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Biodiversity Management Plan

New England Solar Farm – Stage 1 2x200MW AC

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Definitions

Biodiversity Assessment Method (BAM): means the biodiversity assessment method established under Part 6 of the *Biodiversity Cconservation Act 2016* (BC Act). It was established for the purpose of assessing the impact of actions on threatened species and threatened ecological communities, and their habitats, and the impact on biodiversity values of other actions prescribed by the regulations (whether or not the biodiversity offsets scheme applies to the impact of those actions on biodiversity values). It also sets out rules and guidelines with respect to the matters for which biodiversity assessment reports may be prepared.

Biodiversity Assessment Method Calculator (BAMC): the calculator that is used to apply the BAM to calculate the number and type of credits required to offset the impacts of a development on biodiversity or credits generated at a biodiversity stewardship site.

Biodiversity Offsets Scheme (BOS): creates a transparent, consistent and scientifically based approach to biodiversity assessment and offsetting for development that is likely to have a significant impact on biodiversity in New South Wales.

Biodiversity Development Assessment Report (BDAR): must be prepared by an accredited person in relation to proposed development or activity that would be authorised by a planning approval that provides the outcomes of the assessment in accordance with the BAM.

Development: has the same meaning as development in Section 4 of the Environmental Plannnig and Assessment Act 1979 (EP&A Act) and includes development as defined in Section 115T of the EP&A Act.

Development Footprint: the area of land that is directly impacted on by a proposed development as was accounted for in the BDAR as being potentially cleared. It specifically excludes patches of retained vegetation marked as no-go zones in the conditions of consent. See Protected vegetation or fauna habitat.

Diameter at Breast Height (DBH): a standard method of expressing the diameter of the trunk or bole of a standing tree. The measurement is usually taken over the bark at 1.3m above ground height.

Direct impact: assessed by the BAM as those that result from clearing vegetation for a development. These impacts are predictable, usually occur at or near to the subject land and can be readily identified during the planning and design phases of a development. Direct impacts may be permanent (e.g. construction of a railway or building) or temporary (e.g. only occurring over weeks or months) and may result in partial (e.g. ground cover, litter and functional attributes such as logs removed but all other structural components of the vegetation remain) or complete clearing.

Endangered ecological community (EEC): an ecological community specified in Part 2 of Schedule 2 of the BC Act and/or listed under Part 13, Division 1, Subdivision A of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Foliage cover: the percentage of a plot area that would be covered by a vertical projection of the foliage and branches and trunk of a plant, or plants or a growth form group. Foliage cover can also be referred to as percent foliage cover.

Habitat: an area or areas occupied, or periodically or occasionally occupied, by a species or ecological community, including any biotic or abiotic component.

High threat exotic plant cover: plant cover composed of vascular plants not native to Australia that if not controlled will invade and outcompete native plant species. Also referred to as high threat weeds.

Hollow bearing tree: a living or dead tree that has at least one hollow. A tree is considered to have a hollow if:

(a) the entrance can be seen

(b) the minimum entrance width is at least 5 centimetres across

(c) the hollow appears to have depth

(d) the hollow is at least 1 metre above the ground.

Indirect impact: development related activities not associated with clearing for the development footprint and are described in Paragraph 9.1.4.2 of the BAM. Examples include increased noise, dust, light spill, weeds and pathogens and edge effects that can be reasonably attributed to the development. Compared to direct impacts, indirect impacts often:

- occur beyond the development footprint or even the subject land
- have a lower or variable intensity of impact compared to direct impacts

- may be harder to predict spatially and temporally
- may have unclear boundaries of responsibility.

Native ground cover: all native vegetation below 1m in height, including all such species native to NSW (i.e. not confined to species indigenous to the area).

Native vegetation cover: the percentage of native vegetation cover on the subject land and the surrounding buffer area. Cover estimates are based on the cover of native woody and non-woody vegetation relative to the approximate benchmarks for the PCT, taking into account vegetation condition and extent. Native over-storey vegetation is used to determine the percent cover in woody vegetation types, and native ground cover is used to assess cover in non-woody vegetation types.

Offset requirement: the number and type of biodiversity credits that are required to offset the remaining impacts of development on biodiversity values after all reasonable measures have been taken to avoid and minimise impacts

Plant community type (PCT): a NSW plant community type identified using the PCT classification system.

Plot: an area within a vegetation zone in which site attributes are assessed.

Prescribed impacts: are those that may affect biodiversity values in addition to, or instead of, impacts from clearing vegetation. These impacts may be difficult to quantify or offset as they often affect biodiversity values that are irreplaceable. Prescribed impacts are listed under clause 6.1 of the BC Regulation.

Protected vegetation or fauna habitat: any native vegetation or fauna habitat located outside the approved disturbance footprint described in the EIS, i.e. a no-go zone

Regeneration: the proportion of over-storey species characteristic of the PCT that are naturally regenerating and have a diameter at breast height of less than 50mm.

Stream order: has the same meaning as in Appendix 3 of the BAM. Strahler stream order process where the number begins at the top of a catchment with headwater flow paths assigned number one, where two order one flow paths join, the section downstream of the junction is order two. Where two second order streams join the waterway downstream of the junction is order three, and so on. As a lower order and a higher order waterways join they retain the higher order number (e.g. order one joins order three, the waterway remains a third order).

Threatened Ecological Community (TEC): the collective term for ecological communities such as a critically endangered ecological community, an endangered ecological community or a vulnerable ecological community listed in Schedule 2 of the BC Act and/or listed under Part 13, Division 1, Subdivision A of the EPBC Act.

Threatened species: a critically endangered species, an endangered species or a vulnerable species listed in Schedule 1 of the BC Act or any additional threatened species listed under Part 13 of the EPBC Act as critically endangered, endangered or vulnerable.

Tree Protection Zone (TPZ): A perimeter of exclusion around individual trees where root disturbance should be minimised by activities such as compaction or digging. The radius of tree protection zone (TPZ) is calculated for each tree by multiplying its diameter at breast height (DBH) by 12 in accordance with the Standards Australia Committee (2009).

Vegetation Integrity (VI): the degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state.

1 Introduction

1.1 Background

The New England Solar Farm (NESF) is a State Significant Development (SSD) and represents an important contribution to renewable energy generation in New South Wales (NSW). Development consent was granted on 9 March 2020 (SSD 9255) for the construction and operation of the 720 megawatt (MW) photovoltaic NESF with an energy storage facility, located approximately 6 kilometres (km) east of the township of Uralla within the Uralla Shire Local Government Area (LGA).

The Environmental Impact Statement (EIS) assessed the impacts of the NESF on biodiversity and a Biodiversity Development Assessment Report (BDAR) was prepared by EMM in November 2018 to support the EIS. The BDAR was prepared under the Biodiversity Assessment Method (BAM). Condition 3.11 of the Development Consent issued by the NSW Department of Planning, Industry and Environment (DPIE) on 9 March 2020 states that a Biodiversity Management Plan (BMP) must be prepared. The NESF must also be carried out generally in accordance with the EIS (Condition 2.2 of the Development Consent), therefore mitigation measures from the EIS, BDAR and Addendum Report also form requirements of the BMP. An addendum to the Biodiversity development assessment report was prepared on December 2020 as part of a development consent modification to access roads (Modificaton 1) . Modification 1 was approved by DPIE on 19th February 2021 and it has resulted with additional clearing of native vegetation requiring a biodiversity credit obligation. The Modification 1 Biodiversity report found that the management and mitigation requirements are as for the those already outlined in the original BDAR (EMM 2018), appended to the EIS.

UPC/AC Renewables Australia Pty Ltd (UPC/AC Renewables Australia) is the applicant for NESF. Green Light Contractors Pty Ltd (GLC) is the Engineering Procurement and Construction (EPC) contractor engaged by UPC/AC Renewables Australia to build the NESF.

1.2 Environmental Management System Overview

This BMP forms part of the NESF environmental management framework, as described in the Environmental Management Strategy (EMS). The EMS has been prepared to address the construction and operation requirements of:

- Development Consent for SSD-9255 issued by DPIE on 9 March 2020
- Modification of Development Consent for SSD-9255 issued by DPIE on 19 February 2021
- Mitigation and management measures and commitments in the NESF EIS (Feb 2019), the Amendment Report (AR) (June 2019) and Additional Information (December 2019)
- All applicable legislation, during the construction and operation of the NESF.

The environmental management objective of the BMP under the EMS is to therefore comply with all Development Consent conditions and mitigation and management measures.

1.3 Purpose of this BMP

The purpose of this BMP is to describe how impacts on biodiversity will be minimised and managed during the construction of Stage 1 of the NESF under the framework of the EMS. Implementing this BMP will ensure that the project team meets its requirements in a methodical manner and continually monitors and improves its performance. This BMP will be used by NESF personnel and contractors in conjunction with the EMS, as these documents clearly identify required environmental management actions for the NESF.

This BMP was submitted to DPIE on *9 December 2020.*

1.4 Objectives

The key objective of the BMP is to ensure that impacts to biodiversity are managed and are within the scope permitted by the Development Consent. To achieve this objective, UPC\AC Renewables Australia and its EPC contractor will:

- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise potential adverse impacts to biodiversity values in the NESF development footprint
- Ensure appropriate measures are implemented to address the mitigation measures detailed in the EIS, BDAR and Development Consent

- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3 of this BMP.

1.5 NESF Description

UPC\AC Renewables Australia obtained Development Consent from DPIE on 9 March 2020 for NESF (refer to Figure 1-1 below).

NESF will comprise a new solar farm with a generating capacity of approximately 720 megawatts (MW) and 200 MW/400 MW-hour (MWh) of battery storage. The Development Consent issued on 9 March 2020 also involves the upgrading and decommissioning of infrastructure and equipment in the future. While the capacity of the NESF may increase over time as technology improves, the footprint of the NESF would not increase.

NESF will consist of two solar array areas, being the northern and central array areas, connected by above and/or below ground cabling and an internal access road. The northern and central array areas will have generating capacities of about 500 MW and 220 MW respectively. The NESF will connect to TransGrid's existing 330 kilovolt (kV) transmission line that transects the NESF development footprint.

Construction of the NESF is anticipated to take approximately 36-40 months, from the commencement of site establishment works to commissioning of both arrays. The NESF will be constructed in two stages, with Stage 2 estimated to commence approximately 12-14 months after the commencement of the site establishment works planned as part of Stage 1. The two stages include:

- Stage 1 (approximately 24 months) - construction of the northern array area including the solar array substation and the grid substation
- Stage 2 (approximately 24 months) - construction of the central array area including the solar array substation, and the construction of the battery energy storage system (BESS).

It is expected that Stage 1 construction will commence in Q1 2021, preceded by a few months of early works. The exact timing of each stage, the commencement of Stage 1, the commencement of Stage 2, and the subsequent duration of the overlap between the two stages is still being finalised. Similarly, the overall duration of construction will be confirmed once the detailed construction schedule is confirmed. The timeframes are conservative and indicative only at this time.

This BMP applies only to the Stage 1 construction works.

Unless approval has been obtained from the Secretary, construction, upgrading and decommissioning activities on site can only be undertaken between the following hours:

- 7 am to 6 pm Monday to Friday
- 8 am to 1 pm Saturdays
- At no time on Sundays and NSW public holidays.

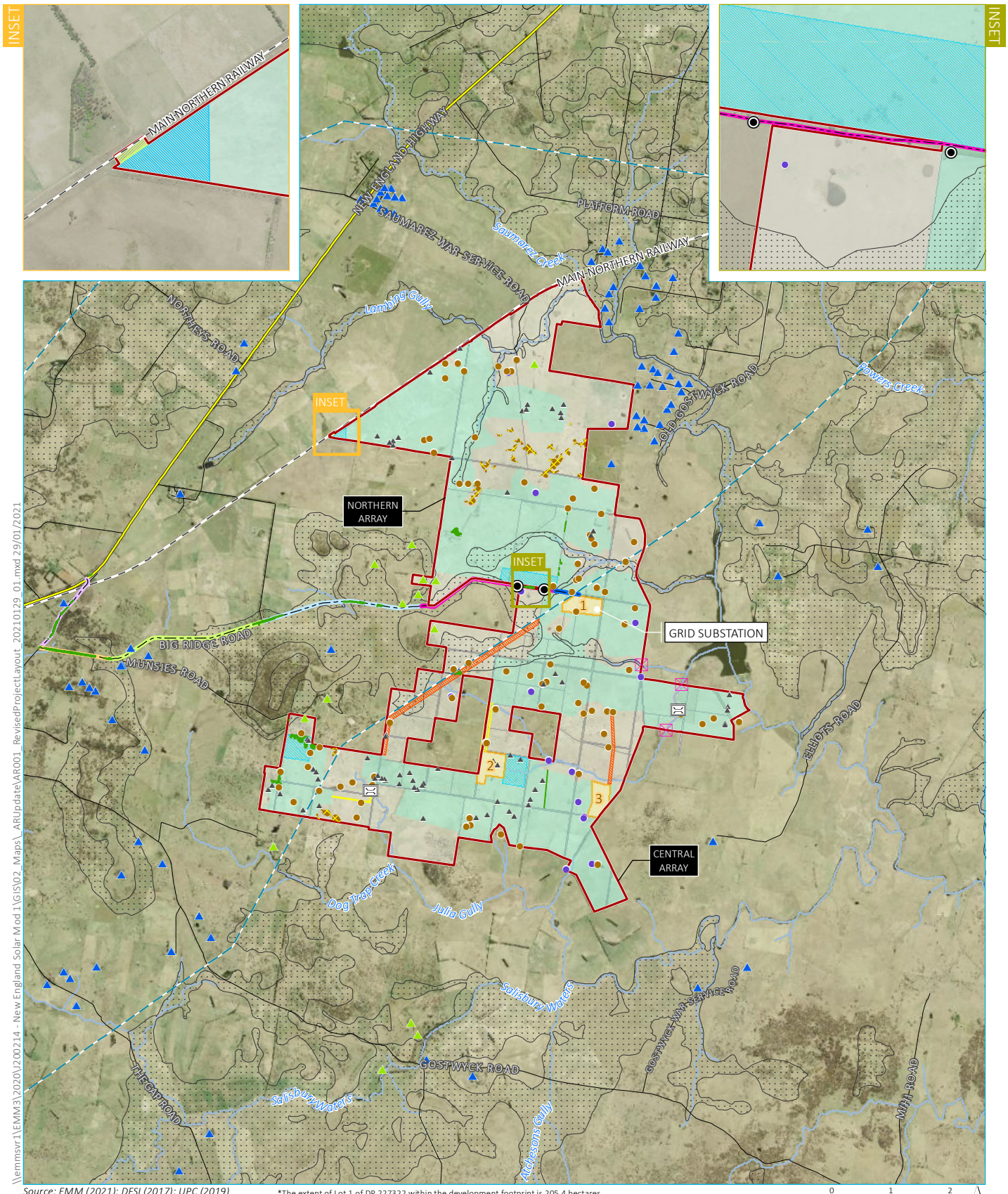
Key components of the NESF are summarised in Table 1-1 and depicted in Figure 1-1 below.

Table 1-1 Key components of the NESF

Aspect	Description
NESF project summary	The NESF project includes: • A generating capacity of approximately 720 MW, including about 400 MW generated by the northern array and 320 MW from the central array • Approximately 1.4 million single-axis tracking solar panels (up to 4.3 metres (m) high) and 150 power conversion units (PCU) (up to 2.7 m high) • A grid substation in the northern array area and connection to TransGrid's 330 kilovolt (kV) transmission line • An internal substation in the central array area at one of two locations

Aspect	Description
	• A lithium-ion battery storage facility (200 MW/400 MWh) located adjacent to one or both of the substations and within a number of small enclosures (up to 2.9 m high) or larger battery buildings (up to 5.5 m high) • A train unloading area, internal access tracks, staff amenities, maintenance buildings (up to 8 m high), offices, laydown areas, car parking and security fencing; and • Subdivision of land within the northern array for the grid substation.
Project area	• Site: 3,362 hectares (ha) • Total NESF development footprint: 2,061 ha – Northern array footprint: 1,394 ha – Central array footprint: 624 ha – Electrical cabling and site access corridors: 43 ha.
Access route	• All vehicles will access the site via the New England Highway, Barleyfields Road (north of Big Ridge Road), and Big Ridge Road.
Site entry and road upgrades	• Two new site entry points will be constructed on Big Ridge Road with a rural property access type. • Upgrades to the intersection of: – The New England Highway and Barleyfields Road, including a Channelised Right Turn (CHR) treatment (pending relevant authority approvals). – Barleyfields Road and Big Ridge Road, including a Basic Left Turn (BAL) treatment. • Upgrades to: – Barleyfields Road between the New England Highway and Big Ridge Road, including sealing to a width of 7.2 m and 1 m gravel shoulders – Big Ridge Road including sealing sections to a width of 7.2 m and 1 m gravel shoulders, and upgrading a section with a gravel surface to a width of 8.7 m.
Rail transport	• Construction materials may be transported to the site via a combination of road and rail (average of 2 trains per week) • A train unloading area and materials storage area may be constructed adjacent to the Main Northern Railway. Materials will be stored in shipping containers (up to 2.9 m high) until required on-site.
Construction	• Construction materials may be transported to the site via a combination of road and rail (average of 2 trains per week) • Construction hours limited to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm.
Operation	• The expected operational life of the NESF is approximately 30 years. However, the NESF may involve infrastructure upgrades that could extend the operational life.
Decommissioning and rehabilitation	• The NESF also includes decommissioning at the end of the NESF project life, which will involve removing all infrastructure.

Aspect	Description
Hours of operation	• Typically operations and maintenance will be undertaken Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm.
Subdivision	• Subdivision of the lots on which the approved grid substation will be located.
Employment	• Approximately 700 construction jobs and up to 15 full-time operational jobs.
Capital investment value	• $768 million.



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Source: EMM (2021); DFSI (2017); UPC (2019)

*The extent of Lot 1 of DP 227322 within the development footprint is 205.4 hectares, which represents approximately 8.4% of the total lot. Subsequently, the full extent of Lot 1 of DP 227322 has been excluded from the project boundary.

** The grid substation (location 1) and only one of potential substation location numbers 2 or 3 to be constructed

0 1 2 km

GDA 1994 MGA Zone 56

N

KEY

- 330 kV transmission line
- Rail line
- Main road
- Local road
- Watercourse/drainage line
- Project boundary *
- Biophysical Strategic Agricultural Land

Sensitive receptors

- Project-related
- Non-project related

Development footprint

- Solar array
- Potential electrical cabling
- Potential site access/electrical cabling
- Potential laydown area/site compound
- Potential substation/BESS footprint (location number) **
- Hardstand in rail corridor
- Potential creek crossing
- Proposed primary site access point
- Indicative location of security fencing across third order watercourses

- Identified Aboriginal sites
- Historic heritage sites
- Paddock trees requiring offsets
- Plant community requiring offset

Plant community type avoidance areas

- PCT 510 woodland

Primary vehicle access route

- Barleyfields Road
- Big Ridge Road - segment 1
- Big Ridge Road - segment 2
- Big Ridge Road - segment 3
- Big Ridge Road - segment 4
- Big Ridge Road - segment 5

Project layout

New England Solar Farm

EMM creating opportunities

1.6 Consultation

SMEC undertook consultation with DPIE and the Biodiversity, Conservation and Science (BCS) on 18 November 2020 to discuss the content of this BMP. Correspondance from the BCS on their preferred method of providing input would be to provide comments on the draft BMP. This correspondence is provided in Appendix D.

A draft of the BMP was sent to DPIE on *9 December 2020* for review and comment.

Responses from DPIE were received on *21 January 2021* and *16 February 2021*. Those comments have been addressed and are included in this version of the BMP.

2 Existing Environment

2.1 Vegetation Communities

The current use of the NESF development footprint area is primarily for sheep and cattle grazing. Native vegetation is highly modified by both historical and ongoing land management practices including clearance of the original vegetation type, cropping, livestock grazing, applicaiton of fertilisers, ploughing and weed invasion. No vegetation within the development footprint is considered intact. Where woodland occurs, it is either limited to planted native wind breaks or patchy remnant woodland with an entirely absent mid storey and disturbed groundcover. The site contains 93 "paddock trees," which are mature native trees isolated by pasture or low condition vegetation that is not considered part of a native plant community. Paddock trees can provide habitat for fauna including hollows and nesting sites.

Native vegetation within the site was attributed to two plant community types (PCTs) across four zones within the BDAR (EMM, 2018), namely:

- PCT 510-Blakely's Red Gum - Yellow Box grassy woodland of the New England Tableland Bioregion woodland
- PCT 510-Blakely's Red Gum - Yellow Box grassy woodland of the New England Tableland Bioregion pasture
- PCT 510-Blakely's Red Gum - Yellow Box grassy woodland of the New England Tableland Bioregion planted
- PCT 1174-Silvertop Stringybark open forest of the New England Tableland Bioregion woodland.

Both the "woodland" and "pasture" zones of PCT 510 were of very low vegetation integrity – below the thresholds required for offsetting under the Biodiversity Offset Scheme (BOS). In addition to these two PCTs identified within the site, dams and exotic vegetation were also identified including cropped land, exotic grassland and exotic trees.

The extent of PCT 510_woodland within the site, despite being degraded, represents a Threatened Ecological Community (TEC) and has the potential to support several threatened fauna species. Those areas of PCT 510 which had the largest patch size, highest density of trees remaining, and the highest level of connectivity have been avoided through design modifications and will be retained in no-go zones. Prior to commencing clearing within the project boundary, security fencing or bunting (or similar) will be installed along the Fence Perimter. These areas of PCT 510 and the security fence perimeter are identified in Figure 2-1.

2.2 Threatened Flora

Based on both habitat assessments and field surveys, the NESF development footprint is not likely to be important habitat for threatened flora or fauna species.

2.3 Threatened Fauna

Based on both habitat assessments and field surveys, the NESF development footprint is also not likely to be important habitat for threatened fauna species. The Box Gum Grassy Woodland containing occasional Yellow Box trees and the paddock trees are identified as potential foraging habitat for the Regent Honeyeater (*Anthochaera phrygia*), Swift Parrot (*Lathamus discolor*) and Painted Honeyeater (*Grantiella picta*); however, nesting sites for these species on the NESF development footprint are unlikely. No significant fauna movement corridors exist within the site, which is a result of high levels of existing fragmentation and small patch sizes.

2.4 Migratory Birds

The airspace associated with the whole NESF development footprint also provides potential foraging habitat for the Fork-tailed swift and White-throated Needletail, but again nesting habitat is not present. The site does not provide habitat for other migratory species.

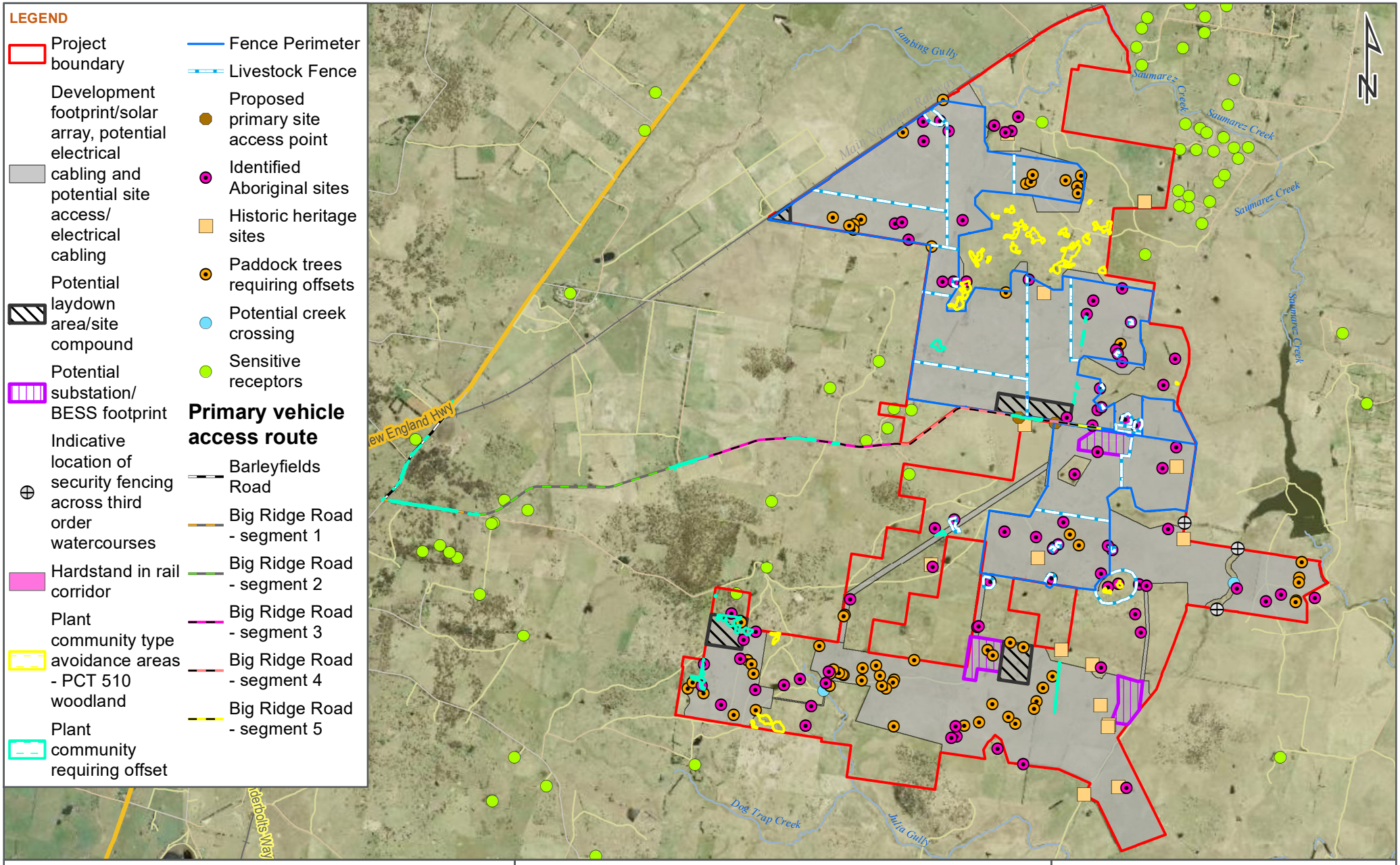

FIG NO. 2-1 **FIGURE TITLE** Project layout - MOD1

DATE 09/07/2020

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COORDINATE SYSTEM GDA 1994 MGA Zone 56

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PROJECT NO. 30018016 **PROJECT TITLE** New England Solar Farm

CREATED BY JT14432

SOURCES
public_NSW_Imagery: © Department of Customer Service 2020, Roadnet MDS 2019

Location: V:\2021\NESF\20210223\NESF_Fig2_1_20210223.mxd

Last updated by: JT14432 on 23/02/2021 at 13:30

2.5 Weed and Pest Species

Blackberry (*Rubus fruticosus spp. agg*), a weed of national significance (WoNS), was identified within the NESF development footprint in isolated patches. The *Biosecurity Act 2015* requires mandatory measures implemented as per Clause 33 of the *Biosecurity Regulation 2017*: a person must not import into the State or sell this species.

One regional priority weed species was identified within the NESF development footprint. Regional priority weeds are classified under a General Biosecurity Duty (GBD). GBD expects a shared responsibility within the region for managing the following weed:

- Sweet briar (*Rosa rubiginosa*) - Land managers should prevent the spread of this weed from their land, where feasible. Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment.

Several species were recorded which are listed as additional species of concern. These are species that may have a high weed risk though there is not sufficient knowledge of the risk or impact to define a feasible regional response. These include; Cocksfoot (*Dactylis glomerata*), Paspalum (*Paspalum dilitatum*), Sweet Vernal Grass (*Anthoxanum odoratum*) and Hawthorn (*Crateagus monogyna*).

It is unclear if any introduced fauna species were recorded on the site as the BDAR does not mention any and a comprehensive fauna survey was not undertaken. The Protected Matters Search lists the following introduced species that have been recorded within 10 km of the NESF development footprint:

- Cat (*Felis catus*)
- House mouse (*Mus musculus*)
- Rabbit (*Oryctolagus cuniculus*)
- Feral deer (several species)
- Pig (*Sus scrofa*)
- Brown Hare (*Lepus capensis*)
- Black rat (*Rattus rattus*)
- Fox (*Vulpes Vulpes*).

3 Relevant Legislation and Guidelines

3.1 Legislation

Legislation relevant to biodiversity management includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *National Parks and Wildlife Act 1974* (NPW Act)
- *Biodiversity Conservation Act 2016* (BC Act)
- *Protection of the Environment Operations Act 1997* (POEO Act)
- *Fisheries Management Act 1994* (FM Act)
- *Local Land Services Act 2013*
- *Biosecurity Act 2015*
- *Pesticides Act 1999*
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Statutory approvals are required under some of these Acts and are detailed within the EIS.

3.2 Guidelines and standards

The main guidelines, specifications and policy documents relevant to this BMP include:

- *Policy for the Translocation of Threatened Fauna in NSW: Policy and Procedure Statement No. 9 Threatened Species Unit, Hurstville NSW* (NSW National Parks & Wildlife Service, 2001)
- Relevant recovery plans, priority action statements and best practice guidelines
- *Hygiene protocol for the control of disease in frogs* (DECCW, 2008)
- *Australian Standard AS 4373 Pruning of Amenity Trees*
- *Australian Standard 4970 – 2009 Protection of Trees*.

3.3 Development consent

DPIE issued approval for the NESF on 9 March 2020. A development approval modification (MOD-1) was lodged and subsequently approved on 19th February 2021. Specific conditions relating to biodiversity which are relevant to mitigation and management measures are listed in Table 3-1.

Table 3-1 Development Consent Conditions - Biodiversity

Condition no.	Condition Requirement	NESF Phase	Where Addressed
Schedule 3 (7) Landscaping	Within 3 years of commencement of construction, the owner of N1 may request in writing that the Applicant to plant a vegetation screen to minimise the visual impacts of the northern array on the N1 property. Upon receiving such a written request from the owner of N1, the Applicant must implement reasonable and feasible landscape screening in consultation with the owner making the request. The vegetation screen must: a. Be wholly contained within the site b. Consist of native species that facilitate the screening of the view of the solar panels and ancillary infrastructure from within the N1 property c. Be implemented within 12 months of receiving the written request, unless the Secretary agrees otherwise	Provisional – Include in subsequent BMP reviews if activated.	N/A

Condition no.	Condition Requirement	NESF Phase	Where Addressed
	d. Be properly maintained with appropriate weed management. If the Applicant and owner for N1 cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.		
Schedule 3 (8) Land Management	Following any construction or upgrading of the site, the Applicant must: a. Restore the ground cover of the site as soon as practicable b. Maintain the ground cover with appropriate perennial species c. Manage weeds within this ground cover d. Manage feral pest species.	Construction and Operational	Section 5 Appendix C
Schedule 3 (9) Vegetation Clearance	The Applicant must not clear any native vegetation or fauna habitat located outside the approved disturbance footprint described in the EIS	Construction and Operational	Section 4.1 Section 5
Schedule 3 (10) Biodiversity Offsets	Prior to commencing the development under this consent, the Applicant must retire biodiversity credits of a number and class specified in Table 1 and 2 of the consent item, to the satisfaction of BCD unless the Secretary agrees otherwise. The retirement of these credits must be carried out in accordance with NSW Biodiversity Offsets Scheme.(note: additional credit obligation may be generated by a BDAR review, pending Sep 2020)	Prior to construction	Modified below. Section 5.2
Ammendment to Biodiversity Offets	Extension of time for retirement of Biodiveristy credits to 31 March 2021 by approval of the Department. Works that are the subject of Modification 1 can commence and biodiversity credits need to be retired by 31 March 2021	31st March 2021.	Section 5.2
Schedule 3 (11) Biodiversity Management Plan	Prior to commencing the development, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with the BCD, and to the satisfaction of the Secretary. The plan must include a description of the measures that would be implemented as shown in sub section (a) below.	Prior to construction	This document
Schedule 3 (11a) Biodiversity Management Plan Measures	• Protecting vegetation and fauna habitat outside the development footprint.	All stages	Section 2.1 Section 5
	• Managing the remnant vegetation and fauna habitat on site.	All stages	Section 2.1 Section 2.2 Section 5
	• Minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development.	Construction	Section 5

Condition no.	Condition Requirement	NESF Phase	Where Addressed
	• Minimising the impacts to fauna on site and implementing fauna management protocols.	Construction and Operational	Section 5
	• Avoiding the removal of hollow-bearing trees during spring to avoid the main breeding period for hollow -dependent fauna.	Construction	Section 5
	• Rehabilitation and revegetating temporary disturbance areas with species that are endemic to the area.	Construction	Section 5
	• Maximising the salvage of vegetation and soil resources within the development footprint for beneficial reuse in the enhancement or rehabilitation of the site.	Construction	Section 5
	• Controlling weeds and feral pests.	All stages	Section 5 Appendix C
Schedule 3 (11b) Biodiversity Management Plan	The Biodiversity Management Plan must include details of who would be responsible for monitoring, reviewing and implementing the plan and timeframes for the completion of actions.	Prior to Construction Following approval, GLC to implement for construction	Section 6.1

4 Environmental Aspects and Impacts (or NESF Impacts)

4.1 Direct impacts

The direct impacts of the project are associated with the clearing of native vegetation communities and loss of species habitat. In summary this includes:

- Clearing of native vegetation and potential threatened species habitat including paddock trees
- Disturbance of watercourse beds and banks during crossing construction.

Most mapped watercourses within the NESF development footprint no longer have any discernible channel and have no surface water present for most of the time due to extensive damming and diversion with contour banks. Any original riparian vegetation is also non-existent, having been historically cleared. Higher order watercourses such as Salisbury Waters have been avoided by NESF's array areas. Nevertheless, higher order watercourses at the site may require crossing by one or more electricity transmission line or site access track. These activities have the potential to impact on fish passage at the site.

A specific creek crossing sub-plan will be included as part of the Construction Environmental Management Plan (CEMP).

4.2 Prescribed impacts

The risk of potential prescribed impacts is considered minor and able to be mitigated. These include:

- Fauna vehicle strike
- Impacts to surface water quality and quantity due to sediment runoff and/or contaminant runoff into adjacent watercourses
- Impacts to groundwater water quality and quantity due to sediment runoff and/or contaminant runoff into adjacent watercourses
- Fragmentation of habitats and associated impacts to connectivity and fauna movement.

It is unlikely that groundwater will be intercepted during the construction, operation and decommissioning of the NESF, due to the estimated depth to groundwater within the NESF boundary and the limited amount of subsurface disturbance activities required during the installation and decommissioning of NESF infrastructure. Except for diesel, the NESF does not require large inputs or storage of chemicals/liquids which pose a risk to groundwater contamination.

The removal of native vegetation has the potential to result in fragmentation of fauna habitat, with resultant effects on fauna species movement, reproduction and gene flow. Habitat fragmentation for threatened species is anticipated to be negligible, given that no significant fauna movement corridors currently exist within the NESF development footprint, which is a result of high levels of existing fragmentation and small patch sizes.

4.3 Indirect impacts

The risk of potential indirect impacts is also considered low with appropriate mitigation measures. Potential impacts include:

- Increased noise, vibration and dust levels
- Artificial lighting impacting nocturnal species behaviour
- Introduction of weeds and pathogens.

The BDAR does not specifically identify the risk of the NESF exacerbating existing weed or feral animals although this potential impact has been considered in this BMP.

5 Biodiversity Mitigation and Management Measures

Table 5-1 below is the full list of Mitigation and Management measures to address biodiversity impacts as taken directly from the EIS, AR (June 2019) and Additional Information (December 2019), and prescribed in the Development Consent. The Monitoring Program Summary provided in Table 6-1 within Section 6.3 should be referred to for more specific performance measures relevant to this plan. It lists the timing points for when measures need to have commenced and reached key targets. The detailed steps to implementing the measures are set out within Section 7, Protocols and Procedures.

Table 5-1 List of Biodiversity Mitigation and Management Measures

Impact	Mitigation and Management Measures	Reference
Clearing of native vegetation and threatened species habitat	1. Avoid and minimise clearing impacts to protected vegetation or fauna habitat where practicable.	EIS BMP Protocol 1
	2. Clearing limits will be clearly marked to prevent clearing beyond the extent of the NESF development footprint. Tree clearing and disturbance will be limited to the NESF development footprint	EIS BMP Protocol 1, 2
	3. Appropriate signage such as 'No Go Zone' or 'Environmental Protection Area' should be installed	EIS BMP Protocol 1.
	4. Identify the location of any 'No Go Zones' in site inductions.	EIS BMP Protocol 1, 2.
	5. Rehabilitating and revegetating temporary disturbance areas with species that are endemic to the area.	Condition of Consent BMP Protocol 8
	6. Manage the remnant vegetation and fauna habitat on site.	Condition of Consent BMP Protocol 5,6.
	7. Maximise the salvage of vegetative and soil resources within the development footprint for beneficial reuse in the enhancement or the rehabilitation of the site.	Condition of Consent BMP Protocol 3, 6.
Clearing of hollow bearing trees / habitat trees, resulting in fauna injury and mortality	8. Limit removal of trees (including dead trees) to that required within the NESF development footprint in support of the installation of NESF infrastructure.	EIS BMP Protocol 3
	9. A tree clearing procedure will include preclearance surveys, which will be completed to determine if any nesting birds are present.	EIS BMP Protocol 3.
	10. A suitably trained fauna handler will be present during hollow-bearing tree (including dead hollow-bearing trees) clearing to rescue and relocate displaced fauna if found on-site.	EIS BMP Protocol 4.
	11. Installation of appropriate exclusion fencing around trees and woodland to be retained within the NESF development footprint whilst construction is occurring. The radius of tree protection zone (TPZ) is calculated for each tree by multiplying its diameter at breast height	EIS BMP Protocol 1.

Impact	Mitigation and Management Measures	Reference
	(DBH) by 12 in accordance with the Standards Australia Committee (2009). 12. Appropriate education should be provided to site personnel in site inductions regarding the purpose of exclusion fencing or no go zones.	EIS BMP protocol 1.
	13. Avoid the removal of hollow-bearing trees during spring.	Condition of Consent BMP Protocol 3
Vehicle collision with fauna.	14. Speed limits within the NESF development footprint will be limited to 40 km/hr and stated in the CEMP.	EIS BMP Protocol 4
Disturbance of river/creek beds and banks during crossing construction (including construction of creek crossings).	15. Source controls, such as mulching, matting and sediment fences, will be utilised where appropriate. 16. An erosion and sediment control (ESC) plan will be prepared in accordance with Managing Urban Stormwater: Soils and Construction (Landcom 2004) prior to commencement of construction. 17. Disturbed areas will be stabilised and rehabilitated as soon as possible to reduce the exposure period. 18. A specific creek crossing sub-plan will be included as part of the CEMP. 19. All creek crossings are to comply with the Policy and Guidelines for Fish Friendly Waterway Crossings (DPI undated).	EIS BMP Protocol 8
Transfer of weeds and pathogen to and from site.	20. Appropriate wash down facilities will be available to clean vehicles and equipment prior to arrival and when leaving site. In particular, ensure soils and seed material isn't transferred in accordance with the measures outlined in the CEMP.	EIS BMP Protocol 5.
Artificial lighting impacting fauna behaviour	21. Lighting to comply with Australian standard AS4282:2019 – Control of Obtrusive Effects of Outdoor Lighting.	EIS
Impacts from existing weeds and feral animals	22. Control weeds and feral pests.	Development Consent. BMP Protocol 5
Threatened species	23. The BMP will include an unexpected finds protocol for threatened species, which will include advice and photographs of key species with the potential to occur within the development footprint. The unexpected finds protocol will outline the following actions if a threatened species or suspected threatened species is found during construction or operation of the project: (i) stop work within the vicinity of the species; (ii) cordon of the area in question with an appropriate buffer; (iii) inform the management team;	Appendix B of the EIS Addendum Report BMP Protocol 7.

Impact	Mitigation and Management Measures	Reference
	(iv) seek advice from an ecologist or species expert to confirm identification; and (v) if a threatened species is confirmed, consult with the relevant agencies to determine appropriate mitigation and management measures and additional approvals (if required).	
General	24. Measures to mitigate impacts specific to the road widening will include reduced speed limits for project-related vehicle movements, which will be detailed in the traffic management plan (TMP). Given that the access route utilises public roads, reduced speed limits for public vehicles may not be enforced (except during road upgrade works).	Appendix B of the EIS Addendum Report. Traffic Management Plan.

5.1 Biodiversity Offsets

Pursuant to Condition 4, Schedule 3 of the New England Solar Farm development consent (SSD-9255), the company is obliged to retire biodiversity credits of a number and class specified under its consent prior to commencing the Development, subject to the Secretary's discretion. The Credit obligations as given in those conditions are as follows:

Consent Conditions Table 1 - ecosystem credits reequirements

Vegetation Community	PCT ID	Credits Required
Blakely's Red Gum - Yellow Box grassy woodland of the New England Tableland Bioregion	510	107
Silvertop Stringybark open forest of the New England Tableland Bioregion	1174	78
Broad-leaved Stringybark – Yellow Box shrub/grass open forest of the New England Tableland Bioregion	567	18

Consent Conditions Table 2- Species Credit Requirements

Vegetation Community	Credits Required
Bluegrass *(Dichanthium setosum)*	44
Hawkweed *(Picris evae)*	43
Austral Toadflax *(Thesium australe)*	33
Pale-headed Snake *(Hoplocephalus bitorquatus)*	39
Glossy Black-Cockatoo *(Calyptorhynchus lathami)*	30
Squirrel Glider *(Petaurus norfolcensis)*	39
Koala *(Phascolarctos cinereus)*	39
Barking Owl *(Ninox connivens)*	5

A request was submitted by UPC to the Department on *29th January 2021* to defer the retirement of biodiversity credits. In correspondence provided to UPC on *11th February 2021*, the Department agreed to deferring this

requirement until 31st March 2021 (Appendix E). Prior to this date, UPC will arrange payment into the Biodiversity Conservation Fund to satisfy the project's offset obligation. Details on this process are outlined at https://www.bct.nsw.gov.au/cards/pay-fund-offset-development."

A modification application (Modification 1) for revised road upgrades was approved by the Department on 19th February 2021. This modification has varied the number and type of biodiversity offset credits required for the project. The retirement of these additional credits is to be in line with the existing credit obligations. This revision has considered Modification 1. See section 6.6.

6 Compliance Management

6.1 Roles and responsibilities

UPC/AC Renewables Australia is the Applicant for NESF and as such has ultimate responsibility and accountability to ensure that the NESF is designed, built, operated, upgraded and decommissioned in accordance with the Development Consent.

GLC is the EPC Contractor with the responsibility to build the NESF for UPC/AC Renewables Australia. GLCs contractual obligations do not extend to the operation, upgrading or decommissioning of the NESF. The contractual requirements do, however, extend to the design and construction of the NESF in compliance with the NESF Development Consent. This responsibility extends to all employees and/or sub-contractors engaged by GLC to build the NESF.

Roles for implementation of Biodiversity Management Actions are given in the Protocols and Procedures (Chapter 7) and responsibilities for monitoring activities are provided in Table 6-1 within Section 6.3 below.

6.2 Training

All employees, contractors and staff working on site will undergo induction training covering all procedures and protocols included within this BMP. Site induction provides an introduction to the ground disturbance permit (Appendix B) and vegetation clearing processes, traffic movement restrictions and hygiene, threatened fauna identification and handling and locations of environmentally sensitive areas. Further details regarding staff induction and training are outlined in the EMS.

Staff and contractors will attend pre-commencement meetings at the beginning of each shift, which will include the details of any urgent biodiversity matters such as any breeched protocols or procedures. Longer toolbox meetings will occur weekly where staff and contractors will be made aware of any less urgent biodiversity matters and reinforce training on implementing protocols and procedures.

6.3 Inspections and monitoring

Monitoring of sensitive areas and activities with the potential to impact biodiversity will occur during both construction and operation of NESF. Table 6-1 below provides the details of monitoring requirements, frequency, and targets for NESF.

Biannual monitoring of any retained native vegetaton or habitat on the the development site with an annual report by a suitably qualified ecologist will report the status of most mitigation measures to be reported to DPIE. Ecological monitoring will not be able to access the areas of protected native vegetation or fauna habitat outside the fenced areas of the solar farm.

In areas of ground disturbance where rapid native ground cover is required as soon as possible, such as under the solar arrays, the target cover is 70% minimum. Monitoring will judge success by evaluating that no areas of greater than 2x2 metres fall below this coverage level.

Issues requiring immediate or ongoing attention will be addressed by the Health, Safety and Environment (HSE) Manager or delegate. Monitoring during construction will include monthly inspections of high disturbance areas, groundcover, protected woodland areas and boundary fence lines.

The HSE Manger or delegate will also note incidental occurrences of any fauna killed or injured. Threatened fauna mortalities will be reported to DPIE and the deaths of any birds resulting from with site infrastructure will be recorded.

The actual area of impact resulting from the construction of the project will be used to verify that the designated offsets for the NESF are adequate.

Table 6-1 Monitoring of Mitigation and Management Measures.

Measures	Monitoring	Timing	Performance Measures	Who	Reporting
1. Avoid and minimise clearing impacts to native PCTs where possible.	Visual inspection of clearance activity.	Regularly as required during clearing activities.	No clearing of protected native vegetation or fauna habitat as mapped. No clearing outside of the approved development footprint. Vegetation designated for Biodiversity offset credit obligations, or low quality native PCT not requiring offset in the development foot print may be cleared to the minimum practicable extent. Clearing impacts within the approved area for clearing in the development footprint is minimised wherever practicable.	Project Manager HSE Manager	On site reporting
2. Clearing limits will be clearly marked to prevent clearing beyond the extent of the NESF development footprint. Tree clearing and disturbance will be limited to the development footprint of the NESF.	Inspection of protected vegetation demarcation.	Prior to clearing.	All no-go zones clearly demarked with bunting or similar, prior to clearing subject to UPC\AC Renewables being permitted by the respective private landholder. Security fencing, or bunting fencing or similar is to be installed along the Fence Perimeter prior to the commencement of vegetation clearing within the Project Boundary, as shown in Figure 2-1. construction of the fenceline itself can constitute a disturbance event so the temporary “environmental protection area”demarcation will remain in place until the completion of the permiter fenc. Trees for removal will be clearly marked. Trees for retention unmarked or protected with bunting string if at risk of incursion into the Tree Protection Zone. .	Project Manager HSE Manager Project Ecologist	On site reporting
3. Appropriate signage such as ‘No Go Zone’ or ‘Environmental Protection Area’ will be installed.	Inspection of signage.	Prior to clearing.	All protected areas have signage that is undamaged, subject to UPC\AC Renewables being permitted by the respective private landholder to access and instal signage.	Project Manager HSE Manager	On site reporting
4. Identify the location of any ‘No Go Zones’ in site inductions.	Induction signature.	At time of induction.	Induction material contains this information.	Project Manager HSE Manager	Induction records

Measures	Monitoring	Timing	Performance Measures	Who	Reporting
5. Rehabilitating and revegetating temporary disturbance areas with species that are endemic to the area.	Ecological inspection, quadrats of 2 m x 2 m in barest areas.	6 and 18 months after construction.	70% native cover by 6 months or suitable mulch coverage if season unfavourable for seed growth. 70% native ground cover by 1 year. Salvaged soils and logs used where appropriate.	Project Ecologist	Annual report to BCS
6. Manage the remnant vegetation and fauna habitat on site.	Photo points, and rapid data plots collecting at least 3 dominant species cover per strata in 20x20 metre quadrats	Annually for three years post-construction.	Any improvement by any margin in overall vegetation integrity score by year 3. High threat weed cover meet targets in its own specific management measures.	Project Ecologist	Annual report to BCS
7. Maximise the salvage of vegetative and soil resources from clearing activity within the development footprint area for beneficial re-use in the enhancement or the rehabilitation of the site.	Inspection during clearing, photographs of relocated logs.	Observe salvage at time of clearing, material is used as soon as practical and inspected during rehabilitation monitoring.	Salvaged logs and soils are relocated at appropriate ecological density and locations. Re-use soils from areas with good native groundcover and few weeds to improve the regeneration outcome of measure 5.	HSE Manager Project Ecologist	First Annual report to DPIE
8. Limit removal of trees (including dead trees) to that required within the NESF development footprint in support of the	Review of detailed design plans.	Prior to construction.	Attempts are demonstrated that trees approved for removal in the development footprint are re-considered for retention, particularly if they contain hollows. Any trees that can be retained should be clearly identified prior to clearing using appropriate signage.	HSE Manager	Working design documents and Independent

Measures	Monitoring	Timing	Performance Measures	Who	Reporting
installation of NESF infrastructure.			Avoid unsafe excavation into structural root zones although incursion into the TPZ is acceptable in this case and preferred over removal		Environmental Audit three months after construction commences.
9. A tree clearing procedure will include preclearance surveys to determine if any nesting birds are present.	Ecologists inspection and identification of habitat trees.	No more than 2 weeks prior to clearing.	Trees spray painted "H" for habitat tree. Unexpected threatened species find protocol triggered if required.	Project Ecologist	Ecologist brief report
10. A suitably trained fauna handler will be present during hollow-bearing tree (including dead hollow-bearing trees) clearing to rescue and relocate displaced fauna if found on-site.	Photographs of habitat trees pre and post removal and log of any fauna findings/relocations.	During tree clearance.	All fauna rescued or relocated. Trigger unexpected finds protocol if threatened species found.	Project Ecologist	Ecologist brief report.
11. Installation of appropriate exclusion fencing around trees and woodland to be retained within the NESF development footprint whilst construction is occurring. The radius of TPZ is calculated for each tree by multiplying its DBH by 12 in accordance with the Standards Australia Committee (2009).	Inspection of protected vegetation demarcation.	Prior to clearance.	Trees at risk of unintended soil disturbance have their TPZ guarded by staking or fencing. Incursion into the TPZ is acceptable in the case where a tree can be retained within the development footprint if it otherwise would warrant removal.	HSE Manager	On site reporting
12. Appropriate education will be provided to site personnel by site inductions regarding the	Induction signature.	At time of induction.	Induction material contains this information.	HSE Manager	Induction records

Measures	Monitoring	Timing	Performance Measures	Who	Reporting
purpose of exclusion fencing or no-go zones.					
13. Avoid the removal of hollow-bearing trees during spring.	Dates recorded by ecologist within clearing supervision report.	Plan prior to clearance.	No clearing of hollow bearing trees in spring or contingency alternative with consent authority.	Project Ecologist	Ecologist brief report
14. Speed limits within the NESF development footprint will be limited to 40 km/hr and stated in the CEMP.	Observation of vehicles.	At all times possible during construction and operation.	Avoiding fauna strikes. CEMP and induction quiz contains the speed limit. Further details including non-compliance punishments are outlined in the TMP.	HSE Manager	Prestart meeting warning of non-compliance.
15. Source controls, such as mulching, matting and sediment fences, will be utilised where appropriate.	Performance of controls monitored.	After rain prior to completion of rehabilitation works.	Prevention of erosion or sedimentation exacerbated by the NESF.	HSE Manager Project Ecologist	On site and Ecologist annual reports
16. An erosion and sediment control (ESC) plan will be prepared in accordance with Managing Urban Stormwater: Soils and Construction (Landcom 2004) prior to commencement of construction.	Pre-development check.	Prior to construction.	A compliant ESC	HSE Manager	Sign off of CEMP and ESC plan
17. Disturbed areas will be stabilised and rehabilitated as soon as possible to reduce the exposure period.	Inspection of ground-breaking activity.	Weekly.	Disturbance is addressed soon as possible.	HSE Manager	On site reporting

Measures	Monitoring	Timing	Performance Measures	Who	Reporting
18. A specific creek crossing sub-plan will be included as part of the CEMP.	Pre-development check.	Sign off of CEMP.	CEMP contains this subplan.	HSE Manager	CEMP sign-off
19. All creek crossings are to comply with the Policy and Guidelines for Fish Friendly Waterway Crossings.	Inspection of creek crossings.	Completion of construction.	Crossings will comply with DPIs Fish Friendly Waterway Crossings.	Project Ecologist	Include in first annual report to BCS
20. Appropriate wash down facilities will be available to clean vehicles and equipment prior to arrival and when leaving site. In particular, ensure soils and seed material isn't transferred in accordance with the measures outlined in the CEMP.	Inspection of availability and functionality of the facilities.	Daily	All vehicles and equipment cleaned prior to arrival and when leaving site.	HSE Manager	On-site vehicle wash-down record/log
21. Lighting to comply with Australian standard AS4282:2019 – Control of Obtrusive Effects of Outdoor Lighting.	Inspection during construction and of completed operational light set up.	Weekly during construction.	Construction and operational phase lighting complies.	HSE Manager	Occupation Certificate
22. Control weeds and feral pests.	HSE manager seasonal lookout for high threat weeds. Ecologists weed mapping of	Seasonal checks for high threat weed outbreaks. End of construction and annual monitoring.	New weed outbreaks contained before spreading to meet biosecurity obligations.	HSE Manager Project Ecologist.	On site reporting and ecologist annual reports

Measures	Monitoring	Timing	Performance Measures	Who	Reporting
	priority weeds.				
23. Control feral pests.	Feral sightings recorded – e.g. rabbits.	Incidental sighting or noted during annual ecological monitoring.	Feral species are identified, and management activated.	HSE Manager Project Ecologist.	On site reporting and ecologist annual reports

6.4 Reporting

Reporting requirements and responsibilities are detailed in the EMS and more specific reporting mechanisms for management actions included in Table 6-1 within Section 6.3. Serious incident reporting is covered under Incident Management within Section 9 of the EMS.

The following biodiversity-specific indicators will trigger reporting to the HSE Manager for the duration of the NESF:

- Presence of injured or deceased fauna, including roadkill
- Scours identified in completed construction areas that are greater than 50 millimetres deep
- Bare ground within native grassland patches greater than 20 m^2
- High threat exotic plant cover greater that 2% of moderate condition PCT 510 grassland
- Low threat exotic plant cover greater than 5% of moderate condition PCT 510 grassland
- High threat exotic plant cover greater than 5% for the remainder of the NESF development footprint
- Low threat exotic plant cover greater than 50% for the remainder of the development footprint
- Groundcover achieves seed set across less than 70% of area
- Feral animals observed on site.

6.5 Auditing

Management review processes are outlined in Section 11.2 of the EMS. For the duration of construction, UPC/AC Renewables Australia will undertake regular management compliance reviews. The focus of these reviews will be on the implementation of the commitments made in the EMS and compliance with the Development Consent. Each management review will be documented and posted on the NESF website.

6.6 BMP review and improvement

Should non-conformances occur, the BMP would be reviewed by the UPC/AC Renewables Australia.

UPC/AC Renewables are also required, in accordance with Condition 2(b) of Schedule 4 of the Development Consent, to:

- Update the strategies, plans and programs required under [the Development Consent] to the satisfaction of the Secretary prior to carrying out any upgrading or decommissioning activities on site
- Review and, if necessary, revise the strategies, plans and programs required under the Development Consent to the satisfaction of the Secretary within 1 month of the:
  - Submission of an incident report under Conditon 7 of Schedule 4 of the Development Cosnent
  - Submissionof an audit report under Conditon 9 of Schedule 4 of the Development Cosnent
  - Any modifications to the conditions of consent.

If Condition 7 Schedule 3 of the Development Consent is activated (i.e., neighbouring property requests a planted screen), this will be added as a new protocol.

Continuous improvement of this BMP will be achieved by the ongoing evaluation of performance against the BMP environmental policies, objectives and targets to identify opportunities for improvement. The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any nonconformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

7 Protocols and Procedures

Table 7-1 below details the procedures to minimise impacts on biodiversity. These protocols are to be followed during the life of the NESF.

Table 7-1 Protocols and procedures for minimising impacts on biodiversity.

Protocol:	Procedure:	Responsibility
1. Native vegetation and threatened species habitat requiring protection	As part of the project refinement process, UPC/AC Renewables Australia undertook steps to avoid, minimise and mitigate impacts to biodiversity. This led to areas of PCT 510_woodland being avoided, particularly in the north-east of the northern array area. This area of woodland is shown on the figure in Appendix 1 of the Development Consent as 'Plant community type avoidance area', a copy of this map is included in Appendix A. Construction methodology for the refined design has allowed for permimeter security fencing, bunting or similar to be installed to separate the development footprint from protected vegetation or fauna habitat areas, including a buffered margin around these areas. This fence will ensure the safety and security of construction personnel and the general public. By necessity the fencing will be designed to exclude people, vehicles and be build with materials robust and fit-for purpose. Once erected this fencing will provide an effective barrier to any potential disturbance to the protected vegetation or fauna habitat areas. The fence effectively segregates the approved clearing boundary (development footprint) from areas to be retained. It should be noted that once the fence is in place pedestrial access outside the solar farms facility will also be restricted. The permanent permiter fencing, or bunting or similar, will be in place prior to clearing within the project boundary. Appropirate signage as specified in mitigation and management measure three is relevant to the fence construction phase and subject to private landowners agreement to the implementation of the protection measures, but not once protected areas become external to the development areas. Temporary signage to notify construction personnel of 'No Go Zone' or 'Environmental Protection Area' must be erected along the fence line, along with flagging tape in any areas within 50 m of mapped protected vegetation or fauna habitat. All native vegetation to be retained in the NESF area is to be delineated with fencing and 'No Go Zone' or 'Environmental Protection Area' signage. The radius of the TPZ is to be calculated for each tree by multiplying its DBH by 12 in accordance with the Standards Australia Committee (2009). This is to be implemented prior to any ground disturbance occurring in the NESF development footprint. Some trees may be identified that can be retained despite being in the development footprint. These trees should be clearly identified for retention, however incursion into their TPZ is acceptable only for these trees if unavoidable and can allow for the retention of the tree. Even retained standing dead trees provide habitat value. Safety of people and infrastructure must be considered and excavation into structural root zones (SRZ), risking the tree's stability must be avoided unless the tree is to be removed. An arborist should be consulted if there are safety concerns. SRZ radius can be calculated as: (DRC x 50) 0.42 x 0.64	HSE Manager

Protocol:	Procedure:	Responsibility
	Where DRC = trunk diameter, in metres, measured above root crown (DRC = Diameter Above Root Crown). Radius is measured from the centre of the stem at ground level. Note: The SRZ for trees with trunk diameters (DRC) less than 0.15 m will be 1.5 m. The locations of all 'No Go Zone' or 'Environmental Protection Area' are to be identified in site inductions. Appropriate education is to be provided to site personnel in site inductions regarding the purpose of exclusion fencing or no-go zones.	
2. Ground disturbance (Pre-clearing)	The ground disturbance permit process is integral to the NESF because it: 1. Communicates the distinction between vegetation protection areas and the approved ground disturbance footprints which contractors will be working within. 2. Enables the Contractor to track and control vegetation clearing on a daily, weekly and monthly basis. The ground disturbance permit procedure is as follows: • Personnel and contractors are informed within their contract and site induction that all ground disturbing activities require them to obtain a ground disturbance permit prior to undertaking the work. • The ground disturbance permit form (Appendix B) is available via GLC permit system and must be submitted to the HSE Manager via email at least 48 hours before the work is planned. • The HSE Manager will compare the proposed ground disturbance locations to the NESF development footprint detailed in the current approved NESF design. • The HSE Manager will visit the site if required and ensure no-go zones for any nearby vegetation projection areas (including a minimum of a 10 m buffer zone) are clearly fenced with signage. • The HSE Manager will either issue the permit unamended or contact the contractor for further clarification. • Once the permit has been issued, the contractor can undertake ground works as per their contract. • Once the work has been completed (date specified in the permit), the HSE Manager will inspect the site, request any additional clean up, rehabilitation or revegetation activities and sign-off that the conditions of the permit have been met. • The HSE Manager will then record the disturbed area as part of a running total disturbed area for the NESF.	HSE Manager
3. Vegetation clearing	Where practicable, trees (including dead trees and particularly mature trees with a DBH >50cm and trees with hollows) will be retained and if removal is considered essential removal of limbs will be considered in the first instance, particularly to retain hollow bearing limbs. If a tree can be retained but lopping of a hollow bearing limb is required it will be inspected by a suitably qualified ecologist and placed in adjacent un-disturbed vegetation to provide fauna habitat.	HSE Manager / Ecologist

Protocol:	Procedure:	Responsibility
	For any trees that can be retained but require lopping, this will be undertaken by a qualified arborist to ensure it is done in a way to optimise tree health. Heavy machinery will not be used for pruning or trimming. Appropriate tools to use are loppers, chain saws and vehicle mounted saws. Where vegetation clearing is to take place and ground disturbance has been approved, the following process is to be followed to minimise the area of disturbance and the amount of vegetation to be cleared: • Preclearing surveys by an ecologist will be completed to determine which trees within an area to be cleared are habitat trees i.e. contain hollows, fissures and or nesting birds are present • A suitably trained fauna handler is to be present during hollow-bearing tree (including dead hollow-bearing or fissure trees) clearing to rescue and relocate displaced fauna if found onsite • Fell trees into the most disturbed area possible, to avoid damaging adjacent vegetation • Do not push felled vegetation into constraints areas. After vegetation clearing has taken place: 1. The boundaries of all cleared areas will be mapped using hand held GPS tracking or similar 2. Isolated paddock trees will be mapped using single GPS points 3. An updated vegetation impact table will be produced, with input from a suitably qualified ecologist 4. The actual area of impact will be used to verify that the designated offsets for the NESF are adequate 5. If inadequate, additional offsets may be required to be added in consultation with the BCS. Removal of hollow or habitat trees Hollow-bearing trees are important habitat feature for a variety of native animals such as possums, gliders, birds and bats. Therefore, before clearing any hollow-bearing trees, it is important to consider if animals are present. The following procedure is to be followed for clearing of any vegetation with hollows or habitat: • Removal of hollow bearing trees will be planned to occur outside of breeding times for arboreal mammals and birds (i.e. spring) • Clear surrounding native vegetation first and allow the hollow-bearing trees to remain standing overnight • After at least 1 night, hollow-bearing trees can be removed in accordance with the steps below • When removing hollow-bearing trees, a spotter will be present at each tree to be removed to look for signs of animal movement in the tree to be cleared. The spotter will be able to communicate directly and safely with the plant operator during operation of the plant • Prior to clearing hollow-bearing trees, use an excavator or loader to hit the trunk as high up the tree as possible several times • Wait at least 30 seconds. Repeat this process several times	

Protocol:	Procedure:	Responsibility
	• Once the hollow-bearing limbs or hollow-bearing tree are on the ground, the spotter must check each hollow and the surrounding area for signs of wildlife before the next limb/tree is removed • If taking the tree down in stages, remove non-hollow-bearing limbs first. Then remove hollow-bearing limbs • Records of any animals removed and relocated or injured must be retained. This will include the location, tree species, where the animal was relocated to or taken if injured • Record the number and size of hollows removed	
4. Fauna rescue and release	In order to minimise disturbance and injury to native fauna speed limits within the NESF development footprint will be limited to 40 km/hr. Any lighting used for early works must comply with Australian standard AS4282:2019 – Control of Obtrusive Effects of Outdoor Lighting. Any injury or death of a native fauna species will be reported to the HSE manager for inclusion in annual environmental reporting. High road kill numbers will trigger adaptive management techniques including reviewing compliance with speed limits or the designated speed limits. As a general principle, any native animals found within the construction area will be avoided and if fauna needs to be handled it will only be done by a suitably qualified ecologist or wildlife carer with relevant skills and experience (e.g. snake handling). Any native fauna found on site within a habitat feature to be removed will be captured and relocated according to the following steps. The following procedure is derived from information provided by the NSW Wildlife Information Rescue and Education Service (WIRES): 1. Ensure that any risks to yourself as a wildlife rescuer are eliminated before approaching the animal. 2. Remove any threat to the animal that could cause or exacerbate an injury. 3. Use appropriate equipment to capture the animal. This may include: Frogs: disposable gloves, disinfectant on hands and equipment between animals, disposable plastic bags (one per animal, one use only). Mammals: gloves, cloth bags/cotton pillow slips, up-to-date Australian Bat Lyssavirus vaccinations. 4. Contain the animal to minimise stress. Gently place the animal in a holding box specifically designed for animals. Cotton pillowslips may be used to cover mammals, or mammals may be placed inside them. Boxes will be placed in a quiet, safe, dark location (not in a vehicle unless temperature is constantly monitored). Do not give the animal food or water. 5. If the animal appears to be injured or under considerable stress Call WIRES on 1300 556 686, who will provide advice on what to do. If you cannot contact WIRES, contact the local vet hospital.	HSE Manager

Protocol:	Procedure:	Responsibility
	6. Release fauna into similar habitats, as near as possible to their capture location but within vegetation that will be retained. Diurnal (day-active) fauna will be released during the day of capture. Nocturnal (night-active) fauna will be released at or after dusk. Arboreal fauna will be slowly released from their bag onto the trunk of a tree, with bats and gliders placed on a tree with rough or peeling bark and hollows. 7. Details of fauna captured and relocated are to be recorded in a register. Any injury or death of a threatened species will be reported to the early works manager. Any onsite protected fauna injured during a construction activity will be captured and a registered wildlife handler or veterinarian contacted immediately and their advice followed. Any introduced species will be taken to a local vet to be euthanised.	
5. Weed, pathogens and pests	Weeds and pathogens Several non-indigenous and exotic flora species were identified by EMM (2018) as occurring within the NESF area. One, Blackberry (*Rubus fruticosus spp. agg*), is listed as a weed of national significance (WoNS) and was identified within the NESF development footprint in isolated patches. The *Biosecurity Act 2015* requires mandatory measures implemented as Clause 33 of the *NSW Biosecurity Regulation 2017*: a person must not import into the State or sell. One regional priority weed species, Sweet briar (*Rosa rubiginosa*), was identified within the NESF development footprint. Regional priority weeds are classified under a GBD. GBD expects a shared responsibility within the region for managing this weed. Land managers should prevent the spread of this weed from their land, where feasible. Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Weed mapping of the NESF Stage 1 area for these two species is to be undertaken by a suitably qualified person prior to any on ground disturbance. Georeferenced photo images of these weeds will also be taken for monitoring purposes. This is ideally done in spring to identify weeds before they go into flower and seed. Removal and treatment of weeds is to be undertaken in line with government guidelines and prior to ground disturbance activities. Where weeds have been treated or removed a follow-up inspection is to be undertaken to ensure treatment was successful. Where weeds cannot be effectively destroyed prior to topsoil stripping, weed contaminated topsoil will be isolated and either encapsulated by deep burying, or disposed of at an approved offsite licensed facility. Any pesticide application is to be recorded on a Pesticide Application Record Sheet. Appropriate wash down facilities will be available to clean vehicles and equipment prior to arrival and when leaving site. Plant and equipment will be checked and cleaned before leaving locations within the NESF that contain WoNS or regional priority weeds. Records of wash down use and vehicle inspections for seeds are to be kept to validate this procedure. In addition, sediment control materials will be weed free (straw bales, geotextiles) and any imported materials such as sand and gravel will be sourced from sites which do not show evidence of noxious weeds or Phytophthora infection.	HSE Manager

Protocol:	Procedure:	Responsibility
	Pests It is unclear if any introduced fauna species were recorded on the site. Annual feral pests monitoring will be undertaken as part of biodiversity monitoring within the protected vegetation or fauna habitat zone during operation. Monitoring will consist of visual inspections for signs of introduced fauna species (scats, diggings etc). If introduced fauna species outbreaks are identified, specific controls will be developed and undertaken. Any vertebrate pest control activities undertaken will be done in accordance with the best practise methods available. Northern Tablelands Regional Strategic Pest Animal Management Plan 2018 from NSW Local Land Services (2018) is a good reference point for management obligation in line with the Biosecurity Act in this region. Priority pest animals under this plan with a potential to found ondevelopment footprint include: • Feral Pig. (*Sus scrofa*) • Feral Deer (four species) • Feral Rabbit (*Oryctolagus cuniculus*) • European Red Fox (*Vulpes Vulpes*) • Feral Cat (*Felis catus*) Additional feral species that may be present include; • House mouse (*Mus musculus*) • Brown Hare (*Lepus capensis*) • Black rat (*Rattus rattus*) A specific response is not required unless localised impacts trigger a NSW government response in plague situations. Control of European rabbit: current best practice control is the inspection, ripping and rehabilitation of rabbit warrens as detected. Initial pest management audit that establishes trapping and baiting requirements. Control of European fox and feral cat: 1080 baiting of foxes and Curiosity® baiting for cats in accordance with relevant legislation (i.e. usage signs erected around the Project Site, avoid placement near waterways), the disposal and recording of carcasses; – Notification to neighbours regarding commencement of a 1080 and Curiosity® baiting program onsite; and trapping with cage traps – euthanasia undertaken in accordance with legislation (NSW Agriculture – Animal Care and Ethics Committee). Control of black rat and house mouse: Non-trapping/poison methods are to be maintained as the primary method of management. A clean operational area is to be maintained to reduce potential for home range establishment (i.e. limit refugia habitat and food sources). Additional resources for pest control measures:	

Protocol:	Procedure:	Responsibility
	Feral pigs: https://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw/feral-pigs/feral-pig-control Feral deer :https://www.dpi.nsw.gov.au/hunting/game-and-pests/managing-feral-deer-in-nsw Rabbits:https://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw/rabbits/rabbit-control Foxes: https://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw/foxes/fox-control Cat baiting: https://www.environment.gov.au/biodiversity/invasive-species/feral-animals-australia/feral-cats/curiosity-bait	
6. Coarse woody debris and bush rock management	Felled timber will be used in areas of protected vegetation or fauna habitat or areas where rehabilitation is to occur as CWD for habitat enhancement. This will maximise the salvage of resources within the development footprint for beneficial reuse. CWD can be used to enhance habitat values in existing vegetation and rehabilitated areas including Box Gum Woodland and derived native grassland (either in offset areas or areas adjoining impacted areas). CWD can provide: • Habitat for micro invertebrates. • Habitat for macroinvertebrates. • Habitat for vertebrates using fallen timber for shelter, e.g. skinks, geckoes, dunnarts. • Habitat for vertebrates using fallen timber for foraging, e.g. treecreepers, robins. • A source of nutrients for native vegetation. • Increased habitat complexity. In the first instance CWD will be placed as discrete logs adjacent to or on the periphery of (to reduce disturbance of protected vegetation or fauna habitat areas) standing native vegetation within protected woodland areas shown on the figure in Appendix 1 of the Development Consent as 'Plant community type avoidance area'. This will be subject to UPC/AC Renewables Australia having land rights over these areas. CWD will be placed at discrete intervals at densities to ensure that the CWD Benchmark for the receiving PCT is not exceeded. The density of CWD must take into account existing fallen timber. Removal, transportation, and placement of CWD will be carried out in a manner that minimises disturbance to native vegetation, including the canopy, trees, shrubs, standing dead timber, fallen timber, and groundcover, as well as topsoil. CWD with existing hollows will be given priority placement adjacent to woodland. Where possible, large branches and root balls with or without hollows will also be used. CWD must not be placed in piles, which can be a fire hazard and provide shelter for feral animals. CWD between 10 and 200 mm in diameter will be chipped and used for disturbed area rehabilitation. Rocks greater than 300 mm diameter at their widest point removed during construction will be retained and relocated to areas of protected vegetation or fauna habitat or grassland nearby. Removal, transportation, and placement of rocks will be carried out in a manner that minimises disturbance to vegetation constraints, including the canopy, trees, shrubs, standing dead timber, fallen	HSE Manager

Protocol:	Procedure:	Responsibility
	timber, and groundcover, as well as topsoil. Rock will be removed with suitable machinery so as not to damage the underlying rock or result in excessive soil disturbance.	
7. Unexpected threatened species find	As a general principle, any native animals found within the construction area will be avoided. Fauna will only be handled by a suitably qualified ecologist or wildlife carer with relevant skills and experience (e.g. snake handling), and only when absolutely necessary. Any nests found in habitat features to be removed during early works will be inspected by a suitably qualified ecologist to determine whether fauna are using the nest, and whether relocation of the fauna and the nest to an adjacent area is viable. Should threatened fauna, or suspected threatened fauna, be encountered, the following procedure is to be followed: • Stop work immediately in the vicinity of the species • The area around the species is to be cordoned off, including an appropriate buffer aera • Notify the Project Manager, HSE Manager and others as relevant • Seek advice from an ecologist or species expert to confirm identification; and • if a threatened species is confirmed, consult with the relevant agencies to determine appropriate mitigation and management measures and additional approvals (if required).	HSE Manager/ Early works site manager
8. Rehabilitation and revegetation of temporary disturbed areas	Areas temporarily disturbed for the NESF will need to be rehabilitated and revegetated as soon as practicable. The aim of rehabilitation and revegetation is to stabilise the disturbed area and to return it to a condition that is similar to its pre-disturbance state. The objectives of rehabilitation are to establish a low maintenance but effective perennial groundcover to protect the soil and minimise the potential for erosion; and minimise the conditions that could facilitate weed establishment and infestation. Once the groundcover is restored, it is to be maintained throughout the construction and operation stages of the NESF. Areas subject to rehabilition will be largely limited to land which has been levelled to facilitate the installation of solar farm infrastructure. Such areas will not include shrubs and trees as part of the vegetation restoration, however opportunities to include shrubs and trees will be explored for areas which do not interfer with the operations of the solar farm. Topsoil preparation Excavated topsoil and subsoil will be stored separately and replaced in a manner that replicates the original profile as closely as possible, to assist natural revegetation. Where disturbance is minimal and topsoil is not disturbed reseeding using native grasses may be sufficient without topsoil preparation. If topsoil preparation is required shallow ripping will be undertaken from 50 to 100 mm in depth. Multiple passes may be required depending on the equipment being used. The final surface will be presented in a roughened state to reduce runoff and provide furrows for seeds to wash into, and then be covered by soil for germination. Sediment fencing is to be installed where required to minimise erosion and will be left in situ until vegetation has re-established. Seed broadcasting	HSE Manager/ Early works site manager

Protocol:	Procedure:	Responsibility
	Where required, seeds can be broadcast or applied with hydromulch. Recommended local provenance seeds are to be those grass species that occur in the PCT for which the rehabilitation works is being undertaken for. This seed can come from seed salvaged from the site prior to clearing or from a local nursery that used seed of local provenance. The groundcover will be kept free of weeds. In areas where no groundcover has been removed, no groundcover restoration is required, provided that ongoing maintenance allows for natural regeneration. A quantitative assessment of groundcover will occur 6 and 18 months after construction. If groundcover is less than 70% cover during this time, corrective actions will be required. This will include consideration of soil conditions such as compaction, frequency of traffic movements, low seedbank storage, lack of soil moisture and nutrient imbalance. If soil chemistry appears to be the growth limiting factor, soil testing will be used to determine any need for amelioration.	
9. Accidental breaches clearing protected vegetation or habitat.	In the event that protected vegetation or fauna habitat that is accidently cleared or damaged DPIE will need to be informed as soon as possile in order to agree on appropriate remedial actions. Advice from the BCS may need to sought in lieu of the extent of damage and the value attributed to the plant community in the BDAR. The site should be immediately stabilised with erosion control measures. A temporary sterile cover seeding could be used if physical erosion controls do not suffice.	

Appendix A Map 1

Clearing Boundary and Protected Vegetation areas.

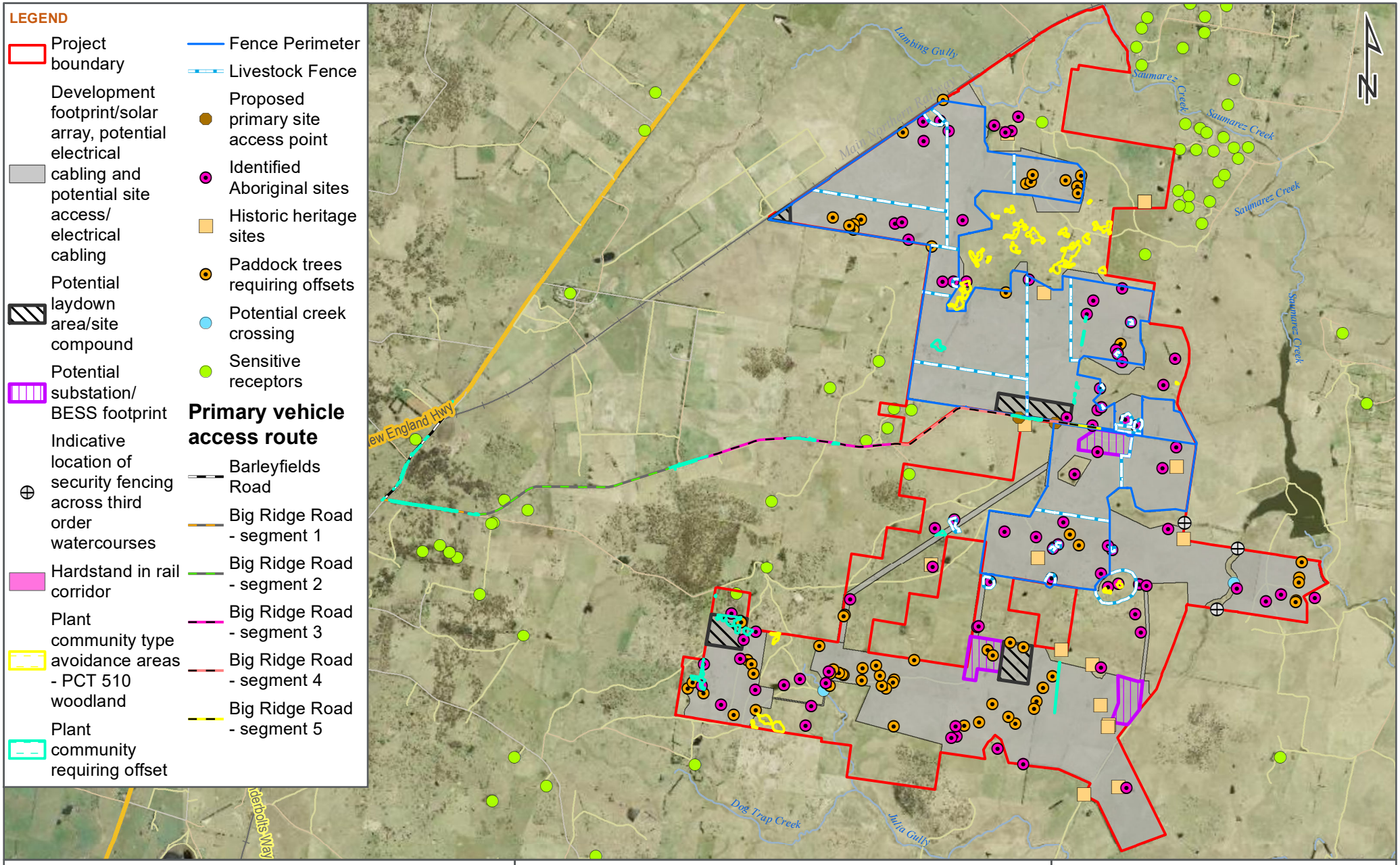


FIG NO. 2-1 **FIGURE TITLE** Project layout - MOD1

DATE 09/07/2020

0 0.5 1
1:65,000 Km

PAGE SIZE A4

COORDINATE SYSTEM GDA 1994 MGA Zone 56

SMEC
Member of the Surbana Jurong Group

PROJECT NO. 30018016 **PROJECT TITLE** New England Solar Farm

CREATED BY JT14432

SOURCES
public_NSW_Imagery: © Department of Customer Service 2020, Roadnet MDS 2019

Location: V:\2021\NESF\20210223\NESF_Fig2_1_20210223.mxd

Last updated by: JT14432 on 23/02/2021 at 13:30

Appendix B Ground Disturbance Permit

GROUND DISTURBANCE PERMIT

Project:

Project number:

Ground disturbance start date:

Expected completion date:

Ground disturbance location:

Ground disturbance estimated total area:

The following questions are to be answered by an Ecologist and HSE Manager for an assessment of habitat features of the ground disturbance area. This is to be completed prior to ground disturbance taking place.

Has the limit of ground disturbance been clearly delineated?	□ Yes	□ No
Have all areas of trees/vegetation/habitat to be retained been clearly identified and no-go areas fenced?	□ Yes	□ No

State how this has been done:

Are there habitat features (tree hollows or fissures, coarse woody debris, rocks, burrows) in this area?	□ Yes	□ No
Are any of the habitat features known to be inhabited (i.e. active nests, hollows or burrows)?	□ Yes	□ No

If yes, provide details:

Have the habitat features been delineated?	□ Yes	□ No

If yes, how (e.g. flagging tape)?

Can habitat features be reused for habitat enhancement?	□ Yes	□ No
Can the habitat feature be re-used immediately?	□ Yes	□ No

If yes, provide details on where it is to be re-used. If no, provide details on the allocated stockpile area and area allocated for re-use.

Are there pest fauna species in the area to be cleared?	□ Yes	□ No

When and how have they been managed?

Are there weeds in the area to be cleared?	□ Yes	□ No

When and how have they been managed?

If soil disturbance is to occur, has an ESC Plan been written and have controls been installed?	□ Yes	□ No
Have all relevant personnel been given a daily pre-start / toolbox induction on the limit of clearing and ground disturbance, clearing procedure for habitat features, fauna handling procedure and any other sensitive biodiversity information relevant to the area?	□ Yes	□ No

Comments:

APPROVALS

Assessment completed by Ecologist: (*insert name*) Date:

Ecologist signature:

Approval by HSE Manager: (*insert name*) Date:

HSE Manager Signature:

SIGN OFF (once works complete)

Have the details of this permit (detailed above) been met?

If no, provide details and specify if further actions are required to rectify these:

HSE Manager Signature:

Date:

Appendix C Weeds Identification

Figure 8-1: Blackberry (Rubus fruticosus species aggregate) in fruit. Photo source: JJ Dellow/DPI.

Figure: 8-2: Sweet briar(Rosa rubiginosa)

Appendix D Correspondance with DPIE

Mark DAVEY

From: Gregg GOLDIN
Sent: Wednesday, 18 November 2020 2:24 PM
To: Mark DAVEY
Cc: Jessica MILLER
Subject: Forward correspondence with DPIE re NE Solar

Gregg Goldin
Experienced Scientist - Ecology
T +61 2 9900 7050 E Gregg.Goldin@smec.com
Level 5, 20 Berry Street, North Sydney, NSW, 2060, Australia

From: Nicky Owner <Nicky.Owner@environment.nsw.gov.au>
Sent: Wednesday, 18 November 2020 1:06 PM
To: Gregg GOLDIN <Gregg.Goldin@smec.com>
Subject: RE: Apologies and NE Solar Farm

Hi Gregg,

Haha, that's funny. At the time, I did question if the email was meant for me.

Apologies for not getting back to you sooner. I have been dealing with multiple major projects over the past couple of weeks.

I haven't looked at your BMP just yet so would prefer to delay the meeting. In fact, our preference would be to get written comments back to Planning, then we can discuss if a meeting is necessary.

I hope this suits.

Cheers,

Nicky

Nicky Owner
Senior Conservation Planning Officer, North East Branch

Biodiversity and Conservation | Department of Planning, Industry and Environment
T 02 6659 8254 | **E** nicky.owner@environment.nsw.gov.au
Level 8, 24 Moonee Street, Coffs Harbour 2450
www.dpie.nsw.gov.au

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Gregg GOLDIN <Gregg.Goldin@smec.com>
Sent: Wednesday, 18 November 2020 12:46 PM
To: Nicky Owner <Nicky.Owner@environment.nsw.gov.au>
Subject: Apologies and NE Solar Farm

Hi Nicky,
Sorry for the typo of your name in the previous email I sent a couple of weeks ago!
I just noticed it. Maybe it's the reason I haven't got a response.

Are you still overseeing this development?

Regards,
Gregg

Gregg Goldin
Experienced Scientist - Ecology
T +61 2 9900 7050 E Gregg.Goldin@smec.com
Level 5, 20 Berry Street, North Sydney, NSW, 2060, Australia

Appendix E Approval of Extension to Retire Offset Credits

Planning, Industry & Environment

Mr Timothy Kirk
Project Development Manager
UPC/AC RENEWABLES AUSTRALIA
Level 14, 77 King Street
SYDNEY NSW 2000

11/02/2021

Dear Mr Kirk

New England Solar Farm (SSD-9255)
Biodiversity Offsets

I refer to your request dated 29 January 2021 seeking the Planning Secretary's approval to vary the timing of the retirement of biodiversity credits beyond the commencement of the development under condition 10 of Schedule 3 of the development consent for the New England Solar Farm (SSD 9255).

The Department has carefully reviewed your request for additional time to meet the offset obligations under the development consent in order to allow works not subject to the current modification application to proceed.

The Department notes that:

- a modification application (Modification 1) for revised road upgrades is currently under assessment by the Department and should it be approved, this modification would result in a variation to the number and type of biodiversity offset credits required for the project;
- to avoid further delays to the commencement of construction, you propose to delay the retirement of the offset credits until after the modification application is determined to consolidate retirement of the biodiversity credits;
- you intend to commence development works for the portion of the development not subject to the modification application as soon as permissible in accordance with the obligations under the consent; and
- you intend to retire your biodiversity credits by making payment into the Biodiversity Conservation Fund within two weeks of determination of the modification application.

The Department is satisfied with the proposed approach to your offset obligations, on the condition that you have an approved Biodiversity Management Plan for the works being undertaken.

Accordingly, the Planning Secretary approves the commencement of development of works prior to the retirement of biodiversity credits required under condition 10 of Schedule 3 of the development consent, subject to the following conditions:

- works that are the subject of Modification 1 would not commence unless and until approved; and
- you retire your biodiversity credits 31 March 2021.

If you wish to discuss the matter further, please contact Lander Robinson on 02 9274 6052 or at lander.robinson@planning.nsw.gov.au.

Yours sincerely

Nicole Brewer
Director
Energy Assessments

As nominee of the Planning Secretary

Appendix F Approval of Modification of Development Consent

Modification of Development Consent

Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Public Spaces, I approve the modification of the development consent referred to in Schedule 1, subject to the conditions in Schedule 2.

Nicole Brewer
Director
Energy Assessments

Sydney 19 February 2021

SCHEDULE 1

Development consent:	SSD 9255 granted by the Independent Planning Commission on 9 March 2020
For the following:	New England Solar Farm
Modification:	Revised Road Upgrade Disturbance Boundaries

SCHEDULE 2

1. In Schedule 1, in the table of DEFINTIIONS, delete the definitions for 'BCD','EIS', 'Heritage NSW', 'RMS' and insert the following in alphabetic order.

BCS	Biodiversity, Conservation and Science Directorate within the Department
EIS	The Environmental Impact Statement for New England Solar Farm dated February 2019, the Amendment Report dated June 2019, the Response to Submissions dated June 2019, additional information dated 31 October 2019 and 10 December 2019, the subdivision plan (see Appendix 3) and the additional information provided to the Independent Planning Commission of NSW on 7 February 2020 and 18 February 2020, as amended by: • *New England Solar Farm Modification Application – Modification Report* dated 16 December 2020.
EPA	Environment Protection Authority
Heritage NSW	Heritage NSW within the Department of Premier and Cabinet
TEC	Threatened ecological community, as defined under the *NSW Biodiversity Conservation Act 2016*
TfNSW	Transport for NSW

2. Delete all references to "RMS" and replace with "TfNSW" and delete all references to 'BCD' and replace with 'BCS'.

3. In condition 10 of Schedule 3, replace Tables 1 and 2 with:

Table 1: *Ecosystem Credit Requirements*

Vegetation Community	***PCT ID***	***Credits Required***
Blakely's Red Gum - Yellow Box grassy woodland of the New England Tableland Bioregion	510	107
Silvertop Stringybark open forest of the New England Tableland Bioregion	1174	78
Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion	567	18

Table 2: *Species Credit Requirements*

Vegetation Community	***Credits Required***
Bluegrass *(Dichanthium setosum)*	44
Hawkweed *(Picris evae)*	43
Austral Toadflax *(Thesium australe)*	33
Pale-headed Snake *(Hoplocephalus bitorquatus)*	39
Glossy Black-Cockatoo *(Calyptorhynchus lathami)*	30
Squirrel Glider *(Petaurus norfolcensis)*	39
Koala *(Phascolarctos cinereus)*	39
Barking Owl *(Ninox connivens)*	5

4. In condition 16 of Schedule 3, delete *"Australian Standard AS4282 (INT) 1997*" and replace with *"Australian/New Zealand Standard AS/NZS 4282:2019".*

5. Delete conditions 7, 8 and 9 of Schedule 4 and replace with:

COMPLIANCE

Incident Notification

7. The Planning Secretary must be notified in writing via the Major Projects website portal immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one), and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 7.

Non-Compliance Notification

8. The Planning Secretary must be notified in writing via the Major Projects website portal within 7 days after the Applicant becomes aware of any non-compliance.

9. A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been done, or will be, undertaken to address the non-compliance.

10. A non-compliance which has been notified as an incident does not need to also be notified as a noncompliance.

INDEPENDENT ENVIRONMENTAL AUDIT

11. Independent Audits of the development must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements* (2020) to the following frequency:

    (a) within 3 months of commencing construction; and
    (b) within 3 months of commencement of operations.

11A. Proposed independent auditors be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.

11B. The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in condition 11 of Schedule 4 upon giving at least 4 weeks' notice to the Applicant of the date upon which the audit must be commenced.

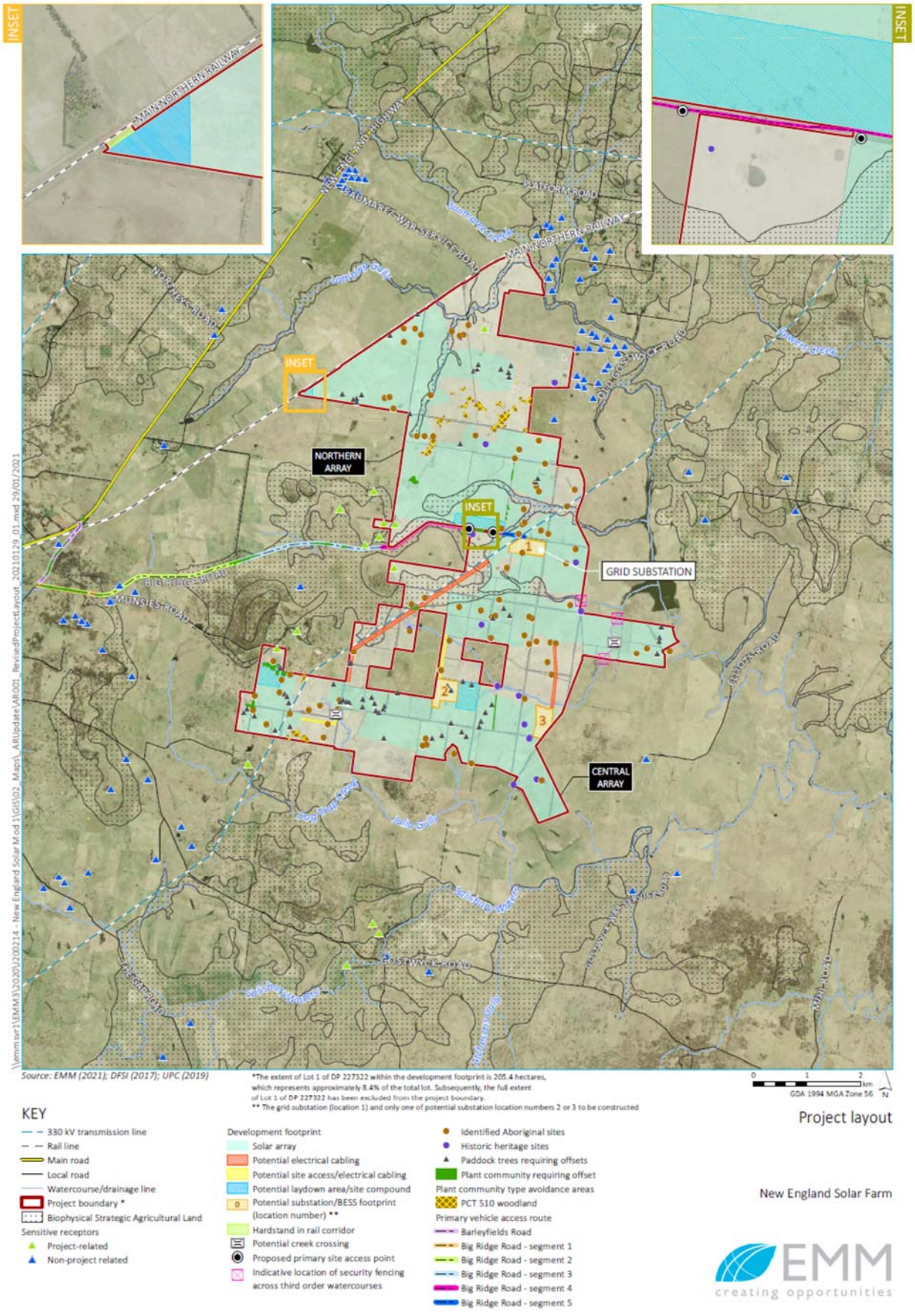
11C. In accordance with the specific requirements of the *Independent Audit Post Approval Requirements* (2020), the Applicant must:

    (a) review and respond to each Independent Audit Report prepared under condition 11 of Schedule 4 of the consent, or condition 11B of Schedule 4 where notice is given by the Planning Secretary;
    (b) submit the response to the Planning Secretary; and
    (c) make each Independent Audit Report, and response to it, publicly available within 60 days of submission to the Planning Secretary unless otherwise agreed by the Planning Secretary.

11D. Independent Audit Reports and the Applicant's response to audit findings must be submitted to the Planning Secretary within 2 months of undertaking the independent audit and site inspection as outlined in the *Independent Audit Post Approvals Requirements* (2020) unless otherwise agreed by the Planning Secretary.

11E. Notwithstanding the requirements of the *Independent Audit Post Approval Requirements* (2020), the Planning Secretary may approve a request or ongoing independent operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that independent operational audits have demonstrated operational compliance.

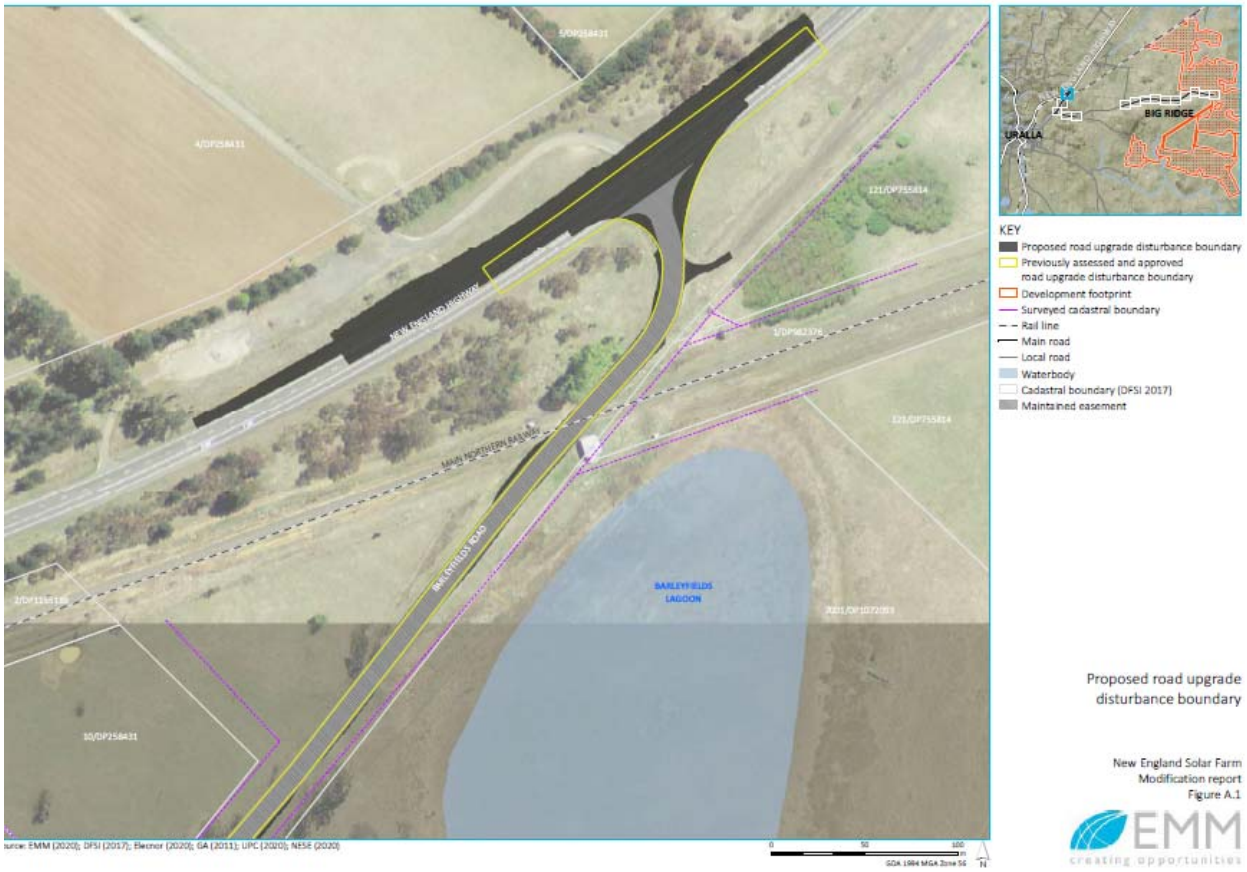
6. Delete figure in Appendix 1 and replace with:


INSET
MAIN NORTHERN RAILWAY
NEW ENGLAND HIGHWAY
LEADMAKER WAY - SERVICE ROAD
PLATFORM ROAD
Saumarez Creek
NORTHERN ARRAY
GRID SUBSTATION
CENTRAL ARRAY
BIG RIDGE ROAD
MUNSIES ROAD
Julia Gully
Source: EMM (2021); DFSI (2017); UPC (2019)
*The extent of Lot 1 of DP 227322 within the development footprint is 205.4 hectares, which represents approximately 8.4% of the total lot. Subsequently, the full extent of Lot 1 of DP 227322 has been excluded from the project boundary.
** The grid substation (location 1) and only one of potential substation location numbers 2 or 3 to be constructed
GDA 1994 MGA Zone 56
KEY
330 kV transmission line
Rail line
Main road
Local road
Watercourse/drainage line
Project boundary *
Biophysical Strategic Agricultural Land
Sensitive receptors
Project-related
Non-project related
Development footprint
Solar array
Potential electrical cabling
Potential site access/electrical cabling
Potential laydown area/site compound
Potential substation/BESS footprint (location number) **
Hardstand in rail corridor
Potential creek crossing
Proposed primary site access point
Indicative location of security fencing across third order watercourses
Identified Aboriginal sites
Historic heritage sites
Paddock trees requiring offsets
Plant community requiring offset
Plant community type avoidance areas
PCT 510 woodland
Primary vehicle access route
Barleyfields Road
Big Ridge Road - segment 1
Big Ridge Road - segment 2
Big Ridge Road - segment 3
Big Ridge Road - segment 4
Big Ridge Road - segment 5
Project layout
New England Solar Farm
EMM
creating opportunities

7. In Appendix 2, add the following rows to the end of the table:

7001	DP1072093	170	DP755814
1	DP587246	2	DP587246
3	DP109536	204	DP755814
203	DP755814	1	DP1005647
1	DP1015933	300	DP1036398
1	DP1026550	206	DP755814
207	DP755814	24	DP1171290
216	DP755814	201	DP755814

8. After the figure in Appendix 4, insert:



Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.2

EMM

Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.3

EMM

Proposed road upgrade disturbance boundary

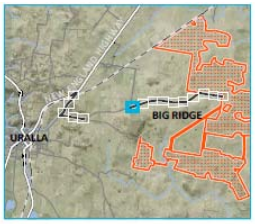
New England Solar Farm
Modification report
Figure A.4

EMM

Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.5

EMM



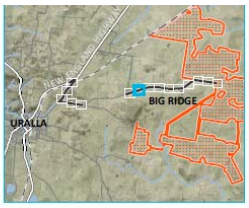
KEY

- Proposed road upgrade disturbance boundary
- Previously assessed and approved road upgrade disturbance boundary
- Development footprint
- Surveyed cadastral boundary
- Rail line
- Main road
- Local road
- Watercourse/drainage line
- Waterbody
- Cadastral boundary (DFSI 2017)
- Maintained easement

Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.6

EMM



KEY

- Proposed road upgrade disturbance boundary
- Previously assessed and approved road upgrade disturbance boundary
- Development footprint
- Surveyed cadastral boundary
- Rail line
- Main road
- Local road
- Watercourse/drainage line
- Waterbody
- Cadastral boundary (DFSI 2017)
- Maintained easement

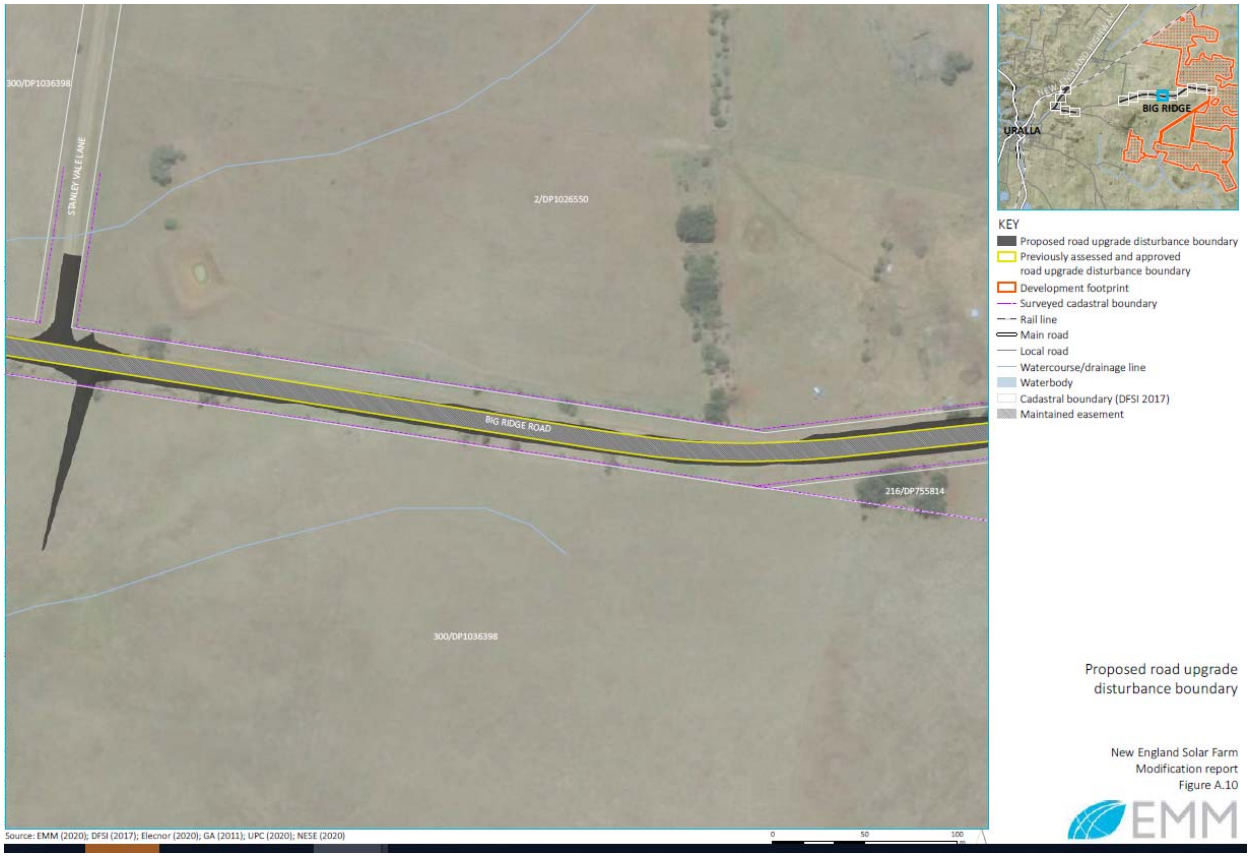
Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.7

EMM
creating opportunities


3/DP109536
300/DP1036398
BIG RIDGE ROAD
1/DP1015933
300/DP1036398
URALLA
BIG RIDGE
KEY
Proposed road upgrade disturbance boundary
Previously assessed and approved road upgrade disturbance boundary
Development footprint
Surveyed cadastral boundary
Rail line
Main road
Local road
Watercourse/drainage line
Waterbody
Cadastral boundary (DFSI 2017)
Maintained easement
Proposed road upgrade disturbance boundary
New England Solar Farm
Modification report
Figure A.8
EMM
urce: EMM (2020); DFSI (2017); Elecnor (2020); GA (2011); UPC (2020); NESE (2020)
0
50
100

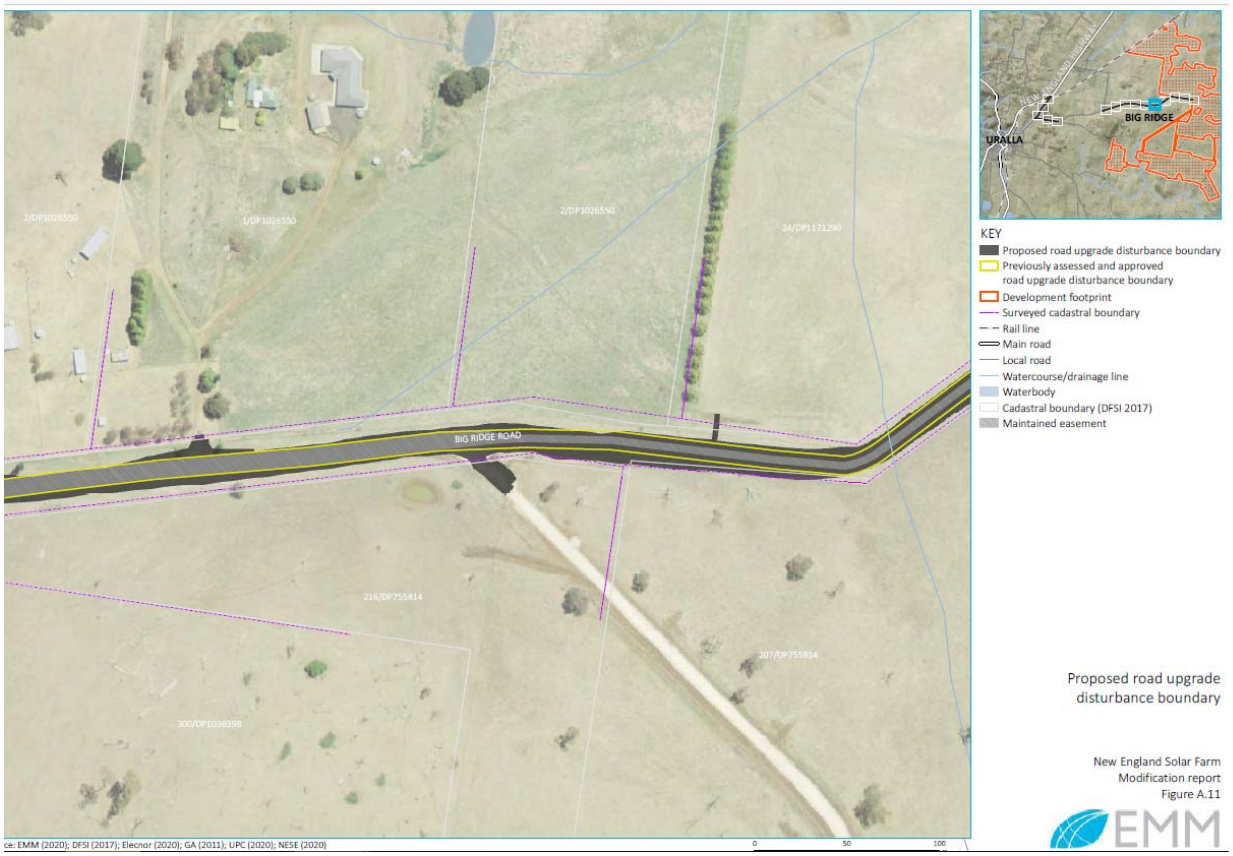

300/DP1036398
BIG RIDGE ROAD
300/DP1036398
URALLA
BIG RIDGE
KEY
Proposed road upgrade disturbance boundary
Previously assessed and approved road upgrade disturbance boundary
Development footprint
Surveyed cadastral boundary
Rail line
Main road
Local road
Watercourse/drainage line
Waterbody
Cadastral boundary (DFSI 2017)
Maintained easement
Proposed road upgrade disturbance boundary
New England Solar Farm
Modification report
Figure A.9
EMM
ource: EMM (2020); DFSI (2017); Elecnor (2020); GA (2011); UPC (2020); NESE (2020)
0
50
100



Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.10

EMM



Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.11

EMM


BIG RIDGE ROAD
24/DP1171290
206/DP755814
207/DP755814
URALLA
BIG RIDGE
KEY
Proposed road upgrade disturbance boundary
Previously assessed and approved road upgrade disturbance boundary
Development footprint
Surveyed cadastral boundary
Rail line
Main road
Local road
Watercourse/drainage line
Waterbody
Cadastral boundary (DFSI 2017)
Maintained easement
Proposed road upgrade disturbance boundary
New England Solar Farm
Modification report
Figure A.12
EMM


BIG RIDGE ROAD
206/DP755814
201/DP755814
81/DP755814
URALLA
BIG RIDGE
KEY
Proposed road upgrade disturbance boundary
Previously assessed and approved road upgrade disturbance boundary
Development footprint
Surveyed cadastral boundary
Rail line
Main road
Local road
Waterbody
Cadastral boundary (DFSI 2017)
Maintained easement
Proposed road upgrade disturbance boundary
New England Solar Farm
Modification report
Figure A.13
EMM

Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.14

Proposed road upgrade disturbance boundary

New England Solar Farm
Modification report
Figure A.15

9. After Appendix 6, insert:

APPENDIX 7
INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

WRITTEN INCIDENT NOTIFICATION REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition 7 of Schedule 4 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
   a. identify the development and application number;
   b. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   c. identify how the incident was detected;
   d. identify when the applicant became aware of the incident;
   e. identify any actual or potential non-compliance with conditions of consent;
   f. describe what immediate steps were taken in relation to the incident;
   g. identify further action(s) that will be taken in relation to the incident; and
   h. identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
   a. a summary of the incident;
   b. outcomes of an incident investigation, including identification of the cause of the incident;
   c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   d. details of any communication with other stakeholders regarding the incident.

End of modification

(SSD 9255 MOD 1)

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global experience

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