



Maryvale Solar Farm Modification 3

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Executive Summary

The Maryvale Solar and Energy Storage Project (the Project) is an approved hybrid renewable energy facility located near the town of Maryvale, 12 km north-west of Wellington in New South Wales (NSW). The Project integrates a 240 MWp solar installation with a 172 MW/409 MWh battery energy storage system (BESS). Once operational, it will be capable of delivering up to 172 MW of dispatchable clean electricity (enough to power around 82,000 homes annually) while helping to avoid up to 411,788 tonnes of carbon emissions each year.

Development consent under the NSW Planning and Assessment Act 1979 (EP&A Act) was granted on 4 December 2019 for the State Significant Development (SSD-8777), which has since been modified on two occasions.

Gentari Solar Australia Pty Ltd (Gentari, the Proponent) is seeking a third modification to SSD-8777 under section 4.55(1A) of the EP&A Act to modify the existing approval to:

- accommodate an altered subdivision layout for the inclusion of the previously approved BESS, and
- address the removal of two additional trees which were not previously assessed in the original Biodiversity Development Assessment Report (BDAR).

The updated subdivision plan is required to reflect the physical changes associated with the BESS and to align with the lease arrangements and accurately represent the ownership boundaries of the land. Proposed Modification 3 will ensure that the subdivision configuration maximises the use of available land while maintaining consistency with ongoing and future land uses. The proposed six-lot subdivision seeks to rationalise the cadastral configuration and improve land management outcomes, without altering the approved development footprint or operational extent of the Maryvale Solar Farm.

Additional biodiversity assessment was undertaken using the streamlined scattered trees assessment method described in Appendix B of the Biodiversity Assessment Method 2020 (BAM) (Department of Planning, Industry and Environment, 2020). The two trees proposed for removal have been identified as Yellow Box (*Eucalyptus melliodora*) trees. They occur as outlying trees loosely associated with a patch mapped to Plant Community Type (PCT) 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW Southwestern Slopes Bioregion in the BDAR and both have tree hollows. The two trees are also considered an example of the BC Act-listed Critically Endangered Ecological Community (CEEC) White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. The removal of the two additional trees would generate an obligation to retire two ecosystem credits for habitat containing hollow-bearing trees.

The environmental and social impacts of the approved Project will be relatively unchanged as a result of the Proposed Modification 3 and the mitigation measures previously identified in the EIS and previous modification reports will continue to apply. Minor additional impacts to biodiversity have been identified and additional offset obligations have been calculated. The assessment concludes that the Proposed Modification 3 is substantially the same development as that for which the consent was originally granted and can be undertaken in accordance with the approved performance measures contained in the current conditions of SSD-8777.

Abbreviations

Term	Definition
BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator
BC Act	<i>Biodiversity Conservation Act 2016</i> (NSW)
BCF	Biodiversity Charge Fund
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
CEEC	Critically Endangered Ecological Community
cm	centimetre
CWO REZ	Central West Orana Renewable Energy Zone
DBH	diameter at breast height
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DP	Deposited Plan
DPE	Department of Planning and Environment (NSW) (former)
DPHI	Department of Planning, Housing and Infrastructure (NSW)
DPIE	Department of Planning, Industry and Environment (NSW) (former)
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EPC	Engineering, Procurement and Construction
ha	hectare
HBT	Hollow Bearing Tree
IBRA	Interim Biogeographic Regionalisation of Australia
km	kilometre
kV	kilovolt

Term	Definition
LEP	Local Environmental Plan
m	metre
MW	Megawatt
MWac	Megawatt alternating current
MWh	Megawatt hour
MWp	Megawatt peak
NSW	New South Wales
PCT	Plant Community Type
PV	Photo Voltaic
SAII	Serious and Irreversible Impact
SSD	State Significant Development
TEC	Threatened Ecological Community

1 Introduction

1.1 Background

The Maryvale Solar and Energy Storage Project (the approved Project) is an approved hybrid renewable energy facility located near the town of Maryvale, 12 km north-west of Wellington in New South Wales (NSW) (refer to Figure 1.1). The Project integrates a 240 MWp solar installation with a 172 MW/409 MWh battery energy storage system (BESS). Once operational, it will be capable of delivering up to 172 MW of dispatchable clean electricity (enough to power around 82,000 homes annually) while helping to avoid up to 411,788 tonnes of carbon emissions each year.

Development consent under the NSW Planning and Assessment Act 1979 (EP&A Act) was granted on 4 December 2019 for the State Significant Development (SSD-8777), which has since been modified on two occasions:

- Modification 1 – addition of BESS, approval granted 15 July 2022
- Modification 2 – capacity increase to solar farm and BESS, approval granted 1 December 2023.

Gentari Solar Australia Pty Ltd (Gentari, the Proponent) is seeking a third modification to SSD-8777 to increase the number of subdivided lots from five to six, and to address the proposed removal of two additional trees which were not assessed in the current approval (Proposed Modification 3). As the Proposed Modification 3 involves minimal environmental impact, the modification to SSD-8777 is being sought under section 4.55(1A) of the EP&A Act.

This Modification Report has been prepared by Umwelt to assess the environmental and social impacts of the Proposed Modification to SSD-8777 in accordance with the requirements of the EP&A Act, Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) and the State significant development guidelines – preparing a modification report (Appendix E to the state significant development guidelines) (Department of Planning, Housing and Infrastructure (DPHI)2026) (the Guidelines).

1.2 The Proponent

Proponent details are provided in Table 1.1 below.

Table 1.1 Proponent Details

Requirement	Details
Full Name/s	Maryvale Solar Farm Pty Ltd as Trustee for the Maryvale Solar Farm Trust (69 176 709 481), part of Gentari Solar Australia Pty Ltd
Postal Address	201/39 East Esplanade, Manly NSW 2095
Street Address (Project Location)	218 Seatonville Road, Maryvale NSW 2820
ACN	620 146 778
Contact Person	Chong Jia Yoong
Contact Details	chong.jiayoong@petronas.com , au.maryvalesf@gentari.com 02 8459 9700

Figure 1.1

Locality Map

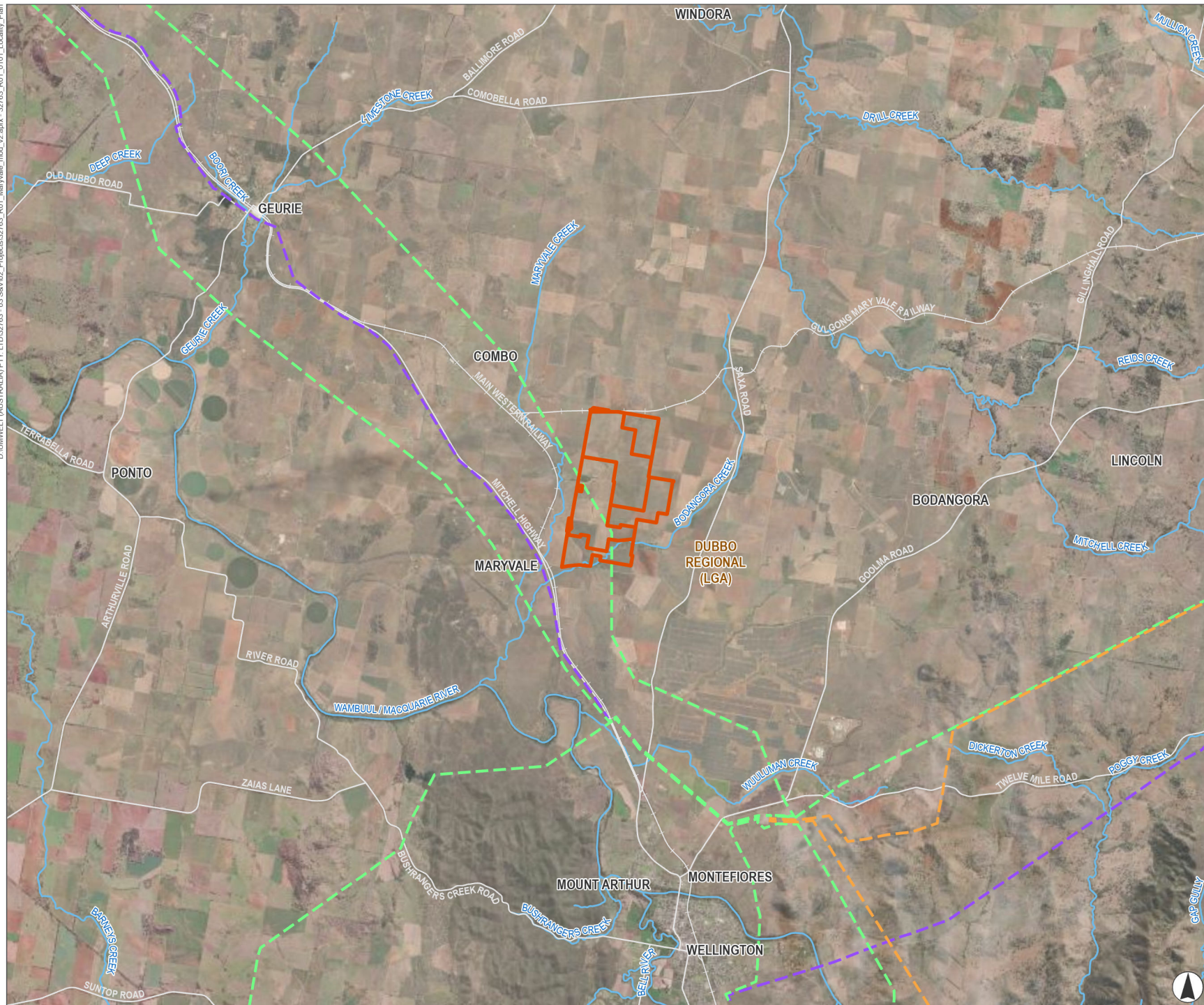
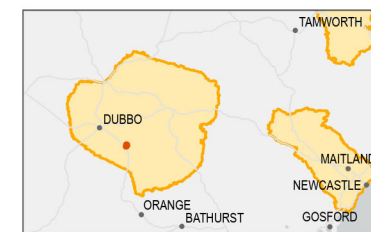


FIGURE 1.1
Locality Map

Legend

-  Proposed Subdivision
-  Renewable Energy Zone
-  Local Government Area (LGA)
-  66kV Transmission Line
-  132kV Transmission Line
-  330kV Transmission Line
-  Road
-  Railway
-  Creek/River



Scale 1:125,000 at A4
GDA2020 MGA Zone 55



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2 Strategic Context & Current Project Status

The strategic context for the Proposed Modification 3 is unchanged from that set out in section 2 of the Modification Report for Modification 2 (NGH Pty Ltd, 2022), as briefly summarised below.

As NSW transitions away from coal fired power, there is an increasing need for increased renewable energy generation and battery storage to firm these renewable energy sources. Both the Commonwealth and NSW Governments have made commitments to increase renewable energy generation and reduce carbon emissions. The Project will help provide reliable electricity while also reducing greenhouse gas emissions and the impacts of climate change.

The Project site is located within the Central-West Orana Renewable Energy Zone (CWO REZ) which was established by the NSW Government to promote regional investment and coordinate critical new energy infrastructure (Department of Planning and Environment (DPE), 2023).

Renewable energy generated from large scale solar farms and energy storage in regional areas allows for distributed generation whereby energy is generated in place rather than at significant distances from the areas of energy use. This increases energy efficiency and reduces energy loss during transmission.

Status of Construction of the Project:

As of June 2026, construction works for the Maryvale Solar and Energy Storage Project is in mature construction stage at 70% across the approved project area in accordance with the development consent and approved management plans.

Works have commenced since August 2025, including site establishment, civil works, access road and internal road works, fencing, piling, tracker installation, photovoltaics (PV) module installation, above-ground and underground electrical works, Power Converter Units (PCU) installation, (Direct Current)DC-DC converter installation, substation works, BESS foundation and conduit works, O&M building works, and progressive pre-commissioning activities. Mechanical works progresses at 85% and electrical works at 66%.

Several works have also been completed or substantially completed. These include site establishment, construction laydown areas, perimeter fencing, internal access roads, fire trails, trenching, electrical cable installation, main equipment foundations, delivery of all photovoltaics string cables and Power Converter Units (PCU), installation of the substation switch room, and substantial completion of the substation mechanical and electrical installation works.

The substation works are well progressed, with major equipment installed including the main transformers, control building, switchgear, harmonic filters, earthing transformers and auxiliary transformer. Remaining works are generally associated with completion of tracker and PV module installation, electrical terminations, combiner box works, stringing, array pre-commissioning, Power Converter Unit (PCU) and DC-DC converter terminations, BESS-related installation works, final commissioning activities and grid energisation works.

3 The Proposed Modification

3.1 Overview

The Proposed Modification 3 is required:

- to accommodate an altered subdivision layout for the inclusion of the previously approved BESS, and
- to address the removal of two additional trees which were not previously assessed in the original Biodiversity Development Assessment Report (BDAR).

A comparison of the approved Project and the Proposed Modification 3 is provided in Table 3.1 below.

Table 3.1 Comparison of the Approved Project and Proposed Modification 3

Project component	Approved Project (as modified)	Proposed Modification 3
Development footprint	Approximately 375 ha	No change
Native vegetation clearance	1.2 ha	Removal of two additional hollow bearing trees.
Solar panels	Approximately 450,000 single axis photovoltaic (PV) panels on mounting structures up to 4 m high.	No change
Energy generation capacity	Up to 230 MWac	No change
BESS	Approximately 180 battery units	No change
Inverter stations	Located within the arrays, centrally to groups of approximately 10,000 PV panels – maximum of 80 inverters across the site.	No change
Substation and switchgear	132 kV substation including transformers and associated 132 kV switchgear	No change
Ancillary infrastructure	As shown on approved layout plan	No change
Subdivision	Five lot subdivision as shown on approved plan	Change to subdivision plan to create six lots
Agricultural use	Sheep grazing throughout the life of the Project	No change
Project life	30 years	No change

3.2 Proposed Subdivision Changes

Schedule 2, condition 13 of SSD-8777 currently states:

13. The Applicant may subdivide the site to create five new allotments, as identified in Appendix 3 and in accordance with the requirements of the EP&A Act and EP&A Regulation.

As outlined in Section 1.1 above, previous modifications to SSD-8777 permitted the inclusion of a BESS as part of approved Maryvale Solar and Energy Storage Project. The purpose of Proposed Subdivision Changes is to update the approved subdivision arrangement from five lots to six lots. The proposed subdivision change is required to rationalise the cadastral configuration of the Project site, align the subdivision with the current land ownership and lease arrangements, and accurately reflect the approved Project layout, including the previously approved BESS. Proposed Subdivision Changes does not seek to change the approved solar generation capacity, approved BESS capacity, approved development footprint, approved substation location, point of connection, external access arrangement or operational extent of the Project. The proposed subdivision change is primarily cadastral and land-tenure related. It does not introduce a new physical development footprint and does not require a material change to the approved infrastructure layout.

The approved five-lot subdivision plan and the proposed six-lot subdivision plan are shown together in Figure 3.1 for comparison. Figure 3.1 illustrates the proposed change to the subdivision arrangement only. It should be read together with Figure 3.2, which shows the approved Project sitewide infrastructure layout.

The proposed six-lot subdivision therefore seeks to align the consented subdivision arrangement with the approved Project layout and land tenure arrangements. It does not seek approval for a new or expanded development footprint, relocation of major infrastructure, or material change to the approved physical layout of the Project.

The approved five lot subdivision plan and the proposed six lot subdivision plan are shown together on Figure 3.1 for comparison. Under the approved development, Lot 1 comprises both:

- the primary portion of land located south of the Gulgong–Maryvale Railway Line, and
- a small triangular parcel located north of the railway line.

It is important to clarify that the inclusion of the northern triangular parcel does not represent a change to the approved development footprint. Rather, this area forms part of the existing cadastral parcel (Lot 11, DP 1260757), which includes land both north and south of the railway corridor. Its inclusion in the proposed subdivision plan reflects the existing cadastral arrangement and does not create any additional development area.

The mapping included in the original Development Application, and subsequently in Appendix 3 of the consolidated consent (SSD-8777), omitted the northern triangular portion and the closed road reserve north of Lot 4 due to geometric inaccuracies in the layout plans. These omissions were graphical in nature and did not reflect a change in land ownership, cadastral boundaries, or the approved development area.

The proposed six-lot subdivision seeks to rationalise the cadastral configuration and improve land management outcomes, without altering the approved development footprint or operational extent of the Maryvale Solar Farm.

A comparison of approved and proposed lot details is provided in Table 3.2.

Figure 3.1 Approved and Proposed Subdivision Layout

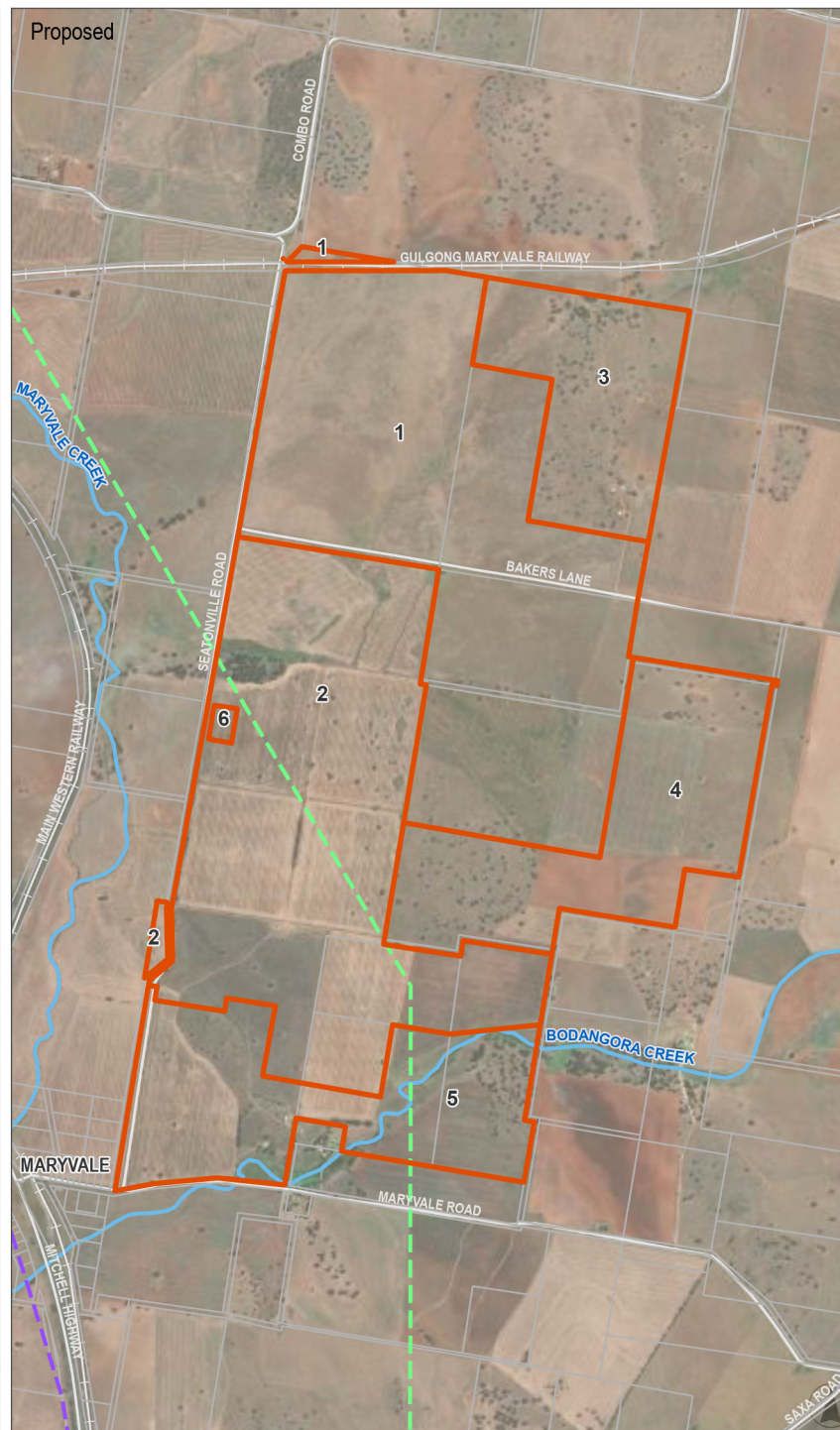
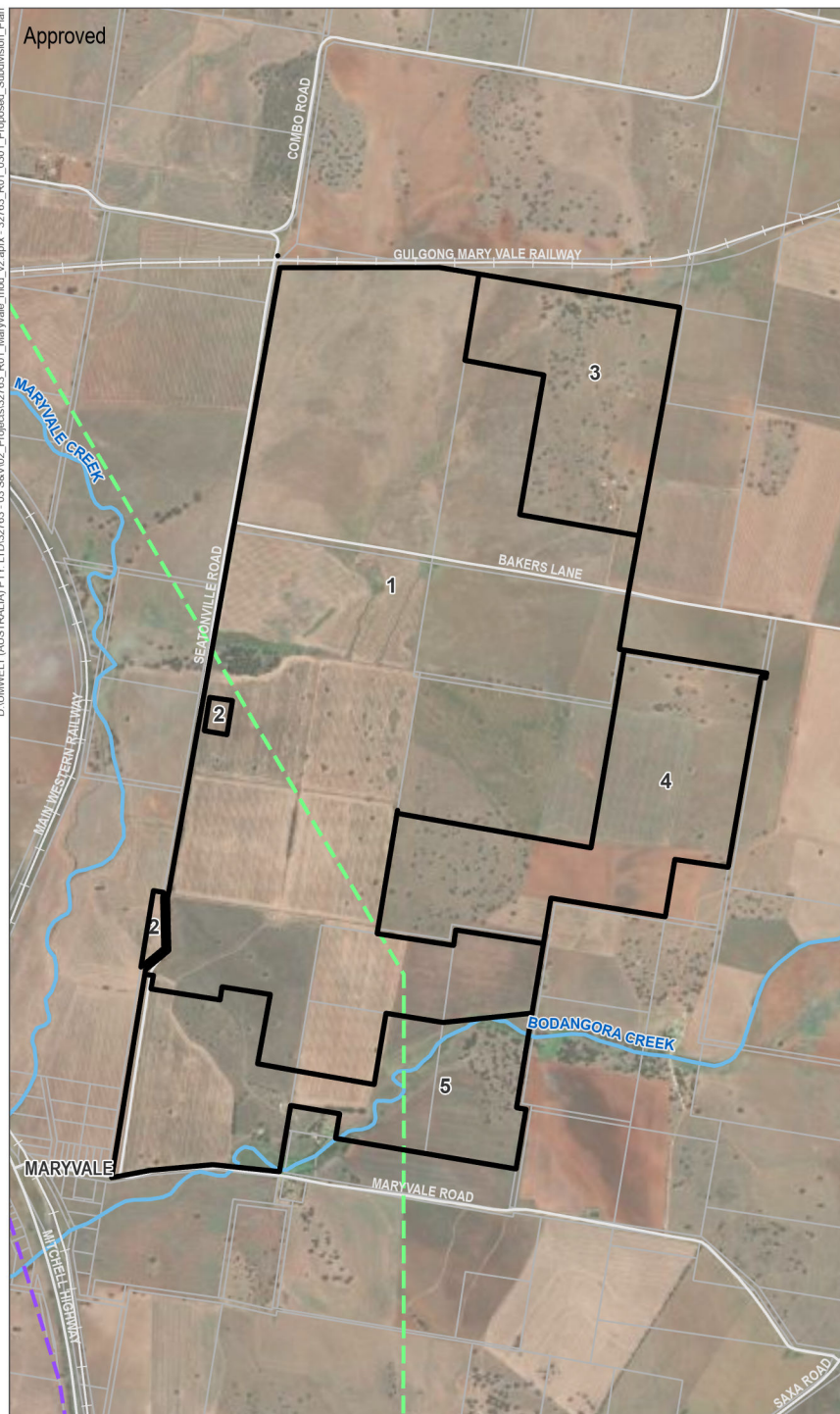
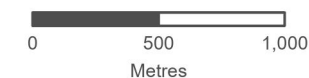


FIGURE 3.1
Approved and Proposed Subdivision Plan

Legend

- Approved Subdivision
- Proposed Subdivision
- 66kV Transmission Line
- 132kV Transmission Line
- Cadastre Lot Boundary
- Road
- Railway
- Creek/River



Scale 1:30,000 at A4
GDA2020 MGA Zone 55



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Figure 3.2 Project Site Layout Diagram



- LEGEND
- 4m CLASS 1 SOLAR FARM ROAD

6m CLASS 2 SOLAR FARM ROAD

4m FIRE TRAIL/PERIMETER ROAD

TRACKER

PV AREA BOUNDARY

PCUXX

PCU (POWER CONVERSION UNIT) TAG

BATTERY BANK

FUTURE BATTERY BANK

DEVELOPMENT FOOTPRINT

LEASE BOUNDARY

CADASTRAL BOUNDARY

TRANSMISSION EASEMENT

EXISTING FENCE

PERIMETER FENCE

EXISTING CONTOUR MAJOR (1m INTERVAL)

EXISTING CONTOUR MINOR (0.25m INTERVAL)

EXISTING TOP BANK

EXISTING HIGH VOLTAGE OVERHEAD ELECTRICITY

EXISTING LOW VOLTAGE OVERHEAD ELECTRICITY

EXISTING POWERLINE TO BE REMOVED

PROPOSED RE-ROUTE POWERLINE

EXISTING OPTIC FIBRE

BUSHFIRE OFFSET ZONE

EXISTING POWER POLE

EXISTING POWER POLE TO BE REMOVED

PROPOSED POWER POLE

ELECTRICITY STAY POLE

EXISTING TELECOM MARKER POST

ABORIGINAL HERITAGE AREA

ARCHAEOLOGICAL SITE AREA

EXISTING DENSE FOLIAGE

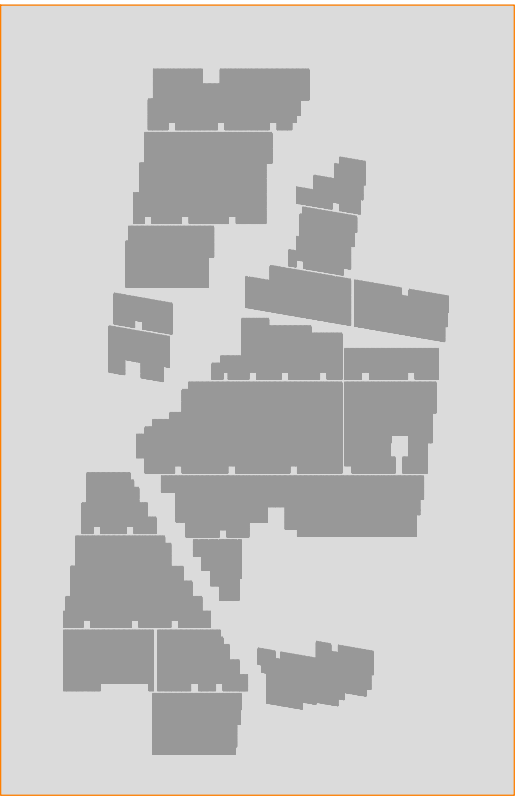
EXISTING TREES

EXISTING TREES TO BE RETAINED

- LEGEND CONTINUED
- VEGETATION SCREEN
- EXISTING WATER COURSE
- 40m WATERWAY BUFFER
- EXISTING DAMS TO BE RETAINED
- SFTXX

STATIC FIREFIGHTING TANK
- BWTs

BORE WATER TANK



KEY PLAN
NTS



EXTERNAL REFERENCE FILES	
X_SMEC_SF_A1	
X_SURV_CONTS_2D	
X_SURV_CONTS_3D	
X_EL_SOLAR_PANELS	
X_CIV_DES_RD	
X_CIV_DES_FIRE	
X_CIV_DES_SCREEN	
X_CIV_DES_SUB	
X_CIV_DES_TANKS	
X_CIV_DES_TEMP	
X_CIV_DES_TEMP_FAC	
X_CIV_DES_TEMP_TANKS	

REV	DATE	AMENDMENT / REVISION DESCRIPTION
0	09.06.25	ISSUE FOR CONSTRUCTION
1	08.07.25	REISSUED FOR CONSTRUCTION

WVR No	APPROVAL	TITLE	NAME
302	EF	DRAFTER	C.DERRADA
302	JK	DRAFTING CHECK	B.KOOPMAN
		DESIGNER	J.GAMBRILL
		DESIGN CHECK	J.KNIEST
		PROJECT MANAGER	E.FREMOUW
		PROJECT DIRECTOR	R.HAMILTON

SCALE AT A1 SIZE DRAWING

50 0 100 200 300

SCALE 1:7500 AT A1

NORTH

FOR CONSTRUCTION


an  company

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CLIENT



PROJECT TITLE	MARYVALE SOLAR FARM
DRAWING TITLE	SITOWIDE OVERALL LAYOUT
PROJECT / DRAWING No.	MVSF-SME-GEN-DWG-0012
REVISION	1

Figure 3.3

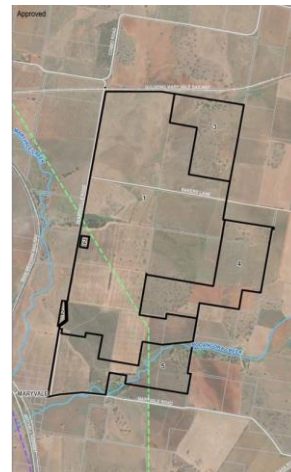
Comparison of Project Site Layout against Approved Subdivision Layout

For Internal Use - For Internal Distribution Only

Development Consent SSD-8777, – Approved Project Layout Compared Against Approved Subdivision Arrangement
 The approved subdivision arrangement does not alter the approved physical project layout.
 The physical infrastructure layout remains as approved under SSD-8777, as modified.



Description: Project Site diagram layout dated 08.07.25 represents the approved physical project layout for the Maryvale Solar and Energy Storage Project



Description: Approved subdivision plan shows the five-lot subdivision arrangement referenced under Schedule 2, Condition 13 and Appendix 3 of the Development Consent SSD-8777.

Figure 3.4

Comparison of Project Site Layout against Proposed Subdivision Layout

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Proposed Modification 3 to Development Consent SSD-8777

- The proposed six-lot subdivision does not change the approved development footprint.
- The proposed modification is limited to rationalising the subdivision boundaries and does not introduce new development areas or material infrastructure layout changes.



Description: The project site diagram layout dated 08.07.25 is shown to confirm that the approved physical project layout remains unchanged under the proposed Modification 3



Description: Proposed six-lot subdivision plan updates the cadastral/subdivision arrangement from five to six lots to better align with the approved project layout, lease arrangement, landownerships boundaries and existing cadastral/title arrangements

Table 3. 2.1 Approved and Proposed Lot Details

Lot Number	Approved Lot Size (ha)	Proposed Lot Size (ha)
1	374	212.77
2	1.04	192.91
3	58	57.55
4	84	86.16
5	85	80.58
6	-	0.42

Note: There is no change to the total area occupied by the proposed subdivision. The difference in total land areas in the table above has arisen due to the omission of part of Lot 1 in the approved subdivision plan and more accurate measurement.

The Dubbo Regional Local Environmental Plan 2022 (Dubbo Regional LEP) specifies a minimum lot size of 400 ha for lots within the proposed subdivision. As was the case with the approved subdivision plan, none of the proposed lots will be compliant with this requirement. However, section 4.38 of the EP&A Act allows the consent authority to grant development consent to SSD which may be partly prohibited by an environmental planning instrument. As none of the lots will reach the minimum lot size, according to clause 4.2 of the Dubbo Regional LEP there will be no dwelling entitlements associated with the created lots.

In addition, lot owner consent has been obtained for the relevant land parcels associated with the proposed subdivision arrangement. The consent documents have been reviewed against the relevant lot and deposited plan references to confirm that the consents correspond to the affected landholdings within the proposed subdivision area. For clarity, the landowner consent documents correspond to the relevant lots as set out in Table 3.2.2.

Table 3. 3.2 Landowner Consent and Corresponding Relevant Lots

Relevant lot / deposited plan	Corresponding landowner consent
Lot 182 DP754318	Baker landowner consent
Lot 1 DP1006557	Baker landowner consent
Lots 1 and 2 DP252522	Baker landowner consent
Lots 11 and 12 DP1260757	Baker landowner consent
Lot 2 DP573426	Whiteley landowner consent
Lot 1 DP1031281	Whiteley landowner consent
Lots 122 and 130 DP754318	Whiteley landowner consent

3.3 Additional Tree Removal

In the course of detailed design for the approved Project, the Engineering, Procurement, and Construction (EPC) contractor has identified two additional trees within the proposed Lot 2 of the Project site that will need to be removed. These trees were not assessed in the original BDAR (FloraSearch, 2018) and therefore were not considered in determining the offset obligation that applied to the Approved Project. Similarly, they were not included in the assessment of biodiversity impacts in the Environmental Impact Statement (EIS) for SSD-8777 (pitt&sherry, 2018).

The two trees are located within the approved solar farm infrastructure area, in proximity to the approved PV array and tracker installation works. The project team has confirmed that the location of the two trees affects approximately six rows of solar panel arrays and tracker installation works within Project Site Layout per Figures 3.5 and 3.6. The removal of the trees is therefore required to facilitate construction of the approved solar array and tracker infrastructure in this area.

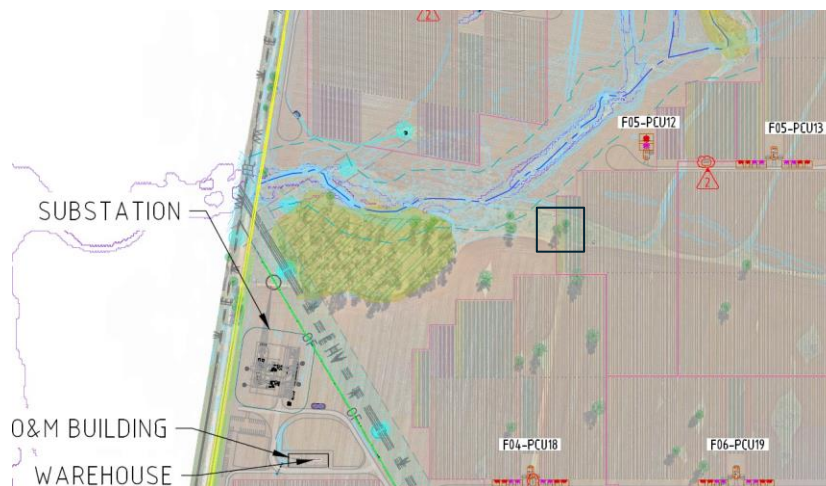
The removal of the two trees is not associated with a proposed change to the approved infrastructure layout. No change is proposed to the approved development footprint, solar generation capacity, BESS capacity, infrastructure layout or operational extent of the Project as a result of the proposed tree removal. Rather, the tree removal is required to facilitate construction and operation of the currently approved infrastructure arrangement. Figure 3.5 shows the location of the two trees identified for removal in relation to the approved Project layout; Figure 3.6 shows the affected solar panel array / tracker installation area within Block 12, identified as “F05-PCU12” of the Project Site Layout Diagram.

An Addendum report has been prepared by OzArk Environment and Heritage (2026) to assess the removal of the two additional trees and to determine any additional offset obligations (refer to Section 6.2 and Appendix 4).

Figure 3.5 Site identification of two trees within Project build-up Layout

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Location of Two Trees within Approved Project Layout

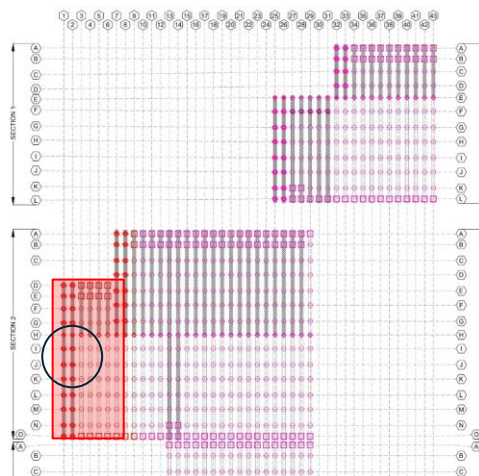


Description: The figures identifies the location of the two additional trees (in black square box) proposed for removal within Maryvale Solar and Energy Storage Project layout. The trees are shown within the approved solar farm infrastructure area, in proximity to the approved PV tracker layout, PCU locations, substation, O&M building and warehouse area.

Figure 3.6 Schematic Layout of Block 12: Impact on construction of Solar Tracker Rows

For Internal Use - For Internal Distribution Only

Purpose of additional tree removal



Description: The red-shaded rectangular area identified the portion of Block 12 where approximately six rows of solar panel arrays and tracker installation works are affected by the location of the two trees (in black circle). Their removal is required to facilitate construction of the approved solar array/tracker layout. The removal does not introduce a new development footprint, does not have associated changes to infrastructure layout and does not materially alter the approved solar array or operational layout of the Project.

3.4 Modification Category

The Proposed Modification 3 seeks to modify SSD-8777 pursuant to section 4.55(1A) of the EP&A Act. As SSD, the Minister for Planning and Public Spaces, or their delegate, will be the consent authority. Modifications sought under section 4.55(1A) must be:

- of minimal environmental impact, and
- the same or substantially the same as the development for which the consent was originally granted and before that consent as originally granted was modified.

The information provided in Table 3.1 demonstrates that the Proposed Modification 3 is substantially the same as the original development approved under SSD-8777 for reasons that include:

- the overall nature of the development remains unchanged
- there is no critical element of the overall approved Project which would be varied substantially by the Proposed Modification 3
- there are minor changes to environmental impacts (refer to Section 6.0) and the Proposed Modification 3 can be undertaken generally in accordance with the approved performance measures contained in the current conditions of SSD-8777.

3.5 Conditions to be Modified

If approved, the Proposed Modification 3 would require minor amendments to the conditions of SSD-8777 as described in Table 3.3 below.

Table 3. 4 Proposed Modifications to Conditions

Condition Reference	General Description	Reason for Change
Schedule 2, Condition 13	Number of lots in subdivision to be updated	Six lots required in subdivision instead of five
Schedule 3, Condition 13	Changes to Table 1 to update ecosystem credit requirements	Additional offsets required for the removal of two additional trees
Appendix 3	Subdivision Plan	Updated figure to be provided to show new subdivision layout

The Proposed Modification 3 does not result in any changes to the updated project description provided as part of the documentation for Modification 2, and for completeness this has been included as Appendix 1.

4 Statutory Context

The Proponent is seeking a modification to SSD-8777 under section 4.55(1A) of the EP&A Act. No other approvals are required for the Proposed Modification 3.

The statutory context for the approved Project remains as set out in section 4 of the Modification Report for Modification 2 (NGH Pty Ltd, 2022). There have been no changes to legislation and/or planning instruments that would alter the statutory context for the Proposed Modification 3.

In accordance with the Guidelines (DPHI, 2026), Table 4.1 provides a summary of compliance requirements under Commonwealth, State and local legislation relevant to Proposed Modification 3. Detailed statutory compliance tables for the modified Project have been included as Appendix 2. The tables identify all the relevant statutory requirements for the modification and provide references to where they have been addressed in this Modification Report.

Table 4.1 Statutory Context Summary

Matter	Relevance to the Proposed Modification
Power to grant approval <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act) and <i>State Environmental Planning Policy (Planning Systems) 2021</i> (Planning Systems SEPP)	The approved Project is State Significant Development (SSD) according to section 20 Schedule 1 of the Planning Systems SEPP. The Proposed Modification 3 seeks to modify SSD-8777 pursuant to section 4.55(1A) of the EP&A Act. As SSD, the Minister for Planning and Public Spaces, or their delegate, will be the consent authority. Modifications sought under section 4.55(1A) must be substantially the same development for which the original consent was granted, or as last modified under the former section 75W of the EP&A Act. The Proposed Modification 3 is substantially the same as the original development approved under SSD-8777 for reasons that include: - the overall nature of the development remains unchanged - there is no critical element of the overall Project which would be varied substantially by the Proposed Modification 3 - there are minor changes to environmental impacts, and the Proposed Modification 3 can be undertaken generally in accordance with the approved performance measures contained in the current conditions of SSD-8777.
Permissibility <i>Dubbo Regional Local Environmental Plan 2022</i> (Dubbo Regional LEP)	The Project is defined as 'electricity generating works', which are permitted with consent in the RU1 Primary Production zone under the Dubbo Regional LEP.
Commonwealth Legislation <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	The BDAR prepared for the approved Project (FloraSearch, 2018) identified that the small loss of potential habitat associated with the Project was highly unlikely to have an adverse impact on any EPBC Act-listed species and referral of the Project to the former Department of Energy and the Environment was not required. Further assessment undertaken for the Proposed Modification 3 has confirmed no additional impacts to EPBC Act-listed entities. Approval under the EPBC Act is not required.
Approvals not required	Section 4.41 of the EP&A Act specifies authorisations which are not required for approved SSD, as listed below: <i>Fisheries Management Act 1994</i> – a permit under section 201, 205 or 219

Matter	Relevance to the Proposed Modification
	• <i>Heritage Act 1977</i> – an approval under Part 4, or an excavation permit under section 139 • <i>National Parks and Wildlife Act 1974</i> – an Aboriginal heritage impact permit under section 90 • <i>Rural Fires Act 1997</i> – a bushfire safety authority under section 100B • <i>Water Management Act 2000</i> – a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91.
Pre-conditions to exercising the power to grant consent	Refer to Appendix 2
Mandatory matters for consideration	Sections 1.3 and 4.15 of the EP&A Act Refer to Appendix 2

5 Engagement

The following engagement has occurred during the preparation of this Modification Report:

- Pre-application discussions with the Department of Planning, Housing and Infrastructure (DPHI) to discuss the approval pathway and assessment requirements.
- Pre-application discussions with Dubbo Regional Council to notify the intention to submit the modification application and to discuss the requirements for subdivision works certificates in accordance with Part 6 of the EP&A Act.
- Individual discussions with the affected landowners prior to finalisation of the subdivision plan in conjunction with lease arrangements.

No significant concerns were raised during the engagement completed for the Proposed Modification 3. The engagement undertaken during preparation of this Modification Report is summarised in Table 5.1.

Table 5.1 Engagement undertaken with community for Proposed Modification 3

Stakeholder	Engagement undertaken	Matters discussed / raised	Outcome
Dubbo Regional Council	Consultation was undertaken in relation to the proposed six-lot subdivision arrangement and the proposed modification to SSD-8777.	Council sought clarification on the purpose of the subdivision, whether the subdivision was for lease lots, the apparent change in lot areas between the approved five-lot subdivision and proposed six-lot subdivision, and whether the proposed arrangement raised any Council concerns.	It is clarified that the proposed subdivision is for lease/cadastral purposes and does not increase the approved development footprint or change the approved physical project layout. Council subsequently confirmed that, given the subdivision is for lease lots, Council raised no obvious issues at that stage.
Affected landowners	Individual engagement was undertaken with the affected landowners in relation to the proposed subdivision arrangement, lease arrangements and owners consent documentation.	Matters discussed related to the proposed subdivision arrangement, corresponding lot and deposited plan details, land ownership boundaries and owners consent requirements.	Owners' consent has been secured for the relevant landowners and corresponding lots. The updated owners consent package is included with the revised submission.

6 Assessment of Impacts

6.1 Preliminary Environmental Risk Analysis

A preliminary analysis of key environmental aspects of relevance to the Proposed Modification 3, based on those aspects assessed in the EIS for SSD-8777 (pitt&sherry, 2018) is provided in Table 6.1.

Table 6.1 Preliminary Environmental Assessment

Aspect	Preliminary Assessment	Approach
Biodiversity	Two additional trees have been identified for removal as part of detailed design which will result in a minor increase to approved biodiversity impacts. The proposed subdivision layout changes would not impact additional areas outside the approved disturbance footprint.	An Addendum to the BDAR has been prepared (refer to Section 6.2 and Appendix 4)
Traffic and transport	The proposed subdivision layout changes would not affect traffic or transportation associated with the approved Project, and no changes to site access will be required.	No additional assessment required.
Heritage	The proposed subdivision layout changes would not impact additional areas outside the approved disturbance footprint or involve changes that would affect approved heritage management commitments.	No additional assessment required.
Land use	The proposed subdivision layout changes would facilitate the ongoing agricultural use of those parts of the Project site that are not required for electricity generation, transmission or storage. This ensures minimal disruption to existing land uses.	No additional assessment required.
Visual amenity	The proposed subdivision layout changes would not alter the location, size or visual appearance of any infrastructure associated with the approved Project.	No additional assessment required.
Water	The proposed subdivision layout changes would not alter water use or management commitments across the Project site.	No additional assessment required.
Soils, geology and contamination	The proposed subdivision layout changes would not impact soils, geology or contamination across the Project site, and do not require additional management commitments.	No additional assessment required.
Noise	The proposed subdivision layout changes would not alter noise levels associated with construction, operation or decommissioning activities.	No additional assessment required.
Air quality	The proposed subdivision layout changes would not alter air quality impacts associated with construction, operation or decommissioning activities.	No additional assessment required.
Socio-economic	The proposed subdivision layout changes would not alter the socio-economic impacts and/or benefits of the approved Project.	No additional assessment required.

Aspect	Preliminary Assessment	Approach
Hazards	The proposed subdivision layout changes would not alter the hazard profile of the approved Project nor necessitate changes to hazard management plans.	No additional assessment required.
Waste	The proposed subdivision layout changes would not alter the waste generated by the approved Project nor necessitate changes to waste management.	No additional assessment required.
Cumulative impact	The proposed subdivision layout changes would not alter the cumulative impacts of the approved Project in conjunction with other projects being undertaken in the locality.	No additional assessment required.

6.2 Biodiversity

An Addendum report has been prepared by ecologists from OzArk Environment and Heritage to assess the removal of two additional trees within the Project site and is provided in Appendix 4. A summary of key outcomes is provided below.

6.2.1 Methodology

The assessment was undertaken using the streamlined scattered trees assessment method described in Appendix B of the Biodiversity Assessment Method 2020 (BAM) (Department of Planning, Industry and Environment, 2020). This method applies to vegetation that meets one of the three criteria described in Section B.1 (a-c) of that appendix. Specifically, in the present case, the vegetation satisfies the third criterion (c):

Scattered trees are defined as species listed in the tree growth form group that... are three or fewer trees that have a DBH of greater than or equal to 5 cm and are within a distance of 50 m of each other, that in turn, are greater than 50 m away from the nearest living tree that is greater than or equal to 5 cm DBH, and the land between the scattered trees is comprised of vegetation that are all ground cover species on the widely cultivated native species list, or exotic species or humanmade surfaces or bare ground.

The trees in question form a cluster of two individuals within 50 m of one another and slightly greater than 50 m from the nearest cluster of trees (refer to Figure 6.1). The intervening land was identified as non-native in the BDAR and this conclusion is supported by subsequent visits and site photographs, which show an understory dominated by a mixture of annual and perennial exotic grasses, forbs, and shrubs, including large areas of Horehound (*Marrubium vulgare*) (refer to Photo 6.1). These findings suggest that the scattered trees method, which was applied to most surrounding trees in the BDAR, is appropriate in this case.

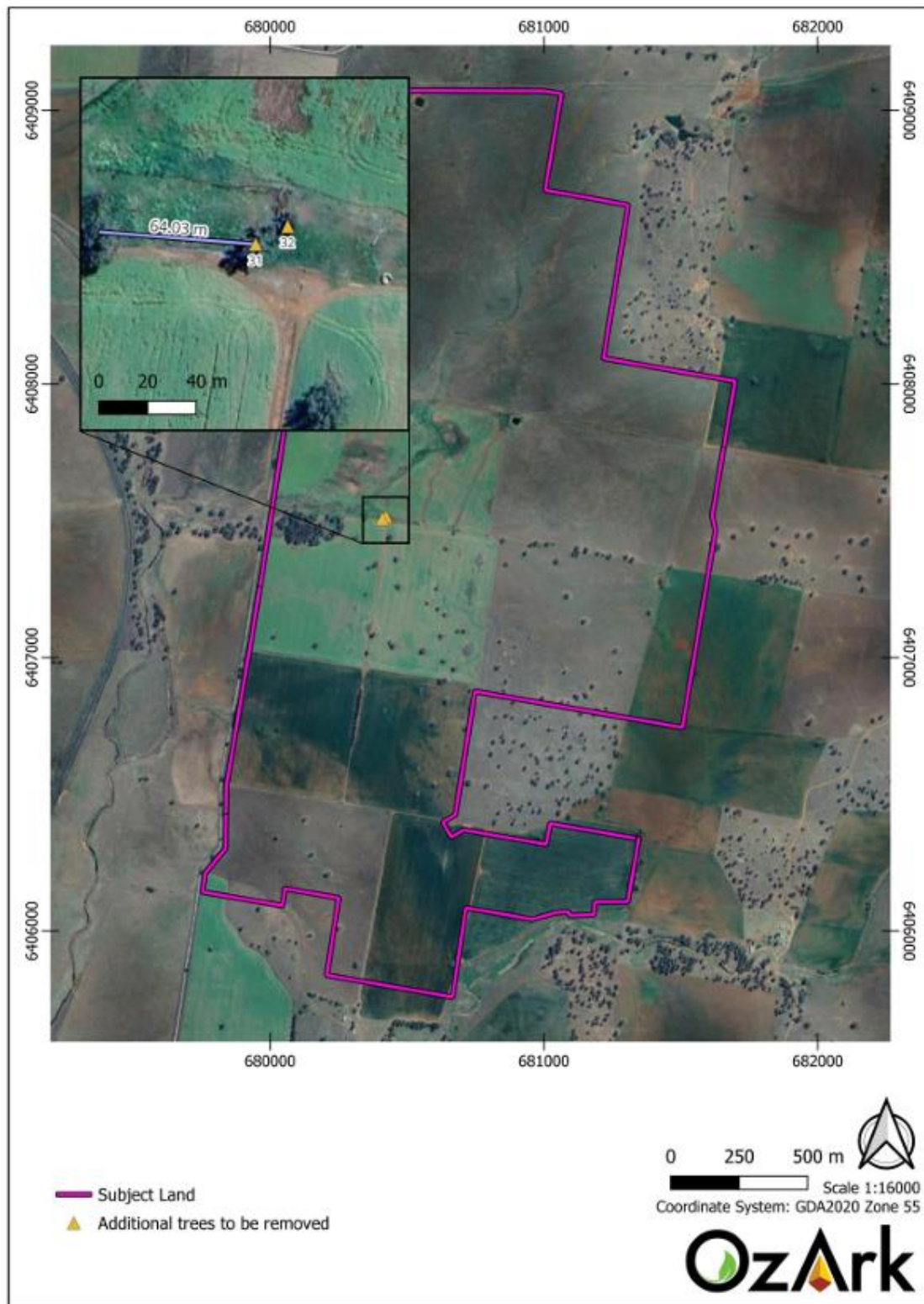


Figure 6. 1 Location of Additional Trees to be Removed

Source: OzArk, 2026



Photo 6. 1 Additional Trees to be Removed

Source: OzArk, 2026

6.2.2 Results

6.2.2.1 *Plant Community Types*

The two trees proposed for removal have been identified as Yellow Box (*Eucalyptus melliodora*) trees based on photographs (refer to Photo 6.1) and prior field assessments. They occur as outlying trees loosely associated with a patch mapped to Plant Community Type (PCT) 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW Southwestern Slopes Bioregion in the BDAR. The presence of scattered Yellow Box trees is consistent with this mapping and PCT 277 has been adopted in this case.

6.2.2.2 *Threatened Ecological Communities*

PCT 277 is associated with the following Threatened Ecological Communities (TECs):

- Biodiversity Conservation Act 2016 (BC Act), Critically Endangered: White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, Southeastern Highlands, NSW Southwestern Slopes, Southeast Corner and Riverina Bioregions.
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), Critically Endangered: White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

The BC Act listing applies to all grassy woodlands and associated derived grasslands dominated or co-dominated by one or more of the title species. The two Yellow Box trees in the patch under consideration meet these broad criteria and must be considered an example of the BC Act-listed Critically Endangered Ecological Community (CEEC).

Assessment under the EPBC Act listing criteria indicates that the patch should not be considered an example of that CEEC, as site photographs taken by OzArk during Project ecology work and field assessments undertaken during the original BDAR suggest that the understorey is predominantly non-native, with perennial exotic vegetation e.g. Horehound and African Boxthorn (*Lycium ferocissimum*) providing greater cover than the negligible native component.

6.2.2.3 *Threatened Species*

Under the streamlined scattered tree assessment method, only species considered to be at risk of a Serious and Irreversible Impact (SAII) or species opportunistically recorded on site need to be considered for potential offsetting. No species credit species were recorded within the affected vegetation during pre-clearance surveys or other field assessments. The BAM Calculator (BAM-C) identified three candidate SAII species-credit species relevant to the patch under assessment:

- Regent Honeyeater (*Anthochaera phrygia*) – BC and EPBC Acts, Critically Endangered.
- Swift Parrot (*Lathamus discolor*) – BC Act, Endangered; EPBC Act, Critically Endangered.
- Prasophyllum sp. Wybong – BC Act, Not Listed; EPBC Act, Critically Endangered.

The Regent Honeyeater and Swift Parrot could be excluded as the site is not mapped as important habitat for either species. Despite being generated as an SAII entity by the BAM-C, Prasophyllum sp. Wybong is an EPBC Act-only entity and SAII provisions do not apply to it (DCCEEW, 2026). On the basis of this, all candidate species generated by the BAM-C were excluded from consideration in this assessment.

6.2.2.4 *Habitat Features*

Both trees under assessment are hollow-bearing trees (HBT):

- Tree 31: Two small (5-10 cm diameter) hollows and two extra small (<5 cm diameter) hollows.
- Tree 32: Two large (15-20 cm diameter) hollows and one small hollow.

Tree numbering is identified in Figure 6.1 and follows mapping provided in prior site assessments.

6.2.3 *Biodiversity Offsets*

No species-credit obligation applies to the removal of the two trees, owing to the exclusion from the assessment of all candidate species generated by the BAM-C (refer to Section 6.2.2.3 above).

The removal of the two additional trees would generate an obligation to retire two ecosystem credits as detailed in Table 6.2 below and outputs from the BAM-C provided in Appendix A of the Addendum report (refer to Appendix 4).

Table 6. 2 Ecosystem Credit Obligation

PCT	TEC	Tree Classes	Credits HBT*	Offset Trading Group
277	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	Class 3 (2 trees)	2	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions

Note: * Credits required for habitat with hollow-bearing trees.

The appropriate credits must be for habitat containing hollow-bearing trees and must be located in the Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley or Wollemi Interim Biogeographic Regionalisation of Australia (IBRA) subregions, or any subregion within 100 km of the outer edge of the impact area. The subregions referred to here are those identified in the current version (7.1) of the IBRA subregion mapping.

6.2.4 Management and Mitigation

Pre-clearance and fauna spotter-catcher requirements for habitat trees as described in the Biodiversity Management Plan (BMP) for the approved Project will apply to these trees. These requirements are detailed in Protocols 1-3 of the BMP (OzArk, 2025).

The offset obligation will be acquitted by purchasing and retiring the necessary credits on the open market or by paying into the Biodiversity Charge Fund (BCF).

7 Justification and Conclusion

The key benefit of the Maryvale Solar and Energy Storage Project remains as stated in the EIS (pitt&sherry, 2018); the production of renewable electricity reducing greenhouse gas emissions and reliance on fossil fuels. The approved Project will contribute to renewable energy generation targets in NSW and nationally, as well as contributing to various international agreements to which Australia is a signatory, such as the United Nations Framework Convention on Climate Change and the Paris Agreement.

The approved Project will provide socio-economic benefits by generating up to 150 construction jobs during peak construction periods and will support six to ten operational jobs during the 25-year life of the solar farm. It will encourage regional development through expenditure by personnel in the Wellington region during construction.

The environmental and social impacts of the approved Project will be substantially unchanged as a result of the Proposed Modification 3 and the mitigation measures previously identified in the EIS and previous modification reports will continue to apply (refer to Appendix 3). A minor additional impact to biodiversity has been identified for the Proposed Modification 3 and additional offset obligations have been calculated.

There will be no change to the response of the approved Project against the objectives of the EP&A Act. The Proposed Modification 3 will continue to support these objectives as outlined in Appendix 2. The principles of ecologically sustainable development will continue to be supported as outlined in the EIS.

The assessment concludes that the Proposed Modification 3 is substantially the same development as that for which the consent was originally granted and the Proposed Modification 3 can be undertaken in accordance with the approved performance measures contained in the current conditions of SSD-8777.

8 References

Department of Planning and Environment (DPE), 2023. Maryvale Solar Farm Modification 2, Modification Assessment Report.

Department of Planning, Housing and Infrastructure (DPHI), 2026. State significant development guidelines – preparing a modification report (Appendix E to the state significant development guidelines).

Department of Planning, Industry and Environment (DPIE), 2020. Biodiversity Assessment Method. Biodiversity Assessment Method 2020 | Environment and Heritage FloraSearch, 2018. Maryvale Solar Farm: Biodiversity Development Assessment Report.

Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2026. *Prasophyllum* sp. Wybong (BioNet Atlas: Threatened Biodiversity Data Collection).

NGH Pty Ltd, 2022. Modification Application 2 Development Consent SSD 8777 Maryvale Solar Farm.

OzArk Environment and Heritage, 2025. Biodiversity Management Plan: Maryvale Solar and Energy Storage System.

pitt&sherry, 2018. Maryvale Solar Farm Environmental Impact Statement. Prepared for Maryvale Solar Farm Pty Ltd.

Appendix 1

Updated Project Description

1 PROJECT DESCRIPTION – INFORMATION REFERENCED BY THE ENVIRONMENTAL IMPACT STATEMENT FOR MARYVALE SOLAR FARM

1.1 OVERVIEW

The Maryvale Solar Farm project involves the construction of a large-scale Solar Farm and Battery Energy Storage System (BESS) to support renewable energy generation and grid stability. The project includes the development, operation, and connection of the facility to the Essential Energy network via a 132 kV Transmission Line, linking the Maryvale Solar Farm Connection Assets to the Geurie Substation.

Maryvale Solar and Energy Storage System is a development with a 243-megawatt (MW) direct current (DC) capacity and a 172 MW alternating current (AC) output. The project incorporates a single axis 1P tracker system, PCU central inverters, and CATL BESS units.

The following works and infrastructure would be required to support the construction and operation of the solar farm:

- Upgrade of the intersection of Seatonville Road and Maryvale Road
- Upgrades to Maryvale Road
- Upgrade of the intersection of Maryvale Road and Cobbora Road and
- Construction of a main access road for all access and egress for the Site and substation from Seatonville Road

Installation of Electrical infrastructure including

- A 132kV Substation including two transformers and associated 132kV switchgear
- Inverters to collect and convert DC to AC
- Cabling and other electrical infrastructure (e.g. security systems)
- Underslinging of the communication cable from Wellington Substation to the Site through the existing 132kV transmission line adjacent to the site
- A maintenance compound and buildings and
- Fencing, landscaping and environmental works.

Power generated by the facility would be transmitted via existing 132kV transmission lines, in an easement owned by Essential Energy that runs through the site in a north-west to south-east direction and extends through to Wellington approximately 12 kilometres to the south -east of the Maryvale Solar Farm Site. A tee off connection would be used to connect to the existing Essential Energy 132kV transmission line.

A section of high capacity fibre wire will be installed to connect the new Maryvale Solar Farm Substation to Essential Energy's 132 kV Network. This communications infrastructure would be delivered through Essential Energy's existing network by under slinging on the existing poles.

The operational life of the solar farm and BESS is expected to be 30 years at which point the panels are either replaced and operations continue or removed and the site is decommissioned and rehabilitated.

1.2 PROPOSAL SITE

The Proposal would be located at "Waroona" 121 Maryvale Road, Maryvale and "Scarborough House", 801 Cobbora Road, Maryvale, NSW and contained within Lot 2 DP 573426, Lot 11 and 12 DP 1260757, Lot 1 DP 1006557, Lot 182, 130 and 122 DP 754318, Lot 1 and Lot 2 DP 252522 and Lot 1 DP 1031281 (the "Subject Land").

The Proposal is located within the Dubbo Regional Council Local Government Area (LGA) and is approximately 15 km north-west of the Wellington town centre.

The Subject Land is currently used for agriculture, including grazing of sheep and cultivation for cereal crops such as wheat, and fodder crops such as lucerne. The solar farm would occupy approximately 375 hectares (the "Site") with the remaining land retained as agricultural land.

There is an existing Essential Energy 132kV easement which runs through Lot 2 DP 573426 in a north – west to south-east direction and this easement contains an existing 132 kV powerline on wooden pole structures which connects

with the Wellington substation some 12 km south. The Wellington substation is located approximately 3.5km to the north of Wellington.

1.3 KEY INFRASTRUCTURE COMPONENTS

The Proposal would consist of the following elements:

- Solar Components including
- Up to 400,000 PV panels on mounting structures that enable the panels to track the sun (known as “single axis trackers”)
- Electrical connections and inverter stations (where the inverters are within containers within the solar PV arrays)
- Underground cabling / collection circuits
- BESS including
- 122 batteries units
- Electrical infrastructure including
- Transmissionkiosk
- A 132kV Substation
- 33kV switchgear
- A main access road
- Upgrade of intersections and roads to facilitate safe access
- Ancillary facilities and construction compounds
- Perimeter security fencing and
- Two maintenance storage containers

During the construction period, some additional temporary facilities would be located within the Site and may include:

- Material laydown areas
- Construction site offices, and
- Parking area

Further details have been provided below for indicative key infrastructure components however the final infrastructure for all components would be confirmed during the construction contract Request for Proposal (RFP) stage.

1.3.1 SOLAR COMPONENTS

The solar modules will consist of a mounting system, PV solar panels and cabling. The support structures for mounting the PV panels will stand up to 4m high with steel posts as foundations. Piles would be driven or screwed in to the ground using pile drivers to a maximum depth of 4m depending on geotechnical conditions.

The Proposal will comprise of up to 400,000 PV panels, using a single axis tracking system, facing east-west and tilted 60° along the north-south axis. The PV modules (2.5m x 1.1m) will consist of 72 high efficiency monocrystalline cells with glass and aluminium frames. The mounting structures will be constructed in rows with approximately 5-6m spacing between the rows to facilitate movement of the panels and provide access for maintenance.

The modules will be arranged in strings and connected to inverters located adjacent to PV arrays. The PV arrays will be fitted with an earthing and lightning protection system connected to the main earth link. All PV modules would be installed in accordance with the relevant Australian Standards including AS 5033.



FIGURE 1 INDICATIVE SOLAR PANEL FOOTINGS



FIGURE 2 EXAMPLE OF TRACKING SOLAR PV PANELS



FIGURE 3 MARYVALE SOLAR FARM – BATTERIES INSTALLED

1.3.2 BATTERY ENERGY STORAGE SYSTEM

The proposed BESS is anticipated to have peak capacity of approximately 230MW and storage capacity of 1.63 hours (or 375MWh). The BESS technology being proposed is utility scale lithium-based batteries providing short term energy storage services where they are charged and discharged on a regular basis to provide both load shifting (storage of energy for discharge later) and potentially grid support services. The final battery supplier has not been selected at this stage however the technology will be approved under the relevant Australian Standards.

Two alternative battery storage formats are being considered through the ongoing technical analysis: either a centralised or distributed format. Both BESS formats being proposed are within the approved infrastructure/impact area defined under the Development Consent and the General Layout Plan.

Either of the formats will be comprised of approximately 122 battery units. Each of the units will have approximately the same scale, dimensions as a “forty foot” container (i.e., length 12.2m, width 2.4m and height 2.6m). The maximum height of the battery units will be approximately 3 metres above ground level, which is 1 metre lower than the maximum height of the approved solar field. An example battery unit is shown in Figure 4 below.

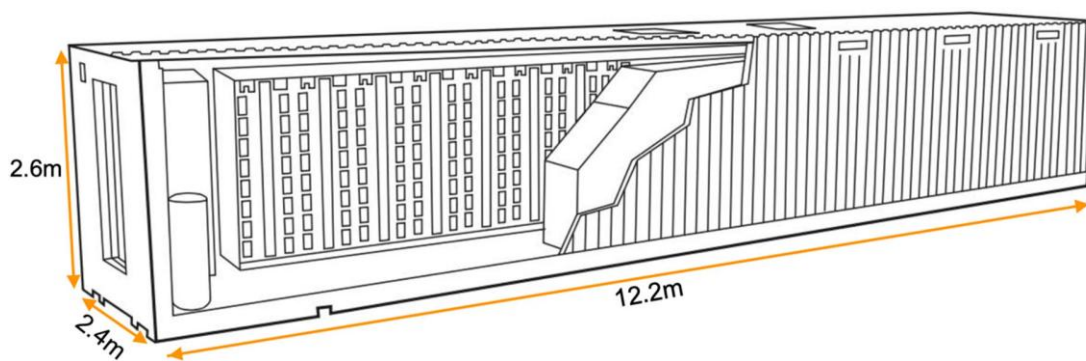


FIGURE 4 APPROXIMATE DIMENSIONS OF INDIVIDUAL BATTERY UNIT

The main differences between the centralised and distributed formats are described below.

Centralised Battery Energy Storage Option

Under this option a large central BESS will be connected into the 33kV bus of the solar farm via additional underground electrical cables. It will be positioned adjacent to the proposed substation on site as shown in the proposed site plans. This battery will occupy approximately 10 acres of land and comprise multiple (approx. 122) shipping container style buildings grouped together that will house the batteries and the ancillary connection and management equipment enabling the batteries to interface with the solar farm substation and the grid.

The centralised BESS will be set back from the western boundary and will also be screened by the supplementary vegetation screening required along this boundary under the Maryvale Solar Farm Development Consent. This screening will assist in mitigating the visual impacts of the BESS along this boundary. The remainder of the BESS will be partially obscured/screened by the solar farm.

The figures below are indicative of the general appearance of a BESS when coupled with a solar farm, where all of battery units and ancillary buildings are located together. The BESS proposed for the Maryvale Solar Farm will be approximately five times the size of this system shown in Figure 5, containing approximately 122 battery units over 10 acres.

Figure 6 shows a close up of an example of the battery units. These images are of existing constructed projects for illustration purposes.



FIGURE 5 ILLUSTRATION OF BESS COUPLED WITH A SOLAR FARM (SOURCE: WWW.ENERGYAUSTRALIA.COM.AU/ABOUT-US/ENERGY-GENERATION/GANNAWARRA-BATTERY-STORAGE)



FIGURE 6 ILLUSTRATION OF CLOSE UP DETAIL OF BATTERY UNITS (SOURCE: WWW.ENERGYAUSTRALIA.COM.AU/ABOUT-US/ENERGY-GENERATION/GANNAWARRA-BATTERY-STORAGE)

Distributed Battery Energy Storage Option

Under this option the same number (approx. 122) of shipping container style buildings housing batteries is proposed but distributed across the site co-located with each of the inverter stations located throughout the development which are adjacent to the PV arrays.

The images below are indicative of the general appearance of a solar farm with a distributed BESS, where the battery units (approx. 122 units) are distributed throughout the solar farm. These images are of existing constructed projects for illustration purposes.



FIGURE 7 ILLUSTRATION OF BATTERY UNITS DISTRIBUTED THROUGHOUT A SOLAR FARM (SOURCE: [HTTPS://EN.SUNGROWPOWER.COM/](https://en.sungrowpower.com/))



FIGURE 8 CLOSE UP EXAMPLE OF DISTRIBUTED BATTERY UNIT WITH INVERTER ADJACENT TO SOLAR PANELS (SOURCE: [HTTPS://EN.SUNGROWPOWER.COM/NEWSDETAIL/2127](https://en.sungrowpower.com/newsdetail/2127))

1.3.3 ELECTRICAL CONNECTIONS AND INVERTERS

Electrical cabling would be attached beneath the modules and would connect the individual PV modules to each other. Groups of panels will be connected to each other by underground cables. Inverter stations will be located centrally to groups of approximately 10,000 PV panels and would be located within the solar PV arrays.

Inverter stations collect electricity from an area of panels, convert it from direct current (DC) to alternating current (AC). The energy is conveyed from the inverter station to the transformer to be located within the substation via electrical cabling.

Each inverter station will house 1-2 inverters and will be fitted with an overvoltage protection device at each DC and AC input/output. This would result in up to 40 inverter stations across the Site.

The type of inverters to be installed across the site would be Ingeteam C Series, 3-4MVA inverters. The inverters would be situated within inverter stations with dimensions approximating a 40' container.

The inverter stations would be delivered as a fully containerised solution. These stations will be installed on a concrete foundation, slightly elevated above the ground to enable the installation of the AC and DC cabling and fitted with:

- 80 Inverters ;
- Cable glands
- Transformer

- Oil retention safety tank
- HV switchgear, and
- Cooling fans

1.3.4 ELECTRICAL CABLING

The majority of electrical cabling (with the exception of DC cabling connecting the modules) required for the Proposal would be installed underground and is considered high voltage (>1kV) and as such would be installed at a depth of approximately 1.2m (in accordance with AS 3000 and AS 3008) (subject to detailed design). All underground cabling would be installed in accordance with the relevant Australian Standards including mechanical protection in accordance with AS 3000.

Any low voltage cabling required for auxiliary loads on site may be installed at a depth of between 500- 600mm (subject to detailed design). Some electrical cabling may be above ground to enable crossing of waterbodies on Site.

Prior to excavating the cable trench, the topsoil would be stripped and stockpiled for use in the rehabilitation of the trench following the cable installation. A sand bed will be placed in the trench before and after laying of the cables, followed by additional backfilling with excavated material.

1.3.5 SUBSTATION

A new 132 kV substation would be established on the western boundary of Lot 2 DP573426.

The substation footprint is approximately 60m x 80m in size and set back approximately 2km from Maryvale Road adjacent to Seatonville Road. The substation switchyard would include a transformer, 33kV switchgear building and auxiliary services building. The substation will connect directly to the existing 132kV transmission line traversing the Site. The maximum height of any component in the substation will be 22m.

The new substation would include (subject to detailed design):

- 1 x 132kV 188MVA transformer
- 33kV switchgear building
- Auxiliary services building
- Elevated busbar
- A lightning protection system
- Circuit breakers
- Disconnectors
- Current transformers
- Voltage transformers
- Diesel Generators, and
- Communications pole with microwave dish and antennas

A chain link fence with upper barbed strands approximately 3m high would be installed around the substation to maintain security of the site and ensure safety for the public and the ongoing agricultural activities surrounding the substation. The substation would have a 20m asset protection zone (APZ) in accordance with design and safety standards.

The substation would be approximately 60m x 80m in accordance with Essential Energy requirements to ensure safe and reliable operation of the substation. Consistent with existing Essential Energy substation designs, gravel will be placed around the substation equipment and fence to restrict vegetation growth and provide a safe working environment in accordance with Australian Standards (AS 2067, AS 1025.1 and 1025.2). The substation will include 33kV switchgear which controls the flow of electricity within an electrical system to prevent overloads and short circuits and to de-energize circuits for testing and maintenance.

The connection will be made directly from the Substation to the existing overhead transmission lines on the Site.



FIGURE 9 Maryvale Substation

1.3.6 ESSENTIAL ENERGY INFRASTRUCTURE WORKS

The Proposal would require connection to electrical infrastructure within an existing Essential Energy easement at the western boundary of Lot 2 DP573426 within the Site. The connection will be made to the existing overhead transmission line. This connection is subject to Essential Energy detailed design however it is assumed that any new infrastructure to carry powerlines from the substation to the 132kV transmission line would consist of timber or spun concrete poles (similar to surrounding infrastructure).

A communications path from the Maryvale Substation to the Wellington Substation will also be required. An underslung fibre optic cable along the existing electrical infrastructure will be installed to achieve this with connections to the Substations at either end. Essential Energy have provided concurrence with these works as outlined in correspondence provided to DPE as landholder's consent.

In order to commission the new communications cable, electrical modification works at Wellington, Dubbo and Dubbo South will also be undertaken inside the control buildings, however due to the nature of these works they have not been the subject of this assessment.

1.3.7 ACCESS ROADS

Access to the Site is via Seatonville Road, an unsealed single lane road that provides access to the western side of the Site. Access into the Site will be through a newly constructed and improved gate way.

Seatonville Road will be upgraded to allow access for heavy vehicles and construction materials.

During operations, access would also be required between the modules and inverter stations onsite for maintenance, however this would not need to be constructed access or delineated roads due to the low frequency of access. All access and maintenance roads would be maintained throughout the construction and operation of the solar farm.

1.3.8 ROAD UPGRADES

The following road upgrades are proposed to facilitate safe access for the duration of the Proposal:

- Seatonville Road will be upgraded to allow for 2-way traffic movements between the site access and Maryvale Road. This would be to a similar standard as the existing conditions on Maryvale Road
- The intersection of Seatonville Road and Maryvale Road will be upgraded to allow for truck movements
- The waterway crossing to the east of the intersection of Maryvale Road and Seatonville Road will be upgraded to allow for truck movements (strength) and will be widened to allow for 2-way truck movements
- The intersection of Maryvale Road and Cobbora Road will be upgraded to provide a minimum left turn deceleration lane for the trucks

All of the above road upgrades would be undertaken in accordance with relevant Road Authority requirements. MSF will provide maintenance to Maryvale Road and Seatonville Road (to the point of site access) during the construction phase.

1.3.9 ANCILLARY FACILITIES AND CONSTRUCTION COMPOUND

The proposed works will require the installation and use of a compound site and a construction laydown area to be located in the southern portion of the Site on Lot 2 DP 573426 (Figure 3-3: Maryvale Solar Farm Proposed Layout) and not exceed a total area of 2ha. Temporary ancillary facilities associated with the compound site would include:

- Construction offices (one 12m x 3m site office, two 12 x 3m break rooms)
- Parking area
- Staff amenities, and
- CCTV (Security purposes)

1.3.10 PERIMETER SECURITY FENCING

The perimeter of the site would be fenced with security fencing at least 1.8m high with 24/7 surveillance cameras. The fence would be designed to ensure adequate access and exit points are provided during both the construction phase and ongoing operational life of the Proposal. An example is provided in Figure 10 below.



FIGURE 10 EXAMPLE PERIMETER FENCING

1.3.11 OPERATIONS

Once operational the Solar Farm will be monitored and operated remotely therefore requiring minimal on-site maintenance personnel. A small area will be maintained for parking of vehicles during operation of the solar farm. Two 40' shipping containers for storage of maintenance equipment will be permanently situated within the Site on the compound areas used during construction.

1.4 CONSTRUCTION AND COMMISSIONING

1.4.1 CONSTRUCTION ACTIVITIES

The construction and commissioning phase is expected to last approximately 14 months, commencing 2022. The main construction activities are outlined in Table 1 below.

TABLE 1 MAIN CONSTRUCTION ACTIVITIES BY STAGE

Stage	Main activities
Site Establishment	• Installation of security measures including fencing
	• Establishment of site compound, material layout and equipment wash down areas
	• Establishment of tree and vegetation protection measures as required.

	• Ground preparation
	• Installation of environmental controls in accordance with a detailed Construction Environmental Management Plan (CEMP)
	• Vegetation clearing
	• Targeted clearance of low laying vegetation around trenching areas
	• Pile driven installation of PV mounting structures to minimise disturbance to existing ground cover
	• Establishment of additional sedimentation and erosion controls as required
Road upgrades	• Upgrade to the intersection of Cobbora Road and Maryvale Road
	• Strengthen the waterway structure and widen the road in places to facilitate passing of two semi-trailers on Maryvale Road
	• Upgrade to the intersection of Maryvale Road and Seatonville Road
	• Widen Seatonville road from Maryvale Road to site access to facilitate passing of two semi-trailers
Preliminary civil works	• Setting up foundations for the substation and inverter stations
	• Drainage works (as required)
Install PV systems and cables	• Installation of steel post and rail foundation system for the solar panels
	• Installation of PV panels and DC wiring beneath the panels
	• Installation of electrical cabling including trenching for underground cabling and installation of inverter stations
Construction of BESS	• Delivery of 122 x forty foot containers delivered to the site
	• Installation works
Construction of 132kV substation	• Site Establishment and clearing (if required)
	• Bulk earthworks
	• Detailed civil works including earthing, foundations
	• Erection of steelwork, equipment, demountable buildings and transformers
	• Electrical connections
	• Install new poles
	• Transmission line stringing for new conductor and OPGW from substation to existing 132 kV transmission line
Rehabilitation and Commissioning	• Testing of electrical infrastructure
	• Removal of temporary construction facilities and rehabilitation of disturbed areas
	• Landscaping works based on the Landscape Plan

1.4.2 EARTHWORKS

While extensive earthworks are not proposed, some land forming (including localised cut and fill areas) may be undertaken to achieve more consistent gradients beneath the PV modules.

Additionally, earthworks are required for trenching works and roadworks. Ground disturbance, resulting from earthworks would be minimal and limited to:

- The installation of the piles supporting the solar panels, which would be driven into the ground to a depth of approximately 1.6m to 4m (depending on geotechnical conditions)
- Concrete or steel pile foundations for the inverter stations, substation and maintenance storage containers
- Trenches up to 1.2m deep for the installation of cables

- Disturbance within the construction laydown area including works to flatten the surface. The construction laydown area will likely be lined with gravel over the top, this will be removed when the construction phase is complete
- Site levelling for BESS and BESS APZ and construction of BESS foundations including excavation down to a depth of approximately 1 - 2m.
- Establishment of temporary staff amenities for construction
- Construction of perimeter security fencing
- Road widening and intersection upgrades, and
- Vegetation clearance - groundcover and scattered paddock trees on Site
-

The ground disturbance from pile foundations is estimated to equate to less than 1% of the total site area. Additional ground disturbance would result from trenches for cabling and footings for another infrastructure and vegetation removal.

Panels within the solar array area would sit above the ground and existing ground cover would be maintained underneath the panels.

1.4.3 CONSTRUCTION HOURS AND DURATION

Construction hours for the project will be in accordance with the Interim Construction Noise Guideline (ICNG) recommended standard hours for construction with extended hours on Saturday as detailed below:

- Monday to Friday – 7am to 6pm
- Saturdays – 8am to 1pm, and
- Sundays or Public Holidays – No construction

No audible out of hours or night works are proposed excluding emergencies. In the event construction is required outside of these hours, approval from the relevant authorities and notification to the community would be undertaken.

1.4.4 RESOURCING REQUIREMENTS

Water

Water use during construction would be limited to staff amenities (temporary portable toilets), dust suppression and soil compaction. Water for dust suppression would be sourced offsite and trucked onto site. A diluted organic polymer agent is proposed to be used to reduce the quantity of water required for dust suppression activities.

Potable water would be trucked to the Site on as needs basis and stored within temporary water tanks at the staff amenities area.

It is estimated that water use during construction would total approximately 25,000L/day equivalent to 1 water truck delivery per day.

Labour

It is estimated that up to 150 construction personnel would be required on site during peak construction period. Construction supervisors and construction labour force, made up of labourers and technicians are intended to be hired locally, where possible.

Plant and Equipment

A range of plant and equipment would be used during construction including earth-moving equipment for civil works, cable trenching equipment, trucks, all terrain forklifts and mobile cranes.

The final list of plant and equipment would be determined by the construction contractor/s.

Traffic Volumes and Requirements

Section 7.2 provides an indication of the total overall traffic movements anticipated throughout the construction and operational periods. The final traffic haulage route and number would be further detailed in the traffic management plan.

Materials

It is anticipated that PV infrastructure and associated materials would be transported via road from either Newcastle or Port Botany. This would include:

- Galvanized steel and Aluminium solar support structures
- Up to 400,000 Crystalline silicon solar PV panels with Aluminium frame
- 80 Inverters
- Substation components
- 1 x transformer
- 2 x maintenance storage shipping containers
- 122 BESS shipping container style units
- Copper and Aluminium interconnection cabling
- Chain link perimeter fence with lockable access gates and three barbed wires at the top (1.8m in height)
- CCTV security system, and
- Crash barriers and road signs

Materials associated with earthworks would likely include:

- Gravel / crushed rock to seal the access roads
- Liner with a gravel cap to seal the construction laydown area
- Sand for the bedding of cables that are to be buried throughout the Site
- Materials for shoulder widening including road sub base, concrete, road base, bitumen and gravel
- Drainage pipes, bedding shingle, geotextile, and
- Topsoil

1.5 OPERATION

Once operational, activities would include daily operations and maintenance. This would include:

- Remote 24/7 on-line monitoring
- Scheduled visual inspections and general maintenance
- Repair and cleaning operations of the PV arrays (as required)
- Replacement of equipment and infrastructure (as required), and
- Land management monitoring and activities including
- Maintenance of groundcover vegetation
- Livestock management
- Weed control
- Erosion and Sediment control
- Pest and vermin control
- The site will be monitored for security by a local security contractor and this will include 24hr response should a security event occur.

1.5.1 HOURS OF OPERATION

The solar farm will generate electricity primarily during daylight hours throughout the year. Typical operations and maintenance by site staff would be undertaken during standard working hours of:

- Monday – Friday 7am to 6pm
- Saturday - 8am to 1pm

Emergency response, inspections and maintenance activities may be required to be undertaken out of hours or night works, however these would be minimised where practicable.

Electricity would be produced by the solar panels during daylight hours and as such may continue to produce electricity outside of standard hours during summer months (i.e. longer days). Some comparatively small amounts of generation or import may occur during night hours from the BESS.

There would be no permanent night lighting operating on the Site. The substation will contain lighting to be utilised only during emergency response.

1.5.2 RESOURCING REQUIREMENTS

During the operational phase the proposal will support up to ten operational jobs. Minimal operational plant and equipment will be required for operation of the facility including ad hoc maintenance vehicles (Utility Vehicle or similar) and other equipment associated with the activities outlined above.

On some occasions, such as during a major substation shutdown, additional maintenance staff may be required on site. During operation of the solar farm, water would be required for stock watering and vegetation management which would be supplied from existing on site dams plus existing bore water. When required water may also be trucked onto site.

Emergency firefighting water would be stored in a tank (approx. 20,000L) located adjacent to the maintenance storage containers.

Operational water use is estimated to be approximately 1.5ML/per annum and will be trucked to Site.

1.5.3 DECOMMISSIONING

The solar farm and BESS have an operational timeline of approximately 30 years following which the infrastructure would be reviewed and either:

- Updated - the plant would be updated for continued use (with the need for any additional approvals or modifications to approvals considered at this time), or
- Decommissioned - the plant will be permanently removed
- Should the decision be made to remove the plant, then the Site would be returned as close as possible to its existing condition and will be decommissioned as per standard solar plant isolation and disconnection procedures. Key elements of proposal decommissioning would include:
- The PV arrays would be removed, including the foundation posts
- Materials would be sorted and packaged for removal from the site for recycling or reuse. Most of the solar PV panels would be recyclable
- All equipment would be removed and materials recycled or reused, wherever possible
- All posts and cabling and stabilising infrastructure (concrete footings) would be removed and recycled
- All areas of soil disturbed during decommissioning would be rehabilitated with the aim of meeting the existing (pre-construction) land capability, and
- Traffic required for decommissioning would be similar in type but considerably less in quantity than that required for the construction phase

The substation may remain in place to service the locality subject to review of viability by Essential Energy.

The BESS may remain in place together with the substation in the event that the solar array is decommissioned and removed from the site.

Appendix 2

Statutory Compliance Tables

Table A2. 1 Objects of the EP&A Act, Section 1.3

Object	Relevance/Reference
a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,	The EIS included a comprehensive assessment of the social, economic and environmental impacts and an overall assessment of the merits of the approved Project. The Proposed Modification 3 would not result in any significant impacts beyond those that were assessed and approved under the existing consent (refer to Section 6.0).
b) to promote the supply, delivery and maintenance of housing, including affordable housing	N/A
c) to promote productivity through the development and management of the State and its resources	As SSD the approved Project is considered to be strategically important for the State of NSW and promotes productivity through renewable energy development.
d) to protect the environment, including the conservation of threatened species of native animals and plants and ecological communities and their habitats,	The EIS included an assessment of the potential impacts on terrestrial and aquatic ecosystems, undertaken in accordance with the requirements of the <i>Biodiversity Conservation Act 2016</i> . The Proposed Modification 3 would result in a minor additional impact beyond those that were assessed and approved under the existing consent (refer to Section 6.2) and additional biodiversity offset obligations have been calculated.
e) to promote resilience to climate change and natural disasters through adaptation, mitigation, preparedness and prevention,	The assessment of the approved Project considered the impacts of climate change where relevant. The Proposed Modification 3 would not result in changes to mitigation measures or management plans.
f) to promote the sustainable management of built and cultural heritage, including Aboriginal cultural heritage,	The EIS included an assessment of potential impacts on built and cultural heritage. The Proposed Modification 3 would not result in any impacts beyond those that were assessed and approved under the existing consent (refer to Section 6.0).

Object	Relevance/Reference
g) to promote good design, amenity and the proper construction and maintenance of built environments, including the protection of the health and safety of the occupants of buildings	No additional construction is proposed, and existing buildings will be maintained to meet relevant workplace health and safety requirements.
h) to provide opportunities for participation in environmental planning and assessment.	The affected landholders and relevant government agencies were consulted in relation to the proposed subdivision changes and in the preparation of the Modification Report (refer to Section 5.0).
i) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	The EIS provided a comprehensive assessment of the social, economic and environmental impacts of the approved Project, and considered these impacts in the context of the principles of ecologically sustainable development including inter-generational equity and the precautionary principle. The Proposed Modification 3 would not result in any impacts beyond those that were assessed and approved under the existing consent (refer to Section 6.0 and Section 7.0).
j) to promote a proportionate and risk-based approach to environmental planning and assessment,	The Modification Report has included an assessment of all potential impacts that may result from the Proposed Modification 3 at a level commensurate with the significance of impacts.
k) to promote the orderly and economic use and development of land.	The approved Project is an approved solar energy and storage facility and the use of the land will be unchanged by the Proposed Modification 3.

Table A2. 2 Mandatory Considerations, EP&A Act Section 4.15(1)

Mandatory Consideration	Relevance/Reference
a) the provisions of: i. any environmental planning instrument	Refer to Section 3.0 , Section 4.0 and this Appendix

Mandatory Consideration	Relevance/Reference
ii. any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved)	N/A
iii. any development control plan	N/A Section 2.10 of the <i>State Environmental Planning Policy (Planning Systems) 2021</i> excludes the application of development control plans (whether made before or after the commencement of the SEPP) to SSD projects.
iiia. any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4	N/A
iv. the regulations (to the extent that they prescribe matters for the purposes of this paragraph)	The <i>Dark Sky Planning Guideline</i> (DPE, 2023) applies to the Project site as it is within 200 km of the Siding Springs Observatory however the Proposed Modification 3 would not alter the impact of night lighting from the approved Project therefore no further assessment is required.
v. repealed	N/A
b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	The EIS included a comprehensive assessment of the social, economic and environmental impacts and an overall assessment of the merits of the approved Project. The Proposed Modification 3 would result in minor additional impacts to biodiversity beyond those that were assessed and approved under the existing consent (refer to Section 6.2).

Mandatory Consideration	Relevance/Reference
c) the suitability of the site for the development	The Project site is deemed to be suitable for the development. Refer to Section 2.0 , Section 6.0 and Section 7.0 .
d) any submissions made in accordance with this Act or the regulations	Refer to Section 5.0 .
e) the public interest.	The approved Project is deemed to be beneficial to the public interest. Refer to Section 5.0 and Section 7.0 .

Table A2. 3 Objectives of RU1 Zone, Dubbo Regional Local Environmental Plan 2022

Objective	Relevance/Reference
To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.	The EIS provides an assessment of the environmental, social and economic impacts of the approved Project and concludes that with the implementation of appropriate mitigation and management measures will be able to operate sustainably. The Proposed Modification 3 would not result in any impacts to primary industry production beyond those that were assessed and approved under the existing consent (refer to Section 6.1).
To encourage diversity in primary industry enterprises and systems appropriate for the area.	The approved Project is appropriate for the area, being located with the Central West Orana Renewable Energy Zone, and will not impact the diversity of primary industry in the area.
To minimise the fragmentation and alienation of resource lands.	The approved Project is unlikely to result in the fragmentation and alienation of resource lands.
To minimise conflict between land uses within this zone and land uses within adjoining zones.	Based on the conservative approach taken in relation to environmental assessments, it is considered that conflict between land issues in the zone will be minimal. There are substantial setbacks to the adjacent houses on neighbouring properties.
To encourage a range of development for the purposes of tourism that supports the agricultural industry.	N/A

Table A2. 4 Subdivision Provisions, Dubbo Regional Local Environmental Plan 2022

LEP Provision	Relevance/Reference
Clause 2.6 Subdivision – consent requirements	The land to which the LEP applies may be subdivided, but only with development consent. Refer to Section 3.2 .
Clause 4.1 Minimum subdivision lot size	The objective of this clause is to ensure lots are large enough to accommodate development without compromising the production capacity of land in rural zones while also minimising impacts on the amenity of the area and preventing fragmentation or isolation of the land. Refer to Clause 4.2A below and Section 3.2 .
Clause 4.2A Minimum subdivision lot sizes for certain rural subdivisions	This clause allows the granting of development consent for the subdivision of land that results in a lot that is smaller than the minimum size shown on the Lot Size Map provided the consent authority is satisfied that the subdivision is necessary for the ongoing operation of a continuing permissible use, and will not adversely affect the use of the surrounding land for the purposes of agriculture or cause or increase conflict in rural land uses in the locality, and is appropriate in relation to the natural and physical constraints affecting the land. Refer to Section 3.2 .

Appendix 3

Summary of Mitigation Measures

Aspect	Management / Mitigation Measure
General	A project specific Construction Environmental Management Plan (CEMP) and all relevant subplans will be prepared by the Contractor prior to commencing Stage 1 construction. The subplans will include: • Land Management Plan (LMP), including a weed management plan • Soil and Water Management Plan (SWMP) including erosion and sediment (ERSED) control to be prepared in consultation with Department of Industry –Lands and Water • Unexpected Finds protocol • Waste Management Plan (WMP) • Traffic Management Plan (TMP) • Emergency Contingency Plan.
	All employees, contractors and subcontractors are to receive a Project induction. The environmental component may be covered in toolbox talks and should include: • environmental mitigation measures • vegetation clearing operations and controls to prevent unauthorised clearing • the Unexpected Finds Protocols (historic heritage, Aboriginal heritage and waste) • Aboriginal heritage (Types of aboriginal heritage objects, details of the NMH heritage object, legislative requirements and penalties associated with the harm or desecration of Aboriginal heritage objects) • waste management strategies and mitigation measures.
	A complaint handling procedure and register will be implemented to assist in recording and managing potential conflict with the local community during construction.
	All new buildings and structures will be constructed in accordance with the relevant requirements of the Building Code of Australia.
	Works are to be carried out during standard work hours (i.e., 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). Any construction outside of these normal working hours would only be undertaken in the event of an emergency or with prior approval from relevant authorities. For non-emergency works outside standard hours, residents and other sensitive land use occupants should be informed of the works between 5 and 14 days before commencement.
Biodiversity	A 10 m buffer shall be established between the perimeter of the remnant Yellow Box Woodland and the works footprint. No works (e.g. plant, material stockpiling) should encroach this area.
	Erect barriers to protect roadside vegetation including old growth eucalypts during road upgrade works.
	A clearing protocol will be developed to ensure any potential impacts to native fauna are minimised during vegetation removal. This will include supervised removal of trees with hollows by a trained wildlife carer and tree removal to be undertaken in the non-breeding season.

Aspect	Management / Mitigation Measure
	The Land Management Plan will be incorporated into an overall CEMP. This will include weed management, animal pest management and monitoring, as well as an induction for all employees and contractors detailing the trees that are protected on site. Trenches should be backfilled as soon as possible to minimise the chance of fauna becoming trapped. Any trench sections left open for greater than a day would be inspected daily, early in the morning and any trapped fauna removed. The use of ramps or ladders to facilitate trapped fauna escape is recommended. Mud and other debris shall be removed from the wheels and bodies of construction vehicles and equipment prior to leaving the project site and before entering the sealed public road network. Soil, earth, mud and other similar materials must be removed from the roadway preferably by dry methods (sweeping, shovelling). A Vegetation Management Plan will be developed and incorporated into the CEMP including protection measures to conserve the remnant Yellow Box Woodland and other significant vegetation. All staff and contractors will be inducted into the CEMP and informed of the biodiversity management measures and no-go zones. A rehabilitation plan will be prepared and implemented prior to decommissioning. Development of an Operational Environmental Management Plan (OEMP) which will include: - the land management plan – which will have a procedure or plan for monitoring vegetation cover and composition and allow for adaptive management - a weed management plan – including monitoring and control - a pest animal management plan – including monitoring and control and site cleanliness - vehicle speed limits, to reduce risk of collision with fauna, and - prohibition of domestic pets on site.
Traffic and Transport	Consultation will be undertaken with the relevant Road Authority for the proposed road improvements and any ancillary road works, and a Section 138 approval prior to the construction of the Project. A TMP for construction shall be developed in accordance with Roads and Maritime Guidelines and Australian Standard AS1742.3. The TMP will include: - designated routes of construction traffic to the site - map of primary access routes highlighting critical locations - Driver's Code of Conduct - carpooling/shuttle bus arrangements to minimise vehicle numbers during construction - scheduling of deliveries - community consultation requirements - restrictions on traffic movements (e.g. residential areas, school pick-up and drop-off times) - traffic controls (speed limits, signage, etc.) - complaint handling procedure/register - induction process for vehicle operators - vehicle origins, numbers, sizes and frequency (including peak and daily volumes) - loads, weights and dimensions of haulage and construction vehicles

Aspect	Management / Mitigation Measure
	- existing background traffic volumes and interaction with construction traffic - cumulative traffic impacts - management and coordination of construction and staff vehicle movements - measures to limit disruption to motorists - controls to achieve a maximum of 70 light vehicle movements per day - shuttle bus locations and parking arrangements - safety measures for all road users - scheduling to minimise convoys - details of intersection improvements (Austroads Guide to Road Design) - consideration of local climate and environmental conditions (e.g. fog, wet weather, wildlife strikes).
	All Project personnel will be provided training on TMP requirements through site inductions, toolbox talks or specific training.
	The heavy vehicle route will be included within the Driver's Code of Conduct and form part of inductions, including informing drivers of school bus pick-up and drop-off times.
	Traffic control will be provided in accordance with the approved TMP to manage vehicular, cyclist and pedestrian movements during construction and maintain traffic flow within the site and surrounding public roads.
	Traffic management controls will be communicated to appropriate stakeholders, including the local community, via letterbox drops.
	Directional signage will be installed to direct construction traffic and warn other motorists in accordance with the approved Traffic Control Plans.
	All employees, subcontractors and suppliers will comply with site speed limits: 40 km/h on formed roads 20 km/h in foggy or dusty conditions with headlights on 10 km/h when passing pedestrians
	A dilapidation survey will be completed along Maryvale Road prior to upgrades and after completion of works.
	Temporary traffic controls will be installed at the intersection of Maryvale Road and Cobbora Road to reduce posted speeds to 80 km/h and provide signage advising of turning trucks.
	A TMP for decommissioning will be developed as part of the decommissioning management plan, including a reviewed haulage route.
	Establish a maintenance schedule with Dubbo Regional Council for Cobbora Road, Maryvale Road and Seatonville Road for the duration of construction.
	Further investigation will be undertaken on measures to improve safety at the Cobbora Road/Maryvale Road intersection to meet the relevant guidelines in consultation with the relevant road authorities
	Rural culverted accesses will be maintained or constructed with appropriate gate setbacks to the relevant property.
Heritage	An Unexpected Finds Protocol which addresses unexpected Aboriginal or non-Aboriginal heritage finds will be included in the Construction Environmental Management Plan to be completed by the construction contractor.

Aspect	Management / Mitigation Measure
	The Unexpected Finds Protocol will form part of the site induction and must be viewed by all relevant employees and contractors before working on site.
	Aboriginal archaeological sites Maryvale Road AFT 1, Maryvale Road AFT 2, Maryvale Road IF 1, Maryvale Road TRE 1, Seatonville Road AFT 1, Seatonville Road AFT 2 and Seatonville Road IF 1, and the Culturally significant tree (all outside the footprint), should be addressed in the CEMP to ensure protection.
	If suspected Aboriginal objects, such as stone artefacts are identified during works, works must cease within 10m of the affected area and an archaeologist called in to assess the finds. If the finds are found to be Aboriginal objects, the Heritage NSW must be notified under section 89A of the NPW Act. Appropriate management or avoidance should be sought if Aboriginal objects are to be moved or harmed.
	In the extremely unlikely event that human remains are found, works should immediately cease and the NSW Police are to be contacted. If the remains are suspected to be Aboriginal, the Heritage NSW may also be contacted at this time to assist in determining appropriate management.
Land Use	Managed grazing will be used to maintain the height of ground cover during operation of the solar farm.
	If operations cease and the site is to be decommissioned, a remediation plan will be compiled and implemented including identification of pasture species in consultation with local agronomic experts.
	All the infrastructure will be removed upon decommissioning with the possible exception of the substation, transmission lines to the substation and access road to the substation.
	Implement the Detailed Landscape Plan.
	All pesticides will be used in accordance with the Pesticides Act 1999, such that only registered pesticides are used based on label instructions that are designed to minimise impacts on surrounding land.
	An OEMP will be prepared for the Project and will incorporate: • a land management plan including weed management, and • ongoing landscaping commitments.
	A decommissioning and rehabilitation plan will be prepared and implemented prior to decommissioning, which identifies the agricultural productivity of the site prior to construction of the solar farm.
Visual Amenity	Dubbo regional Council will be notified prior to decommissioning of the project
	Minimise impact through use of siting and design features.
	Group ancillary facility structures where possible to minimise sprawl.
	Stabilise new access tracks formed within the site required for operations, but do not seal with bitumen or other dark coating.
	Minimise and repair ground disturbance.
	Minimise grading across the site and undertake the minimum levelling necessary to install panel supports.
	Rehabilitate exposed ground surfaces as soon as possible and implement erosion and sediment controls to avoid issues associated with dust generation and water pollution.
	Minimise vegetation removal.

Aspect	Management / Mitigation Measure
	Retain existing trees near the substation and along creek line on the western boundary. Maintain a buffer of 40m between infrastructure and waterway 2.
	Install temporary fencing around vegetation to be retained and demarcate as a no-go zone.
	Develop a Detailed Landscape Plan as part of the CEMP to implement the Concept Landscape Plan, which includes visual screening, as indicated in Figure 6-11 of the EIS.
	Retain as much existing grass cover beneath solar panels as possible.
	Progressively stabilise disturbed area with pasture grasses.
	Develop a remediation plan to include the following actions: - recontour, cultivate, seed, and stabilise the majority of disturbed surfaces with pasture grass species following the removal of infrastructure, and - re-establish any previously removed native vegetation with appropriate, similar species.
	Use colour to reduce contrast.
	Treat the support structures of PV panels and ancillary structures such as inverters, with a non-reflective finish.
	Paint or colour-treat facility components to better match the surroundings and decrease their visibility and contrast. Choose a colour two to three shades darker than the background colour.
	Minimise impact through use of siting and design features.
	Signage required at the site should be of sufficient size to be readable at driver height within short range (0-20m) and contain only information sufficient for basic facility and company identification, for safety, navigation, and delivery purposes. Large scale signage will not be installed.
	Avoid Night Sky Impacts.
Water and Soils	Permanent evening lighting will be limited to compulsory lighting required for the substation. Substation lighting will be turned on if an intrusion is detected or if staff are on site undertaking works outside of daylight hours. Amber colour lights will be used rather than bluish-white lighting.
	An OEMP will be prepared for the Project and will incorporate a complaints management process.
	Monitor performance of screen planting areas six-monthly for first three years then annually. Replant as necessary if plants die, and supplement planting with alternative species if plants are not adapting to the Site
	Keep non-reflective finishes and colour-treated coatings in good repair. Reapply if surface is subject to fading or flaking.
	A SWMP will be prepared in consultation with Department of Industry – Lands and Water and implemented by the Contractor as part of the CEMP, this will include use of onsite water for dust mitigation measures. The SWMP will be prepared in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) and the Guidelines for Controlled Activities on Waterfront Land (NRAR 2018).
	Minimise the footprint of disturbance at any one time by implementing progressive construction and remediation works.
	Undertake site inspections at least weekly and following significant rainfall events to observe the condition and operation of erosion and sediment controls and water management systems and schedule any required maintenance.

Aspect	Management / Mitigation Measure
	Design solar panel arrays to allow sufficient space between panels to establish and maintain ground cover beneath the panels and assist in reducing potential sediment impacts on water quality.
	Ensure all refuelling activities are undertaken in a bunded area at least 40m from any waterways.
	Additional mitigation measures will be considered during detailed design.
	Implement the Land Management Plan to ensure at least 80% groundcover is restored and maintained.
	All works within waterfront land being carried out will be in accordance with the 'Guidelines for Controlled Activities on Waterfront Land (NRAR 2018)'.
	Any waterway crossings for roads will be completed in accordance with the <i>Guidelines for Watercourse Crossings in Waterfront Land</i> (NRAR 2018).
	Develop and implement a protocol for management of an unexpected finds of soil contamination.
	A 40 m buffer will be maintained between infrastructure and Bodangora Creek near the south-east boundary of the site.
Bushfire	All electrical components would be designed and managed to minimise potential for ignition.
	The design would consider that the permanent access road must be trafficable by Category 1 fire appliances.
	Design should consider shielding of solar farm components including burial of cables underground and shielding of above ground cables and circuitry.
	Research undertaken into the ignition, flammability and toxicity risks of the solar farm components once the design is finalised.
	Maximise use of construction components using materials such as glass, silicon, steel and aluminium rather than plastic.
	Develop an Emergency Response Plan (ERP) in consultation with the NSW RFS District Fire Control Centre prior to construction. The ERP should include:
	• Foreseeable on-site and off-site fire events. • Clearly states work health safety risks and procedures to be followed by fire-fighters, including ○ Personal protective clothing ○ Minimum level of respiratory protection ○ Decontamination procedures ○ Minimum evacuation zone distances ○ A safe method of shutting down and isolating the PV system and BESS ○ Any other risk control measures required to be followed by fire fighters. ○ Any other risk control measures required to be followed by firefighters. • Evacuation triggers and protocols. • Suppression response strategies and tactics, including aerial suppression options/management.
	An Asset Protection Zone (APZ) will be constructed around the solar farm with the following requirements:

Aspect	Management / Mitigation Measure
	- The APZ will be 15 m wide around the entire perimeter of the solar farm footprint. The APZ may be mineral earth (dirt or gravel) or alternatively vegetation managed to a low level in accordance with the APZ specifications detailed in PBP (RFS 2019). - No trees or shrubs to be planted on the internal side of the fire break including that associated with the landscape plan. - Access track located on the internal edge of the APZ that is trafficable by Category 1 fire appliances. - The substation should have a 20m APZ. - A 10 m asset protection zone should be maintained around the BESS containers/infrastructure. Solar infrastructure can be located within the BESS APZ provided it does not comprise a general fire safety risk.
	The APZ or a fire break is to be constructed as part of the first stage of the development.
	Construction between 1 December and 31 March would be undertaken in accordance with the following:
	- All plant, vehicles and earth moving machinery will be cleaned of any accumulated flammable material (e.g. soil and vegetation). - A suitable fire appliance (e.g. fire extinguisher) is present on site with at least two personnel trained in bushfire fighting. - On days when Very High fire danger or worse is forecast for Wellington, the “fires near me” app is to be checked hourly for the occurrence of any fires likely to threaten the site. - All operations involving machinery will cease while the GFDI is or forecast to be 35 or greater.
	Installation of electrical equipment such as, junction boxes, inverters, transformer and electrical cabling, is to be in accordance with AS 3000:2007 Electrical installations and undertaken by qualified professionals.
	Install a water supply tank with a capacity of 20,000L outside the APZ near the substation.
	Ensure any trees or shrubs planted are outside the APZ and meet the following criteria:
	- use species suitable for the environment that have low fire spotting characteristics (e.g. smooth bark) - maintain a 20m APZ width adjacent any vegetation.
	At the end of construction and prior to operation contact the Local Emergency Management Committee to establish emergency management procedures with relevant authorities for the safety hazards presented by the site.
	At the end of construction and prior to operation brief the local volunteer fire brigades and neighbouring farmers.
	APZ of mineral earth firebreak, 15 to 20 m wide, setback 25 m from perimeter of solar farm components.
	APZ substation- 20 m APZ with no internal vegetation (i.e. gravel surface).
	APZ BESS- 10m APZ with no internal vegetation (i.e. gravel surface or mineral earth).
	If construction occurs from December to March: APZ constructed first, fire appliance on site and machinery/hot works suspended when GFDI ≥ 35 .
	Maintain minimal fuel load by grazing, slashing or mowing.
	Under panel fuels minimised. No vegetation within the Substation.
	Suspend site maintenance operations when GFDI ≥ 35 .
	Avoid fire-fighting within footprint of solar farm.
	Avoid operating downwind of smoke from burning solar farm components.

Aspect	Management / Mitigation Measure
Noise	Water storage-minimum 20,000L. Consideration by proponent to increased capacity in line with CFA guidelines
	Prepare a construction noise management protocol for the site to manage noise emissions.
	Implement a formal complaint handling procedure to manage any potential concerns from the community. This will include: • details of a readily accessible contact person • a well-documented process that includes an escalation procedure so that (if required) there is a path to follow should the complainant not be satisfied • details regarding setting up a complaint register. • Each complaint would need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits.
	Toolbox and induction of personnel prior to start of shift to discuss noise control measures that may be implemented to reduce noise emissions to the community, construction hours and nearest sensitive receivers.
	All plant should be shut down when not in use. Plant to be parked/started at farthest point from relevant assessment locations.
	Avoid the operation of noisy equipment near noise sensitive areas and where possible, loading and unloading would be conducted away from sensitive areas.
	Noise levels will be considered when procuring equipment.
	All plant is to utilise a broadband reverse alarm in lieu of the traditional hi frequency type reverse alarm.
	Where possible use localised mobile screens or construction hoarding around plant to act as barriers between construction works and receivers, particularly where equipment is near the site boundary and/or a residential receiver including areas in constant or regular use (e.g. unloading and laydown areas).
	Signage is to be placed at the front entrance advising truck drivers of their requirement to minimise noise both on and off-site.
	Complete a one-off noise validation monitoring assessment to quantify emissions from site and confirm emissions meet relevant criteria.
Air Quality	Prepare an operational noise protocol that can be implemented to address any community concerns regarding noise emissions for future operations of the Project.
	Activities shall be assessed during adverse weather conditions and modified as required to reduce dust generation (e.g. cease activity where reasonable levels of dust cannot be maintained).
	Engines to be switched off when not in use for any prolonged period.
	Water and/or use of a diluted organic polymer agent for suppression of dust on exposed areas, roads and stockpiles, when required.
	Temporarily excavated soil and other materials that exhibit significant dust lift off would be wet down, stabilised or covered to manage dust.
Socio Economic	Vehicles and plant would be fitted with suitable pollution reduction devices wherever possible and maintained according to manufacturer's specifications.
	The Community Stakeholder Engagement Program (CSEP) will continue to be implemented, including: • providing regular updates to the community • inform relevant stakeholders of potential impacts (for example noise impacts)

Aspect	Management / Mitigation Measure
	- establishment of a complaints handling procedure and a response protocol - responding to any complaints received.
	Liaise with local industry representatives to maximise the use of local contractors, manufacturing facilities and materials. Create a resourcing plan to ensure jobs will be local.
	Local accommodation options for staff will be maximised.
Hazards	<i>Hazardous Good</i> Dangerous or hazardous materials would be transported, stored and handled in accordance with AS1940-2004: The storage and handling of flammable and combustible liquids and the ADG Code where relevant. <i>Electromagnetic Interference</i> All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia. <i>Electromagnetic Interference</i> The layout of the Project has been designed considering buffer distances between the solar farm and sensitive receivers, road users and the general public. The separation distance between infrastructure within the BESS is to be determined in accordance with Codes and Standards and manufacturer's recommendations so that the preferred strategy of allowing a fire in one battery enclosure or inverter to burn without the risk of propagating to other infrastructure can be maintained without the need for external firefighting. The separation distance within the BESS is to be determined in accordance with Codes and Standards and manufacturer's recommendations to allow safe escape from the BESS in case of a fire. All relevant requirements in the Australian Standard 5139 (2019) are to be adhered to at the BESS. The BESS should also adhere to requirements in international Standards applicable to major BESS, for example, to the US NFPA 855 (2020). Procurement of a battery system that is certified to UL 9540 and/or IEC 62619, proving that a credible fire within a battery unit will not propagate to other battery units. Detailed firefighting response and need for fire water containment should be assessed and reported (e.g. in the format of a Fire Safety Study) post development approval, for review by the DPHI, NSWFR and the RFS. Measures to prevent a leak occurring at the BESS, and for containment of a spill of pollutant from the BESS, should be addressed in the detailed design phase for the BESS. The specific risk associated with the potential for dust storms and ingress of dust causing damage to infrastructure needs to be integrated into the design and the BESS manufacturers, Project contractors and the Applicant's staff need to be aware of this threat during BESS design, construction, and operation.
Waste	A Waste Management Plan will be prepared and implemented as part of the CEMP to manage any construction waste. The Waste Management Plan will include but not be limited to: - measures to avoid and minimise waste associated with the Project - the procedure for assessing, classifying and storing waste in accordance with the EPA's Waste Classification Guidelines (EPA, 2014) and management options

Aspect	Management / Mitigation Measure
	- procedures for storage, transport and disposal of waste - procedures for notification to Wellington Waste Management Depot prior to any large disposals - monitoring, record keeping and reporting, e.g. waste tracking data demonstrating the lawful disposal of contaminated products, waste or residues generated at the facility.
	An Unexpected Finds (Waste) Protocol would be established and implemented in case potentially contaminated, hazardous or unsuitable material are encountered during the site works.
	Waste management strategies and mitigation measures will be communicated to all employees and contractors during site induction, prior to commencing works at the site.
	The proposed facility will comply with the relevant waste-tracking requirements for any wastes assessed or classified as hazardous waste, industrial waste or 'Group A' waste (such as solvents, paints or oils).
	Waste generated from the Project will be managed in accordance with the principles of the waste hierarchy.
	A decommissioning environmental management plan will be prepared for the proposed facility with a WMP.
	Wellington Waste Management Depot given appropriate notification before any large quantities of waste are deposited at the Wellington Waste Management Depot. Consultation will be undertaken with Dubbo Regional Council to determine what these notification periods will be and what waste can be taken by the facility.
	A Waste Management Plan will be prepared and implemented as part of the OEMP to manage any waste operational waste
Cumulative Impact	The CEMP would be updated as required to incorporate potential cumulative impacts from surrounding development activities as they become known. This would include a process to review and update mitigation measures as new work begins or if complaints are received.

Appendix 4

Addendum to BDAR

26 June 2026

Will Somerton

Project Manager

PCL Solar

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Maryvale Solar Farm – BDAR Addendum

Dear Will,

This document outlines the results of additional assessments applied to two trees within the Maryvale Solar Farm site that were not assessed in the original Biodiversity Development Assessment Report (BDAR; FloraSearch, 2018) but which have now been identified as requiring removal. Both trees are hollow-bearing Yellow Box (*Eucalyptus melliodora*) trees and have been assigned to Plant Community Type (PCT) 277 - Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion. They belong to the Biodiversity Conservation (BC) Act 2016-listed Critically Endangered Ecological Community (CEEC) White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. Removal of these trees would attract an additional ecosystem credit obligation of two (2) credits.

Note: Updated again to include re-finalised BAM Calculator outputs.

Regards,

Dr David Orchard**Senior Ecologist****BAAS #21028**

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1 BACKGROUND AND METHODOLOGY

1.1 OVERVIEW

OzArk Environment & Heritage (OzArk) has been engaged by PCL Solar (PCL) to provide an assessment of two additional trees earmarked for removal within the site of the Maryvale Solar Farm (SSD-8777). These trees, shown in **Figure 1-1**, were not assessed in the BDAR (FloraSearch, 2018), and therefore were not considered in determining the offset obligation that applied to the proposal. Similarly, they were not included in the approved impacts identified in the Environmental Impact Statement (EIS; Pitt & Sherry, 2018). As a consequence of this, removal of these trees has not been approved.

This addendum report includes additional offsets for the two identified trees with a view to facilitating the removal of those trees, contingent on approval from the Department of Planning, Housing and Infrastructure (DPHI).

No additional field assessment has been undertaken in producing this report. Information utilised in the preparation of this report has been derived from the BDAR and from field surveys conducted during pre-clearance and fauna spotter-catcher activities.

1.2 BIODIVERSITY ASSESSMENT

This report was completed by Dr David Orchard with quality control provided by Dr Crystal Graham (**Table 1-1**).

Table 1-1. Summary of OzArk personnel qualifications.

Name	Position	CV Details
Dr David Orchard	Senior Ecologist	• BAM-accredited Assessor #BAAS21028 • Doctor of Philosophy (Agriculture) – Charles Sturt University • Graduate Diploma in Science (Botany) – University of New England • Bachelor of Arts (Honours)– Australian National University • 4WD Training • First Aid Training • WH&S Induction Training for Construction Work • Rail Industry Worker Card
Dr Crystal Graham	Senior Ecologist	• BAM-accredited Assessor #BAAS22024 • Postdoctoral Fellow – Smithsonian Tropical Research Institute • Doctor of Philosophy (Biology) – University of Sydney • Honours in Biology – University of Sydney • Bachelor of Advanced Science – University of Sydney • 4WD Training • First Aid Training • WH&S Induction Training for Construction Work • Worker at Heights Training

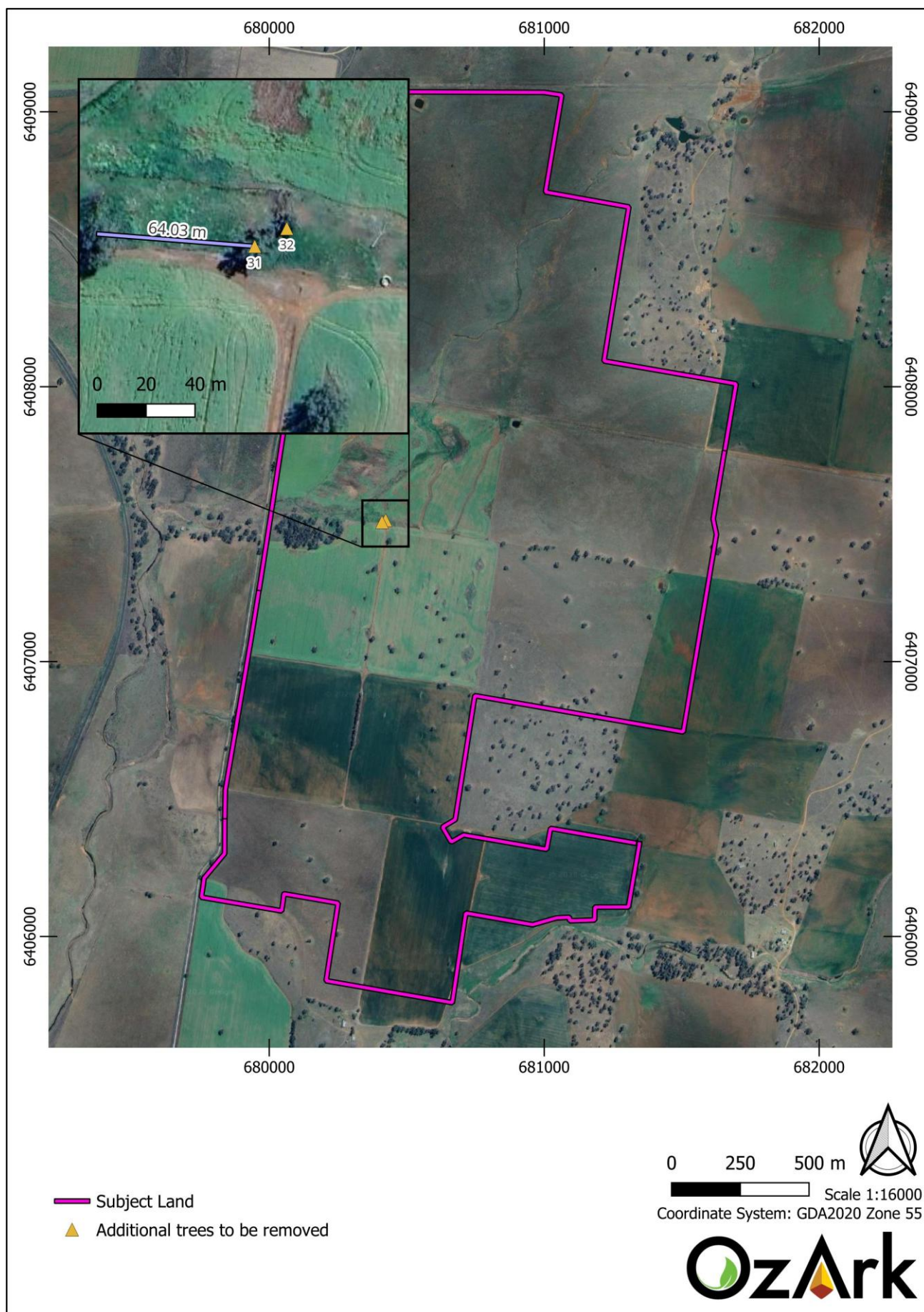


Figure 1-1. Location of the additional trees proposed for removal.

2 ASSESSMENT OF ADDITIONAL TREES

2.1 SCATTERED TREES ASSESSMENT METHOD

This assessment has been carried out using the streamlined scattered trees assessment method described in Appendix B of the Biodiversity Assessment Method (BAM) 2020. This method applies to vegetation that meets one of the three criteria described in Section B.1 (a-c) of that appendix. Specifically, in the present case, the vegetation satisfies the third criterion (c):

Scattered trees are defined as species listed in the tree growth form group that... are three or fewer trees that have a DBH of greater than or equal to 5 cm and are within a distance of 50 m of each other, that in turn, are greater than 50 m away from the nearest living tree that is greater than or equal to 5 cm DBH, and the land between the scattered trees is comprised of vegetation that are all ground cover species on the widely cultivated native species list, or exotic species or humanmade surfaces or bare ground.

The trees in question form a cluster of two individuals within 50 m of one another and slightly greater than 50 m from the nearest cluster of trees (see **Figure 1-1**). The intervening land was identified as non-native in the BDAR and this conclusion is supported by subsequent visits and site photographs, which show high cover of exotic grasses and the low perennial shrub Horehound (*Marrubium vulgare*) (**Plate 2-1**).

These findings suggest that the scattered trees method, which was applied to most surrounding trees in the BDAR, is appropriate in this case.

2.2 PLANT COMMUNITY TYPES (PCTs)

The two trees proposed for removal have been identified as Yellow Box (*Eucalyptus melliodora*) trees based on photographs (**Plate 2-1**) and prior field assessments. They occur as outlying trees loosely associated with a patch mapped to PCT 277 - Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion in the BDAR. The presence of scattered Yellow Box trees is consistent with this mapping and PCT 277 has been adopted in this case.



Plate 2-1. Site photograph of the two trees proposed for removal.

The understorey in the above photo is dominated by a mixture of annual and perennial exotic grasses, forbs, and shrubs, including large areas of Horehound (*Marrubium vulgare*).

2.3 THREATENED ECOLOGICAL COMMUNITIES (TECs)

PCT 277 is associated with the following TECs:

- BC Act, Critically Endangered: White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions.
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), Critically Endangered: White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

The BC Act listing applies to all grassy woodlands and associated derived grasslands dominated or co-dominated by one or more of the title species. The two Yellow Box trees in the patch under consideration meet these broad criteria and must be considered an example of the BC Act-listed CEEC.

Assessment under the EPBC Act listing criteria indicates that the patch should not be considered an example of that CEEC, however, as site photographs taken by OzArk during project ecology work and field assessments undertaken during the original BDAR suggest that the understorey is predominantly non-native, with perennial exotic vegetation – e.g. Horehound and African Boxthorn (*Lycium ferocissimum*) – providing greater cover than the negligible native component.

2.4 THREATENED SPECIES

Under the streamlined scattered tree assessment method, only species considered to be at risk of a Serious and Irreversible Impact (SAIL) or species opportunistically recorded on site need to be considered for potential offsetting. No species credit species were recorded within the affected vegetation during pre-clearance surveys or other field assessments. The BAM Calculator (BAM-C) identified three candidate SAIL species credit species relevant to the patch under assessment:

- Regent Honeyeater (*Anthochaera phrygia*) – BC and EPBC Acts, Critically Endangered.
- Swift Parrot (*Lathamus discolor*) – BC Act, Endangered; EPBC Act, Critically Endangered.
- *Prasophyllum* sp. Wybong – BC Act, Not Listed; EPBC Act, Critically Endangered.

The Regent Honeyeater and Swift Parrot could be excluded as the site is not mapped as important habitat for either species. Despite being generated as an SAIL entity by the BAM-C, *Prasophyllum* sp. Wybong is an EPBC Act-only entity and SAIL provisions do not apply to it (BioNet Threatened Biodiversity Data Collection, 2026).

On the basis of the above, all candidate species generated by the BAM-C could be excluded from consideration in this assessment.

2.5 HABITAT FEATURES

Both trees under assessment possess hollows:

- Tree 31: Two small (5-10 cm diameter) hollows and two extra small (<5 cm diameter) hollows.
- Tree 32: Two large (15-20 cm diameter) hollows and one small hollow.

Tree numbering is identified in **Figure 1-1** and follows mapping provided in prior site assessments.

Pre-clearance and fauna spotter-catcher requirements for habitat trees described in the Biodiversity Management Plan (BMP) for this proposal will apply to these trees. These requirements are detailed in **Protocols 1-3** of the BMP (OzArk, 2025).

3 NSW BIODIVERSITY OFFSETS SCHEME (BOS)

This section details the offsetting obligation associated with the removal of the two additional trees. As indicated above, this assessment has been conducted via the scattered trees method, and no species credit species require offsetting. The impacts of the proposed removal can be offset via ecosystem credits only.

3.1 ECOSYSTEM CREDIT OBLIGATION

The removal of the two additional trees would generate an obligation to retire two (2) ecosystem credits. This obligation is detailed in **Table 3-1** and outputs from the BAM-C provided in **Appendix A**.

Table 3-1. Ecosystem credit obligation.

PCT	TEC	Tree Classes	Credits	Offset Trading Group (OTG)
			HBT ¹	
277	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	Class 3 (2 trees)	2	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions

¹Credits required for habitat with hollow-bearing trees (HBT).

3.2 SPECIES CREDIT OBLIGATION

No species credit obligation applies to the removal of the two trees, owing to the exclusion from the assessment of all candidate species generated by the BAM-C (see **Section 2.4**).

4 SUMMARY

This document summarises the results of an additional assessment concerning two trees proposed for removal at the site of the Maryvale Solar Farm (SSD-8777). The trees were not considered in the original biodiversity assessment and consequently have not been approved for clearing. This addendum report is intended to determine an additional offsetting obligation which, once acquitted, would allow for the additional trees to be removed, contingent on approval from DPHI.

The two trees under assessment have been identified as hollow-bearing Yellow Box (*Eucalyptus melliodora*) trees, belonging to PCT 277 and the BC Act-listed CEEC White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions.

The scattered trees assessment method (BAM 2020, Appendix B) has been applied in this case. No species credit species have been identified as requiring offset; consequently, the proposal can be offset via ecosystem credits alone. The proponent must retire **two (2) credits** of the OTG White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions.

The appropriate credits must be for habitat containing hollow-bearing trees and must be located in the Inland Slopes, Bogan-Macquarie, Bondo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley or Wollemi Interim Biogeographic Regionalisation of Australia (IBRA) subregions, or any subregion within 100 km of the outer edge of the impact area. The subregions referred to here are those identified in the current version (7.1) of the IBRA subregion mapping.

An offset obligation may be acquitted by purchasing and retiring the necessary credits on the open market or by paying into the Biodiversity Charge Fund (BCF). Once approved by DPHI, a quote may be obtained from the BCF by providing a finalised Biodiversity Credit Report, the conditions of consent, and other associated documentation.

5 REFERENCES

FloraSearch (2018). Maryvale Solar Farm: Biodiversity Development Assessment Report.

NSW Department of Climate Change, Energy, the Environment and Water (2026). *Prasophyllum* sp. Wybong (BioNet Atlas: Threatened Biodiversity Data Collection) <<https://www.environment.nsw.gov.au/AtlasApp/Default.aspx>>

NSW Department of Planning, Industry and Environment (2020). Biodiversity Assessment Method. <<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/biodiversity-assessment-method-2020-200438.pdf>>

OzArk (2025). Biodiversity Management Plan: Maryvale Solar and Energy Storage System.

Pitt & Sherry (2018). Maryvale Solar Farm: Environmental Impact Statement.

APPENDIX A – BAM CREDIT REPORTS

The following reports are provided here:

- Scattered Tree Report
- Biodiversity Credit Report



Scattered Tree Report

Proposal Details

Assessment Id	Assessment name	BAM data last updated *
00064230/BAAS21028/26/00064232	Maryvale Solar Farm SSD-8777 Addendum	09/04/2026
Assessor Name	Report Created	BAM Data version *
David Orchard	26/06/2026	Current classification (live - default) (94)
Assessor Number	BAM Case Status	Date Finalised
BAAS21028	Finalised	26/06/2026
Assessment Revision	Assessment Type	BOS entry trigger
2	Scattered Trees	Major Project

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Scattered Trees

PCT code	PCT name	No. of trees	Species	DBHOB Category	Contain hollows	Class	Assessment required
277	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	2	Eucalyptus melliodora	>= 50cm	True	3	Visual assessment for hollows, presence of important habitat features and habitat suitability for threatened species

Assessment Id	Proposal Name	Page 1 of 1
00064230/BAAS21028/26/00064232	Maryvale Solar Farm SSD-8777 Addendum	



BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00064230/BAAS21028/26/00064232	Maryvale Solar Farm SSD-8777 Addendum	09/04/2026
Assessor Name	Assessor Number	BAM Data version *
David Orchard	BAAS21028	Current classification (live - default) (94)
Proponent Names	Report Created	Date Finalised
	26/06/2026	26/06/2026
Assessment Revision	BOS entry trigger	Assessment Type
2	Major Project	Scattered Trees
BAM Case Status	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	
Finalised		

Potential Serious and Irreversible Impacts

Nil

Additional Information for Approval

PCTs With Customized Benchmarks
No Changes

Ecosystem Credit Summary

Assessment Id	Proposal Name	Page 1 of 2
00064230/BAAS21028/26/00064232	Maryvale Solar Farm SSD-8777 Addendum	



BAM Biodiversity Credit Report (Like for like)

PCT	TEC	HBT Cr	No HBT Cr	Credits
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Ri	2	0	2

Credit classes for 277	Like-for-like options				
	TEC	Trading group	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Ri	-	Yes	2	Inland Slopes, Bogan-Macquarie, Bongo, Capertee Uplands, Capertee Valley, Crookwell, Hill End, Kerrabee, Lower Slopes, Murray Fans, Murrumbateman, Orange, Pilliga, Talbragar Valley and Wollemi. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Assessment Id
00064230/BAAS21028/26/00064232

Proposal Name
Maryvale Solar Farm SSD-8777 Addendum

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