project is consistent with the objectives of the RU1 zone under the LEP, particularly by:

- encouraging diversity in primary industry enterprises and systems appropriate for the area;
- minimising fragmentation and alienation of resource lands; and
- allowing for non-agricultural land uses that will not restrict the use of other land in the locality for agricultural purposes.

While the Narrabri LGA has traditionally relied upon agriculture, solar energy generation would contribute to a more diverse local industry, thereby supporting the local economy and community. In addition, the proposed solar farm would encourage renewable energy development, which is consistent

with *the Narrabri Shire 2040 Local Strategic Planning Statement (LSPS)* and *Operational Plan 2018-2019.*

The project is consistent with the *New England-North West Regional Plan 2036,* which identifies renewable energy generation as a priority growth sector for the region.

Whilst the Department considers that the project is compatible with the LEP for the above reasons, the project's impacts on agricultural land are further discussed below.

Potential Impacts on Agricultural Land

The project site is within the New England North West region of NSW, with a strong and diverse agricultural sector. About 7.9 million ha (or 80% of the region) is used for agriculture output.

Soil studies undertaken as part of the EIS indicate that soils within the site are primarily classified as Class 5 (approximately 350 ha, 88% of the development footprint) under the Land and Soil Capability Mapping in NSW (OEH, 2017), meaning the land is suited to grazing with occasional cultivation available.

The solar farm component of the project does not include any area of Class 1, Class 2 or Class 3 rural land capability, however the transmission line crosses mapped Class 2 and Class 3 lands. The project would not disturb any Biophysical Strategic Agricultural Land (BSAL).

Areas of Class 2 and Class 3 land are associated with the transmission line as summarised in Table 3.

The project has largely avoided agricultural site constraints identified in the *Large-Scale Solar Energy Guidelines* with an area of less than 12% of the development classified as class 2 and Class 3 land, and with no impacts on any Biophysical Strategic Agricultural Land (BSAL).

Table 3 | Land and Soil Classes

Class	Disturbance Footprint Solar Farm, ha (%)	Disturbance Footprint Transmission Line / Other Ancillary Infrastructure, ha (%)	Total
2	0	31 (7.8)	31 (7.8)
3	0	15 (3.7)	15 (3.8)
5	346 (87)	4 (1)	350 (88.4)
Total	**346**	**51**	**396 (100)**

While the solar farm would reduce the agricultural output of the site while the solar farm remains operational, ENGIE propose livestock grazing to continue within the development footprint, between solar arrays.

The inherent agricultural capability of the land would not be affected by the project due to the relatively low scale of the development, and ENGIE proposes to return the land back to existing levels of agricultural capability. To this end, the Department has included requirements to maintain the site's current land capability, including ground cover within the development footprint, where practicable

during the construction and operation of the project. ENGIE must fully reinstate the agricultural capability of the land following decommissioning of the project, including the requirement to return the development footprint to existing land and soil capability.

Regarding potential cumulative impacts, the project's development footprint combined with the other approved and/or operational SSD solar farms in the New England North West region would be approximately 4,568 ha. The loss of 4,568 ha of agricultural land represents a small fraction (0.06%) of the 7.9 million ha of land currently used for agricultural output. It would therefore result in a negligible reduction in the overall productivity of the region.

The Department notes that neither Council nor DPI Agriculture raised concerns that the project would compromise the long-term use of the land for agricultural purposes, subject to the removal of all project infrastructure at decommissioning.

The potential loss of a small area of predominantly grazing land in the region must be balanced against:

- the broader strategic goals of the Commonwealth and NSW governments for the development of renewable energy into the future;
- the environmental benefits of solar energy, particularly with reducing greenhouse gas emissions; and
- the economic benefits of solar energy in an area with good solar resources and capacity in the existing electricity network.

Based on these considerations, the Department considers that the proposed solar farm represents an effective and compatible use of the land within the region and that the site is suitable to accommodate the development.

The Department considers that the proposal has adequately addressed the site selection process and assessed site constraints in accordance with the NSW Government guidelines.

Potential Impacts on Neighbouring Agricultural Activities

One submission raised concerns regarding potential impacts of the project on neighbouring agricultural activities, including potential impacts on water management (e.g. flooding impacts and ability to harvest water); inhibiting the aerial application of chemical fertilizers; and the potential impacts of new transmission infrastructure and screen planting.

ENGIE has committed in the Submissions Report to ensuring that existing drainage and flow paths are maintained throughout the life of the project. This includes commitments to maintain an existing drain that traverses the site and designing the project to not obstruct overland flow.

ENGIE notes that aerial spraying is subject to licencing and regulation, including management of drift impacts to adjoining lands. Notwithstanding this, ENGIE has committed to coordinating construction and operational activities with surrounding farming activities, including aerial spraying, and notes that once operational, the solar farm could be controlled remotely if required.

The transmission line corridor would be located adjacent to the Newell Highway and North-West Railway Line, and the proposed vegetation screening would occur along the western boundary of the

solar arrays, wholly within the project site. The transmission line and vegetation screening would therefore not impact on neighbouring agricultural activities.

Based on these considerations, the Department considers that the project would not significantly impact neighbouring agricultural activities.

Potential Impacts on Other Land Uses

Mining and Exploration Activities

The site is covered by an expired Petroleum Exploration License held by Santos (PEL 238), which Santos has applied to renew. In response to MEG recommendations, ENGIE further consulted with Santos, who confirmed it had no concerns about the solar project noting no exploration activities are currently proposed in the project area.

Oakville Aerodrome

Privately-owned Oakville Aerodrome is located adjacent to the north-west corner of the site. The aerodrome is operated by Aircair Aviation and has one runway that is approximately 1.1 km in length. Commercial receiver (R004) is associated with the Oakville Aerodrome, and is located approximately 123 m to the west of the site. R004 did not make a submission on the project.

ENGIE has minimised potential operational impacts to the Oakville Aerodrome by incorporating a 176 m buffer between the project footprint and the runway to reduce potential windshear and turbulence to aircraft, and reducing potential visual impacts by implementing visual screening measures, in consultation with the owners of the Oakville Aerodrome.

The Department notes the proposed site is located outside of controlled airspace (wholly within Class G airspace) and is not located in any Prohibited, Restricted and Danger areas.

Based on these considerations, the Department considers that the proposed solar farm would not be incompatible with the continued operation of the Oakville Aerodrome, subject to recommended conditions.

5.3 Biodiversity

The project has the potential to impact biodiversity through clearing for the project footprint.

BCS initially raised concerns that the project Biodiversity Development Assessment Report (BDAR) had not been completed fully in accordance with the NSW Biodiversity Assessment Method (BAM). In its Amendment Report, ENGIE responded to BCS comments with a revised BDAR, including further avoidance of woodland vegetation, and BCS has confirmed no residual concerns.

The site comprises mostly cleared agricultural land with approximately 214 ha (54%) containing predominantly exotic grassland, approximately 182 ha (46%) containing native grassland, and 0.69 ha of native woodland (0.1%). The dominant vegetation is represented by native and exotic pastures, with

one small patch of remnant woodland, degraded and modified as a result of agricultural activities with the understorey affected by livestock grazing.

Native vegetation includes plant community types (PCTs) associated with *Brigalow – Belah Open Forest/Woodland on Alluvial Plains Often Gilgaied Clay from Pilliga Scrub to Goondiwindi (derived native grassland)* (PCT 35)*, Poplar Box- White Cypress Pine shrub grass tall woodland of the Pilliga-Warialda region, Brigalow Belt South Bioregion (derived native grassland)* (PCT 397) and *Belah woodland on alluvial plains and low rises in the central NSW wheatbelt to Pilliga and Liverpool Plains regions (woodland and derived native grassland forms)* (PCT 55).

Avoidance and Mitigation

One Endangered Ecological Community (EEC), *Brigalow-Belah Open Forest/Woodland EEC* (PCT 35), identified on the site during surveys is listed as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) and *Biodiversity Conservation Act 2016* (BC). ENGIE has designed the project layout to avoid impacts to this EEC, and the Department has included requirements to ensure that impacts to this EEC are avoided during the construction, operation and decommissioning of the project.

In response to the concerns raised by BCS during the exhibition of the EIS, ENGIE amended the project design to further avoid areas of native vegetation including 1.15 ha of *Poplar Box – White Cypress Pine Shrub Grass Tall Woodland of the Pilliga-Warialda Region* (woodland form) (PCT397) (see **Error! R eference source not found.**).

Table 4 summarises the vegetation types proposed to be disturbed for the project, as well as the areas requiring assessment and offsets in the BDAR.

Table 4 | Summary of Vegetation Disturbance

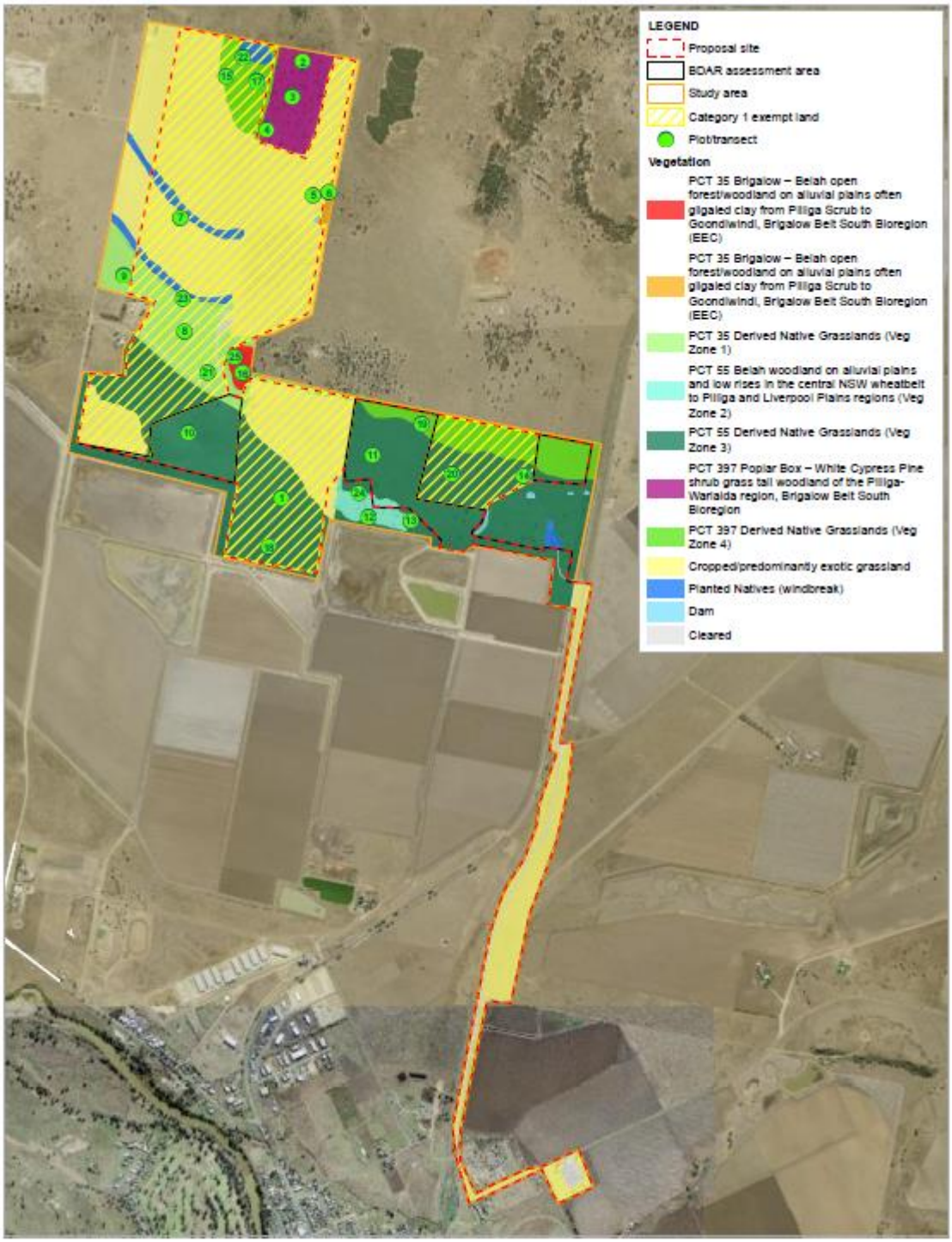
Item	EIS Disturbance Area (ha)	Amendment Report Disturbance Area (ha)	Area Requiring Assessment in the BDAR (ha)	Area of Disturbance Generating 'Ecosystem Credits'
Woodland				
PCT 55 Belah woodland on alluvial plains and low rises in the central NSW wheatbelt to Pilliga and Liverpool Plains regions	0.69	0.69	0.69	0.69
PCT 397 Poplar Box – White Cypress Pine shrub grass tall woodland of the Pilliga-Warialda region, Brigalow Belt South Bioregion	1.15	0	0	0
Derived Native Grasslands				
PCT 35 Derived Native Grasslands	26.81	26.81	0.77[1]	0
PCT 55 Derived Native Grasslands	121.96	121.96	53.89[1]	47.86[2]
PCT 397 Derived Native Grasslands	32.69	32.69	10.71[1]	0
Other				
Planted vegetation	7.88	7.88	-	-
Cropped/ predominantly exotic grassland	198.2	198.2	-	-

Cleared	8.11	8.11	-	-
Total	**397.49**	**396.34**	**66.06**	**48.55**

[1] Excludes 'Category 1' land.

[2] Area generating ecosystem credits reduced to account for establishment of transmission line poles only.

Figure 6 | Vegetation Zones within the Site



ENGIE is proposing a range of mitigation and management measures to address potential indirect impacts on threatened species and communities, including erosion and sediment controls and weed and pollutant management.

While ENGIE has designed the project to avoid and minimise biodiversity impacts, the project would result in residual impacts to native grassland and woodland vegetation, as discussed below.

Native Vegetation

The development footprint contains approximately 182 ha of native grassland and 0.69 ha of native woodland. The majority of this area (122 ha, 67%) is native grassland containing Belah Woodland DNG (PCT 55), with the remainder (33 ha, 18%) comprised of Poplar Box- White Cypress Pine Woodland DNG (PCT 397)., Brigalow-Belah Open Forest/Woodland DNG (27 ha, 15%) and Belah Woodland (PCT 55) (0.7 ha, 0.4%).

In its revised BDAR, ENGIE provided updated offset credit liability calculations and classified areas of 'Category 1' land, which are exempt from offsetting requirements resulting in around 74% of native grassland (133.6 ha) being either Category 1 – exempt land or of sufficiently low quality that it does not generate offset credits. The area requiring assessment was reduced to a total of approximately 60 ha, and the total disturbance requiring offsetting reduced to approximately 49 ha (**Table 4**).

BCS has accepted revised offset calculations and the mapped extent of Category 1 – Exempt Land for the project in the Amended BDAR, which are summarised in **Table 5**.

Table 5 | Native Vegetation Communities, Disturbance Area and Credit Liability

Description and condition	Area Requiring Assessment in the BDAR (ha)	Ecosystem Credits
PCT 55 Belah woodland on alluvial plains and low rises in the central NSW wheatbelt to Pilliga and Liverpool Plains regions	0.69	16
PCT 35 Derived Native Grasslands	0.77	0[1]
PCT 55 Derived Native Grasslands	47.86	679
PCT 397 Derived Native Grasslands	10.71	0[1]
Total	**60.02**	**695**

[1] Biodiversity offset not required for vegetation with a vegetation integrity score <17 in accordance with the BAM.

The Department has recommended ENGIE retire the ecosystem credits outlined in **Table 5** in accordance with the NSW *Biodiversity Offsets Scheme* prior to the commencement of construction of the project.

Threatened Fauna Impacts

Five threatened fauna species listed under the BC Act were recorded in the project area.

ENGIE has designed the project to avoid the majority of woodland habitat, however the project would impact on approximately 0.7 ha of woodland habitat which would provide potential foraging and breeding habitat for these five threatened species. As this habitat corresponds directly with Belah Woodland, the offsets for Belah Woodland would sufficiently offset this impact, and no additional species credit offsets would be required.

There were also three candidate species credit entities identified to have moderate potential to occur at the proposal site.

Suitable habitat for one candidate species, the Australasian Bustard, was identified at the site, however, as targeted field surveys did not detect the presence of this species and the species has not been recorded locally, therefore, the retirement of species credits is not required.

Targeted surveys did not find any Koalas or evidence of Koalas within the survey area. Any habitat within the study area is not considered to be critical to the survival of the Koala.

BCS has reviewed and did not recommend any species credit offset liability for the project.

The Department considers that the proposal is unlikely to have a significant impact on any threatened species or have a significant impact on the biodiversity values of the locality.

5.4 Other Issues

The Department's consideration of other issues is summarised in **Table 6**.

Table 6 | Summary of Other Issues Raised

Findings	Recommendations
Noise	
• Noise generated by the proposed construction activities for the solar arrays are predicted to be well below the 'highly noise affected' criterion of 75 dB(A) and below the 'noise affected' criterion of 45 dB(A) in the EPA's *Interim Construction Noise Guideline* (ICNG) at all non-associated residential receivers, except R005 where a 10 dB exceedance is predicted. • R005 is approximately 372 m west of the solar arrays component of the project. • The Department notes the exceedances at R005 would be short-term (approximately three days), and are expected to occur during installation of steel post foundations for the solar arrays, with impacts reducing as the equipment moves away from this receiver. • Noise generated by the proposed construction of the transmission line corridor infrastructure is predicted to exceed the ICNG 'noise affected' criterion of 45 dB(A) during standard hours for all six residences located along Bailey Street (located on the periphery of Narrabri township), with the closest residence to the transmission line predicted to exceed the ICNG 'highly noise affected' noise criterion of 75 dB(A) when construction works are within approximately 40 m of this residence (which is expected to occur for a period of approximately 2 days). • The Department notes that the ICNG includes provisions for situations where construction noise is above the 'highly noise affected' criterion. In these scenarios, respite periods may be implemented whereby the construction hours are restricted for the activities resulting in high noise exceedances, in consultation with the community. • The Department notes that works close to residences in Bailey Street that would result in these exceedances are short term. • There would be negligible noise during operation of the project and no exceedances of the relevant operational criteria in the EPA's *Noise Policy for Industry* are predicted. • Road traffic noise along Logans Lane, the Kamilaroi Highway and the Newell Highway during the construction of the project would not exceed the relevant day time noise criteria in the EPA's *Road Noise Policy* at any residential receiver along these roads. • Noting the above, the Department considers that the predicted noise impacts are acceptable as any exceedances would be short term, intermittent and limited to standard construction hours.	• Minimise the noise generated by any construction, upgrading or decommissioning activities on site in accordance with best practice requirements outlined in the ICNG. • Comply with the noise management levels as derived from the NSW Noise Policy for Industry (EPA, 2017) at any non-associated residence • Restrict construction hours to Monday to Friday 7 am - 6 pm, and Saturday 8 am - 1 pm unless inaudible at non associated receivers.

Traffic and Transport	
• The main transport route for heavy vehicle deliveries is from Port of Newcastle via New England Highway, Kamilaroi Highway and Logans Lane, which is an unsealed local road providing direct access to the site. • An increase in traffic volumes would occur during the 12-month construction period, with a peak period of 5 months, with up to 60 heavy vehicles and 240 light vehicle movements a day expected during the peak period. • Outside of this peak period, the estimated peak daily movement of heavy vehicles would reduce to approximately 13 heavy vehicle movements. • There would also be a total of 10 to 12 over-dimensional vehicles during the life of the project. • Traffic generation during operations would be negligible with a workforce of up to six full time positions. • While unlikely, the construction period may overlap with and share usage of the State road network with other proposed or approved State significant projects in the New England North West region. This includes the Narrabri South Solar Farm and Wee Waa Solar Farm (if approved). • There is sufficient capacity in the State road network to accommodate the construction traffic. The increase in traffic would have minimal impact and would not impede the ability of surrounding landowners to access their property. • ENGIE, in consultation with Transport for NSW and Council, has committed to road upgrades including Basic Right Turn (BAR) and Basic Left Turn (BAL) treatment at the intersection of Logans Lane and Kamilaroi Highway; upgrade and seal of Logans Lane for a minimum length of 1.2 km from its intersection with Kamilaroi Highway; and sealing of property access at Logans Lane. • By undertaking the requested road upgrades and the implementation of a Traffic Management Plan to manage movements during the construction period, the Department, TfNSW and Council are satisfied that the project would not result in significant impacts to the road network capacity, efficiency or safety	• Undertake the relevant road upgrades to the site access road, Logans Lane, and the Kamilaroi Highway / Logans Lane intersection. • Restrict the number of vehicles during construction, upgrading and decommissioning to the peak volumes identified. • Prepare and implement a Traffic Management Plan, including provisions for dilapidation surveys, details of measures that would be implemented to address road safety and details of the employee bus service.

Visual	
• The site and surrounds comprise flat topography and patches of vegetation located throughout cleared agricultural land. • Narrabri township is located approximately 4 km to the south of the site and the North-West Railway Line and Newell Highway run immediately adjacent to the eastern boundary of the site. • All non-associated residences are located more than 1.2 km from the solar arrays (with the exception of R005), and are anticipated to experience only low levels of visual impact with limited views of the project. • R005 is located approximately 372 m west of the solar arrays at a similar elevation to the solar arrays, and in the absence of mitigation measures, R005 would experience moderate levels of visual impact.	• Establishment of a vegetation buffer to the satisfaction of the Planning Secretary prior to the commencement of construction. • Preparation of a Landscaping Plan to outline the measures that would be implemented to ensure the vegetation buffer achieves the expected level of visual mitigation, as well as a program to monitor its effectiveness.

- Whilst R005 did not object to the project, ENGIE has committed to providing visual screening in the form of a vegetation buffer along a section of the western boundary of the solar arrays, which once established, would reduce the level of visual impact to low.
- For other residences, the Department considers that the existing vegetation, the relatively low height of the proposed infrastructure, the presence of existing infrastructure (Newell Highway, Kamilaroi Highway and North-West Railway Line) and the proposed vegetation buffer, would limit the visual impact of the project for residences and most sensitive viewpoints within 2 km.
- The Department has recommended a Landscaping Plan be developed to the satisfaction of the Secretary to outline the measures that would be implemented to ensure the vegetation buffer achieves the expected level of visual mitigation, as well as a program to monitor its effectiveness.
- In regard to the transmission line corridor, although some residences along Bailey Street are located adjacent to the transmission line and are anticipated to have a low to moderate level of visual impact, the Department considers these impacts to be acceptable given the proximity to Narrabri township, existing electricity transmission infrastructure and the existing industrial and urban visual context, such as the North-West Railway Line, Newell Highway and existing Narrabri Substation.

Siding Springs Observatory

- A consent authority must consider the NSW *Government's Dark Sky Planning Guideline* for any project that is likely to impact the night sky and is within 200 km of the Observatory. The project is located approximately 130 km from the Sliding Spring Observatory.
- During operations some lighting would be present on site, however, this would be limited to the office building and would generally only be used when personnel are on site, such as during maintenance or emergencies.
- The Department has recommended conditions requiring the development to minimise lighting impacts (e.g. by ensuring lighting does not shine above the horizontal).
- Consequently, the Department is satisfied that the project would not affect the observing conditions at the Observatory.

- Requirement to establish suitable ground cover within 3 months following the completion of construction or upgrading activities.
- Recommended conditions to minimise potential for glare and reflection.
- Recommendation condition requiring lighting impacts to be minimised.

Water

Surface Water, Flooding and Erosion

- Two public submissions raised concerns that the project would adversely affect water management and harvesting of water on their properties (through diversion of flow and flooding) as well as impact water quality and erosion.
- The project site includes a number of unnamed ephemeral drainage lines that traverse the site (see **Figure 3**), with flows only observable in these drainage lines following large or prolonged rainfall.

- Design, construct and maintain the project to minimise impacts on surface water and flooding at the site, and ensure existing overland flows to neighbouring properties are maintained as a result of the project.

- The project has been designed to avoid the first and second order drainage line that traverses the southern portion of the site in a north-west to south-east direction, however, crossings of all unnamed drainage lines would be required for internal access tracks, electrical cabling and security fencing.
- No riparian vegetation would be cleared and ENGIE has committed to implement buffer zones consistent with the *Guidelines for Controlled Activities on Waterfront Land* (i.e. 10 m from either side of first order streams, 20 m from either side of second order streams, 30 m from either side of third order streams).
- The Narrabri Flood Study indicates that parts of the proposed site are affected by flooding for the 20% annual exceedance probability (AEP) event and 1% AEP events.
- Flood modelling for a 1% AEP event indicates that floodwaters would not substantially increase and would generally follow the alignment watercourses within the project site.
- ENGIE has committed to ensuring that existing overland flows to neighbouring properties are maintained as a result of the project. This would be achieved through appropriate infrastructure design and management measures, including locating site fencing to not obstruct overland flow and designing and constructing access tracks and associated drains to maintain existing drainage paths.
- Water quality impacts during operation are expected to be minimal with runoff from the site continuing to follow existing drainage patterns to ephemeral waterways.
- Any erosion and sedimentation risks associated with the project can be effectively managed by following the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004). The Department has included these requirements in the recommended conditions and to prepare a Soil and Water Management Plan in consultation with the adjacent property owners.
- With the implementation of these measures the Department considers there would be limited impacts to surface water.

Groundwater

- The project is not expected to adversely affect groundwater resources.
- During construction of the transmission line, excavation would involve installing poles up to a depth of 7 m, which has the potential to intercept groundwater, however, the volume of groundwater to be displaced during construction of the transmission line poles is expected to be minimal.

Water Supply

- The project would require an estimated 20 kilolitres of water per day (around 7 ML per year) during construction (mainly for dust suppression) and 2.5 megalitres of water per year during operation (mainly for cleaning panels).
- It is proposed that water used on site would be sourced from existing on-site farm dams. If insufficient water was available on-site, supplementary water would be sourced from the Narrabri town supply, subject to commercial agreement and trucked to the site.
- Minimise any soil erosion in accordance with the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) manual and ensure the solar project is constructed and maintained to avoid causing erosion on site.
- Unless DPIE Water agrees otherwise, ensure all works are undertaken in accordance with *Guidelines for Controlled Activities on Waterfront Land* (NRAR, 2018).
- Develop a Soil and Water Management Plan in consultation with adjacent property owners.

• Subject to the recommended conditions, the Department considers that the project would not result in significant impacts on water resources.	
Dust	
• Construction of the project involves earthworks for site preparation, vegetation clearance, trenching for cables and construction of access tracks. Other sources of dust would include vehicles travelling on unsealed roads and wind-blown emissions during operations. • The Department is satisfied that dust generated during construction of the project would be managed via the use of water trucks and covering loads, which ENGIE has committed to, as well as developing a process for monitoring dust on-site and weather conditions, to alter management measures as required in a proactive and reactive manner.	• Minimise dust generated by the development.
Heritage	
<u>Aboriginal cultural heritage</u>	
• Surveys identified two previously unrecorded Aboriginal cultural heritage sites within the project site (Silverleaf IF-1 and Silverleaf IF-2), both of which were isolated artefact sites assessed as low significance. • ENGIE has refined the project site to avoid both sites, implementing a 5 m exclusion zone around both sites such that direct impacts would be avoided during construction and operation of the project. • Consultation with RAPs informed the project design and management measures. • If previously identified Aboriginal artefacts or skeletal material are identified during construction of the project all work would cease and an unexpected finds procedure would be implemented. • With these measures, the Department considers that the project would not significantly impact the heritage values of the locality.	• Ensure the development does not cause any direct or indirect impacts on the previously identified heritage items. • Cease works and notify the NSW Police and BCS if human remains are identified over the life of the project. • Development of a Heritage Management Plan, which would include details of the on-going management of identified heritage sites in consultation with the RAPs. • Undertake consultation with Aboriginal stakeholders, prior to construction.
<u>Historic heritage</u> • No heritage items listed on Commonwealth, National or State registers are located within the site. • There is one local heritage item, the Narrabri Old Cemetery (I018) listed on the *Narrabri LEP 2012,* which is adjacent to the transmission line corridor. • The Heritage Council noted the project would not physically impact any State or locally listed heritage items, but recommended further consideration of mitigation measures for potential visual impacts of the proposed transmission line on the Narrabri Old Cemetery historic heritage site. • The Department considers that the proposed transmission line would not significantly impact the visual amenity of the Narrabri Old Cemetery, noting there are existing transmission lines on both sides of the road reserve in the vicinity of the item.	• Consider visual impacts of transmission lines on the Narrabri Old Cemetery at the detailed design stage.

Recommended conditions have also been included for consideration of visual impacts at the detailed design stage, such as spacing of transmission poles. • Noting the above, the Department is satisfied that project would not likely have any adverse impacts on local or State heritage items in the local area.	
Hazards	
• The project site is not identified as bushfire prone land, and due to the lack of vegetation, the bushfire risk is low. • To manage fire hazards, ENGIE would be required to comply with the RFS's *Planning for Bushfire Protection 2019* and prepare a Bushfire Management Plan to manage the fire risk. • The Department is satisfied that the bushfire risks can be suitably controlled through the implementation of standard fire management procedures. • ENGIE completed a preliminary risk screening for the project in accordance with *SEPP No.33 – Hazardous and Offensive Development* (SEPP 33). • The screening concluded that the storage and transport of hazardous materials for the project would not exceed the relevant risk screening thresholds and the project is not considered to be 'potentially hazardous'. • The project would comply with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines for electric, magnetic and electromagnetic fields. • Subject to the recommended conditions, the Department is satisfied that risks associated with the facility would be negligible.	• Ensure that the development complies with the relevant asset protection requirements in the RFS's *Planning for Bushfire Protection 2019* and *Standards for Asset Protection Zones*. • Prepare Bushfire Management Plan in consultation with RFS and Fire and Rescue NSW. • Store and handle all liquid chemicals, fuels and oils used on-site in accordance with all relevant Australian Standards and the EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Handbook*.
Decommissioning and Rehabilitation	
• The Department has developed standard conditions for solar farms to cover this stage of the project life cycle, including clear decommissioning triggers and rehabilitation objections such as removing all above and below ground infrastructure and restoring land capability to its pre-existing agricultural use. • With the implementation of the conditions, the Department considers that the solar farm would be suitably decommissioned at the end of the project life, or within 18 months if operations cease unexpectedly, and that the site be would appropriately rehabilitated.	• Include rehabilitation objectives requiring the site to be rehabilitated within 18 months of cessation of operations such that the site is safe, stable and non-polluting and the land capability is restored to pre-existing use.
Land Values	
• One public submission raised concern that the project could devalue surrounding properties. • The Department notes that: o property values are influenced by a number of factors; o the impacts of the project can be minimised by imposing conditions on the project requiring a range of mitigation measures, including vegetation screening. o the Department considers the amenity impacts of the project on the surrounding residences and road users would not be significant.	• No specific conditions required.

• Noting the above, the Department considers that the project would not result in any significant or widespread reduction in land values in areas surrounding the project.	
Workforce Accommodation	
• Up to 120 workers would be required during the construction period and ENGIE has committed to source workers from the local community including the towns of Narrabri and surrounding areas where possible. • There is potential for construction of the project to overlap with the construction of the approved Narrabri South Solar Farm and ARTC's proposed Narrabri to North Star project, however, accommodation would be sourced from the local and wider region, including neighbouring towns (e.g. Narrabri and Gunnedah) and LGAs, which would be able to accommodate the workforce should the construction periods overlap. • The Department is satisfied that there is sufficient accommodation in the nearby area.	• No specific conditions required.
Community Contributions	
• In response to the Amendment Report, Council noted a Planning Agreement had not been discussed with ENGIE, and requested consideration of a condition of consent requiring a development contribution under Section 7.12 of the EP&A Act, which would equate to 1% of the CIV (approximately $1.9 million). • The Department considered the need for developer contributions in its assessment of this project and whether it would create any additional demand on public services and infrastructure. • The assessment found that the only material additional demand on services and infrastructure related to roads. • As such, the Department has recommended strict conditions of consent that would require ENGIE to pay for all the relevant road and intersection upgrades. Further, ENGIE would be required to pay for the repairs of any project-related impacts on the road network. These conditions have been agreed with ENGIE and Council. • The Department also considered the demand created by the construction workforce (up to 120 workers), as noted above. • Given the relatively low level of employment generated once it is operational (6 workers), the project is unlikely to result in significant additional demand on community services and infrastructure during the operational stage of the project. • It is noted that Council has a Section 7.12 Development Contributions Plan. While the Contributions Plan is a relevant matter for consideration by the consent authority, it is not binding on State significant developments. Further, as outlined above, the Department has considered the demand on public services and infrastructure and is satisfied that its recommended conditions address the only material impact of the project on these matters (i.e. roads). Consequently, the Department does not consider that a Section 7.12 levy is either necessary or warranted in this case.	• No specific conditions required.

6 Recommended Conditions

The Department has prepared recommended conditions of consent for the project (see Appendix H).

The Department consulted with ENGIE and the relevant agencies on the conditions for the project, particularly Council and TfNSW in regard to the road upgrades and maintenance requirements, and BCS to determine the appropriate biodiversity offset requirements for the project.

These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- ensure standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting;
- provide for the ongoing environmental management of the project; and
- provide clear decommissioning and post-operational land use requirement.

The recommended conditions use a risk-based approach that focuses on performance-based outcomes. This reflects current government policy and the fact that solar farms require relatively limited ongoing environmental management once the project has commenced operations. In line with this approach, the Department has recommended operating conditions to minimise biodiversity, amenity, traffic, water, flooding, heritage and bushfire impacts, and required the following management plans and strategies be prepared and implemented:

- Traffic Management Plan;
- Landscaping Plan;
- Biodiversity Management Plan;
- Heritage Management Plan; and
- Emergency Plan.

The recommended conditions also require ENGIE to provide detailed final layout plans to the Department prior to construction.

Other key recommended conditions include:

- biodiversity offsets – retiring biodiversity offset credits in accordance with the NSW Biodiversity Offsets Scheme;
- roads – requiring relevant road upgrades are undertaken prior to the commencement of construction, and maintenance and repair of any damage during construction, upgrades or decommissioning activities;
- visual – establishment of a vegetation buffer and preparation of a Landscaping Plan to outline how the vegetation buffer would be established and a program to monitor its effectiveness, minimising the off-site visual and lighting impacts of the project, including the potential for any glare or reflection, and ensuring the visual appearance of all ancillary infrastructure (including paint colours) blends in as far as possible with the surrounding landscape;
- water and flooding – ensuring the solar panels and ancillary infrastructure (including security fencing) are designed, constructed and maintained to maintain existing flow paths and reduce impacts on surface water, flooding and groundwater at the site;

- heritage – ensuring the development does not cause any direct or indirect impacts on any previously identified Aboriginal heritage items located within exclusion zones or outside the approved development footprint;
- operating hours – undertaking construction, upgrading or decommissioning activities onsite during standard construction hours, unless these are activities that are inaudible at non-associated receivers; and
- fire – ensure that the development complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2019.

7 Evaluation

The Department has assessed the development application, EIS, submissions, Submissions Report, Amendment Report and additional information provided by ENGIE and advice received from relevant government agencies. The Department has also considered the objectives and relevant considerations under Section 4.15 of the EP&A Act.

The project site is wholly located on land zoned RU1, where electricity generating works are permissible with consent under the Infrastructure SEPP.

The site is a rural landscape, with the nearest non-associated residence located approximately 372 m from the western boundary of the solar farm arrays. Other non-associated residences are located more than 1.2 km away from the proposed site.

The site would have direct access to the local and regional road network with its proximity to Newell Highway, and would be connected to an existing Transgrid substation, located approximately 5 km from the site via a new 132 kV overhead transmission line.

The project has been designed to largely avoid key constraints, including amenity impacts to nearby non-associated residences, agricultural land, watercourses, remnant native vegetation and Aboriginal heritage sites. Any residual impacts would be relatively minor and can be managed through the recommended conditions of consent.

The Department acknowledges that ENGIE amended the project, in response to agency advice and submissions, to further reduce impacts by avoiding the clearing of an additional 1.15 ha of native woodland vegetation, inclusion of setbacks from riparian zones along watercourses and classification of the site access point on Logans Lane to avoid access via the Newell Highway.

The project would not result in any significant reduction in the overall agricultural productivity of the region, as it would avoid all areas of BSAL and ENGIE proposes that grazing may be continued within the development footprint. Following decommissioning, land within the project site could easily return to agricultural land as the inherent agricultural capability of the land would not be affected in the long term.

The Department considers that there would be no significant visual impacts on surrounding residences, with distance, intervening topography and vegetation providing screening from non-associated residences and the public road network.

Given the distance of the project from other approved and proposed projects in the region, with the closest project being Narrabri South Solar Farm (approved in December 2018 with construction yet to commence) located 11 km to the south-east of the site, there would be minimal localised cumulative impacts, regarding potential visual and noise impacts.

The solar farm development is a suitable land use for the site as it has good solar resources and available capacity on the existing electricity network located in an area.

Importantly, the project would assist in transitioning the electricity sector from coal and gas-fired power stations to low emissions sources. It would have a generating capacity of 120 MW of clean electricity, which is enough to power approximately 44,000 homes. It is therefore consistent with the goals of the NSW's *Climate Change Policy Framework*, the *Net Zero Plan Stage 1: 2020 – 2030*.

The Department considered the submissions made through the exhibition of the project and the issues raised by the community and agencies during consultation. These matters have been addressed through changes to the project and the recommended conditions of consent. In addition, Council and the agencies consulted supported the project subject to conditions.

To address the residual impacts of the project, including Aboriginal cultural heritage, water, flooding, erosion and hazards, the Department has recommended a range of stringent conditions, developed in consultation with agencies and Council, to ensure these impacts are effectively minimised, managed or offset.

On balance, the Department considers that the project achieves an appropriate balance between maximising the efficiency of the solar resource development and minimising the potential impacts on surrounding land users and the environment. Through job creation and capital investment, the project would also stimulate economic investment in renewable energy and provide flow-on benefits to the local community.

On balance, the project is in the public interest, subject to the recommended conditions of consent (see **Appendix H**).

8 Recommendation

It is recommended that the Director, as delegate of the Minister for Planning:

- **considers** the findings and recommendations of this report; and
- **accepts** and **adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant consent to the application;
- **agrees** with the key reasons for approval listed in the notice of decision;
- **grants** consent for the application in respect of Silverleaf Solar Farm (SSD 9358) as amended, subject to the conditions in the attached development consent; and
- **signs** the attached development consent and recommended conditions of consent (see **Appendix H**).

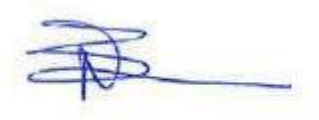
Recommended by:

13/4/2022

Karl Okorn
Team Leader
Energy Assessments

9 Determination

The recommendation is Adopted ~~/ Not adopted~~ by



21/4/2022

Nicole Brewer

Director

Energy Assessments

Appendices

Appendix A – List of Documents

Silverleaf Solar Farm – Environmental Impact Statement, GHD, August 2019
Silverleaf Solar Farm – Response to Submissions, GHD, November 2020
Silverleaf Solar Farm – Amendment Report, GHD, September 2021

Appendix B – Environmental Impact Statement

See the Department's website at:
https://www.planningportal.nsw.gov.au/major-projects/projects/silverleaf-solar-farm

Appendix C – Additional Information

See the Department's website at:
https://www.planningportal.nsw.gov.au/major-projects/projects/silverleaf-solar-farm

Appendix D – Submissions

See the Department's website at:
https://www.planningportal.nsw.gov.au/major-projects/projects/silverleaf-solar-farm

Appendix E – Submissions Report

See the Department's website at:
https://www.planningportal.nsw.gov.au/major-projects/projects/silverleaf-solar-farm

Appendix F – Amendment Report

See the Department's website at:
https://www.planningportal.nsw.gov.au/major-projects/projects/silverleaf-solar-farm

Appendix G – Statutory Considerations

In line with the requirements of Section 4.15 of the EP&A Act, the Department's assessment of the project has given detailed consideration to a number of statutory requirements. These include:

- the objects found in Section 1.3 of the EP&A Act; and
- the matters listed under Section 4.15(1) of the EP&A Act, including applicable environmental planning instruments and regulations.

The Department has considered all of these matters in its assessment of the project and has provided a summary of this assessment below.

Aspect	Summary
Objects of the EP&A Act	The objects of most relevance to the Consent Authority's decision on whether or not to approve the project are found in Section 1.3(a), (b), (c), (e) and (f) of the EP&A Act. The Department is satisfied that the project encourages the proper development of natural resources (Object 1.3(a)) and the promotion of orderly and economic use of land (Object 5(c)), particularly as the project: • is a permissible land use on the subject land; • is located in a logical location for efficient solar energy development; • is able to be managed such that the impacts of the project could be adequately minimised, managed, or at least compensated for, to an acceptable standard; • would contribute to a more diverse local industry, thereby supporting the local economy and community; • would not fragment or alienate resource lands in the LGA; and • is consistent with the goals of the Net Zero Plan Stage 1: 2020 – 2030, and would assist in meeting Australia's renewable energy targets whilst reducing greenhouse gas emissions. The Department has considered the encouragement of ESD (Object 1.3(b)) in its assessment of the project. This assessment integrates all significant socio-economic and environmental considerations and seeks to avoid any potential serious or irreversible environmental damage, based on an assessment of risk-weighted consequences. In addition, the Department considers that appropriately designed SSD solar development, in itself, is consistent with many of the principles of ESD. ENGIE has also considered the project against the principles of ESD. Following its consideration, the Department considers that the project can be carried out in a manner that is consistent with the principles of ESD. Consideration of environmental protection (Object 1.3(e)) is provided in **Section 5.3** of this report. Following its consideration, the Department considers that the project is able to be undertaken in a manner that would at least maintain the biodiversity values of the locality over the medium to long term and would not significantly impact threatened species and ecological communities of the locality. The Department is also satisfied that any residual biodiversity impacts can be managed and/or mitigated by imposing appropriate conditions and retiring the required biodiversity offset credits. Consideration of the sustainable management of built and cultural heritage (Object 1.3(f)) is provided in Section 5.4 of this report. Following its consideration, the Department considers the project would not significantly impact the built or cultural heritage of the locality.
State Significant Development	Under Section 4.36 of the EP&A Act the project is considered a State Significant Development. The Minister for Planning is the consent authority for the project.

	Under the Minister's delegation of 9 March 2022, the Director, Energy Assessments, may determine the project.
Environmental Planning Instruments	The *Narrabri Local Environment Plan 2012* applies and is discussed in sections 2.1, 3.3, 5.1 and 5.4 of this report, particularly regarding permissibility and land use zoning. The project is permissible under the Infrastructure SEPP. In accordance with the Infrastructure SEPP, the Department has given written notice of the project to Council, Transgrid and TfNSW. ENGIE completed a preliminary risk screening and preliminary hazard analysis in accordance with *SEPP No. 33 – Hazardous and Offensive Development*. The Department's consideration of this analysis is discussed in **Section 5.4**. The Department has considered the provisions of *SEPP No. 55 – Remediation of Land*. A preliminary assessment of the land found no contaminated land within the project site, and the Department is satisfied the site is suitable for the development. The Narrabri Local Government Area is listed under *SEPP No. 44 – Koala Habitat Protection*. ENGIE's assessment concluded that while the localised woodland patches of vegetation within the site are considered potential Koala habitat, this habitat is unlikely to be important habitat for the species as the species was not found in targeted surveys. The Department has considered this in **Section 5.3** of this report.

Appendix H – Recommended Conditions of Consent

See the Department's website at:

https://www.planningportal.nsw.gov.au/major-projects/projects/silverleaf-solar-farm