

27 August 2024

Darryl Fitzgerald
Director – Planning and Development
Moree Plains Shire Council
PO Box 420
Moree NSW 2400



Darryl.fitzgerald@mpsc.nsw.gov.au

Dear Darryl

Re: 230246 – Moree Battery Energy Storage System

Thank you for taking the time to speak with NGH and Avenis Energy regarding the Moree Battery Energy Storage System (BESS) last week. As requested, please see a brief overview of the Project, proposed traffic arrangements and swept-path diagrams, and the proposed Voluntary Planning Contribution (VPA) in line with the Moree Plains Shire Section 7.12 Contribution Plan.

If you have any questions, please contact me or David Canterbury on 0403 709 813. We would be pleased to discuss any aspect of this project with you further.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Sarah Hillis', written in a cursive style.

Sarah Hillis

Principal Consultant – Environmental Assessment and Approvals
0413 343 912

Wagga Wagga

35 Kincaid Street (PO Box 5464) Wagga Wagga NSW 2650

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The Proposal

Avenis Energy (the Applicant) propose to construct a 120MW/480MWh lithium-ion Battery Energy Storage System (BESS) within the Moree Special Activation Precinct (MSAP) at Bulluss Drive, Moree (the proposal).

The BESS would connect to the national electricity market (NEM) via TransGrid's 132kV Moree Bulk Supply Point substation, located immediately to the north of the development site (leased developable area). The connection to the substation would be via underground transmission.

The proposal would include the following:

- Approximately 140 battery containers, containing lithium-ion technology
- Approximately 42 skid-mounted Power Conversion Systems (PCS) comprising of; the inverters, which convert direct current (DC) to alternating current (AC); the medium-voltage transformer, which converts the inverter output voltage to the medium-voltage of the system (33 kilovolt); and the medium voltage switchgear, which contains the medium voltage circuit breakers and disconnectors for the PCS
- A 33kV switch room, which collects all the individual medium voltage cables from the PCS units in one location, before connection to the high-voltage transformer. Auxiliary power is supplied from a low-voltage room, which is connected to the medium-voltage switch room. Underground cables would connect the switch room, power conversion units and batteries, to allow for easy access and minimal disruption (if access is required)
- A control room, which will contain battery-monitoring equipment, allowing operators to control the plant remotely
- A short overhead / underground transmission line which would connect the proposed BESS to the adjacent Moree substation. The connection type would be subject to TransGrid requirements
- Associated ancillary infrastructure, including:
 - Operations and Maintenance (O&M) building
 - Auxiliary low-voltage transformers
 - Ancillary storage
 - Staff amenities
 - Sewerage holding tank
 - On-site car parking
 - A water tank
 - Internal access tracks
 - Security fencing
 - Onsite drainage infrastructure.

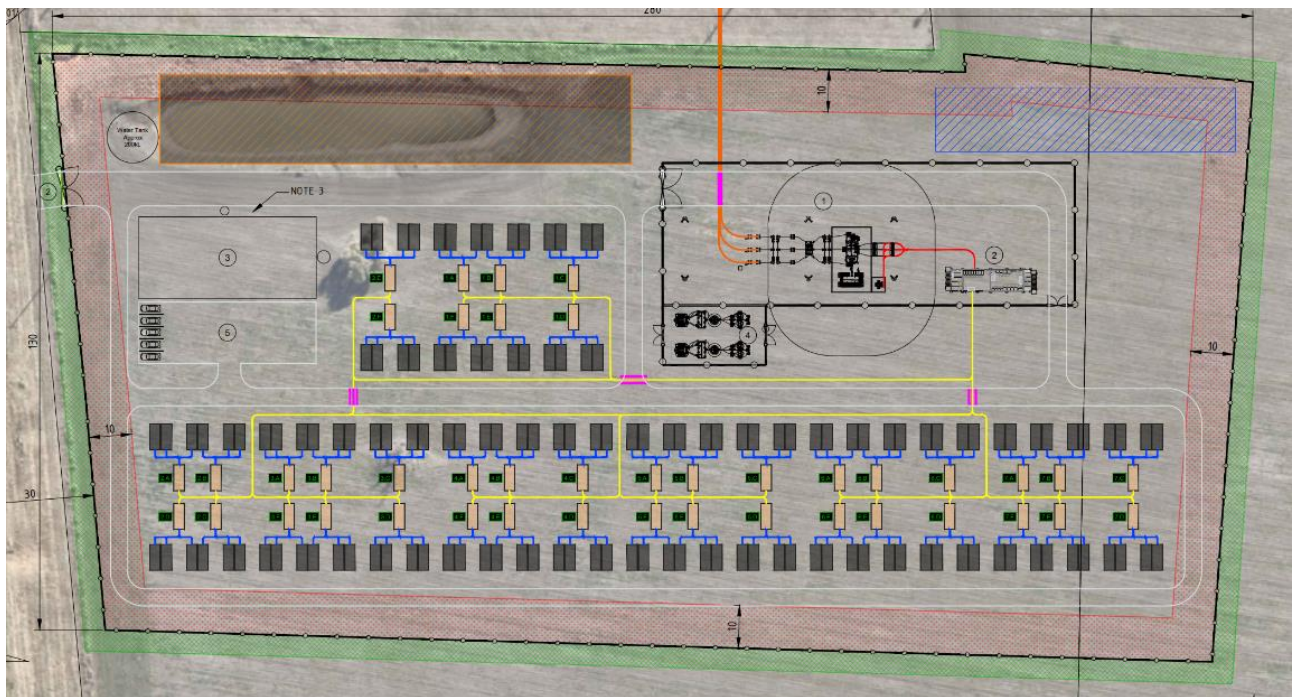
Subject land and locality, site selection and design

The subject land (the full area of all involved lots) comprises Lot 82 DP 751780 and part of Lot 144 DP751780 for siting of the BESS (4.06ha), and Lot 1 DP 751780 for connection to the TransGrid substation. The area to be developed (referred to as the development site) would comprise approximately 5.3 ha (Figure 1).

The subject land is currently undeveloped. It is devoid of stands of remnant vegetation. An existing borrow pit turned farm dam is present in the north-western portion. As indicated above, the subject land is adjacent to the Moree Bulk Supply Point substation and fronts Bullus Drive.



Figure 1 Proposal location



SYMBOL	DESCRIPTION
	BESS MODULE
	POWER CONVERSION SYSTEM
	10m ASSET PROTECTIN ZONE
	5m LANDSCAPE BOUNDARY
	33 kV UNDERGROUND CABLES
	132 kV UNDERGROUND CABLES
	LAYDOWN/CONSTRUCTION AREA
	DENTION POND
	HV SUBSTATION
	SWITCHROOM
	OPERATIONS BUILDING
	HARMONIC FILTER (TBC)
	VISTERS CARPARKING

Figure 2 General layout

Construction phase

The construction phase is expected to last approximately 6-12 months. At the peak construction period, the BESS is expected to require approximately 80 workers.

Construction activities would be undertaken during standard construction hours:

- 7.00 am to 6.00 pm Monday to Friday,
- 8.00 am to 1.00 pm on Saturdays.
- No work on Sundays or public holidays

Construction activities would be restricted to the hours indicated above, construction required outside of these hours would only be undertaken with prior approval from relevant authorities and in accordance with the development's Construction Management Plan, or in the event of emergency circumstances i.e., to make work safe.

Operations

Once operational, the BESS would operate on a continuous basis; recharging when supply is high and energy prices are low and discharging when demand and energy prices are high.

There would be 5 staff members on site to take care of the operation of the BESS during workdays and it can be automated/remotely operated outside of work hours. The battery component of the proposal would need to be replaced every 10-15 years. The BESS would be operational for 20-25 years after which it would either be decommissioned or refurbished.

Access and traffic

Existing Environment

The subject land is within close proximity to Newell Highway, with the site being accessed via Bulluss Drive. Bulluss Drive is a 7m wide two-lane sealed road with clear markings with no posted speed limit.

Bulluss Drive connects to Newell highway approximately 550m from the site entrance. Newell Highway is a National Highway and provides a major link between Queensland and Victoria via central NSW. The highway has a posted speed limit of 60km per hour at the intersection of Bulluss Drive. The Highway has also got a dedicated right turning lane to turn into Bulluss Drive from the south – north direction.

Both the Newell Highway and Bulluss Drive are approved B-double routes.

A Transport and Traffic Plan (Arcadis, 2021) was prepared for the Moree SAP.

Construction

During construction, the proposed development is likely to generate additional light and heavy vehicle movements as detailed within Table 1 below.

Table 1 Traffic generation during construction

Vehicle type	Average vehicle movements per day		Peak vehicle movements per day	
	Daily (vpd)	Peak hour (vpd)	Daily (vpd)	Peak hour (vpd)
Light vehicle	35	20	60	40
Shuttle bus	4	2	12	8
MRV/HVR	30	6	60	8
AV/B-Double	8	2	14	2
Total	77	29	146	58

One over-sized over-mass (OSOM) vehicle is expected to be required, to deliver the transformer to the site.

The traffic generated during the construction period is on average 38 heavy vehicles per day, maxing out at 74 heavy vehicles per day during peak. When comparing to the traffic volumes generated along the Newell Highway using 2012 data from the Arcadis Transport and Traffic Plan (Arcadis, 2021), the proposed peak construction traffic shows a daily increase of 1.2% from the south, and 1.5% from the north (assuming a 50/50% directional split). This is not predicted to be significant. As such, it is considered that the road network would be more than sufficient to accommodate the additional trips required for the construction of the development.

Table 2 2012 traffic data from the Arcadis Transport and Traffic Plan (Arcadis, 2021)

Statistic	Narrabri to Moree	Moree to Boggabilla
Daily Traffic		
AADT	2,924	2,533
%Heavy vehicles (two-way)¹	40.5%	47.7%
Typical Peaking Characteristics		
Northbound peak (11:00am)	127	113
Opposing flow	106	93
%Heavy vehicles (two-way)	32.5%	36.2%
Southbound peak (2:00pm)	109	94
Opposing flow	118	96
%Heavy vehicles (two-way)	35.7%	40.4%

Source: RMS 2012

Bulluss Drive is and will be a major access road for the SAP and would be suitable to service the proposed development. Swept paths have been investigated for the likely vehicle types to be generated by the proposed development during the construction phase and a suitable access point has been developed. The swept path analysis and driveway design are presented in Appendix A.

Operation

During operation, the proposal is expected to generate light vehicle movements only.

While estimating traffic generation within the Moree SAP, it was assumed that solar and energy precincts were non-trip generating areas (Arcadis, 2021). This was attributed to the small proportion of staff required to operate energy / solar related developments.

Voluntary Planning Agreement

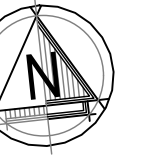
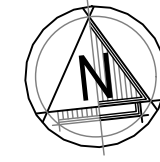
In line with Appendix B of the Moree Plains Shire Operations Plan (Fees and Charges 2024-25) (MPSC, 2024), the Applicant proposed a monetary contribution of \$100,000.00 per annum plus CPI paid over a period of 20 years (Appendix B). With an approximate Estimated Development Cost (EDC) of \$2.5 million, this is the approximate equivalent of 1% development cost.

References

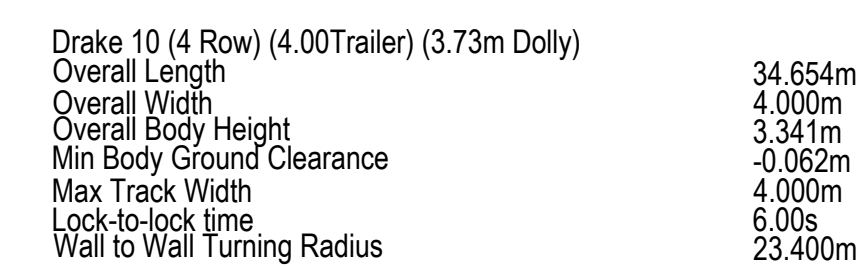
Arcadis. (2021). *Moree Special Activation Precinct - Transport and Traffic Plan*. Arcadis Design & Consultancy.

MPSC. (2024). *Operational Plan Appendix B Fees and Charges 2024-25*. Retrieved from <https://www.mpsc.nsw.gov.au/publications-documents/fees-and-charges/2597-fees-and-charges-2024-25/file>

Appendix A Swept-paths for Bulluss Drive intersection



PASSENGER-CAR
NTS



OSOM DESIGN VEHICLE PROFILE



CLIENT: NSW GOVERNMENT

ARCHITECT

PROJECT: MOREE BESS
LOTS 82 & 144, DP 751782 AND LOT 201, DP 1186601
BULLUSS DRIVE, MOREE NSW 2400

TITLE: VEHICLE TURNING PATHS
LAYOUT PLAN

SCALE @ A1:	CHECKED:	APPROVED:
AS SHOWN	JM	SN
PROJECT NUMBER:	DRAWN:	DATE:
PS212248	EM	28/03/2024

DRAWING No:	REV:
C011	A

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**Appendix B Draft Voluntary Planning Agreement
payment schedule**



Suite 2, Level 10, 52 Alfred St S
Milsons Point, NSW 2061

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info@avenisenergy.com.au

ATTN: The General Manager
Moree Plains Shire Council

14/6/2024

Dear Sir/Madam

Re: Voluntary Planning Agreement Offer

AE BESS 2 Pty Ltd as Trustee for AE BESS 2 Unit Trust offers to enter into a Planning Agreement Deed with Council under section 7.4 of the *Environmental Planning and Assessment ACT 1979* in connection with the proposed Battery Energy Storage System (BESS).

The proposed development involves a 120MW 4-hour (480MWh) BESS on 4.06 Ha of the Subject Land. The development footprint includes the Moree Bulk Point supply substation (Lot 1 DP999486) which the BESS will connect to via an underground cable to either a new or existing 132kV bay.

AE BESS 2 Pty Ltd as Trustee for AE BESS 2 Unit Trust proposes the terms set out in the following table:

Item	Terms
Parties	Moree Plains Shire Council
	AE BESS 2 Pty Ltd as Trustee for AE BESS 2 Unit Trust
Subject Land	Lot 82 DP751780, Lot 144 DP751780
Monetary Contribution	\$100,000.00 per annum plus CPI. Assuming a CPI of 2.5% over the operations period of 20 years results in total cash payments of \$2,554,465.76 approximately equivalent to 1% of the proposed development's CIV.
Period	20 years.

Kind regards,

DocuSigned by:

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Jeremy Moore

Project Development Manager +61 (0) 400 928 911