NEVERTIRE SOLAR FARM MODIFICATION 4 REPORT

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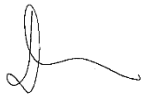
Deborah Dinardo  21 December 2021

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EXECUTIVE SUMMARY

Background

The Nevertire Solar Farm is located approximately one kilometre west of the Nevertire township and 90 kilometres west of Dubbo, within the Warren Shire Council local government area. Development consent for the Nevertire Solar Farm was originally issued by the then NSW Department of Planning and Environment on 5 July 2017 (State Significant Development 8072). Since development consent for the Nevertire Solar Farm was granted, the development has been modified on three occasions. Elliott Green Power the current owner of the Nevertire Solar Farm, propose a further modification to the development for the addition of a Battery Energy Storage System to be constructed to support and integrate with the Nevertire Solar Farm.

Purpose of the Modification Report

This Modification Report has been prepared to support Elliott Green Power's application for modification to the Approved development under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979*. This report describes the modification sought, assesses the impacts of the modification, and proposes any relevant mitigation measures.

Modification description

It is proposed to locate a new battery energy storage system facility on a parcel of land immediately adjacent the Nevertire Solar Farm (identified as Lot 38, DP755292). The proposed Battery energy storage system facility would consist of up to 40, 2.9 metre high shipping container style battery energy storage packs using a lithium technology or similar. The proposed infrastructure would include battery storage containers, converters, ring main units, step-up transformers, high voltage underground feeders, connection to the Nevertire Solar Farm 22 kilovolt switchboard and associated roads, tracks, fences, control building (3 metre high), associated drainage, outdoor lighting and security system and a water tank. The battery energy storage system facility would have a capacity of up to 50 megawatts of power with energy storage of 100 megawatt hours.

In addition, Elliott Green Power is seeking a modification to subdivide Lot 38, DP755292 into two allotments, with one allotment being solely dedicated to the siting of the battery energy storage system facility. The land use of the balance allotment would not change and would remain available for rural purposes. This modification application seeks inclusion of the parcel of land that contains the battery energy storage system facility into the Approved development footprint for the Nevertire Solar Farm.

Engagement

Consultation has occurred with government agencies, stakeholders, and the community, including sensitive receivers proximate to the proposed battery energy storage system facility site, to communicate information about the proposed modification. Relevant government agencies and stakeholders that have been engaged include Warren Shire Council, the Department of Planning, Industry and Environment Biodiversity and Conservation, NSW Environment Protection Authority, DPIE Water Group, NSW Department of Primary Industries, NSW Rural Fire Service, Transport for NSW, Heritage for NSW, Office of the Registrar of Aboriginal Owners, Native Title Service Provider for Aboriginal Traditional Owners, Central West Local Land Services and Warren Macquarie Local Aboriginal Land Council.

Impacts

In accordance with the *State Significant Development Guidelines - Preparing a Modification Report*' (NSW Department of Planning, Industry and Environment, July 2021), a standard level review/assessment of environmental matters assessed for the Approved development as per the *Nevertire Solar Farm Environmental Impact Statement* (NGH Environmental), February 2017) was undertaken as part of the Modification Report to identify any changes in the nature or magnitude/extent of impacts assessed for the Approved development. The assessment indicated that subdivision would not have any adverse impacts. Findings for key matters and potential impacts associated with the battery energy storage system are summarised below:

Biodiversity

The proposed battery energy storage system facility site has been subject to extensive historical agricultural land use. The modification is unlikely to result in a significant impact on threatened species and ecological communities, and it is considered that the Modified development is not likely to result in an increased impact on biodiversity values. Cumulatively, the Modified development would not result in an increased impact on biodiversity values. Given that the proposed modification is not likely to have a significant impact on biodiversity values, a Biodiversity Development Assessment Report is not required. Mitigation measures for minimising the direct and indirect impacts of the modification on biodiversity have been identified. These include micro-siting, planting native vegetation and removing propagules of exotic flora.

Aboriginal heritage

The battery energy storage system facility site has been demonstrably disturbed which would affect the archaeological integrity of cultural deposits and it is considered to have a low archaeological potential. Due to the low archaeological potential of the battery energy storage system facility site, the modified development is expected to have negligible cumulative impacts on Aboriginal heritage. Mitigation measures such as implementing unexpected finds protocols for Aboriginal objects and human remains have been provided to manage impacts related to the Modified development.

Noise

The construction noise assessment identified that predicted LAeq, 15 minute noise levels have the potential to exceed the noise management levels at certain times when noise intensive activities and works are occurring. Best-practice mitigation and management measures have been recommended to manage impacts associated with noise emissions. Operational emissions of the Nevertire Solar Farm with the addition of the battery energy storage system facility is compliant with the *NSW Noise Policy for Industry* (Environment Protection Authority, 2017) requirements for all assessment periods. No further recommendations for noise reducing mitigation or management measures are proposed as part of the proposed modification for the operation of the battery energy storage system facility. Suitable safeguards and provisions for monitoring have been recommended to assist operational noise levels being maintained below the applicable Point Noise Trigger Levels.

Visual

The battery energy storage system facility site is open, cleared rural land with very little remnant vegetation. The site is located within a very flat landscape at approximately 200 metres Australian Height Datum. The four Land Character Zones identified within the local area of the battery energy storage system facility include agricultural, residential, industrial, and the solar farm. Viewpoint analysis indicates that the battery energy storage system facility would result in nil, negligible, or low impacts for 21 selected viewpoints. Safeguard measures have been recommended to assist with maintaining the desired visual quality of the landscape. An assessment against the *Dark Sky Planning Guideline* has also been undertaken and appropriate mitigation measures proposed.

Hazards and risks

Bushfire

The proposed battery energy storage system facility site constitutes a potential bushfire risk however the implementation of recommendations from the Bushfire Assessment Report would reduce the risk of damage and/or harm in the event of a bushfire event. The land surrounding the battery energy storage system facility site supports grassland which forms a bushfire threat that exists in all directions on and surrounding the battery energy storage system facility site. Recommendations have been provided including installation of non-combustible fencing, managing the10 metre Asset Protection Zone as an Inner Protection Area and development of a Bush Fire Emergency Management and Operations Plan to ensure that the battery energy storage system facility meets the *Planning for Bushfire Protection* (Rural Fire Service, 2019) requirements.

Preliminary Hazards Analysis

Preliminary risk screening for storage of dangerous goods indicates that with suitable engineering controls in place the proposed battery energy storage system facility would not be considered an offensive or hazardous development. Potential hazards requiring detailed investigation included hazards associated with Lithium iron phosphate (LFP) batteries in the battery energy storage system facility, specifically overheating and fire and hazards associated with oils escaping from transformers. The findings indicate residual risk of major incidents possible at the battery energy storage system facility after the implementation of control measures is assessed to be low. The potential for offsite impacts from the scenarios reviewed is considered

unlikely, based on the control systems being in place and the distance to the nearest residence being greater than 1 kilometre. Control measures for potential major incidents are provided. Cumulatively the Modified development would not be considered an offensive or hazardous development.

Traffic

The construction and operation of the battery energy storage system facility is not expected to generate a material traffic increase in the wider road network and therefore can be effectively managed via the existing conditions of consent. Cumulatively the Modified development is not expected to generate a noticeable traffic increase in the wider road network given the low vehicular movements that are generated by the operating Nevertire Solar Farm and the infrequent maintenance activity envisaged for the proposed battery energy storage system facility. The mitigation measures for the Approved development including development of a traffic management plan are sufficient to manage potential impacts associated with the battery energy storage system facility.

Additional matters

Additional matters assessed included soils, hydrology, water use and water quality, resource use and waste generation, climate and air quality, historic heritage and community and socio-economic. Assessment indicated that impacts would be minimal. As such the mitigation measures and safeguards included within the environmental impact statement prepared for the Approved development and the relevant conditions of consent for these additional matters are considered sufficient to mitigate any potential impacts that may be associated with the proposed battery energy storage system facility.

Land use impacts

The current land use of the location of the proposed battery energy storage system facility is grazing, and the site has a history of cropping. During operation, the battery energy storage system facility site would change from agricultural land use to power generation. The loss of the 2.5 hectares battery energy storage system facility site for the life of the battery energy storage system facility (20 years) is not considered a significant loss in the locality and grazing activities are able to continue on adjacent parcels of land.

Justification

As an ancillary component to the Nevertire Solar Farm, the proposed battery energy storage system facility would assist in meeting the objectives of the Nevertire Solar Farm which include providing solar electricity generation which would assist the NSW and Commonwealth Governments to meet Australia's renewable energy targets and other energy and carbon mitigation goals. The benefits of the modification would be aligned and consistent with those of the Approved development such as generation of renewable energy, displacement of carbon dioxide equivalent greenhouse gas emissions, diversification of fuel sources for electricity generation and creation of local job opportunities. An additional benefit as a result of the battery energy storage system facility would include facilitating improved electricity dispatchability and storage capacity outcomes for the Nevertire Solar Farm. Due to the benefits of the Nevertire Solar Farm and the additional benefits associated with the modification, it is considered that the battery energy storage system facility would be in the public interest.

This Modification Report also demonstrates that the addition of the battery energy storage system facility does not conflict with the grounds that supported the granting of the consent for the Nevertire Solar Farm. Furthermore, the Modification Report demonstrates that the modification does not conflict with any relevant matters under the *Environmental Planning and Assessment Act 1979* and relevant environmental planning instruments.

TERMS AND DEFINITIONS

Term	Definition
ACHA	Aboriginal Cultural Heritage Assessment
ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
Approved development	The Nevertire Solar Farm State Significant Development 8072
APZ	Asset Protection Zone
BAR	Bushfire Assessment Report
BC Act	*Biodiversity Conservation Act 2016*
BCS	NSW Department of Planning, Industry and Environment Biodiversity Conservation and Science
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BESS facility	The Battery Energy Storage System comprising shipping container style battery energy storage packs, converters, ring main units, step-up transformers, high voltage underground feeders, connection to the Nevertire Solar Farm 22 kilovolt switchboard and associated roads, tracks, fences and control building, associated drainage, outdoor lighting and security system and a water tank.
BIAR	Biodiversity Impact Analysis Report
CoC	Conditions of Consent
CO_2	Carbon dioxide
DECCW	Department of Environment, Climate Change and Water NSW
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
EGP	Elliott Green Power
EIS	Environmental Impact Statement
EMF	Electromagnetic Field
EPA	NSW Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
HIPAP 6	*NSW Department of Planning, Industry and Environment's Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis*
HV	High Voltage
Infrastructure SEPP	*State Environmental Planning Policy (Infrastructure) 2007*
IPA	Inner Protection Area
km	kilometre
kV	kilovolt
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
LLS Act	*NSW Local Land Services Act 2013*
MLRA	Multi-Level Risk Assessment
Modified development	The Nevertire Solar Farm, BESS facility and ensuing subdivision of Lot 38, DP755292 into two allotments.
MW	megawatt
MWh	megawatt hours

NIA	Noise Impact Assessment
NMLs	Noise Management Levels
NPI	*NSW Noise Policy for Industry 2017*
NPW Act	*National Parks and Wildlife Act 1974*
NSF	Nevertire Solar Farm
OEH	NSW Office of Environment and Heritage
PBP	*Planning for Bush Fire Protection 2019*
PCT	Plant Community Types
PHA	Preliminary Hazard Analysis
PNTL	Project Noise Trigger Levels
POEO Act	Protection of the Environment Operations Act 1997
PV	Photovoltaic
RAPs	Registered Aboriginal Parties
RFS	NSW Rural Fire Service
RMU	Ring Main Units
SCADA	Supervisory control and data acquisition
SEPP 33	*State Environmental Planning Policy No 33 (Hazardous and Offensive Development)*
SEPP 55	*State Environmental Planning Policy No. 55 (Remediation of Land)*
SHR	State Heritage Register
SRD SEPP	*State Environmental Planning Policy (State and Regional Development) 2011*
SSD	State Significant Development
TfNSW	Transport for NSW
TIS	Traffic Impact Statement
TMP	Traffic Management Plan
WM Act	Water Management Act 2000
WSC	Warren Shire council

1 INTRODUCTION

1.1 Background

The Nevertire Solar Farm (NSF) (the 'Approved development') is a solar photovoltaic (PV) plant comprising approximately 364,000 solar panels, a substation, maintenance building and staff amenities, and vegetation screening along the southern and eastern boundaries of the development site. The NSF is located approximately one kilometre (km) west of the Nevertire township and 90km west of Dubbo, within the Warren Shire Council local government area (LGA) on Lots 1 and 2, DP1258306.

Development consent for the NSF was originally issued by the then NSW Department of Planning and Environment on 5 July 2017 (State Significant Development (SSD) 8072) and allows for the construction, upgrading and decommissioning of the NSF.

Since development consent for the NSF was granted, the development has been modified on three occasions to revise the development footprint (Mod-1) which was approved on 13 October 2017; facilitate a subdivision and amend the site facilities layout (Mod-2) which was approved 7 May 2018 and use of an adjoining property for temporary access and parking during the construction phase (Mod-3) which was approved on 22 November 2018. Final commissioning of the Approved development was completed on 20 February 2020 and unconstrainted operation at 100 per cent export was approved.

Elliott Green Power (EGP), the current owner of the NSF, proposes a further modification to the project for the addition of a Battery Energy Storage System (BESS) facility to be constructed to support and integrate with the NSF. There is no suitable land available to locate a BESS facility on the allotment for which the original consent was granted. As such it is proposed to locate the BESS facility on about 2.5 hectares of a parcel of land immediately adjacent the NSF (identified as Lot 38, DP755292) (the BESS facility site) and the existing overhead transmission line easement.

The proposed BESS facility would consist of up to 40 shipping container style battery energy storage packs using a lithium technology or similar. It would include battery storage containers, converters, ring main units (RMU), step-up transformers, high voltage (HV) underground feeders, connection to the NSF 22 kilovolt (kV) switchboard and associated roads, tracks, fences and control building. The BESS facility would have a capacity of up to 50 megawatt (MW) of power with energy storage of 100 megawatt hours (MWh) which is two hours at capacity at full power rating.

In addition, EGP is seeking to modify the Approved development to create two allotments from Lot 38, DP755292. The purpose of the subdivision is to partition off a parcel that would be solely dedicated to the siting of the BESS facility. The BESS facility would occupy allotment one which would be approximately 2.5 hectares. Allotment two would be approximately 21.5 hectares and would not incur any changes to its current land use which is grazing.

A locality map, including aerial view of the site is provided in Appendix A.1.

1.2 Applicant

The applicant is EGP, an independent power producer with over 300MW of operating solar PV projects in Australia, comprising the 98MW Susan River Solar Farm and 78MW Childers Solar Farm in south-east Queensland and the 132MW NSF in NSW.

1.3 Purpose of this Modification Report

This Modification Report supports EGP's application to seek a modification to SSD8072 under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to construction and operate a new BESS facility and ancillary infrastructure on a parcel of land immediately adjacent to the NSF.

This Modification Report describes, in detail, each element of the modification sought, assesses the potential economic, environmental, and social impacts of the modification, and proposes any relevant mitigation measures. This document has been prepared generally in accordance with the '*SSD Guidelines - Preparing a Modification Report*' (NSW Department of Planning, Industry and Environment (DPIE), July 2021).

2 MODIFICATION DESCRIPTION

2.1 Overview of the modifications

The modifications to the NSF are illustrated in Appendix A. An overview of the proposed modification is as follows:

- The construction, operation and decommissioning of a BESS facility to support and integrate with the NSF. It is expected that the BESS facility would consist of up to 40 shipping container style battery energy storage packs using a lithium technology or similar. It would include battery storage containers, converters, RMU), step-up transformers, HV underground feeders, connection to the NSF 22kV switchboard and associated roads, tracks, fences and control building.
- Subdivision of Lot 38, DP755292 into two allotments, one to be solely dedicated to the siting of the BESS facility. The other allotment would be retained for its existing land use.

Inclusion of the parcel of land that contains the BESS facility into the Approved development footprint for the NSF.

Table 2-1 provides a comparison of the Modified development to the Approved development.

Table 2-1: Comparison of the Modified development to the Approved development

Element	Approved development	Modified development
Project area		
Approved Development Footprint	Lot 1 DP 1258306 and Lot 2, DP 1258306	Lot 1 DP 1258306 and Lot 2, DP 1258306 and a portion of Lot 38, DP755292
Estimated land clearance	200 hectares	202.5 hectares
Estimated construction footprint	200 hectares	202.6 hectares
Estimated operational footprint	200 hectares	202.6 hectares

2.2 Description of each of the modifications

A detailed description of the modification is provided below. A description of the modified development is provided in Appendix B. A detailed layout of the BESS facility and subdivision boundaries is provided in Appendix A.2 - Appendix A.4. A modified development layout is also provided in Appendix A.1.

2.2.1 Subdivision of land

The modification would include subdivision of Lot 38, DP755292 which is located immediately adjacent to the NSF, into two allotments as follows:

- Allotment one would accommodate the BESS facility. The indicative site layout provides that the lot would be approximately 2.5 hectares. Subject to ongoing discussions with the landowner EGP may purchase the land on which the BESS facility is proposed to be located, or enter into a lease agreement, as per the arrangement for the NSF
- Allotment two would be approximately 21.5 hectares. This larger of the two allotments of the subdivided Lot 38 would not incur any changes to its current land use which is grazing.
- Subdivision boundaries are provided in Appendix A.2.

2.2.2 BESS facility

Key features

The proposed BESS facility would consist of the following, subject to original equipment manufacturers (OEM) final design:

- Preliminary construction works and some small temporary works such as construction site sheds and compounds.
- A 2.5-hectare portion of land within the existing parcel of land identified as Lot 38 DP755292
- Access road and maintenance track
- Boundary security fencing
- Up to 40 shipping container style (12.2m long 2.9m wide 2.6m high) of battery storage (20 containers: 7.2m long, 1.7m wide 2.5m high)
- Converter kiosks and RMU/step-up transformer kiosks (dimensions subject to OEM final design).
- 22kV underground feeder cables
- Control building (typically 10m long 5m wide and 3m high; typically, grey/white)
- Connection to existing NSF 22kV switchboard
- Associated drainage, outdoor lighting and security system
- Water tank (5m diameter and about 30kL).

A detailed layout of the BESS facility is provided in Appendix A.3 and Appendix A.4.

Access

Access to the BESS facility would be via the existing NSF access road which connects with the Mitchell Highway (A32). An internal unsealed spur road would be built from the existing NSF access road into the BESS facility.

Grid connection

It is proposed that the BESS facility would be connected to the NSF 22kV switchboard via two or three 22kV underground cable feeders. The NSF 22kV switchboard is an existing switchboard located inside the NSF 22kV switchboard building. The NSF 22kV switchboard has a split bus (there are two main HV buses) with an existing two spare circuit breaker bay on each bus. There would be four spare bays in total. The BESS facility would connect to two or three bays. The NSF 22kV bus is “behind the meter” which means that it is on the generator side of the grid connection. The NSF 22kV switchboard is connected to the grid via the Essential Energy 132kV NSF substation.

Construction

Activities

Construction of the BESS facility would likely include the following activities:

- Site survey, inspection and mobilisation
- Build access roads, site tracks and temporary works
- Site clearing, grubbing, contouring, levelling and compacting
- Trenching for cabling and concrete footings (approximately one m deep)
- Concrete slabs for BESS facility containers
- Placement of BESS facility containers/panels and HV kiosks
- Construction of buildings and fencing
- Augmentation to existing 22kV switchboard (i.e., connection of the underground feeder cables to the switchboard)
- Electrical connections and testings
- Commission system

- Demobilisation.

Footprint

The BESS facility site is 175m x 140m providing an overall area of 25,085 square metres (2.5 hectares), with all construction activities occurring inside this area. The construction footprint for the 22kV cable route is approximately 150m long and 10m wide. Of this approximately half is outside of the BESS facility footprint. The total construction footprint would be about 25,835 square metres (approximately 2.6 hectares).

Plant and equipment

The construction would likely require the following plant and equipment:

- De-mountable office, amenities and ablution blocks and sheds
- Portable storage/tool containers
- All terrain forklifts
- Mobile cranes
- Water trucks and tanks
- Excavators and trenching machines
- Graders
- Compactors
- Light vehicles
- Front end loaders
- Dumpers
- Concrete pumps and trucks
- Elevated work platforms
- Concrete saws and grinders
- Mobile generator
- Heavy rigid trucks. articulated trucks and low loaders.
- Temporary fencing.

Materials and components

The BESS facility is expected to require the following materials and components:

- Estimated 0.3 megalitres of water for compaction and dust suppression
- 16 tonnes of steel mesh reinforcement
- 400 cubic metres of pre-mixed concrete
- 3000m of HV, LV and earthing cable
- Typically, up to 10 RMU kiosks (subject to OEM final design)
- Up to 40 BESS facility containers/panels
- De-mountable control room
- Sundry other miscellaneous and temporary materials and equipment.

Duration and hours

The design and construction of the BESS facility would be undertaken over a period of about 12 months. This would be divided into roughly a three-month design period and nine months for construction, testing and commissioning.

Construction would be undertaken during standard construction hours (Monday-Friday 0700-1800, Saturday 0800-1300 and no Sunday or public holiday work).

Workforce

At its peak, the BESS facility would have a maximum work force of 50 staff on site. The supply of staff would be based on the availability of project staff supplemented by suitably experienced local workers.

Traffic volumes

There would be an average of approximately 20 light and heavy vehicles used daily which would equate to an average of 40 vehicle movements (in and out) per day. Vehicle movements are expected to peak at approximately 40 light and heavy vehicles (80 movements (50 light and 30 heavy)) per day during the busiest period.

Water supply

The construction would require approximately 300kl of water for compaction and dust suppression. The water would be sourced locally from Nevertire or from groundwater sources and would be trucked to site as and when required.

Operation

Life expectancy

The BESS facility is anticipated to have an operational design life of 20 years. This is limited by some components which would be replaced or upgraded as required.

Workforce

The BESS facility would be un-manned and there would be no permanent dedicated operational personnel. Periodic maintenance required for the BESS facility would be performed by staff from the NSF.

Security

A 2.4m high security fence would be installed around the boundary of the BESS facility. It would consist of wire mesh with three barbs on top and a double vehicular gate for egress.

The vehicular gate would be located on the western side of the BESS facility and an emergency pedestrian gate would be located on the eastern side.

Essential services

The following services would be provided for the BESS facility:

- Power - LV power would be provided to the control building and local lighting via a HV/LV auxiliary step-down transformer and switchboard
- Water - Potable water would be sourced from the roof catchment of the control building and stored locally
- Sewer - There would not be any sewer service required. Amenities would be available at the NSF
- Drainage - There would be no interruption to the overland flow of water. There are no significant local waterways that would be impacted by the development

- Access – An internal unsealed spur road would be constructed off the existing access road to the NSF.

Typical operating scenario

The BESS facility would primarily be on automatic control 24 hours per day 7 days per week with minimal human intervention. The functioning of the BESS facility would typically be controlled by the BESS facility control system. This control system would automatically determine the state of charge or dis-charge as required.

2.3 Conditions to be modified

A consistency review was undertaken to determine whether the Modified development was able to meet Conditions of Consent (CoC) (Appendix C). The review found that the proposed modification would not meet three CoC.

Condition 2 of Schedule 2 of the Development Consent states that the development must be "*generally in accordance with the EIS"*. As part of the modification for the BESS facility there would be an increase in the development footprint from 200 hectares to 202.6 hectares. Therefore, the modified layout may be considered as not complying with this CoC. As such, a change to this CoC is being sought.

Condition 6 of Schedule 2 of the Development Consent requires that "*over time, the Applicant may upgrade the solar panels and ancillary infrastructure on site provided these remain within the approved development footprint of the site. Prior to carrying out any such upgrades, the Applicant must provide revised layout plans of the development to the Secretary incorporating the proposed upgrades"*. As above, given the change in the development footprint by 2.6 hectares, the modified layout may be considered as not complying with this CoC. As such, a change to this CoC is being sought.

Condition 13 of Schedule 2 of the Development Consent provides that "*The Applicant may subdivide Lot 26 DP755292 to create two new allotments, in accordance with the EIS and the requirements of the EP&A Act and EP&A Regulation"*. Given that the modification involves subdivision of Lot 38 DP 755292, the modified layout may not be complying with this CoC. As such, a change to this CoC is being sought.

In addition, **Appendix 1** General Layout of Development and schedule of lands - The modified layout may be considered as not complying with Appendix 1. As such, a change to Appendix 1 is being sought.

Schedule of Lands -project Site *currently states"*

Lot Number	***Deposit Plan (DP)***
26	755292
81	132913

The modified layout may be considered as not complying with the Schedule of Lands. As such, a change to the Schedule of Lands is being sought.

All other CoC can be met by the Modified development.

2.4 The development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted

The NSF was originally approved under Section 4.38 of the EP&A Act as a SSD through the application of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Under Section 4.55 of the EP&A Act an SSD can be modified. This can be done where the Modified development remains 'substantially the same' as the Approved development for which consent was granted. An applicant can apply to the Minister for Planning and Public Spaces to modify an SSD approval and lodge a request for assessment of a modification.

Clause 4.55(2) of the EP&A Act refers to *other modifications*. It states that;

A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:

a) *it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all)*

This Modification Report addresses this provision. Section 1.1 indicates that the Modified development does not conflict with the grounds that supported the granting of the consent.

Section 2.1 and 2.2 sets out the description of the modification. The proposed BESS facility would support and integrate with the NSF. In addition, the BESS facility would be intrinsically linked to the solar farm via the same existing connection to the network as the solar farm (Section 2.2.2). The proposed BESS facility would therefore be associated with and ancillary to the NSF. As such the proposed BESS facility and the associated subdivision is considered part of and substantially the same as the Approved development.

Furthermore Section 5 describes the nature and level of environmental impacts that would result from the BESS facility and finds that the additional impacts would be minimal.

3 STATUTORY REQUIREMENTS FOR THE MODIFICATION

3.1 Planning approval pathway

Under Section 4.55(2) of the EP&A Act an SSD can be modified where the Modified development remains 'substantially the same' as the Approved development for which consent was granted.

3.1.1 Consent authority

Pursuant to Section 4.5(a) of the EP&A Act, the consent authority for the modification application is the Minister for Planning and Public Spaces (although the Minister has delegated this function to DPIE).

3.2 Permissibility

3.2.1 Subdivision of land

Under the Warren LEP Lot 38, DP755292 zoned RU1 Primary Production. The minimum lot size, as shown on the Warren LEP Lot Size Map, is 1000 hectares. Given the proposed lots are under the minimum lot size, the proposed subdivision is not permitted under clause 4.1 of the Warren LEP. Under clause 4.2 of the Warren LEP, subdivision for the purpose of primary production may create lots under the minimum lot size where the lot does not hold a dwelling. The proposed subdivision is not permitted under clause 4.2 of the Warren LEP given the purpose of the subdivision is not primary production.

Under Section 4.38(3) of the EP&A Act, consent for SSD may be granted despite the development being partly prohibited by an environmental planning instrument, therefore it is considered that modification to subdivide Lot 38, DP755292 is permissible.

3.2.2 BESS facility

Under the Warren LEP electricity generating works is not specified as permitted without consent or permitted with consent in the land use table for zone RU1 and is therefore considered prohibited development. However, under clause 34 of *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. Land which is zoned RU1 Primary Production is a prescribed rural zone for the purposes of clause 34 of Infrastructure SEPP. Accordingly, the proposed BESS facility is permissible.

Mandatory matters for consideration

Mandatory matters for DPIE to consider before granting approval for the modification are summarised in Table 3-1 with cross-references to the relevant sections of the Modification Report where it is addressed in more detail.

Table 3-1: Mandatory matters for consideration under the EP&A Act and relevant environmental planning instruments

Statutory reference	Mandatory consideration	Section in the Modification Report
EP&A Act		
Section 4.55 (2)(a)	The consent authority must be satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all)	Section 2.4
Infrastructure SEPP		
Clause 45	Before determining an application for modification of a consent the consent authority must give written notice to TransGrid and Essential Energy, inviting comments about potential safety risks, and take into consideration any response that is received within 21 days after the notice is given.	Section 4.1.2
State Environmental Planning Policy No 33—Hazardous and Offensive Development (SEPP 33)		
Clause 13	A consent authority must consider - • current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development, and • whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply, and • in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and • any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application), and any likely future use of the land surrounding the development.	Section 5.6, 5.8, 6 and Appendix G.6
State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)		
Clause 7	The consent authority must be satisfied that the BESS facility site is suitable for the development proposed to be carried out or would be suitable if appropriate remediation is undertaken.	Section5.8 and 6.3
Warren LEP		
Clause 5.10	The consent authority must consider the effect of the proposed modification on the heritage significance of the place and any Aboriginal object and notify local Aboriginal communities, about the application and take into consideration any response received	Section 5.3 and Appendix G.2
Clause 6.5	The consent authority must be satisfied that services (water, electricity, sewage, drainage, and access) is available.	Section 2.2.2

Table 3-2: Mandatory matters for consideration under Section 4.15 of the EP&A Act

Mandatory consideration	Section in the Modification Report
Consideration under Section 4.15 of the EP&A Act	
Relevant environmental planning instruments: • Infrastructure SEPP	Section 3.3

Mandatory consideration	Section in the Modification Report
• SEPP 33 • State Environmental Planning Policy No. 55 - Remediation of Land • Warren LEP	
The regulations	Section 3.4
The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	Section 5
The suitability of the site for the development	Section 5.8 and 6.3
The public interest	Section 5.8 and 4

3.3 Relevant environmental planning instruments

3.3.1 Infrastructure SEPP

As discussed in Section 3.2 the proposed BESS facility is permissible under Clause 34 of the Infrastructure SEPP.

The BESS facility site is located near electrical infrastructure and under Clause 45 there is a requirement to consult with TransGrid and Essential Energy as the electricity supply authorities for the area. It is expected that DPIE would refer this modification application to TransGrid and Essential Energy to provide comment on the Modified development. It is noted however that EGP have already notified the electricity supply authorities. Details on consultation is provided in Section 4.

3.3.2 SEPP 55

Clause 7 of State Environmental Planning Policy No. 55 - Remediation of Land requires that the remediation of land is to be considered by a consent authority in determining a development application. A review of the NSW Environment Protection Authority (EPA) Contaminated Land Record and List of NSW contaminated sites notified to the EPA, undertaken on 30 September 2021, confirmed there are no known contaminated sites in or near the BESS facility site. As such the risk of the site being contaminated is low.

3.3.3 SEPP 33

SEPP 33 establishes a comprehensive test by way of a preliminary screening assessment and preliminary hazard analysis (PHA) to determine the risk to people, property and the environment. Under Clause 12 Development for the purposes of a potentially hazardous industry must prepare a preliminary hazard analysis in accordance with the current circulars or guidelines published by DPIE and submit the analysis with the development application. A Preliminary Screening Assessment and PHA was undertaken in accordance with the SEPP (Appendix G.6). The findings of the study are summarised in Section 5.6.

Clause 13 of SEPP 33 provides for conditions that must be satisfied before DPIE may grant approval for the proposed modification, as summarised in Table 3-1.

3.3.4 Warren LEP

Clause 2.3 (2) of the Warren LEP specifies that *the consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.* The objectives of RU1 Primary production land use zone include:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area*
- *To minimise the fragmentation and alienation of resource lands*

- *To minimise conflict between land uses within this zone and land uses within adjoining zones*
- *To protect, enhance and conserve agricultural land in a manner that ensures that the primary role of land is for efficient and effective agricultural pursuits, managed in accordance with sustainable natural resource management principles*
- *To protect water resources in the public interest*
- *To protect areas of local, state, national and international significance for nature conservation, including areas with rare plants, wetlands and significant habitat*
- *To permit rural industries that do not have a significant adverse impact on existing or potential agricultural production on adjoining land*
- *To conserve and protect the Macquarie Marshes by encouraging and managing appropriate land uses and agricultural activities.*

As discussed in Section 3.2.2 electrical generation is prohibited in this zone. However, the ISEPP allows for the BESS facility with consent. As discussed in Section 3.2.1 Subdivision of Lot 38 DP755292 is not permitted under the Warren LEP however under the EP&A Act the subdivision is considered permissible.

While the BESS facility would impact on land available for primary production, the proposed use would be reversible such that the land can return to cropping and grazing at the end of the BESS facility' life (about 20 years).

Clause 5.10 of the Warren LEP provides specific provisions for the protection of heritage items, heritage conservation areas, archaeological sites, Aboriginal objects and Aboriginal places of heritage significance within the Warren LGA. There are no known Aboriginal objects or places of heritage significance located within the BESS facility site (refer Section 5.3 and Appendix G.2).

3.4 Environmental Planning and Assessment Regulation 2000

Subclause 115(1) of the EP&A Regulation details the information required to be submitted with an application to modify a development consent under section 4.55 of the EP&A Act.

Subclause 92(1)(d) provides that for the purposes of Section 4.15 of the of the EP&A Act the consent authority must consider the *Dark Sky Guideline* (NSW Department of Planning and Environment, 2016) in the case of SSD on land less than 200km from the Siding Spring Observatory.

Table 3-3 indicates where these details have been addressed in the Modification Report.

Table 3-3: Requirements under the EP&A Regulation

Details	Section in the Modification Report
Clause 115	
An application for modification of development consent must contain (a) the name and address of the applicant	Section 1.2
(b) a description of the development to be carried out under the consent (as previously modified)	Appendix B
(c) the address, and formal particulars of title, of the land on which the development is to be carried out,	Section 1.1 and 2
(d) a description of the proposed modification to the development consent	Section 1.1
(e) a statement that indicates either— (i) that the modification is merely intended to correct a minor error, misdescription or miscalculation, or (ii) that the modification is intended to have some other effect, as specified in the statement,	Section 2
(i) a description of the expected impacts of the modification	Section 5
(j) an undertaking to the effect that the development (as to be modified) would remain substantially the same as the development that was originally approved,	Section 2.4

Details		Section in the Modification Report
(k)	in the case of an application that is accompanied by a biodiversity development assessment report, the reasonable steps taken to obtain the like-for-like biodiversity credits required to be retired under the report to offset the residual impacts on biodiversity values if different biodiversity credits are proposed to be used as offsets in accordance with the variation rules under the Biodiversity Conservation Act 2016,	Not relevant. Refer section 4.1.2, 5.2, Appendix E and Appendix G.1
(l)	if the applicant is not the owner of the land, a statement that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner)	Section 4.1.5
(m)	a statement as to whether the application is being made to the Court (under section 4.55) or to the consent authority (under section 4.56)	Section 1.3 and 2.4
Subclause 92(1)(d)		
Consideration of the *Dark Sky Guideline* (NSW Department of Planning and Environment, 2016)		Section 5.5.1, 5.5.2, 5.5.3

4 ENGAGEMENT

4.1 Engagement carried out

Consultation has occurred with government agencies, stakeholders, and the community throughout the planning and design phase of the proposed BESS facility. Evidence of consultation with government agencies and the community is provided in Appendix E and summarised below.

4.1.1 Department of Planning, Industry and Environment

Since June 2021 RPS has engaged and consulted with DPIE to discuss and confirm the nature of the proposed modification and confirm the modification application and report requirements. Notable details of the consultation to date include:

- A letter issued on 15 June 2021 advising DPIE of EGPs intent to submit a modification application for the proposed BESS facility
- A scoping meeting on 9 July 2021, attended by DPIE, EGP and RPS
- Reporting requirements for a preliminary hazard analysis (PHA) were issued to RPS by DPIE on 9 July 2021
- A letter issued 19 July 2021 prepared by Clarke Kann Lawyers setting out justification for a modification application to be an appropriate planning approval pathway for the proposed NSF BESS facility.

On 27 July 2021 Modification Report requirements were issued by DPIE to EGP. As part of the Modification Report DPIE require evidence of consultation with affected surrounding residences having regard to noise, visual and traffic impacts; and evidence of consultation with all relevant stakeholders, including Council, Biodiversity Conservation and Science (BCS) within the Department and TransGrid. Evidence of consultation is provided in Appendix E and summarised below.

4.1.2 Government Agencies

RPS emailed notification letters to the following agencies in August 2021. Agencies were provided with a period of 21 days to provide comments.

- Warren Shire Council
- BCS
- NSW Environment Protection Authority (EPA)
- DPIE Water Group
- NSW Department of Primary Industries (DPI)
- NSW Rural Fire Service (RFS)
- Transport for NSW.

EGP engaged with TransGrid on 13 October 2021 via email correspondence. On 19 October 2021 TransGrid recommended reaching out to Essential Energy for further information. No further action is required from TransGrid.

Essential Energy were engaged and consulted through email correspondence on 30 September 2021. Subsequent to email correspondences, on Thursday, 7 October 2021 via an e-meeting Essential Energy expressed no material issues with the BESS facility but noted that technical items regarding connection of the battery into the network would need to be managed through the usual processes already in place with Essential Energy. It was agreed to have another round of discussions between EGP executive team and Essential Energy in November 2021 to discuss the path forward to amend the existing GPS and connect the proposed BESS facility at Nevertire existing point of connection.

4.1.3 Aboriginal engagement

As part of the Aboriginal Cultural Heritage Assessment (ACHA), RPS emailed letters requesting the details of any Aboriginal people that may hold cultural knowledge relevant to the BESS facility site to the following stakeholders on 13 August 2021. Stakeholders were provided with a period of 14 days to register interest or comment on the proposed BESS facility

- Warren Shire Council
- Heritage for NSW
- Office of the Registrar of Aboriginal Owners
- Native Title Service Provider for Aboriginal Traditional Owners
- Central West Local Land Services
- Warren Macquarie Local Aboriginal Land Council (LALC).

Furthermore, as part of the ACHA, an advert was placed in the Daily Liberal Newspaper in August 2021 to allow for interested parties to register interest in the ACHA.

Warren Macquarie LALC was invited to participate in the fieldwork by RPS. Registered Aboriginal Parties (RAPs) attended a site visit on 22 September 2021.

As part of the ACHA, engagement with RAPs was undertaken throughout the preparation of the ACHA. A draft copy of the ACHA was forwarded to all RAPs on 29 October 2021. RAPs were provided 28 days to review the document and make comments, request revisions or provide additions to this ACHA. All comments on the cultural significance of the BESS facility site that were received have been included in the ACHA.

4.1.4 Community engagement

Community engagement for the proposed BESS facility commenced on 27 September 2021. Engagement included letters, phone calls, emails and home visits to surrounding residents and landowners with potential to be affected by noise, visual and traffic impacts. A summary of consultation is provided in Table 4-3. Landowners of properties located on the following local streets were consulted:

- Oxley Hwy, Nevertire NSW
- Mitchell Hwy, Nevertire NSW
- Clyde St, Nevertire NSW
- Gunningbar St, Nevertire NSW
- Warren St, Nevertire NSW
- Trangie St, Nevertire NSW
- Narromine St, Nevertire NSW

4.1.5 Landowner consent

EGP has consulted with the existing landowner of Lot 2, DP 1258306 and Lot 38, DP755292 and the landowner of Lot 1, DP 1258306. All landowners have provided consent for the modification application.

4.2 Key issues raised

4.2.1 Government agencies

All agencies that were engaged provided a response with the exception of DPI (see Appendix E). All key issues raised and where they have been addressed in the Modification Report is summarised in Table 4-2.

Table 4-1: Key issues raised by government agencies

Stakeholder	Date	Category	Subcategory	Issue raised	Where addressed in the Modification Report
BCS	2 August 2021	Environmental impact	Biodiversity	A land category assessment of the site is encouraged to determine if the site meets the definition of Category 1 - exempt land (as defined under the *NSW Local Land Services Act 2013* (LLS Act) in order to determine whether a BDAR is required	Appendix G.1 and Section 5.2
	22 October 2021	Environmental impact	Biodiversity	The Biodiversity Impact Analysis Report (BIAR) contains adequate information to support the conclusion that the proposed development area is Category 1 – exempt land under the *Local Land Services Act 2013.* As such a biodiversity development assessment report is not required.	Appendix G.1 and Section 5.2
WSC	3 August 2021	Environmental impacts	Visual	Compliance with Conditions 8, 9 and 10 within Schedule 3 of the Approved development approval.	EGP has engaged ENcome, its site operator, to facilitate the upgrade of the irrigation system and establishment of the vegetated buffer. ENcome are liaising with two local suppliers to undertake the works. The current intention is for planting to start by the end of November.
		Environmental impacts	Waste	Waste must be disposed of at a licenced waste facility other than Ewenmar Waste facility	Section 5.8
		Statutory issues	approvals	BESS facility must be approved by Essential Energy	Section 4.1.2
		Statutory issues	approvals	Easements must be established for all underground infrastructure	N/A
		Environmental impacts	Traffic	The existing access should be utilised to prevent traffic hazard.	Section 5.7 and Appendix G.7
TfNSW	16 August 2021	Statutory issues	Compliance	Any changes to the approved conditions 1-7 and 9 would need to be identified and justified as to how compliance is achieved with the Austroads Guide to Road Design, Technical Directions, Supplements and the Roads Traffic Authority Guide to Traffic Generating Development.	Section 1.1 and Appendix G.7

Stakeholder	Date	Category	Subcategory	Issue raised	Where addressed in the Modification Report
		Environmental impacts	Traffic	An updated Traffic Impact Assessment is to be prepared that addresses, where relevant, project schedule, traffic volumes, traffic characteristics, origins, destinations and routes.	Section 5.7 and Appendix G.7
			Traffic	Any changes as a result of the modification would require a Traffic Management Plan (TMP)	Section 5.7 and Appendix G.7
		Statutory issue	Approval	If the modification does not trigger a change condition 1-7 and 9 or trigger a legislative requirement for referral or concurrence from TfNSW then the modification would not require referral to TfNSW as a part of the modification process.	Section 5.7
NSW Rural Fire Service	3 September 2021	Statutory issue	Compliance	A bushfire assessment report must be prepared which identifies the extent to which the proposed development conforms with or deviates from the relevant provisions of Planning for Bush Fire Protection 2019.	Section 5.6 and Appendix G.5
		Environmental impact	Bushfire risk	The EIS (Modification Report) must identify the bushfire risk to the BESS facility and recommend mitigation measures to reduce the identified bushfire risk.	Section 5.6 and Appendix G.5

4.2.2 Community

No responses were received, and no issues were raised following the letter-box drop to local residences. Responses and outcomes from subsequent consultation that comprised phone calls, emails, and home visits is summarised below in Table 4-3.

Table 4-2 Summary of focussed consultation with landowners/occupants located proximate to the proposed modification with potential to experience amenity impacts

Receiver / landowner address	Date	Method and outcome	Category	Subcategory	Issue raised	Where addressed in the Modification Report
Occupant and owner of Lot 47 DP DP755292 (9650 Oxley Hwy, Nevertire NSW)	21 December 2021	Home visit A representative from Elliott Green Power visited the residence. An additional copy of the community consultation letter was provided to the resident. No issues were raised.	-	-	No issues raised	-
Owner of Lot 8 DP 235427 (9650 Oxley Hwy, Nevertire NSW); as well as numerous allotments including Lot 86, 87, 90 DP 755292 and Lot 105 DP 755276	16 December 2021	Telephone The landowner's offices were contacted and advised of the proposed BESS facility. Informed that corporate office would provide feedback.	-	-	No issues raised	-
	17 December 2021	Telephone The corporate office was contacted, and the Project was described. No issues were raised.	-	-	No issues raised	-
	18 December 2021	Telephone The occupant was contacted, and the Project was described. No issues were raised.	-	-	No issues raised	-
	20 December 2021	Email Follow-up emails were sent with a letter containing additional details of the Project including a layout. No responses were received.	-	-	No issues raised	-
Owner and occupant 10811 Mitchell Hwy, Nevertire NSW	16 December 2021	Telephone and email The Project was described in general, and the development process was discussed. An additional copy of the community consultation letter was emailed to the landowner. The landowner did not raise any objections.	Environmental	Visual impacts	Queried the status of the vegetation buffer for the solar farm	Table 4-2

4.3 Changes to the approved engagement that would be carried out if the modifications are approved

No changes to the approved engagement would be carried out if the modification is approved. As with the approved engagement, consultation with the community and government agencies would continue during assessment of the modification (if required), during construction of the proposed BESS facility and throughout the operation of the facility.

5 ASSESSMENT OF IMPACTS

5.1 Impact Assessment Approach

Key environmental matters assessed for the Approved development included:

- Biodiversity
- Aboriginal heritage
- Noise impacts
- Visual impacts.

Additional matters assessed for the Approved development included:

- Soils
- Hydrology, water use and water quality
- Traffic, transport and road safety
- Land use impacts
- Resource use and waste generation
- Magnetic fields
- Climate and air quality
- Historic heritage
- Bushfire risk
- Community and socio-economic
- Cumulative impacts.

Modification Report requirements from DPIE dated 27 July 2021 requested that the Modification Report include a comprehensive environmental impact assessment of the battery project site, including biodiversity, heritage, noise, visual and traffic impact assessment, noting the site would comprise new land to the Approved development. This section of the Modification Report addresses this requirement. An assessment of environmental matters assessed for the Approved development is considered in this section of the Modification Report to identify any changes in the nature or magnitude/extent of impacts assessed for the Approved development. An updated table of the proposed mitigation measures for the Modified development is provided in Appendix F.

5.2 Biodiversity

5.2.1 Assessment approach

A BIAR was completed for the proposed BESS facility in October 2021 (refer to Appendix G.1). The purpose of the BIAR was to quantify the likely impacts of the proposed modification and determine whether those impacts constitute a nett increase in impacts on biodiversity values relative to the Approved development. The BIAR involved desktop research and a site inspection to assess the likely impacts on biodiversity values. The BIAR has taken into consideration the transitional arrangements applicable to the Native Vegetation Regulatory Map (Section 60F of the LLS Act), notably subsection (4) as it relates to the categorisation of land. The assessment approach has been informed by guidance received from BCS, dated 28 July 2021 and 2 August 2021 (Section 4.1.2) to determine whether a BDAR is required for the modification.

5.2.2 Modification assessment

The subdivision would not have any adverse impacts on biodiversity.

The results of the BIAR indicate that the BESS facility site has been subject to extensive historical agricultural land use from at least the early 1970's. The native plant community types (PCT) within the BESS

facility site was identified to be PCT 49 - Partly derived Windmill Grass - copperburr alluvial plains shrubby grassland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion (Figure 5-1).

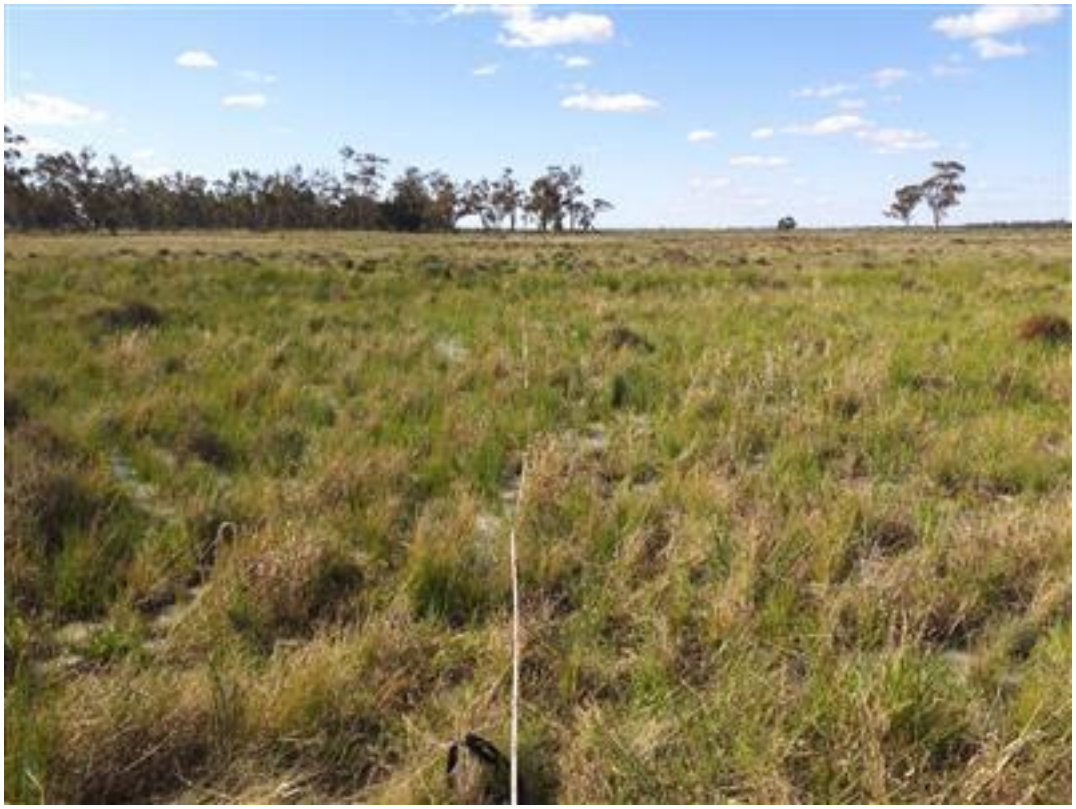

Figure 5-1: PCT 49 - Partly derived Windmill Grass - copperburr alluvial plains shrubby grassland of then Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion

Biodiversity Assessment Method Plots within the BESS facility site identified two vegetation zones - areas of water inundation and dry paddock. These zones were found to be dominated by one primary native species *Eleocharis acuta* and *S. caroli* respectively. Approximately 50-55 percent of the BESS facility site comprised exotic species however none were classed as high threat weed species. The groundcover vegetation on the BESS facility site was deemed significantly disturbed or modified.

The BIAR indicates that the areas of ephemeral water inundation may provide potential habitat for frogs including *Crinia sloanei* and foraging habitat for birds (see Figure 5-2) however no evidence of frogs was found during the site assessment noting the survey occurred immediately after heavy rains. One White faced Heron was observed utilising this habitat during the site visit. Although *C. sloanei* has been recorded 25km north of the BESS facility site, targeted surveys for this species undertaken by NGH Environmental in 2019 in the adjoining NSF failed to detect this species, furthermore there is limited connectivity between the BESS facility site and the record to the north in the form of creeks, drainage channels, roadside drain throughout a highly modified environment. No threatened flora or fauna species were observed during the site assessment.

Figure 5-2: Location of water inundated areas within the BESS facility site

The BIAR concluded that as the BESS facility site is taken to be significantly disturbed or modified and is categorised as Category 1 – exempt land under the Section 60F of the LLS Act and there is not likely to be a significant impact on threatened species and ecological communities, it is considered that the Modified development is not likely to result in an increased impact on biodiversity values. The BIAR further concluded that a BDAR is not required. Through consultation, BCS have concurred with the methodology for the land

category assessment and have provided concurrence that a BDAR is not required for the modification (refer Section 4.1.2).

There would be no biodiversity impacts as a result of the subdivision.

Cumulatively, the Modified development would result in additional land clearance (2.5 hectares). However due to the disturbed nature of the BESS facility site, it would not result in an increased impact on biodiversity values. Section 5.2.3 lists mitigation measures recommended for minimising the BESS facility's direct and indirect impacts on biodiversity.

5.2.3 Statutory requirements

Section 7.9(2) of the BC Act states that a development application for SSD is to be accompanied by a BDAR (as defined under section 7.1 of the BC Act), unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values. Given that the proposed modification is not likely to have a significant impact on biodiversity values, a BDAR is not required.

Assessment of Significance in accordance with Section 7.3 of the BC Act conclude that the proposed modification is not likely to have a significant impact on threatened species, ecological communities and their habitats.

The proposed modification is not likely to have a significant impact on a threatened species, ecological community or its habitat listed under the EPBC Act. Accordingly, any decision to voluntarily refer the proposed modification would be made under Section 68(2) of the EPBC Act with conclusion presented being the proposed modification is not considered a controlled action.

5.2.4 Mitigation measures

Mitigation measures recommended for minimising the Modified project's direct and indirect impacts on biodiversity include (as provided in Appendix F):

- Stockpiling materials and equipment and parking vehicles would be avoided within the dripline (extent of foliage cover) of any native tree.
- Prior to the commencement of work, a physical vegetation clearing boundary at the approved clearing limit is to be clearly demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, flagging tape, parawebbing or similar.
- Where possible, use non barbed-wire on exterior fencing to minimise bird collision risks.
- Where possible, landscape plantings would be comprised of local indigenous species with the objective of increasing the diversity of the existing vegetation. Planting locations would be designed to improve the connectivity between patches in the landscape where consistent with landscaping outcomes.
  - On the BESS facility site native vegetation commensurate to the surrounding remnant PCT should be planted. This should be done to compensate for woody vegetation cleared between November and December 2015
- If night work is unavoidable, ensure any floodlights are directed away from vegetation.
- Weed and hygiene protocols would be prepared and implemented.
  - On the BESS facility site remove all propagules of exotic flora from within the impact area and adjoining patch (within 10m) to prevent the spread or growth of exotic flora
- During operation direct lights away from vegetation.
- Weed and planting protocols would be prepared and implemented
- Where possible, it is recommended that areas of inundation mapped within the BESS facility site be avoided by micro-siting the BESS facility to align with areas of drier vegetation.
- Where possible, it is recommended that areas of inundation mapped within the BESS facility site be avoided by micro-siting the BESS facility to align with areas of drier vegetation

- Native vegetation commensurate to the surrounding remnant PCT should be planted. This should be done to compensate for woody vegetation cleared between November and December 2015
- Remove all propagules of exotic flora from within the impact area and adjoining patch (within 10m) to prevent the spread or growth of exotic flora

5.3 Aboriginal heritage

5.3.1 Assessment Approach

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared to document the assessment of potential impacts to Aboriginal heritage associated with the proposed works and to provide appropriate management and mitigation strategies to avoid harm to Aboriginal objects, Aboriginal places and cultural heritage values. The report is presented at Appendix G.2. The ACHAR has been compiled to meet the requirements of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water NSW (DECCW) 2010a), *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b) and *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011). Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act).

A key component of the ACHAR is consultation with Aboriginal stakeholders. The strategy and outcomes of consultation with Aboriginal stakeholders is summarised in Section 4.1.3). An archaeological survey was undertaken on 22 September 2021 by a senior RPS heritage consultant together with two representatives from the Warren LALC.

5.3.2 Modification assessment

The subdivision would not have any adverse impacts on Aboriginal heritage.

The ACHAR indicates that the BESS facility site is not included on the State Heritage Register (SHR) under the Heritage Act 1977.

The BESS facility site has no previously recorded sites within it, however four Aboriginal Heritage Information System (AHIMS) sites have been previously recorded within a 1.5km radius of the proposed BESS facility (Table 5-1). AHIMS 27-5-0226 was recorded as a single artefact, around 300m northwest of the BESS facility site. The survey of NSF ACHAR recorded three of the AHIMS sites (27-5-0224, 27-5-0227 and 27-5-0226) as single artefacts in a proximity to the BESS facility site. The repatriated artefacts were recorded under AHIMS 27-5-0227, following the collection from NSF ACHAR. One single artefact of collection was placed in bags and tags buried in a plastic container approximately 4m southwest of the modified tree; AHIMS 27-5-0223. This scared tree (AHIMS 27-5-0223) was identified as a mature bimble box, approximately 15m in height. An elongated oval shape scar was described around 25cm above ground facing south. Another scarred tree occurred in AHIMS results in proximity to the BESS facility site. However, AHIMS 27-5-0213 site card recorded the location of the scarred tree as 5km east of Walgett to Pilliga, on the southern side of the road which is approximately 200km north of the BESS facility site (Figure 5-3). Therefore, AHIMS 27-5-0213 is not assessed in the ACHAR, in terms of Aboriginal heritage values due to the actual distance to the BESS facility site.

Table 5-1: AHIMS sites

AHIMS	Site Name	Site Type	Status
27-5-0224	Nevertire IF 3 (Datum GDA)	Artefact	Destroyed
27-5-0223	Nevertire ST 1(Datum GDA)	Modified Tree (Carved or Scarred)	Valid
27-5-0225	Nevertire IF 2 (Datum GDA)	Artefact	Destroyed
27-5-0226	Nevertire IF 1 (Datum GDA)	Artefact	Destroyed

AHIMS	Site Name	Site Type	Status
27-5-0213[1]	WTSR-ST1 (Datum AGD)	Modified Tree (Carved or Scarred)	Valid
27-5-0227	Nevertire Solar Relocated Artefacts (Repatriated Artefacts) (Datum GDA)	Artefact	Valid

[1] Coordinates on AHIMS does not correspond to location description in site cards.

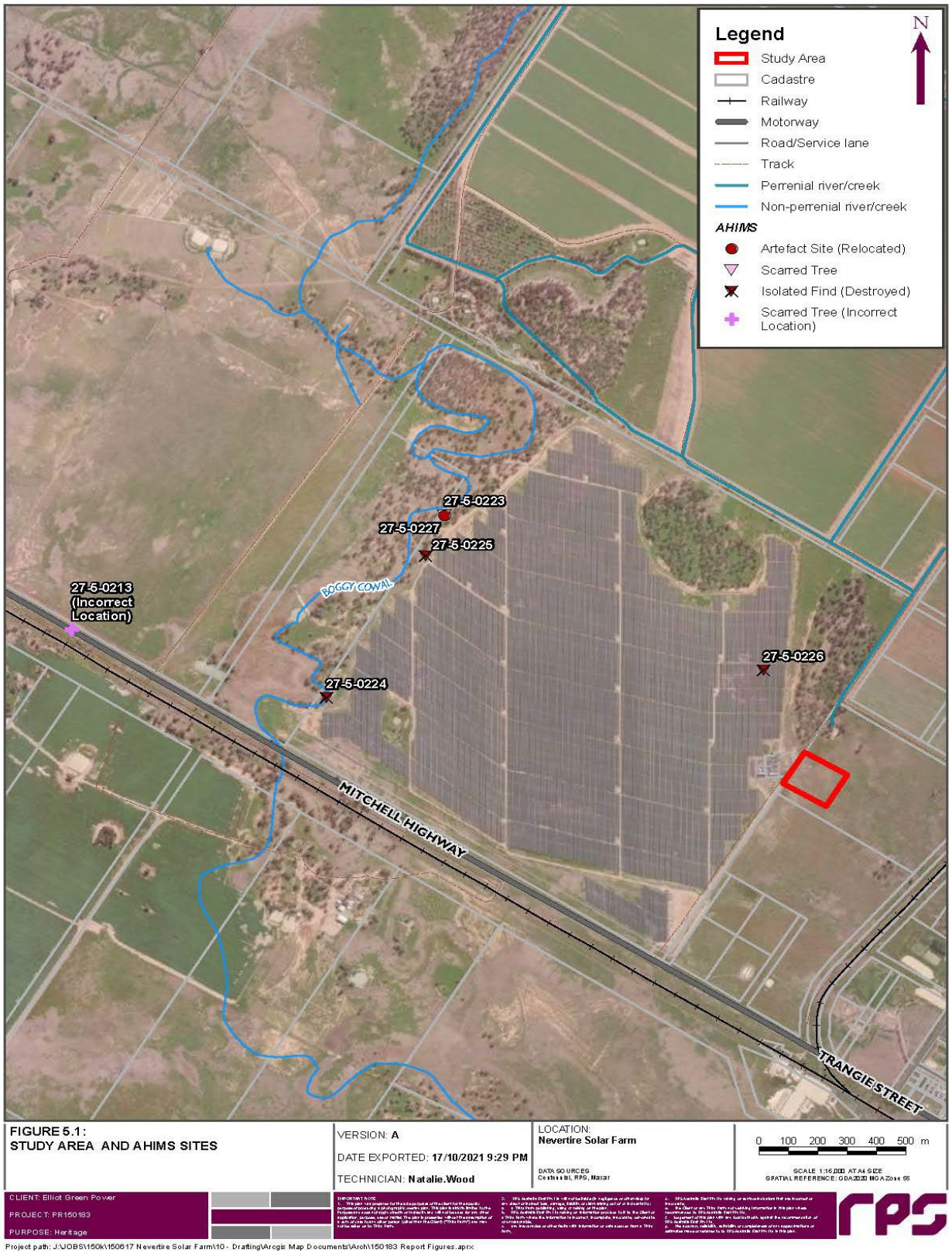

Figure 5-3: AHIMS sites in proximity to the BESS facility site (RPS, 2021)

No Aboriginal objects or sites were identified in the BESS facility site during the site survey and no raw materials suitable for stone tool manufacture were observed.

The ACHAR concluded that the BESS facility site has been demonstrably disturbed which would affect the archaeological integrity of cultural deposits and it is considered to have a low archaeological potential. However, during the time of the site survey, the ground visibility was moderate due to vegetation and leaf

litter which inhibited potential artefact detection. As such it is therefore advised that works proceed with caution through the implementation of protocols for unexpected finds.

Due to the low archaeological potential of the BESS facility site, the Modified development is expected to have negligible cumulative impacts on Aboriginal heritage. Unexpected finds protocols are summarised in Section 5.3.1 below.

5.3.1 Mitigation measures

Mitigation measures and unexpected finds protocols are as follows (as provided in Appendix F):

- All relevant staff and contractors should be made aware of their statutory obligations for heritage under the National Parks and Wildlife Act 1974 and the Heritage Act 1977
- If suspected Aboriginal objects are identified the following procedures must be followed:
    1. Immediately cease all activity at the location.
    2. Ensure no further harm occurs, secure the area, consult with the onsite RAP.
    3. Notify the Environment Protection Authority's Enviro Line on 131 555, Warren LALC on 0268 474 599 and an archaeologist (RPS +61 2 8099 3200).
    4. No further action to be undertaken until Heritage NSW provides written consent.
- Protocols must be provided that ensure the risk of encountering burials is appropriately managed. If burials are identified, work must immediately cease, the site must be secured, NSW Police must be contacted and HNSW must be notified.
- All human remains in, on or under the land must not be harmed. If suspected human remains are located during any stage of the proposed works:
    1. Immediately cease all activity at the site.
    2. Ensure no further harm occurs, secure the area to avoid further harm to the remains.
    3. Notify the NSW Police 000.
    4. Notify the Environment Protection Authority's Enviro Line on 131 555, Warren LALC on 0268 474 599 and an archaeologist (RPS +61 2 8099 3200).
- Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the registered Aboriginal party and may include further field survey.

5.4 Noise impacts

5.4.1 Assessment Approach

SLR completed a Noise Impact Assessment in October 2021. The report is presented at Appendix G.3. The purpose of the NIA was to assess the potential construction and operational noise and vibration impacts associated with the proposed BESS facility. Background and ambient noise monitoring for the NIA was adopted from the baseline noise monitoring campaign undertaken by Renzo Tonin & Associates as part of the NSF Construction and Operational Noise and Vibration Assessment in 2017. The procedures contained within the *NSW Interim Construction Noise Guideline* (DECCW, 2009) were used for determining project specific Noise Management Levels (NMLs) at residential receivers during construction. The *NSW Noise Policy for Industry* (NPI) (EPA, 2017) was used to determine the Project Noise Trigger Levels (PNTL) for the operational BESS facility. Further guidelines/policies/standards adopted for the preparation of the NIA are included in Section 7 of the NIA.

5.4.2 Modification assessment

The subdivision would not have any adverse noise impacts.

The BESS facility would primarily be on automatic control 24 hours per day 7 days per week with minimal human intervention. The BESS facility would typically be controlled by the BESS facility control system. This control system would automatically determine the state of charge or dis-charge as required.

The identified sources of noise from the operation of the proposed development include:

- battery Storage Containers
- LV-HV Transformers / RMU Kiosks (6 MVA)
- control Room Heating, Ventilation, and Air Conditioning (HVAC).

The nearest sensitive receivers are residential properties located in the village of Nevertire to the southeast of the development with some other rural residential properties scattered around the area. The Nevertire Community Park is also located in the village and has been identified as a passive recreation receiver. The nearest receivers are presented in Figure 5-4.

The construction noise assessment identified that predicted LAeq, 15 minute noise levels have the potential to exceed the NMLs at certain times when the noisiest works are occurring. The worst-case impacts are, however, only likely to occur for relatively short times of the total project duration and the works would be limited to standard daytime construction hours, with no evening or night-time works required. A number of best-practice mitigation and management measures have been recommended to be applied, where feasible and reasonable, to control and minimise the impacts during construction as far as practicable (Section 5.4.3).

The operational noise assessment identified that all predicted LAeq, 15 minute noise levels for the proposed operations of the BESS facility are below the project noise trigger levels (PNTL) at all the identified receivers.

Cumulative noise emissions from the NSF (including substation) and the BESS facility were also considered. Cumulative LAeq, 15 minute noise levels during noise enhancing weather conditions (i.e., worst-case) are expected to remain below the most stringent night time criteria of 35 dBA.

Operational emissions of the NSF with the addition of the BESS facility is therefore compliant with the NPI requirements for all assessment periods. As such no further recommendations for noise reducing mitigation or management measures are proposed as part of the proposed modification for the operation of the BESS facility. Suitable safeguards and provisions for monitoring have been recommended to assist operational noise levels being maintained below the applicable PNTL (Section 5.5.3).

Cumulative operational emissions of the Modified development is determined to be compliant with the NPI requirements.

Based on the findings of the NIA and assuming the recommendations and/or safeguards are applied, the Modified development is considered appropriate from an acoustic standpoint.

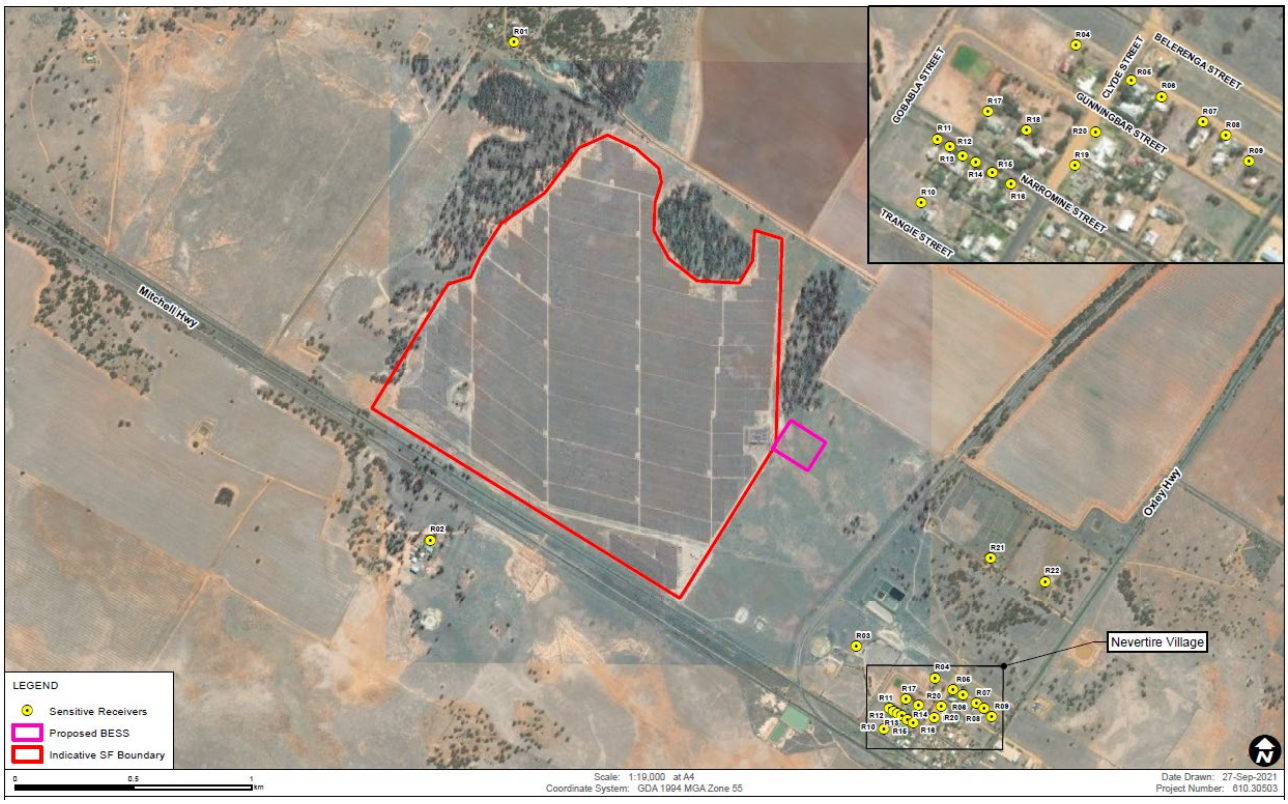

Figure 5-4: Sensitive receivers in proximity to the BESS facility site (SLR, 2021)

5.4.3 Mitigation measures

Design

The following design mitigation measures, as provided in Appendix F are recommended:

- During detailed design / equipment procurement, ensure that the BESS facility noise emission sources achieve quantities and sound power levels equal to or lower than presented in this report. If overall BESS facility noise emissions are expected to be higher, additional assessment should be considered

Construction

The following best-practice mitigation and management measures have been recommended to be applied, where feasible and reasonable, to control and minimise the impacts during construction (as provided in Appendix F):

- Implement noise control measures such as those suggested in Australian Standard 2436-2010 "*Guide to Noise Control on Construction, Demolition and Maintenance Sites*", to reduce predicted construction noise levels.
- Highly noise intensive works should only be undertaken during the following standard construction hours, unless otherwise assessed and justified:
  - 7 am to 6 pm Mondays to Fridays, inclusive; and
  - 8 am to 1 pm Saturdays; and
  - at no time on Sundays or public holidays
- Provide appropriate respite periods as per the Roads and Maritime *Construction Noise and Vibration Guideline* (August 2016) when noise intensive works are undertaken or during periods of high noise impacts
- Carry out community consultation to determine the need and frequency of respite periods, if necessary

- Avoid loading and unloading of materials / deliveries outside of daytime hours
- Site entry and exit points should be located as far as possible from sensitive receivers
- Compounds and work areas should be one-way to minimise the need for vehicles to reverse
- Work compounds, parking areas, equipment and stockpiles should be positioned away from noise-sensitive locations and/or in shielded locations
- Trucks should not idle near to residential receivers
- Stationary sources of noise, such as generators, should be located away from sensitive receivers
- Training should be provided to project personnel, including relevant sub-contractors, on noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks
- Delivery vehicles should be fitted with straps rather than chains for unloading, wherever possible
- Truck drivers should avoid compression braking as far as practicable
- Use the minimum sized equipment necessary to complete the work and where possible, use alternative, low-impact construction techniques
- Power tools should use mains power where possible rather than generators
- Shut down machinery, including generators, when not in operation
- Avoid dropping materials from a height and dampen or line metal trays, as necessary
- Ensure equipment is operated in the correct manner
- All equipment should be appropriately maintained and fitted with noise control devices, where practicable, including acoustic lining of engine bays and air intake / discharge silencers, etc.
- Provide appropriate notice to the affected sensitive receivers prior to starting works and before any noisy periods of works
- Provide signage with a 24 hour contact number
- Where there are complaints regarding noise, review and implement additional control measures, where feasible and reasonable
- Conduct noise and/or vibration monitoring in response to any formal complaints received
- Conduct vibration monitoring whenever vibration intensive works are undertaken within the minimum working distances of sensitive receivers or structures.

Operation

The following suitable safeguards and provisions for monitoring have been recommended to assist operational noise levels being maintained below the applicable PNTL (as provided in Appendix F):

- Where new and improved BESS facility technology becomes available within the life of the project, replacement of BESS facility equipment should aim to achieve sound power levels equal to or lower than presented in this report. If overall BESS facility noise emissions are expected to be higher, additional assessment should be considered
- All formal / reoccurring operational noise complaints should be investigated and where necessary, operator attended noise compliance measurements should be undertaken to measure and compare the site noise level contributions to the predicted values and the PNTLs presented in this report
- All site noise levels should be measured to exclude any influential source not associated with the project
- If the measured site noise levels are below the predicted values and comply with the PNTLs presented in the Noise Impact Assessment, no further mitigation or management measures are required
- If the measured site noise levels are above the predicted noise levels or PNTLs presented in the Noise Impact Assessment, further mitigation and/or management measures should be considered.

5.5 Visual impacts

5.5.1 Assessment Approach

A Landscape Character and Visual Impact Assessment (LCVIA) was undertaken by RPS in November 2021 (Appendix G.4) to assess the impacts of the BESS facility on the visual environment and where required, provide mitigation measures. The methodology for the LCVIA is based on the following guidelines:

- *Guidance Note for Landscape and Visual Assessment* (Australian Institute of Landscape Architects, 2018)
- *Guideline for Landscape character and visual impact Environmental Impact Assessment Practice Note assessment EIA-N04* (Transport for NSW, 2020).

The methodology involved the following activities:

- Review of the *Visual Impact assessment - Nevertire Solar Farm* (NGH Environmental, 2017)
- Desktop study using aerial photography to identify the potential visual catchments and possible visual receptors
- Providing guidance to a third-party photographer in relation to the capture of visual data to support the LCVIA report and reviewing the supplied photography
- Describing and evaluating the existing landscape character and visual environment to establish a baseline for the visual assessment
- Identifying visual receptors
- Undertaking a visual impact assessment using the grading matrix, considering visual sensitivity (of the visual amenity or viewpoints) and the magnitude of the visual change, to arrive at an overall level of visual impact.

Dark Sky Planning Guideline

The *Dark Sky Planning Guideline* (NSW Department of Planning and Environment, 2016) is a matter for consideration for all development under the EP&A Act before development consent is granted within the local government areas of Coonamble, Dubbo, Gilgandra and Warrumbungle. Although not located in one of the relevant local government areas, the project falls within the Dark Sky Region which consists of the land within a 200-kilometre radius of Siding Spring Observatory. An assessment of night lighting in regard to the *Dark Sky Planning Guideline* associated with the project has been included in Section 5.5.2.

5.5.2 Modification assessment

The BESS facility site is open, cleared rural land with very little remnant vegetation. The site is located within a very flat landscape at approximately 200m Australian Height Datum.

Landscape Character Zones (LCZs)

The *Visual Impact Assessment - Nevertire Solar Farm* (NGH Environmental, 2017) identified three LCZ types in the local area:

- Agricultural
- Residential
- Industrial.

The subsequent construction of the solar farm adjacent introduces a fourth type of LCZ. The four LCZs identified within the local area of the BESS facility are identified in Figure 5-5.

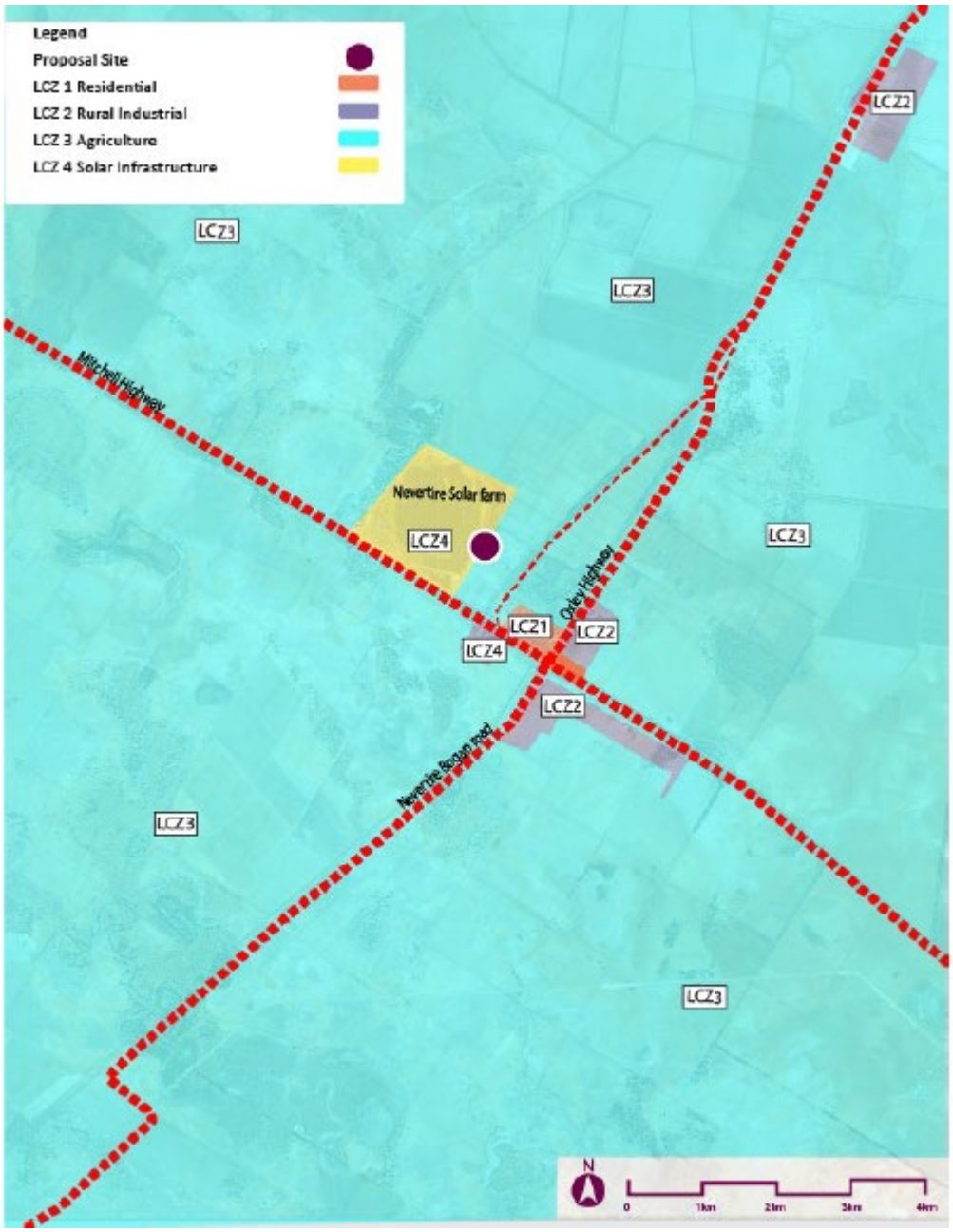

Figure 5-5: Landscape Character Zones

Figure 5-6 outlines the position of the 24 viewpoints analysed where the impacts on the view are assessed facing towards the proposed BESS facility

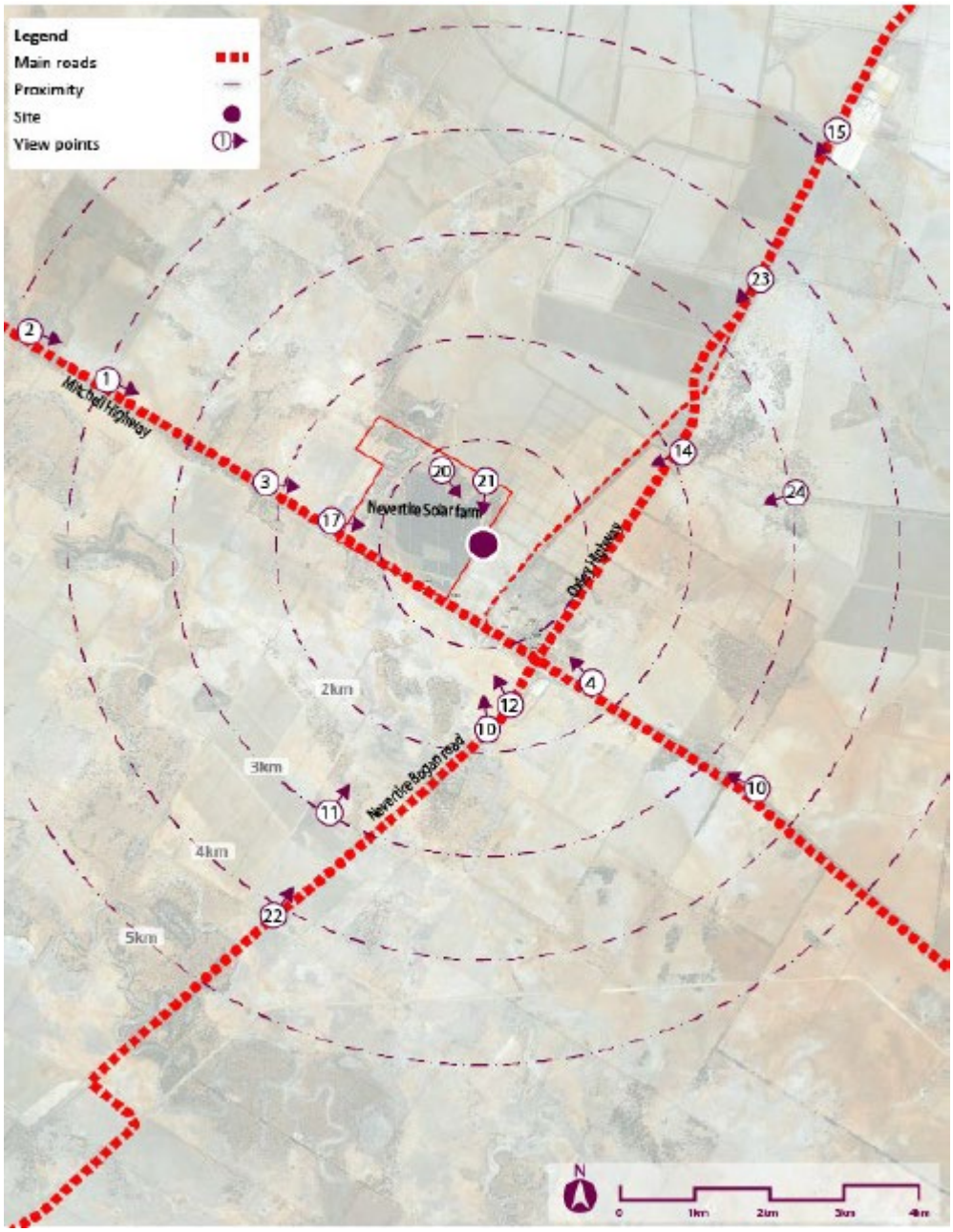

Figure 5-6: Viewpoint locations – contextual

The findings of the viewpoint analysis indicates that that the BESS facility would result in nil, negligible, or low impacts for all the selected viewpoints based on baseline data collected through LCZ process, the landscape values extrapolated from the Warren LEP, and the community perception as ascertained from the *Visual Impact Assessment - Nevertire Solar Farm* (NGH Environmental, 2017). Section 5.5.3 proposes safeguard measures to assist with maintaining the desired visual quality of the landscape as extrapolated from the Warren LEP. Furthermore, the viewpoint analysis indicates that would be either no, or very low levels cumulative impacts associated with the addition of BESS facility to the Approved development.

The subdivision would not have any adverse visual impacts.

Lighting

There would be no all-night lighting installed within the BESS facility. Night lighting would only be used in the case of security or maintenance and in the event of an emergency and would be designed to reduce disturbance to adjacent residential areas. Sensor lighting would be used for security issues and egress purposes. Manual-on lighting for emergencies and/or maintenance activities. Any lighting installed would be

in accordance with *AS4282-1997 - Control of Obtrusive Effects of Outdoor Lighting*. Lighting would also be designed with regards to principles identified within the *Dark Sky Planning Guidelines* (2016).

5.5.3 Mitigation measures

The following mitigation measures, as provided in Appendix F are recommended:

Design

- Review and limit the impacts of the construction laydown areas on the site
- Review lighting design to mitigate its impact on adjacent residential areas
- Lighting would be designed to align with principles identified within the *Dark Sky Planning Guidelines* (2016) and would include:
  - Using shielded fittings

Construction

- Avoid unnecessary loss or damage to other vegetation adjacent to the BESS facility site by protecting vegetation not proposed for removal prior to construction
- Minimise light spill from the BESS facility site by directing construction lighting into the construction areas and ensuring the site is not over-lit. This includes the sensitive placement and specification of lighting to minimise any potential increase in light pollution
- Temporary hoardings, barriers, traffic management and signage would be removed immediately when no longer required
- The site is to be kept tidy and well maintained, including removal of all rubbish at regular intervals.

Operation

- Minimise light spill from the BESS facility site by directing operational lighting into the site and ensuring the site is not over-lit. This includes the sensitive placement and specification of lighting to mitigate increase in light pollution
- Undertake regular maintenance work to the area around the BESS facility to maintain a clean and safe working environment
- Damage to fencing, Graffiti and other visual nuisance should be removed during operation to maintain the visual appearance of the BESS facility
- Review any future changes to the facility in relation to their impacts on visual amenity
- Adhere to requirements of the *Dark Sky Planning Guidelines* (2016) and implement the following practices:
  - Eliminate upward spill light
  - Direct light downwards, not upwards
  - Avoid ‘over’ lighting
  - Switch lights off when not required
  - Use energy efficient bulbs
  - Use asymmetric beams, where floodlights are used
  - Confirm lights are not purposefully directed towards reflective surfaces
  - Use warm white colours.

5.6 Hazards and risks

5.6.1 Assessment Approach

Bushfire

A Bushfire Assessment Report (BAR) has been prepared by BEMC in October 2021 to identify the bushfire risk to the BESS facility and recommend mitigation measures to reduce the identified bushfire risk. The report is presented at Appendix G.5. The BAR has been prepared to determine compliance with the performance criteria in *Planning for Bushfire Protection* (PBP) (RFS, 2019).

Hazard analysis

Modification Report requirements from DPIE dated 27 July 2021 requested that a Preliminary Hazard Analysis (PHA) be prepared in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis' (HIPAP 6) and Multi-Level Risk Assessment (MLRA) having regard to any recent developments in research and standards for battery storage. As such a PHA was prepared by SLR in October 2021 to determine the hazards and risks associated with the proposed BESS facility and understand the adequacy of safeguards in place in accordance with the DPIE's *Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'*(HIPAP 6) and *Multi-Level Risk Assessment* (MLRA). The report is presented at Appendix G.6. The PHA for the BESS facility met the MLRA criteria for a Level 1 assessment – being that the proposed activities do not pose a significant off-site risk. SEPP 33*: Hazardous and Offensive Development Application Guidelines (*NSW Department of Planning, 2011) was also applied to the PHA to determine if the BESS facility could be considered hazardous due to the transport of dangerous goods.

Guidance to inform technical and management safeguards required for BESS facility are set out in the following documents, noting that adherence to such guidelines should be verified in the final detailed design for the site:

- AS1768:2020 *Lightning Protection*
- AS 5139 *Electrical Installations - Safety of Battery Systems for Use with Power Conversion Equipment*
- Ditch, Ben & Zeng, Dong. (2019). *Development of Sprinkler Protection Guidance for Lithium Ion Based Energy Storage Systems* (FM Global Research Technical Report)
- FM Global Property Loss Prevention Data Sheets 5-33, Electrical Energy Storage
- IEC 62485-1:2015 *Safety requirements for secondary batteries and battery installations - Part 1: General safety information*
- IEC 62485-2:2010 *Safety requirements for secondary batteries and battery installations - Part 2: Stationary Batteries*
- IEC 62619:2017 *Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications*
- IEC 62897 *Stationary Energy Storage Systems with Lithium Batteries - Safety Requirements*
- IEC 62933:2018 *Electrical Energy Storage (ESS) Systems*
- NFPA 855: 2020 *Standard for the Installation of Stationary Energy Storage Systems*
- UL 9540 *Standard for Energy Storage Systems and Equipment*
- UL 9540A ANSI/CAN/UL *Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems.*

5.6.2 Modification assessment

Bushfire

NSW Rural Fire Service (RFS) bushfire prone land mapping (RFS, 2021) indicates that the BESS facility site is located in land identified as bushfire prone land (Vegetation Category 3).

The subdivision would not pose any bushfire risk.

The BAR indicates that the BESS facility site constitutes a bushfire risk however the implementation of the recommendations (Section 5.6.3) would reduce the risk of damage and/or harm in the event of a bushfire event.

The findings show that land surrounding the BESS facility site supports vegetation consistent with a grassland which forms a bushfire threat that exists in all directions on and surrounding the BESS facility site (Figure 5-7). As such, recommendations have been provided to ensure that the BESS facility meets the PBP requirements (Section 5.6.3), all of which have been incorporated into the design of the BESS facility.

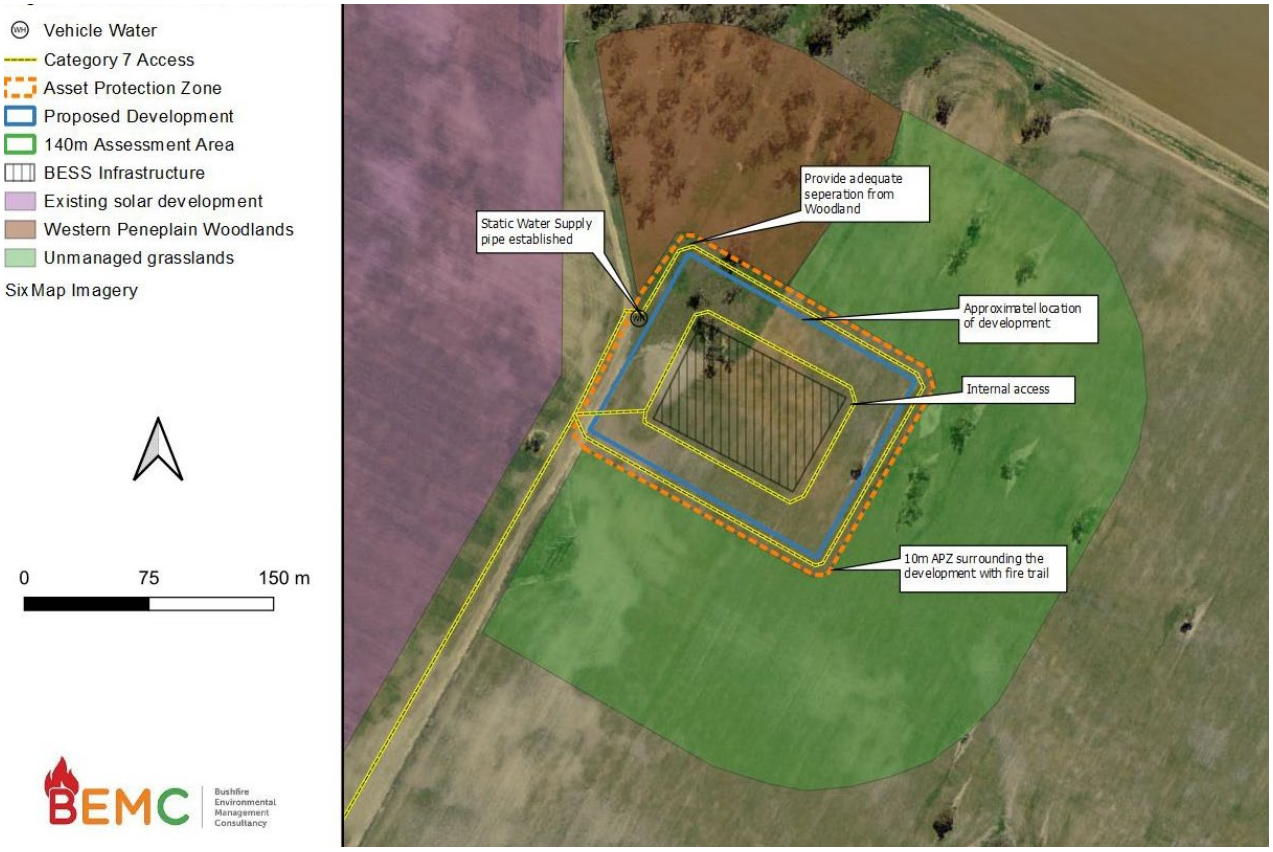

Figure 5-7: Bushfire assessment report parameters (BEMC, 2021)

Hazard analysis

The subdivision would not pose any hazards.

Preliminary risk screening under SEPP 33 for storage of dangerous goods indicate that the BESS facility would not be classified as a hazardous or offensive industry. However, the lithium ion batteries as a component of the BESS facility require a more detailed assessment of the hazard which was addressed in a subsequent PHA to assess whether the proposed BESS facility would impact on surrounding land uses and/or if the BESS facility is offensive or hazardous, thereby posing an unacceptable risk to the surrounding community or if the proposed BESS facility may be potentially subject to hazards or risks from existing development in the surrounding area.

The PHA indicated the following:

- The risk of property damage and accident propagation to adjoining property outside the BESS facility site is considered unlikely, based on the significant distances between the BESS facility site and the nearest sensitive recovers
- The risk of biophysical damage outside the site is considered unlikely, based on the limited processes undertaken on the site, the engineering and design controls that would be in place and the rural nature of the surrounding environment.

The next step involved a review of surrounding land use and consideration of a series of potentially hazardous events or scenarios. This step was taken to identify if further comprehensive qualitative analysis is required. Hazardous events that were identified included:

- Bushfire
- Fire starting on site
- Explosion / thermal runaway reaction – powerpacks in containerised modules
- Exposure of equipment to high voltage
- Damage to batteries from vehicle collision
- Transformer oil leakage
- Security breach
- Damage due to lightning strike
- Flooding of facility causing damage
- Exposure to electromagnetic fields (EMF).

Controls and safeguards for each hazardous event are summarised in Section 5.6.3 below.

The following potential hazards could not be eliminated through first review and require further examination:

- Hazards associated with lithium ion batteries in the BESS facility, specifically overheating and fire
- Hazards associated with oils escaping from transformers.

Fires associated with powerpacks in containerised BESS facility modules (containerised modules), do not easily spread to adjacent containerised modules, when constructed and installed according to relevant standards and guidelines. The findings of the PHA indicate residual risk of major incidents possible at the BESS facility after the implementation of control measures is assessed to be low. The potential for offsite impacts from the scenarios reviewed is considered unlikely, based on the control systems being in place and the distance to the nearest residence being greater than 1km. Control measures for potential major incidents are summarised below in Section 5.6.3.

The BESS facility would be fitted with a complete and comprehensive fire detection and protection system and would comply with the Australian Standards and the National Construction Code.

This would include a SCADA integrated fire control system with the following:

- Smoke detection system
- Fire detection system
- Battery and other equipment temperature monitoring system
- A fire protection buffer around the inside of the perimeter fence
- A steel water tank to the RFS requirements.

The PHA concluded that with suitable engineering controls in place the proposed BESS facility would not be considered an offensive or hazardous development.

The Approved development was not identified as an offensive or hazardous development (as provided in the NSF EIS (NGH Environmental, February 2017). As such it is considered that cumulatively the Modified development would not be considered an offensive or hazardous development.

5.6.3 Mitigation measures

Bushfire

The following recommendations, as provided in Appendix F, have been provided to ensure that the BESS facility meets the PBP requirements:

- Develop a Bushfire Management Plan to include but not be limited to:

- Management of activities with a risk of fire ignition.
- Management of fuel loads onsite.
- Storage and maintenance of firefighting equipment, including siting and provision of adequate water supplies for bushfire suppression. This includes access to the onsite dam if required for fire emergency situations.
- The below requirements of PBP -
    - Identifying asset protection zones
    - Providing adequate egress/access to the site
    - Emergency evacuation measures
    - Non-combustible fencing be installed and located 10m from the BESS facility and related infrastructure
    - At the commencement of building works and in perpetuity, the 10m Asset Protection Zone (APZ) around the external boundary fence shall be managed as an Inner Protection Area (IPA) as outlined within Appendix 4 of Planning for Bushfire Protection 2019, and NSW Rural Fire Service 'Standards for Asset Protection Zones'
    - The entire area within the fenced BESS facility compound shall be managed as IPA as outlines within Appendix 4 of Planning for Bushfire Protection 2019, and NSW Rural Fire Service 'Standards for Asset Protection Zones'
    - Access from Mitchell Highway to the BESS facility compound shall be established
    - Fire trail access around the perimeter fence of the BESS facility compound is provided
    - A supply pipe from the static water tank associated with the control room shall be established and positioned outside the BESS facility compound to enable responding fire fighters to access this water supply. The location of the supply pipe shall be adequately sign posted for 'Static Water Supply' and complying with the static water provisions within Table 7.4a of PBP 2019
- Operational procedures relating to mitigation and suppression of bushfire relevant to the solar farm and BESS facility.

Hazards

Control measures to maintain and contain the risks within the BESS facility site boundary and reduce the risk to areas outside the site boundary are as follows (as provided in Appendix F):

- All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required.
- Design of electrical infrastructure would minimise EMFs.
- Transformer failure and fire
    - Equipment and systems would be designed and tested to comply with international and/ or Australian standards and guidelines
    - Use of fully bunded oil storage for transformers in accordance with AS1940
    - Regular tank inspections included in inspection requirements
    - Fire management plan or the like, be in place
- Electrical Hazards – short circuit /equipment failure
    - Equipment and systems would be designed and tested to comply with international and/ or Australian standards and guidelines
    - Site operating procedures in place to avoid workers coming in contact with electrified systems
- Bushfire
    - Implementation of a fire break around the site

  - Fire management plan or the like, be in place
  - Coordination with local fire authorities
- Fire starting on site
  - Implementation of a fire management plan or the like
  - Coordination with local fire authorities
- Explosion / thermal runaway reaction – powerpacks in containerised modules
  - Equipment and systems would be designed and tested to comply with international and/ or Australian standards and guidelines
  - Implementation of a fire management plan or the like
- Exposure of equipment to high voltage
  - Equipment and systems would be designed and tested to comply with international and/ or Australian standards and guidelines
  - BESS facility Battery Management System fault detection and safety shut-off systems provided
  - Emergency Response Plan to cover all site hazards
- Damage to batteries from vehicle collision
  - Installation of security fencing around battery facility
  - Use of internal access roads with appropriate turning circles
  - Limit of speed limit within fenced facility
  - Earthing system installed as per normal electrical facilities
- Transformer oil leakage
  - Use of fully bunded oil storage for transformers in accordance with AS1940
  - Regular tank inspections included in inspection requirements
- Security breach
  - Installation of security fencing around entire facility and also battery facility separately
  - Installation of CCTV security system to monitor key areas
  - Inspections to monitor for security breaches
- Damage due to lightning strike
  - Completion of a lightning risk assessment in accordance with AS1768
  - Include lightning protection measures if deemed necessary
- Flooding of facility causing damage
  - Where possible install electrical equipment elevated above ground level
  - Ensure suitable site access and egress at different locations
- EMF
  - Follow industry guidance with respect to minimising exposure to EMF.

5.7 Traffic

5.7.1 Assessment Approach

A Traffic Impact Statement (TIS) was prepared by SLR in October 2021 to assess site access and external road network operational and construction impacts (Appendix G.7).

5.7.2 Modification assessment

The subdivision would not have any traffic impacts.

As part of the Modified development an unsealed, internal spur road is proposed from the existing highway access to the NSF. The TIS indicates that from a traffic and transport perspective, the spur road has no implications as this would be an extension to the internal road. Existing site arrangements for parking and access from the Mitchel highway are considered satisfactory for both the construction and ongoing operation of the proposed BESS facility.

During construction of the BESS facility all construction activities would take place within the boundary of the site. No construction activities are proposed near or on the wider road network. There would be an average of 20 light and heavy vehicles (combined) used each day, resulting in 40 vehicular movements per day. At the peak period of the construction works, this is expected to reach 25 light and 15 heavy vehicles, resulting in 80 vehicular movements per day. The majority of construction works would be undertaken before the delivery of battery packs so that the overall construction traffic generation would be staggered rather than accumulative. The TIS indicates that the construction of the proposed development is not expected to generate a material traffic increase in the wider road network and therefore can be effectively managed via the existing conditions of consent.

During operation of the BESS facility maintenance activities would be undertaken by the NSF maintenance crew for the battery packs and the associated equipment, such as inverters. In relation to the ongoing operations, the largest design vehicle that is anticipated to visit the site is a medium rigid vehicle (MRV) which is up to 8.8m in length. The TIS indicates that the ongoing operation of the proposed development is not expected to generate a noticeable traffic increase in the wider road network. As such the operation of the BESS facility would not require an increase in the approved upper limit of 20 heavy vehicle movements per day as per the existing conditions of consent.

Cumulatively the Modified development is not expected to generate a noticeable traffic increase in the wider road network given the low vehicular movements that is generated by the NSF and the infrequent maintenance activity envisaged for the proposed BESS facility.

Statutory requirements/considerations

The proposed modification would not require any change to the approved conditions related to Traffic, as such compliance with The Austroads Guide to Road Design, Technical Directions, Supplements and the Roads Traffic Authority Guide to Traffic Generating Development is achieved through the approved conditions.

As the modification does not require a change to the approved conditions related to Traffic, referral to TfNSW or concurrence is not required.

5.7.3 Mitigation measures

The mitigation measures related to Traffic in the EIS as provided in Appendix F are sufficient. These include:

- A Traffic Management Plan would be developed as part of the CEMP, in consultation with Warren Council and TfNSW. The plan would include, but not be limited to:
  - Assessment of road condition prior to construction on all local roads that would be utilised.
  - A program for monitoring road condition, to repair damage exacerbated by the construction and decommissioning traffic.
  - Designated routes of construction traffic to the site.
  - Carpooling/shuttle bus arrangements to minimise vehicle numbers during construction.
  - Scheduling of deliveries.
  - Community consultation regarding traffic impacts for nearby residents.
  - Consideration of cumulative impacts.
  - Consideration of impacts to the railway.
  - Traffic controls (speed limits, signage, etc.).

  - Procedure to monitor traffic impacts and adapt controls (where required) to reduce the impacts.
  - Providing a contact phone number to enable any issues or concerns to be rapidly identified and addressed through appropriate procedures.
- The proponent would repair any damage resulting from proposal traffic (except that resulting from normal wear and tear) as required at the proponent's cost.

5.8 Other environmental matters

Other environmental matters from the Approved development not already address in sections 5.2 to 5.7 have been reviewed in Table 5-2 to determine potential environmental impacts associated with the proposed modification.

Table 5-2: Assessment of additional matters

Approved development Environmental Impact	Comment
Soils and contamination	As with the NSF, the BESS facility site is predominately located within Caarabear Western Soil Landscape that consist of alluvial sediments of the Macquarie River. Younger Macquarie River alluvial sediments of Bugwah - Upstream soil landscapes lie along south-eastern boundary of the BESS facility site. The subdivision would not impact soils. Impacts to soil during construction and decommissioning of the BESS facility include disturbance, erosion and subsequent sedimentation - similar to what was assessed as part of the Approved development. Minimal operational impacts to soils would occur as a result of operational activities. Cumulatively the Modified development is not expected to have significant impacts on soil. Clause 7 of State Environmental Planning Policy No. 55 - Remediation of Land requires that the remediation of land be considered by a consent authority in determining a development application. A review of the NSW EPA Contaminated Land Record and list of NSW contaminated sites notified to the EPA, undertaken on 30 September 2021, confirmed there are no known contaminated sites in or near the BESS facility site. Given the historical use of the site for cropping and grazing, the risk from significant contamination across the site is low. The mitigation measure and safeguards for the Approved development as per the EIS, as provided in Appendix F and the CoC are considered sufficient.
Hydrology, water quality	There are no watercourses on the BESS facility site. The closest watercourses to the BESS facility site are Boggy Cowal located along the western boundary of the NSF, that drains towards the Macquarie River over 19km north of the BESS facility site. Two other waterways are located within 10km of BESS facility site, Beleringar Creek to the north and Trowan Cowal to the south (NGH, 2017). Areas of ephemeral water inundation occur on the western portion of the site. When inundated with water these areas may provide potential habitat for frogs and foraging habitat for birds. The proposed BESS facility footprint would intersect these areas. There are no bores on site. The subdivision would not impact hydrology, or water quality. Compaction and dust suppression during construction and decommissioning phases of the BESS facility has potential to result in sediment laden runoff affecting local waterways, similar to what was assessed as part of the Approved development. Water quality impacts at the site during operation are not considered substantially different to the current potential water quality impacts occurring from existing activities at the NSF, which are low. Cumulatively the Modified development is not expected to have significant impacts on watercourses and water quality. The mitigation measure and safeguards for the Approved development as per the EIS, as provided in Appendix F and the CoC are considered sufficient.
Land use impacts	The current land use of the location of the proposed BESS facility is grazing and the site has a history of cropping.

Approved development Environmental Impact	Comment
	The subdivision would not have an adverse impact on land use. A small portion of the parcel of land to be subdivided would be solely dedicated to the BESS facility and the land use would change. The larger portion of the subdivided parcel of land would be retained for grazing or other farming purposes which would be unaffected by the operation of the BESS facility. Once construction commences on the BESS facility site, agricultural activities would temporarily cease due to intensive construction activities such as noise and dust, which would potentially adversely impact livestock that may be located in an immediately adjacent area. During operation, the BESS facility site would change from agricultural land use to power generation. The loss of the 2.5 hectares BESS facility site for the life of the BESS facility (20 years) is not considered a significant loss in the locality and grazing activities are able to continue on adjacent parcels of land. Cumulatively the Modified development is not expected to result in a significant loss of land for agricultural activities in the locality. Post decommissioning, the 2.5 ha that the BESS facility was located on would potentially return to agricultural use or an alternative use. The mitigation measure and safeguards for the Approved development as per the EIS, as provided in Appendix F and the CoC are considered sufficient and no additional mitigation measures would be required for the modification.
Resource use and waste generation	Key resources and estimated quantities (pending the final design) required to construct the BESS facility include: • Water: 0.3 megalitres water for compaction and dust suppression • Metal: contained in 16 tonnes steel mesh reinforcement, 40 BESS facility containers, 3000m of HV, LV and earthing cable and RMU kiosks, fencing • Gravel: – Road base gravel : approximately 990 tonnes. – BESS facility yard: approximately 784 tonnes • Sand: subject to the detailed design outcome therefore the quantity is currently unknown The subdivision would not require any resources or generate any waste. The majority of the required resources would be used during the construction of the BESS facility. During operation resource requirements would be associated with maintenance activities and would result in negligible wastes. Potable water will be sourced from the roof catchment of the control building and stored locally. Water use during the operation of the BESS facility would be required for drinking and is expected to be minimal. In addition, it would be available for firefighting purposes if required. Construction activities would result in the generation of wastes including: • packaging materials • excess building materials • scrap metal and cabling materials • plastic and masonry products, including concrete wash • excavation of topsoils and vegetation clearing (expected to be minimal) Most waste generated during the construction and decommissioning phases would be classified as building and demolition waste in accordance with the definitions in the POEO Act, and associated waste classification guidelines, within the class general solid waste

Approved development Environmental Impact	Comment
	(non-putrescibles). Hazardous waste in the form of used fuels, lubricants, and chemicals from construction plant would be associated with minor maintenance of vehicles. Such waste would be decanted for re-use or taken off-site for recycling. Decommissioning of the BESS facility site would involve reuse or recycling of materials where practicable. Where items cannot be recycled, these would be disposed in accordance with applicable regulations and to appropriate waste disposal facilities. The operation of the BESS facility is not anticipated to generate waste. Battery cores would be taken back by the technology provider for re-purposing while steel components would be recycled. Waste cannot be disposed of at the local Ewenmar waste facility due to capacity limitations. Consultation would be undertaken with other local waste facility operators and haulage of waste to facilities outside Warren LGA may be considered. The mitigation measures and safeguards related to land use and resource use for the Approved development as per the EIS, as provided in Appendix F and the CoC are considered sufficient.
Climate and air quality	The closest residential receiver is located 930 m southeast of the proposed BESS facility location. The subdivision would not result in any impact on air and climate quality. During construction and decommissioning of the BESS facility generation of dust from earthworks and truck movements as well as air emissions from equipment and vehicle exhaust fumes is expected. Due to the distance of receivers and the minor extent of earthworks the mitigation measure and safeguards related to land use and resource use associated with the soil disturbance and plant and machinery operation for the more intensive and greater magnitude activities associated with the Approved development as per the EIS, as provided in Appendix F and the CoC are considered sufficient. Due to the short duration of the work and the scale of the BESS facility being much smaller in comparison with the Approved development, negligible climatic impacts are anticipated as a consequence of the construction and decommissioning activities of the BESS facility. The operation of the BESS facility would generate negligible air quality impacts and emissions. Operation of the BESS facility would facilitate the NSF's positive impact on global climate change in assisting to reduce Australia's reliance on fossil fuels for electricity generation. Cumulatively the Modified development is not expected to have significant adverse impacts on air quality and emissions.
Historic heritage	No known historic items or places occur on the proposed site for the BESS facility. The subdivision would have no impact on historic heritage. Cumulatively the Modified development is expected to have no impacts on historic heritage. The mitigation measures and safeguards for the Approved development as per the EIS, as provided in Appendix F and the CoC are considered sufficient.
Community and socio-economic	The proposed subdivision would not generate any adverse community and socioeconomic impacts. The construction of the BESS facility would utilise up to 50 staff at the peak of construction, many of whom would be sourced from the local area. The construction workforce would inject funds into the regional economy through staying in local and regional accommodation and purchasing goods and services and consumables such as food from local providers. As such it is anticipated that the BESS facility would result in a positive economic benefit. Noise, visual and traffic impacts on the community are not expected to be significant as described in Section 5.4, 5.5 and 5.7 respectively. Cumulatively the Modified development is not expected to have significant impacts on the community. Mitigation measures and safeguards related to consultation with the community for the Approved development as per the EIS, as provided in Appendix F and the CoC are considered sufficient to address these impacts.

6 JUSTIFICATION OF THE MODIFIED DEVELOPMENT

6.1 Objectives

The proposed BESS facility would facilitate improved electricity dispatchability and storage capacity outcomes for the NSF. As an ancillary component to the NSF, the proposed BESS facility would assist in meeting the objectives of the NSF (as provided in the Nevertire Solar Farm EIS (NGH Environmental, February 2017). which are:

- *Select and develop a site which is suitable for commercial scale solar electricity generation which would assist the NSW and Commonwealth Governments to meet Australia's renewable energy targets and other energy and carbon mitigation goals*
- *Provide a clean and renewable energy source to assist in reducing greenhouse gas emissions*
- *Develop a project which is acceptable to the local community*
- *Provide local and regional employment opportunities and other social benefits during construction and operation*
- *Construct a project with minimal adverse environmental impacts.*

6.2 Benefits

The benefits of the modification would be aligned and consistent with those of the Approved development as set out in the Nevertire Solar Farm EIS (NGH Environmental, February 2017), including the following:

- Generation of approximately 263,000 MWh per annum of renewable electricity which is enough to supply electricity for 44,000 average NSW households (AER, 2014)
- Displacement of approximately 221,000 tonnes of CO_2 equivalent greenhouse gas emissions per year (Department of Environment and Energy, 2016)
- Diversification of fuel sources for electricity generation on the National Electricity Market, therefore increasing energy security
- Creation of local job opportunities
- Injection of expenditure in the local area
- Development of a new land use thereby diversifying the regional economy.

An additional benefit as a result of the BESS facility would include facilitating improved electricity dispatchability and storage capacity outcomes for the NSF. Due to the benefits of the NSF and the additional benefits associated with the modification, it is considered that the BESS facility would be in the public interest.

6.3 Suitability of the site

As described in Section 1.1 it is proposed to locate the BESS facility on a parcel of land immediately adjacent the NSF (identified as Lot 38, DP755292) as there is no suitable land available to locate the BESS facility on the allotment for which the original consent was granted. The proposed site for the BESS facility is considered suitable for the following reasons:

- It is located immediately adjacent to the NSF and therefore in proximate to existing infrastructure including the NSF substation
- The BESS facility is considered a compatible use of this land and does not conflict with ongoing operations or existing surrounding land uses as described in Section 5
- The site is significantly disturbed due to historical cropping and grazing and therefore impacts on environmental matters such as threatened species and ecological communities are negligible
- The site has low archaeological potential

- Due to the distance of sensitive receivers to the site (approximately 1km), visual, and noise impacts are not significant and the operation of the BESS facility on the proposed parcel of land would unlikely be perceived as hazardous or offensive by the surrounding community.

7 REFERENCES

DPIE (2016) *Dark Sky Planning Guideline*

NGH Environmental (2017) *Environmental Impact Statement Nevertire Solar Farm*

NGH Environmental (2017) *Modification Application Nevertire Solar Farm*

NSW EPA (2021) Contaminated Land Record https://app.epa.nsw.gov.au/prclmapp/searchregister.aspx, accessed October 2021

NSW EPA (October 2021) List of Notified sites https://www.epa.nsw.gov.au/your-environment/contaminated-land/notified-and-regulated-contaminated-land/list-of-notified-sites, accessed October 2021

NSW Government, 2021 Sharing and Enabling Environmental Data Mapping *https://geo.seed.nsw.gov.au/Public_Viewer/index.html?viewer=Public_Viewer&locale=en-AU*, accessed October 2021