

New England Solar – Water Supply Strategy



Stage 1b – 400MWac – Operations

Stage 2a – 320MWac - Construction

Stage 3a – 200MW/2hr - Construction

13 December 2023

Document Control

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1	19 January 2021	Submitted to DPIE	Onward Consulting	Tim Kirk	MV
2	15 February 2021	Revised to address DPIE request for additional information	Onward Consulting	Tim Kirk	MV
3	23 February 2021	Revised to include DPIE approval letter only	Onward Consulting	Tim Kirk	MV
4	13 December 2023	Stage 2a and Stage 3a update	T Verkerk	P Millar	S Donnan



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Table of Contents

Document Control	2
Acronyms and Abbreviations	6
1 Introduction	7
1.1 Approved Project	7
1.1.1 General project description	7
1.2 Working Hours	9
1.2.1 Construction	9
1.2.2 Operations	9
1.3 Purpose of this document	11
2 Water demand	12
3 Water Supply Strategy	13
3.1 Broombee Stud dam	14
3.1.1 Description of water supply	14
3.1.2 Environmental impact assessment and licencing requirements	15
3.2 Dams within Project development footprint	17
3.2.1 Description of water supply	17
3.2.2 Environmental impact assessment and licencing requirements	17
3.3 Uralla Shire Council wastewater treatment facility	17
3.3.1 Description of water supply	17
3.3.2 Environmental impact assessment and licencing requirements	17
3.4 Uralla and Walcha Shire Council mains water	17
3.4.1 Description of water supply	17
3.4.2 Environmental impact assessment and licencing requirements	18
3.5 Third Party Water Supply	18
3.5.1 Description of water supply	18
3.5.2 Environmental impact assessment and licencing requirements	18
4 Conclusion	19
5 Reference	20
APPENDIX A DPE Approval Letter	21

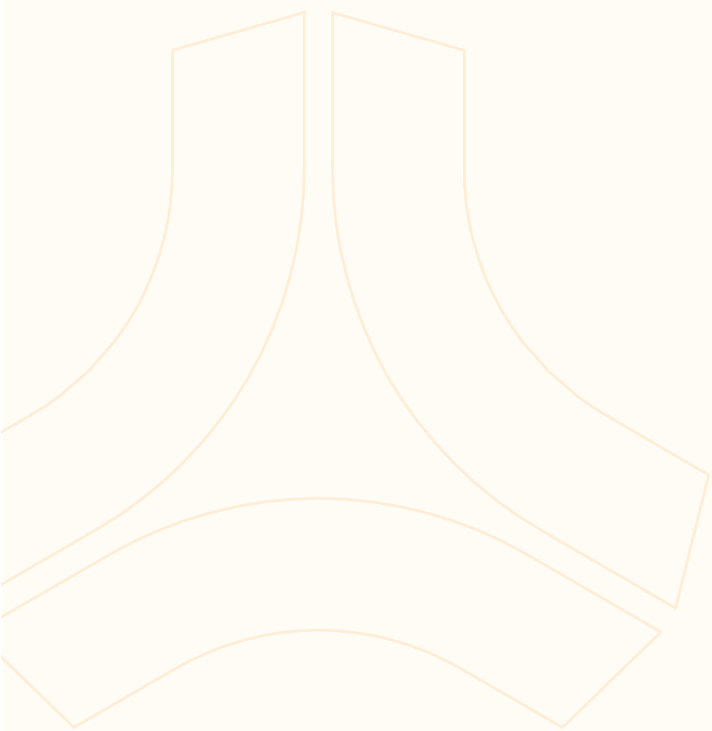
Table of Tables

Table 1-1 Key components of NES 8

Table of Figures

Figure 1: Location of New England Solar 10

Figure 2: Actual water supply infrastructure and access for Broombee Stud Dam 16



Acronyms and Abbreviations

Acronym	Description
ACEN Australia	ACEN Australia Pty Ltd (formerly known as UPC\AC Renewables Pty Ltd)
CoC	Conditions of consent of SSD 9255
Council	Uralla Shire Council
DA	development application
DPE	NSW Department of Planning and Environment (formerly known as NSW Department of Planning, Infrastructure and Environment)
NES EIS	The Environmental Impact Statement for NES dated February 2019, the Amendment Report date June 2019, the Response to Submissions dated June 2019, additional information dated 31 October 2019 and 10 December 2019, the subdivision plan in Appendix 3 of SSD 9255 and the additional information provided to the Independent Planning Commission of NSW on 7 and 18 February 2020
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
KL	kilolitre
KL/day	kilolitre per day
IPC	Independent Planning Commission
km	kilometre
ML	megalitre
ML/yr	megalitre per year
MW	megawatt
MWh	megawatt hour
NES	New England Solar
SRD SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
SSD	State significant development
WAL	water access licence
WM Act	<i>Water Management Act 2000</i>
WSW	water supply works

1 Introduction

1.1 Approved Project

New England Solar Project (NES) was granted Development Consent from the Department of Planning, Infrastructure and Environment (DPIE) (now the Department of Planning and Environment [DPE]) on 9 March 2020 (SSD 9255). The Development Consent was most recently modified on 26 May 2023 (Modification 2), after receiving approval for Modification 1 on 9 Feb 2021.

1.1.1 General project description

ACEN Australia Pty Ltd (ACEN Australia) (formerly named UPC Renewables Australia Pty Ltd) has approval to develop the New England Solar and Battery Project; a significant grid-connected solar and battery energy storage system (BESS) project along with associated infrastructure (the Project), approximately 6 kilometres (km) east of the township of Uralla, which lies approximately 19 km south of Armidale, in the Uralla Shire local government area (LGA) (hereafter referred to as NES). NES is within the New England Renewable Energy Zone (REZ). NES was approved, subject to conditions, by the New South Wales (NSW) Independent Planning Commission (IPC) on 9 March 2020 (SSD 9255).

NES will be constructed in the following stages:

- Stage 1a: Construction of a 400 megawatt (MW) solar farm within the Northern Array, which commenced on 7 February 2022 and is expected to be completed by Q4 2023
- Stage 1b: Operations of 400MW solar
- Stage 2a: Construction of a 320 megawatt (MW) solar farm within the Central Array, which is expected to commence by Q1 2024
- Stage 2b: Operations of 320MW solar
- Stage 3a: Construction of 200MW/2hr BESS within the approved Substation/BESS area, which is expected to commence by Q1 2024
- Stage 3b: Operations of 200MW/2hr BESS
- Stage 4a: Construction of 1200MW/2hr BESS within the approved Substation/BESS area
- Stage 4b: Operations of 1200MW/2hr BESS
- Stage 5: Decommissioning

Key components of NES development are summarised in Table 1-1.

Table 1-1 Key components of NES

Aspect	Description
NES project summary	<p>The NES project includes:</p> <ul style="list-style-type: none"> • A generating capacity of approximately 720 (MWac), including about 400 MWac generated by the northern arrays (Stage 1) and 320 MWac from the central arrays (Stage 2). • Approximately 1.4 million single-axis tracking solar panels (up to 4.3 metres (m) high) and 150 power conversion units (PCU) (up to 2.7 m high). • A grid substation in the northern array area and connection to TransGrid's 330 kilovolt (kV) transmission line. • A lithium-ion battery storage facility (1,400 MW/2,800 MWh) located adjacent to the substation and within a number of small enclosures (up to 2.9 m high) or larger battery buildings (up to 5.5 m high) (Stage 3 & 4). • Internal access tracks, staff amenities, maintenance buildings (up to 8 m high), offices, laydown areas, car parking and security fencing. • Subdivision of land within the site for the TransGrid switchyard.
Project area	<p>Site: 3,355 hectares (ha).</p> <p>Total NES footprint: 2,159 ha</p> <ul style="list-style-type: none"> • Stage 1b footprint: 1,159 ha • Stage 2a footprint: 985 ha • Stage 3a footprint: 15 ha
Access route	<p>All vehicles will access the site via the New England Highway, Barleyfields Road (North) and Big Ridge Road).</p>
Site entry and road upgrades	<p>Two new site entry points are constructed on Big Ridge Road with a rural property access type.</p> <p>Upgrades to the intersection of:</p> <ul style="list-style-type: none"> • The New England Highway and Barleyfields Road (North), including a Channelised Right Turn (CHR) treatment. • Barleyfields Road (North) and Big Ridge Road, including a Basic Left Turn (BAL) treatment. <p>Upgrades have been made to:</p> <ul style="list-style-type: none"> • Barleyfields Road (North) between the New England Highway and Big Ridge Road, including sealing to a width of 7.2 m and 1 m gravel shoulders. • Big Ridge Road including sealing sections to a width of 7.2 m and 1 m gravel shoulders, and upgrading a section with a gravel surface to a width of 8.7 m.

Rail transport	Construction materials may be transported to the site via a combination of road and rail (average of 2 trains per week). A train unloading area and materials storage area may be constructed adjacent to the Main Northern Railway. Materials will be stored in shipping containers (up to 2.9 m high) until required on-site.
Construction	Construction materials may be transported to the site via a combination of road and rail (average of 2 trains per week). Construction hours limited to Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm.
Operation	The expected operational life of NES is approximately 30 years. However, this may involve infrastructure upgrades that could extend the operational life.
Decommissioning and rehabilitation	The NES project also includes decommissioning at the end of the NES project life, which will involve removing all infrastructure.
Hours of operation	Daily operations and maintenance will be undertaken Monday to Friday 7 am to 6 pm, and Saturday 8 am to 1 pm. NES will be operational 24/7.
Subdivision	Subdivision of the lots on which the approved TransGrid Switchyard is located has been completed.
Employment	Approximately 700 construction jobs and up to 15 full-time operational jobs.
Capital investment value	\$1.268 billion.

1.2 Working Hours

1.2.1 Construction

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

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

1.2.2 Operations

Once commissioned, NES will operate 24 hours a day. The facility will be staffed during daylight hours, generally from:

- 7 am to 6 pm Monday to Friday (staff on-call during weekends and public holidays).

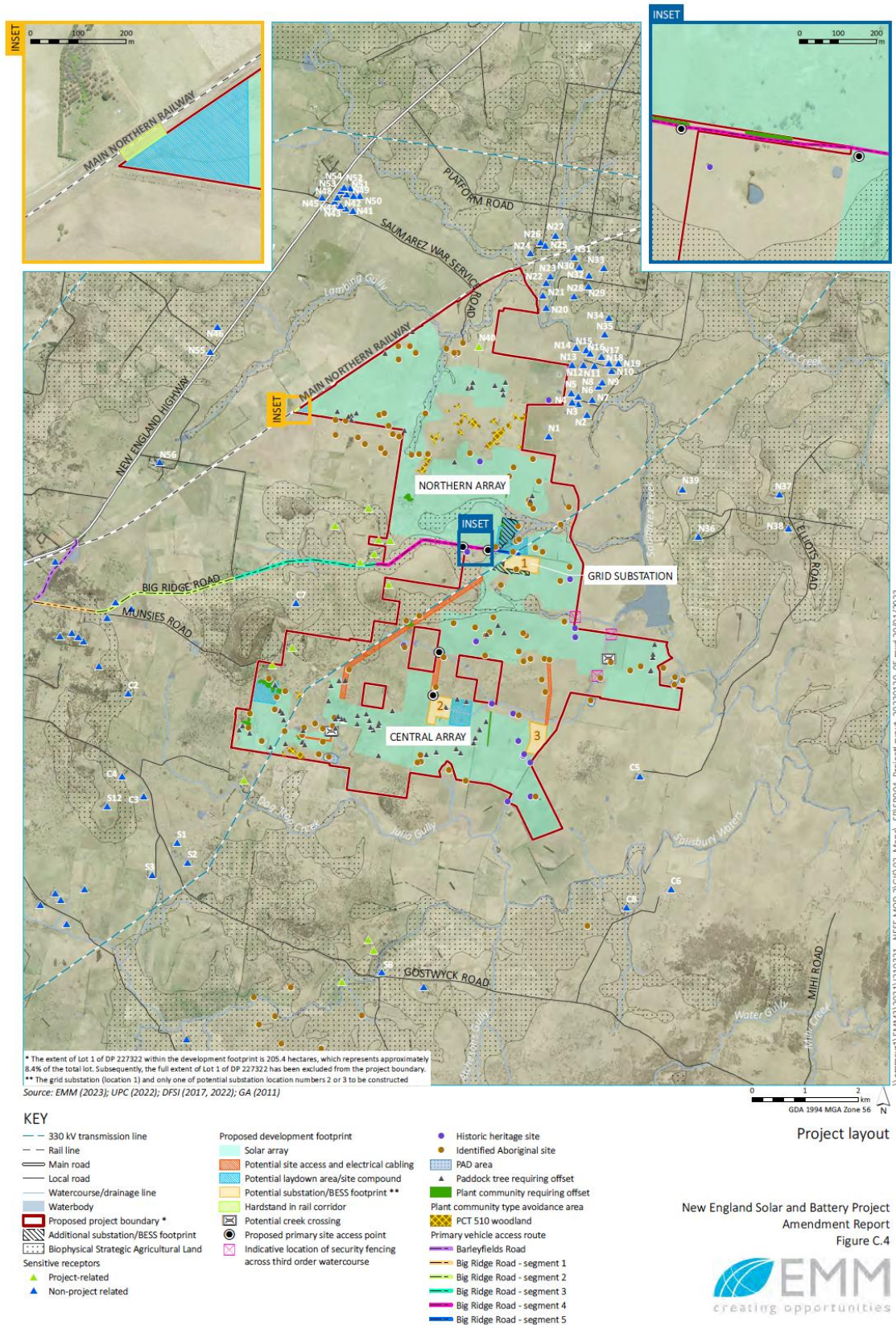


Figure 1: Location of New England Solar

1.3 Purpose of this document

The NES EIS described the following potential water supply options for the Project:

- potable water imported (trucked in) to site;
- opportunistic use of water from farm dams to be removed in accordance with harvestable rights provisions;
- provision from a third party (e.g. AEE Services);
- treated water from Uralla's sewerage treatment plant; and
- potable water from Uralla's or Walcha's town water supply.

General statements in the EIS in relation to water supply included:

- water supply arrangements for NES will be the subject of further consultation with the Project landholders, neighbouring landholders, Uralla Shire Council and relevant agencies; and
- ACEN Australia and its contractors will continue discussions with AEE Services, Uralla Shire Council and other providers prior to the commencement of construction.

The WSS strategy must meet Condition 20 from Schedule 3 which states the following:

Prior to the commencement of the development the Applicant must demonstrate to the satisfaction of the Secretary that the Applicant has sufficient water for all stages of the development, and if necessary, adjust the scale of the development to match its available water supply.

Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain the necessary water licences for the development.

2 Water demand

Water for construction of NES is primarily required for dust suppression, with other minor uses including potable water for site amenities, fire protection and for cleaning of plant and equipment. Water supply for operation is primarily required for the cleaning of solar panels.

Data taken from Stage 1a show that approximately 70ML was used from Broombee Stud Dam for the construction period. Some water was taken from the removed farm dams, although it would be minor compared to what was taken from Broombee Stud Dam. During the construction of Stage 1a, wet weather and flooding was experienced throughout the two years of the construction period. As such the total construction water demand during this period was far less than anticipated.

For Stage 2a and 3a, detailed design has confirmed the following estimated construction water demand:

- Stage 2a and 3a: daily construction average water demand: 200 kL/day;
- Stage 2a and 3a: total construction water demand: 220 ML;
- Stage 1b: operational water demand: 5 ML/year; and
- potable water demand: 4 kL/day during construction (Stage 2a and 3a) and 0.5 kL/day during operation (Stage 1b).

With the commencement of Stage 2a and Stage 3a commencing in Q1 2024, the weather patterns have shifted to a drier and more drought like conditions. It is anticipated the numbers predicted above are still relevant.

With the construction Stage 1a expected to complete the transition into operation Stage 1b by Q4 2023 it is anticipated the operational water demand will follow.

3 Water Supply Strategy

Prior to the commencement of Stage 1a, ACEN Australia and its Engineering, Procurement and Construction contractor, Green Light Contractors (GLC), undertook extensive evaluation of water supply options in the Project area with the objectives to:

- identify a range of options to secure water supply throughout construction and operation of NES to provide flexibility if one option becomes unavailable (temporarily or permanently);
- minimise environmental impacts, in particular impacts on the local community (e.g. truck movements through Uralla, dust, noise); and
- maintain Project economic viability.

Table 3.1 provides a summary of the water supply options identified to date. The Broombee Stud dam was utilized during Stage 1a of NES and it is intended for Stage 2a and Stage 3a to continue using Broombee Stud dam as its main water source.

As per findings from Stage 1a, water from the Uralla Shire Council sewage treatment plant (STP) would be used in parallel to Broombee Stud dam where required (i.e. a mechanical failure within the infrastructure).

Water in the dams within the development footprint would be used progressively as they are filled in as construction progresses.

Potable water would be sourced from Uralla Shire Council or Walcha Shire Council mains water supply and trucked into site.

Sections 3.1 to 3.5 provide further details of each option and an environmental impact assessment of each option in comparison to that described in the EIS.

Table 3.1 – Water supply options

Water Source	Description	Available Supply	Hierarchy
Broombee Stud – private property	Dam on private property	Total water access licence is 843.5 ML	Primary construction water source. Potential operational water source.
Uralla Shire Council sewerage treatment plant	Treated wastewater	150 kL/day and total capacity of 400 ML.	Supplementary primary construction and operational water source if Broombee Stud dam becomes unavailable.
Dams within project development footprint	Dams on private property	Estimated 6 dams with average 2 ML each	Supplementary construction and operational water source.
Uralla and Walcha Shire Councils water main	Town Water Supply	Adequate for potable uses	Primary operational water source. Construction and operational potable water

Operations and Maintenance Building Rainwater	Roof Runoff	575kL/ year assuming average rainfall	Potential operational water source
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3.1 Broombee Stud dam

3.1.1 Description of water supply

The Broombee Stud dam is located on a property immediately adjacent to NES (Figure 3.1). The landholder has a current WAL and WSW approval, which are detailed in Table 3.2. Water for Stage 1 is provided to NES by the landholder of Broombee Stud dam via a private commercial agreement with GLC. It is intended that this agreement will be transferred to ACEN Australia for Stage 2 and 3 works.

Table 3.2 - Broombee Stud dam licence details

Approval	Details
WAL 39699	Water sharing plan: Macleay River Unregulated and Alluvial Water Sources Category: Unregulated River Status: Current Water Source: Salisbury Waters Water Source Tenure type: Continuing Share components: 838.00 Nominated works approval: 30CA308873
WAL 39702	Water sharing plan: Macleay River Unregulated and Alluvial Water Sources Category: Domestic and stock Status: Current Water Source: Salisbury Waters Water Source Tenure type: Specific purpose Share components: 5.50 Nominated works approval: 30CA308873
Water Supply Works and Water Use	Issue date: 1 July 2016 Expiry date: 30 June 2029 Approval number: 30CA308873 Status: Current Water Source: Salisbury Waters Water Source WALs nominating these works: WAL 39699 and WAL 39702 Work type/s: <ul style="list-style-type: none"> Work 1 – 200mm Centrifugal Pump, Work 2 – Bywash Dam, Work 3 – 150mm Submersible Pump, Work 4 – Pipeline. Use: Irrigation

The landholder of Broombee Stud has advised that water may be accessed from the dam so as long as it maintains a minimum of 50 % capacity, which will adequately supply daily peak and total construction water demand and operational requirements. At the time of preparing this Strategy, the Broombee Stud dam was at full capacity (approximately 843.5 ML) and it is expected that it would remain above 50 % capacity for the entirety of the Project construction

period. Regular monitoring of the dam will be undertaken. This strategy will be reviewed when the dam reaches 60% and appropriate revisions will be made to this Plan if an alternate water source is required.

Water from Broombee Stud dam is accessed via a pump and pipeline supplied by the landholder of Broombee Stud. The pump and pipeline are connected to a water storage tank and standpipe located within the NES development footprint.

The location of the water supply infrastructure is shown on Figure 3.1. On the landholders property the following infrastructure has been installed:

- two solar submersible pumps with a maximum flow rate of approximately 30 m³/hour each;
- shared solar array for pump power supply;
- water meter on each pump to monitor water consumption; and
- 110 mm poly pipe approximately 1.2 km long placed overland for transfer of water to the Project development footprint.

Within the NES development footprint, the following infrastructure has been installed:

- a connecting pipeline (110 mm poly pipe) placed overland from the Broombee Stud landholders pipeline to the construction water supply tanks;
- A 309,000L water storage tank, which includes 65,000L dedicated to fire fighting purposes
- Two 150,000L construction water supply tanks; and
- access track and water loading area.

All water tanks are currently located in the vicinity of the O&M building.

3.1.2 Environmental impact assessment and licencing requirements

The WAL and WSW licenses held by the Broombee landholders have been amended to include the infrastructure constructed. There are no further licencing requirements.

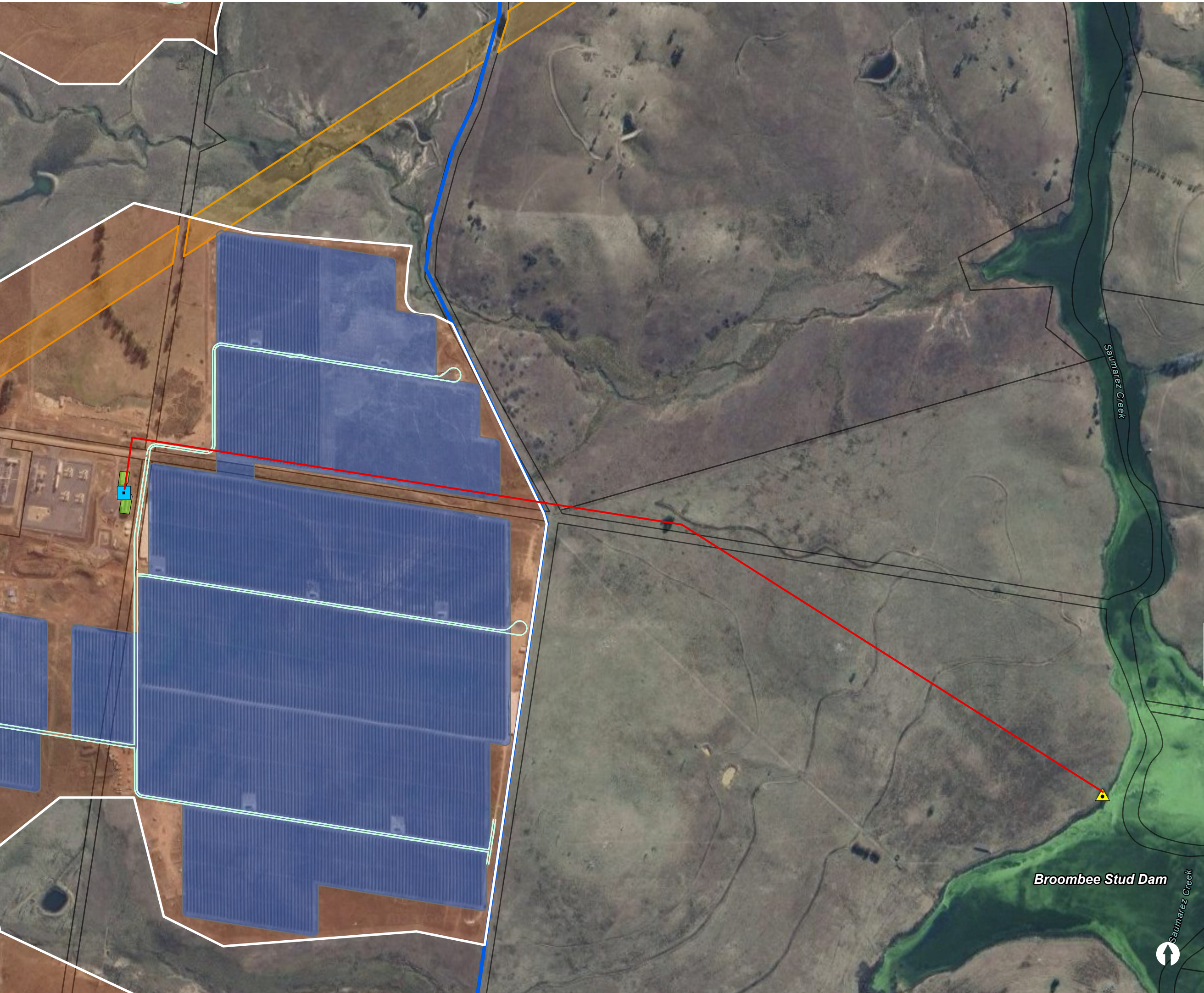
The existing infrastructure placed on the landholders was considered exempt from approval under the *Water Management Act 2000* under subdivision 3 section 37 which states the following in relation to pipe work (emphasis added):

37 Exemptions relating only to construction of water supply works

(1) A person is exempt from section 91B(1) of the Act in relation to the construction of any of the following water supply works—

(b) the construction of a water pipe for use solely for conveying water from one place to another.

No further assessment or approval under the EP&A Act is considered to be required for the infrastructure located on the Broombee Stud property nor for NES.



Legend

O&M Building

Water Tank

Water Pump Station

Water Pipe Feeder

Development Footprint

Project Footprint

Array Area

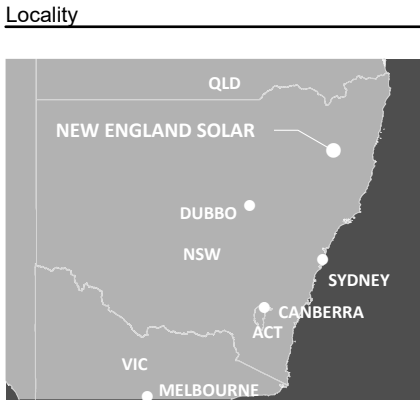
Internal Array Tracks

Existing Transmission Line Easement

Cadastral Boundary

Notes

1. Project features shown are preliminary and subject to change.



Project

New England Solar

Renewable Energy from ACEN

Title

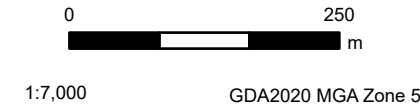
Water Feeder Pipe Location

Drawing no.

NESF-P021

Date

5/12/2023



3.2 Dams within Project development footprint

3.2.1 Description of water supply

There are in the order of 6 smaller farm dams located within the NES development footprint which are approved to be filled in as part of construction works for NES. Prior to filling in the dams, ACEN Australia is proposing to utilise any remaining water for construction purposes. Water would be obtained from these dams using a portable water pump to fill water trucks, water carts or other light vehicles as required.

3.2.2 Environmental impact assessment and licencing requirements

The smaller farm dams have a combined capacity of approximately 15 ML and store surface water runoff under the Harvestable Rights provisions (s53) of the WM Act. As such, there is no change to the potential impacts assessed as part of the EIS in relation to farm dams within the development footprint.

3.3 Uralla Shire Council wastewater treatment facility

3.3.1 Description of water supply

ACEN Australia has discussed with Uralla Shire Council the potential use of treated water from Uralla's wastewater treatment plant. It is understood that the wastewater treatment plant currently produces in the order of 150 kL/day of treated water. The use of this water will be subject to further consultation with Uralla Shire Council and will be dependent on a review of water quality information to confirm the suitability of the treated water for use during construction. Additional treatment infrastructure may be required at the sewerage treatment plant to allow for the reuse of this water during construction.

3.3.2 Environmental impact assessment and licencing requirements

Treated water would be transported via the approved access road as per the Development Consent. If used, the treated water would be assessed for its suitability using the National Guidelines for Water Recycling (EPHC, NRMCC & AHM, 2006) in consultation with the Environment Protection Authority and DPE. These guidelines focus on human health risk assessment and management and are most relevant where there is human exposure to recycled water. If additional infrastructure is required, relevant planning approvals would be obtained by Uralla Shire Council.

3.4 Uralla and Walcha Shire Council mains water

3.4.1 Description of water supply

Potable water for construction and operation of NES would be supplied via mains water from Uralla Shire Council or Walcha Shire Council. The councils have indicated that adequate supply would be available for the proposed potable water demand (i.e. 4 kL/day during construction and 0.5 kL/day during operation). The potable water would be trucked to NES using the approved access road.

A 30,000L potable water supply tank is located next to the O&M Building which utilises the Uralla Shire Council mains water supply.

3.4.2 Environmental impact assessment and licencing requirements

Potable water would be transported via the approved access road. There would be no other change to potential impacts assessed in the EIS.

3.5 Third Party Water Supply

3.5.1 Description of water supply

Water can be trucked into site through the use of a water cartage service. This water is sourced by a third-party water supplier (such as AEE services) who have permits with major water supply service providers (such as Councils). Potable water, bore water, recycled water and sea water can be carted to site which can be used for potable water, dust suppression or filling up tanks. A commercial agreement would be put in place with the third-party water supplier to provide this water.

3.5.2 Environmental impact assessment and licencing requirements

Potable water would be transported via the approved access road. There would be no other change to potential impacts assessed in the EIS.

4 Conclusion

No additional environmental impacts are anticipated from any of the water supply options to that assessed in the EIS and what was found to be actual during Stage 1a.

The quantum of water available from the Broombee Stud dam is more than adequate to meet construction and operational water demand for all stages of NES.

The supplementary options for construction and operational water supply from the farm dams within the development footprint and potential use of treated wastewater from Uralla Shire Council, or Mains water from Walcha Shire Council or Uralla Shire Council provide certainty of continued water supply for construction and operational purposes.

Revisions to this Plan will be made if there are seasonal changes resulting in a change to the water supply strategy for NES.

Therefore, the water supply options presented in this Strategy demonstrate that ACEN Australia has sufficient water for all stages of NES in accordance with Schedule 3 CoC 20.

5 Reference

EMM Consulting Pty Ltd (2019a). New England Solar Farm: Environmental Impact Statement. Prepared for UPC Renewables Australia Pty Ltd, February 2019.

EMM Consulting Pty Ltd (2019b). New England Solar Farm Amendment Report, Prepared for UPC Renewables Australia Pty Ltd, June 2019

EMM Consulting Pty Ltd (2019c). New England. Solar Farm Response to Submissions, Prepared for UPC Renewables Australia Pty Ltd, June 2019

EMM Consulting Pty Ltd (2019d). New England Solar Farm Additional information package, Prepared for UPC Renewables Australia Pty Ltd, 31 October 2019

EMM Consulting Pty Ltd (2019e). New England Solar Farm Additional information, Prepared for UPC Renewables Australia Pty Ltd, 10 December 2019

Environment Protection and Heritage Council, the Natural Resource Management Ministerial Council and the Australian Health Ministers' Conference (EPHC, NRMMC & AHM) (2006). National Water Quality Management Strategy: Guidelines for Water Recycling – Managing Health and Environmental Risks (Phase 1).

NSW Office of Environment and Heritage (2017). Biodiversity Assessment Method.

APPENDIX A DPE APPROVAL LETTER

Sarah Donnan
Project Manager – NES
ACEN Australia
96b Bridge Street
Uralla, NSW, 2358

20/12/2023

Subject: New England Solar – Water Supply Strategy for Stage 1b, Stage 2a and Stage 3a

Dear Mrs Donnan,

I refer to your submission requesting approval of the Water Supply Strategy for Stage 1b, Stage 2a and Stage 3a (Revision 4 dated 13 December 2023). I also acknowledge your response to the Department's review comments and request for additional information.

The Department has carefully reviewed the document and is satisfied that it meets the requirements of the relevant conditions in consent (SSD-9255 as modified).

Accordingly, as nominee of the Planning Secretary, I approve the Water Supply Strategy (Revision 4 dated 13 December 2023).

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Katie Weekes on (02) 4927 3223 or via email at katie.weekes@dpie.nsw.gov.au.

Yours sincerely



Iwan Davies
Director
Energy Assessments

As nominee of the Planning Secretary

