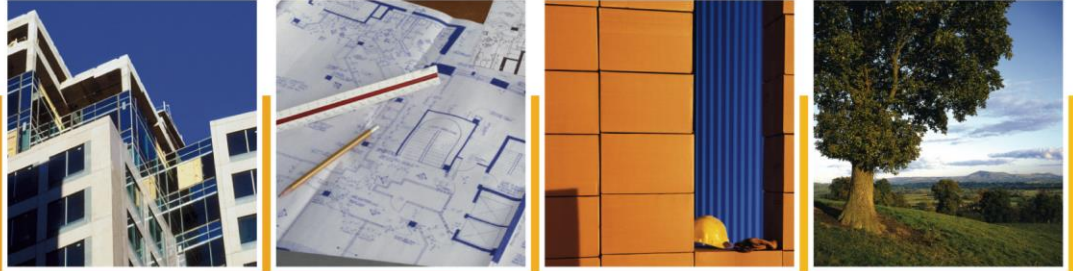


STATEMENT OF ENVIRONMENTAL EFFECTS



For
Battery Energy Storage System

At
105 Merriwa Road Denman 2328

Prepared for
Clean Energy Transfer Fund Pty Ltd

June 2023
Report 23/046 Rev A

Prepared by



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HDB Project Manager: Mark Ihlein
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Project Manager:**Date: 14.06.2023***This document is for discussion purposes only, unless signed and dated by the person identified.***DISCLAIMER:**

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1.0 EXECUTIVE SUMMARY

This Statement of Environmental Effects (SEE) has been prepared by HDB Town Planning and Design on behalf of Clean Energy Transfer Fund Pty Ltd. This SEE supports the lodgement of a development application seeking consent for a Battery Energy Storage System (BESS) including supporting Shed structures on E4 zoned Lot 21 DP 731407, 105 Merriwa Road, Denman 2328. The project is a part of Hive consisting of the installation of ten (10) BESS in total.

The SEE provides the following:

- Details of the Application (Section 2)
- An extensive assessment/analysis of the existing Site (Section 3)
- A detailed description of the proposed development (Section 4)
- An assessment of the proposed development against all the relevant planning controls and matters as outlined under Section 4.15 (Section 5)
- An assessment of the proposal with regard to the key planning and environmental issues identified (Section 6)
- Justification and Need for the Project (Section 7)

The subject site sits amidst the industrial area of Denman and is zoned E4 – General Industrial under the council’s mapping. Primary access to the lot is from Merriwa Road (Golden Highway). The property has an 11kv transmission line in the vicinity which will allow a relatively easy connection to the proposed battery grids.

The area of disturbance is restricted to a compound measuring 32.5m X 44.2m and is relatively insignificant in comparison to the size of the property.

The proposed development is permissible on the subject land under *section 2.36 – SEPP (Infrastructure and Transport) 2021* and is consistent with the objectives of the E4 zone under Muswellbrook Shire Council’s Local Environment Plan (LEP) 2009. This report concludes that the proposal can be achieved with minimal environmental impacts.

Having reviewed and assessed the proposal, the application is submitted for the consideration of Muswellbrook Shire Council on behalf of our Client. Based on the assessment undertaken we recommend approval of the application, subject to the recommendations of this and the other supporting reports.

2.0 INTRODUCTION

2.1 PURPOSE

The SEE addresses the planning requirements pertaining to the proposed development of a Battery Storage Facility. It provides an assessment of the potential environmental impacts pursuant to the requirements of Section 4.15 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act).

The SEE has been prepared by HDB Town Planning and Design (HDB) on behalf of Clean Energy Transfer Fund Pty Ltd. The application is lodged with Muswellbrook Shire Council pursuant to Section 4.12 of the EP&A Act.

2.2 SITE DESCRIPTION

Lot 21 DP 731407

105 Merriwa Road, Denman 2328

2.3 APPLICATION DETAILS

2.3.1 APPLICANT DETAILS

Clean Energy Transfer Fund Pty Ltd
C/- HDB Town Planning & Design
PO Box 40
MAITLAND NSW 2320

2.3.2 CONTACT DETAILS

Aprajita Gupta
HDB Town Planning & Design
PO Box 40
MAITLAND NSW 2320

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2.3.3 OWNERSHIP DETAILS

Ivan Howard Burkill
See Title Search as *Appendix A*

2.4 DOCUMENT STRUCTURE

The SEE has been structured as follows:

- Section 1 - Executive summary - provides a general overview of the projects its findings and conclusions
- Section 2 – Introduction - provides a general background of the project and defines the site, the current owner and contact details
- Section 3 – Site Analysis – provides a detailed analysis of the site proposed for the development.
- Section 4 – Proposed Development – provides a detailed description of the proposal including its suitability to the site.
- Section 5 - Legislative Context – provides the legislative context of the development.
- Section 6 – Key Planning and Environmental Issues – provides details of any potential impacts of the project on the subject site and includes mitigation measures that are proposed to reduce and / or remove the potential impacts.
- Section 7 – Project Justification and Need – provides a summary of the project and a justification of the proposal with reference to the principles of ecologically sustainable development and objectives of the Environmental Planning and Assessment Act, 1979.
- Section 8 – Conclusion – provides a conclusion and requests that Muswellbrook Shire Council grant conditional consent to the proposed development.

3.0 SITE ANALYSIS

3.1 LOCATION

Address:	Lot 21 DP731407, 105 Merriwa Road Denman 2328
Local Government:	Muswellbrook Shire Council
Locality:	Denman
Area of site:	23.30 ha
Zone:	E4 – General Industrial

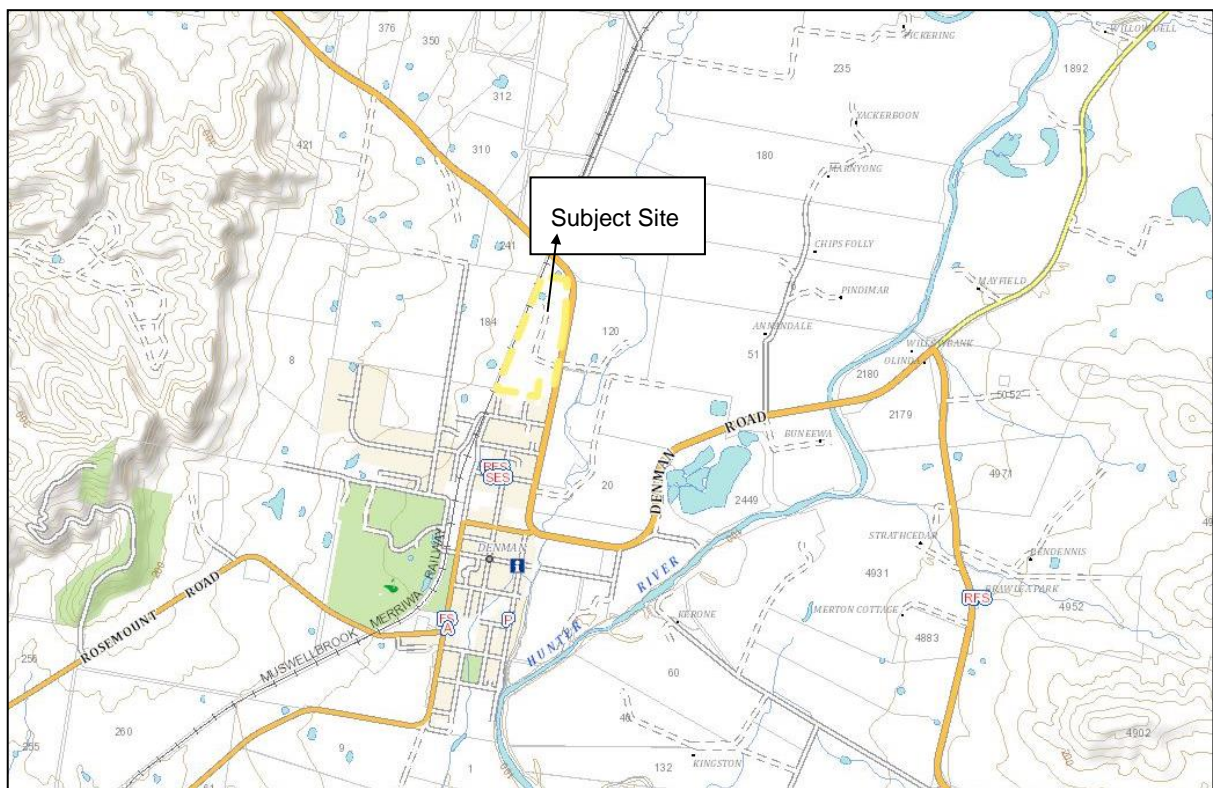


Figure 1: Location Plan

Source: NSW ePlanning Portal accessed May 2023

3.2 EXISTING SITE



Figure 2: Site Plan

Source: Nearmaps accessed May 2023

The subject lot is located in the Denamn locality and has an area of 23.30 ha. It is zoned E4 – General Industrial under Muswellbrook LEP 2009.

The site is mostly vacant with some small shed structures, see **Figure 2** above. Primary access to the lot is from Merriwa Road (Golden Highway) running along the eastern boundary. The lot has Muswellbrook Merriwa Railway to its west. The lot is generally flat and is predominantly cleared.

There is an Ausgrid substation in the adjoining lot (to the south), as shown in the figure above.

3.3 ARCHAEOLOGY AND HERITAGE

A desktop investigation of the Aboriginal Heritage Information Management System (AHIMS) was undertaken (refer to **Appendix B – AHIMS Report**), which confirmed that there are no records of Aboriginal Heritage or archaeological items found within

50m of the site. The site does not contain any items of local or European Heritage significance.

3.4 ACCESS/ TRANSPORT

The primary access is from Merriwa Road which runs along the east boundary of the site.

3.5 TOPOGRAPHY, HYDROLOGY & VEGETATION

The subject lot is generally flat with Improved Pature scattered over the majority of the site. The site is devoid of any significant vegetation/trees.

There is a dam and a hydro line that pass through the site, as shown in the figure below.

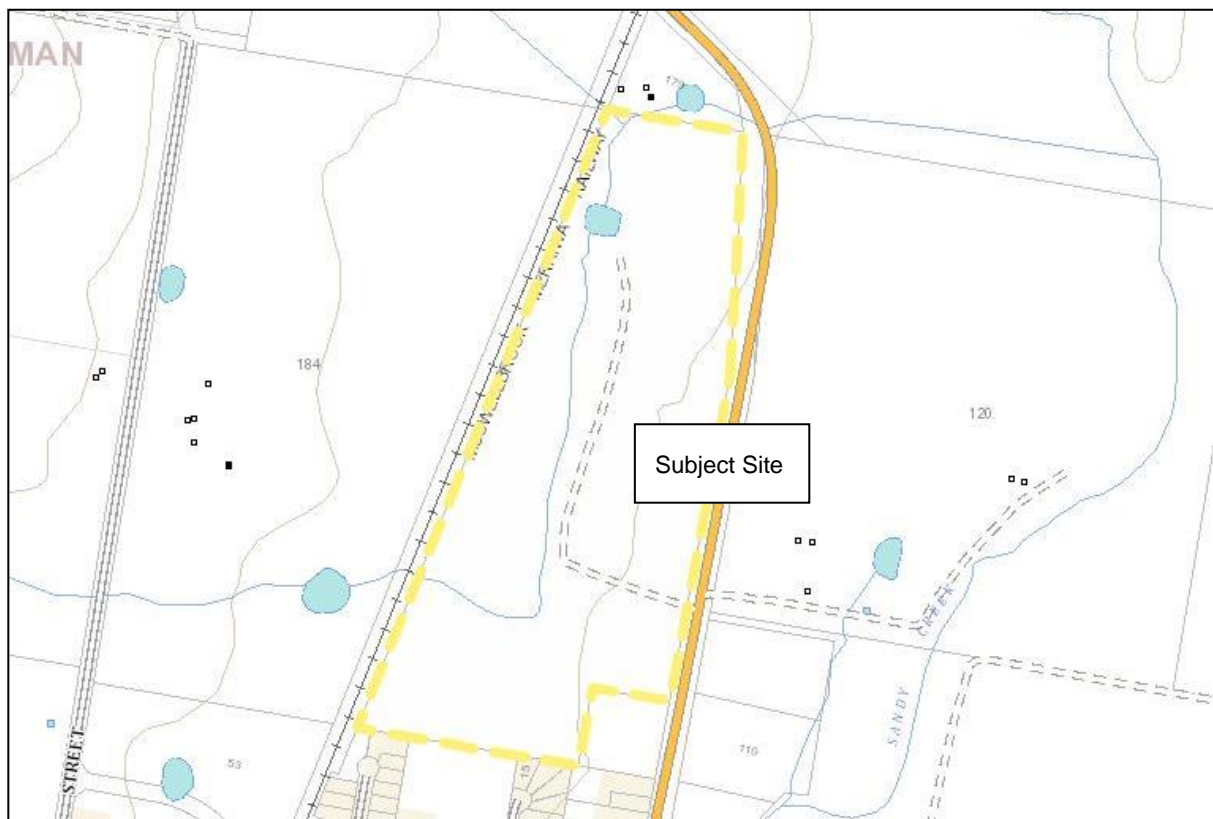


Figure 3: Hydrolines

Source: NSW ePlanning Portal accessed May 2023

3.6 FLOODING

The site is not mapped as Flood Planning Area under flood mapping by the council.

3.7 SURROUNDING LAND USE

Existing site uses to the south, west, and east is generally rural living on farmland. There are conservation lands to the north.

3.8 SERVICES TO SITE

Currently, Electricity and Water are available for the site.

3.9 BUSHFIRE

The subject lot is identified as Bushfire-prone land in the Bushfire Planning map by Council, containing *Vegetation Category 3*, as shown in **Figure 4**.

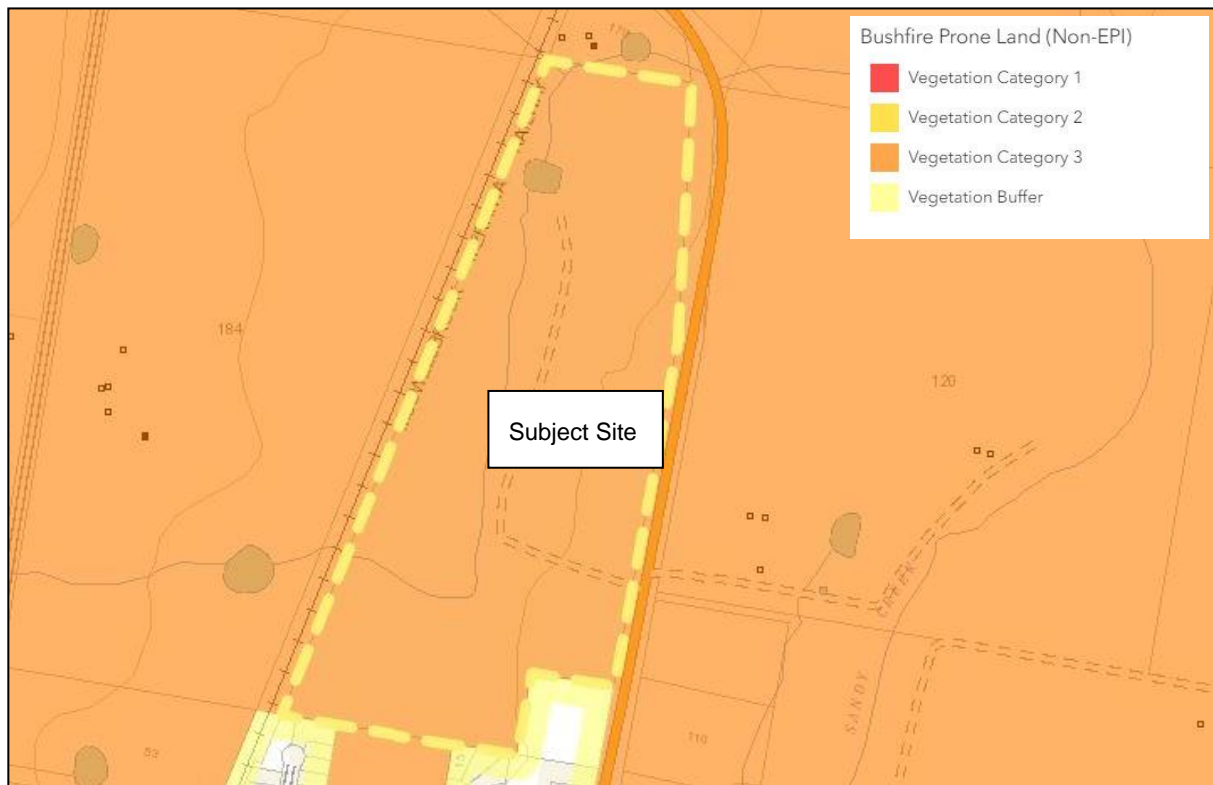


Figure 4: Bushfire Mapping

Source: NSW ePlanning Portal accessed May 2023

4.0 PROPOSED DEVELOPMENT

4.1 SUMMARY

The applicant seeks development approval for the installation of a Battery Energy Storage System (BESS) and associated shed structures.

A BESS is a 4.98 MW energy storage system that captures energy from the electrical grid at low demand and discharges electricity at times of high demand.

Ten (10) Battery Units will be initially installed on the land and a further two (2) in 4 years to cover degradation. The battery unit complex will be contained within a compound as shown in **Figure 5** below. Refer to **Appendix C** for further details.

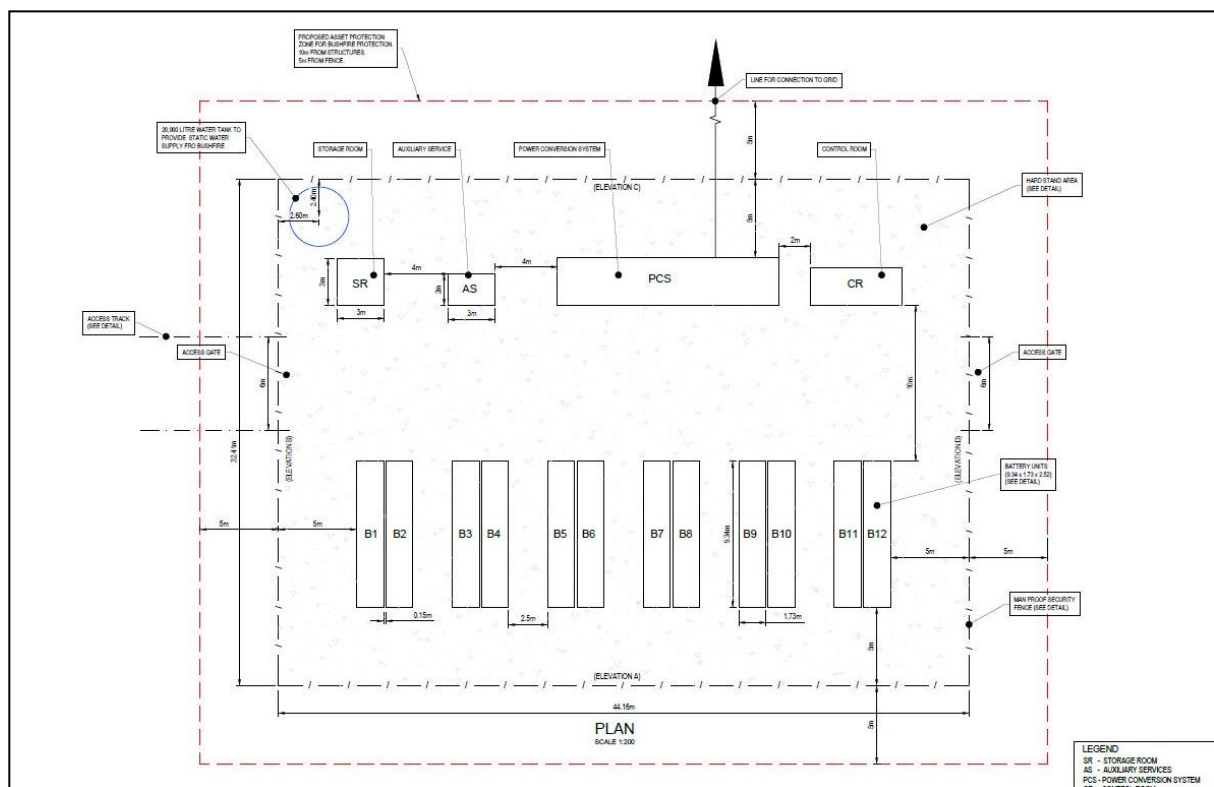


Figure 5: Compound Layout

Source: HDB

The following section provides details regarding the design, functioning, and installation of the proposed BESS.

4.2 DETAILS

4.2.1 DESIGN

The proposed BESS will consist of 10 to 12 Battery Cabinets (ST2752UX), and other sheds to house power equipment, switchgear, and controllers positioned in the direction of the connection line out to the boundary.

A summary of the design of the Battery Cabinets is shown in **Table 1** below, with the complete specifications available in **Appendix F**.

Battery Type - ST2752UX	
Battery Technology	Liquid Cooling Energy Storage System
Battery Cabinet Dimension	9340L X 2520H X 1730W mm
Battery Cabinet Weight	26,000 kg
Number of Battery Cabinets	10 to 12
Power Generation	4.98 Mw over 4 hours continuous

Table 1: Battery Cabinet

Source: Sungrow Power Supply Co. Ltd. 2021



Figure 6: Battery Cabinet

Source: Sungrow Power Supply Co. Ltd. 2021

4.2.2 ACCESS

A new access driveway (3m wide) from Merriwa Road (Golden Highway) will provide access to the Battery facility. Refer to *Appendix C* for more details.

4.2.3 PARKING

No formal or dedicated parking facilities are proposed or required to be provided throughout the site, as the maintenance vehicles will park around the site as needed to service the batteries.

4.2.4 HOURS OF OPERATION

Construction will be off-site and delivery and erection will occur over a 4 to 6 hours time period. The site will be operated remotely and visitation for general maintenance will occur 1 to 2 times per month.

4.2.5 STAFFING

No permanent staff will be located on the site.

4.2.6 SECURITY

A security mesh fence (2.4m high) will be constructed around the facility, see *Appendix C*.

4.2.7 LANDSCAPING

Landscaping is proposed to all sides along the fencing, concealing BESS from the adjoining properties to the south and the Merriwa road to the east. This will be in accordance with the details shown in *Appendix I*.

4.2.8 STORMWATER MANAGEMENT

The site is mostly flat and a gravel hardstand area will be constructed in accordance with *Appendix E* within the facility. Due to the minimum area and small size of the proposed development, minimum stormwater treatments are required. General Details are shown in *Appendix E*.

5.0 LEGISLATIVE CONSIDERATION

5.1 RELEVANT LEGISLATION

5.1.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) provides the framework for environmental planning and development approvals and includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision-making process.

The application is subject to Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act). The proposed development is permissible with the consent in accordance with Chapter 2, Part 2.3, Division 4 of *SEPP (Transport and Infrastructure) 2021*.

5.1.2 ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2021

The development is a 4.98 MW Energy System that does not fall within the definition of an “Electricity Generating Station” under Schedule 3 Designated Development, Part 2, Section 24 of the *Environmental Planning & Assessment Regulation 2021*. Therefore, an EIS is not required.

5.1.3 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act) detailed the Activities required to obtain a license under the act.

The proposal is not listed in Schedule 1 of the POEO Act and therefore, does not require any further reference to this Act.

5.2 STATE ENVIRONMENT PLANNING POLICY (SEPP)

5.2.1 SEPP (TRANSPORT AND INFRASTRUCTURE) 2021

Chapter 2 of this SEPP aims to facilitate the effective delivery of infrastructure across the State of NSW. *Part 2.3: Division 4 Electricity Generating Works or Solar Energy Systems* of the SEPP provides permissibility for this use as follows:

Within the SEPP the Battery Storage is defined as:

electricity generating works means a building or place used for the following purposes, but does not include a solar energy system—

- (a) making or generating electricity,
- (b) electricity storage.

prescribed non-residential zone means any of the following land use zones or a land use zone that is equivalent to any of those zones—

(a) *E4 General Industrial*

As identified above, Electricity Generating Works are permitted with consent under *Section 2.36* as follows;

2.36 Development permitted with consent

(1) *Development for the purpose of electricity generating works may be carried out by any person with consent on the following land—*

(a) *in the case of electricity generating works comprising a building or place used for the purpose of making or generating electricity using waves, tides or aquatic thermal as the relevant fuel source—on any land,*

(b) *in any other case—any land in a prescribed non-residential zone.*

Comment:

The proposal seeks to install Battery Energy Storage System (BESS) on the subject site.

BESS falls under the definition of “electricity generating works” which are permissible with consent under *Section 2.36* of the SEPP (Transport and Infrastructure) 2021 if the development is proposed in a prescribed zone. The subject site is zoned E4 under the council’s LEP, which is a prescribed zone under this SEPP.

Therefore, the proposed development is permitted with consent on the subject lot.

5.2.2 SEPP (PLANNING SYSTEMS) 2021

Chapter 2 State and Regional Development of the SEPP identifies State significant development, State significant infrastructure, and critical State significant infrastructure.

Schedule 6, Section 5(a) of SEPP (Planning Systems) 2021 states:

5 Private infrastructure and community facilities over \$5 million

Development that has a capital investment value of more than \$5 million for any of the following purposes—

(a) *air transport facilities, electricity generating works, port facilities, rail infrastructure facilities, road infrastructure facilities, sewerage systems, telecommunications facilities, waste or resource management facilities, water supply systems, or wharf or boating facilities,*

(b) affordable housing, child care centres, community facilities, correctional centres, educational establishments, group homes, health services facilities or places of public worship.

Comment:

The proposal will have a capital investment value of more than \$5 million and will trigger Regionally Significant Development.

However, we understand due to the minor nature of the proposal, it is unnecessary to refer the application to the Hunter and Central Coast Regional Planning Panel for determination and that the Council can seek delegated authority from the Panel to assess and determine the application. A letter requesting to seek this variation has been attached as **Appendix G** with the report.

5.3 MUSWELLBROOK COUNCIL LOCAL ENVIRONMENTAL PLAN 2009

The subject site is zoned E4 – General Industrial as shown in **Figure 7** below and is considered permitted with consent under *section 2.1 Land Use Zones*.



Figure 7: Land Use Zone

Source: NSW ePlanning Portal accessed May 2023

Zone E4 General Industrial

1 Objectives of zone

- *To provide a range of industrial, warehouse, logistics and related land uses.*
- *To ensure the efficient and viable use of land for industrial uses.*
- *To minimise any adverse effect of industry on other land uses.*
- *To encourage employment opportunities.*
- *To enable limited non-industrial land uses that provide facilities and services to meet the needs of businesses and workers.*

2 Permitted without consent

Building identification signs; Environmental protection works; Flood mitigation works; Sewage reticulation systems; Water reticulation systems

3 Permitted with consent

Air transport facilities; Car parks; Crematoria; Depots; Environmental facilities; Freight transport facilities; Garden centres; General industries; Goods repair and reuse premises; Hardware and building supplies; Heavy industrial storage establishments; Highway service centres; Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Kiosks; Landscaping material supplies; Light industries; Local distribution premises; Neighbourhood shops; Oyster aquaculture; Places of public worship; Plant nurseries; Pond-based aquaculture; Public administration buildings; Recreation areas; Recreation facilities (indoor); Roads; Rural industries; Service stations; Sex services premises; Signage; Storage premises; Take away food and drink premises; Tank-based aquaculture; Timber yards; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Warehouse or distribution centres; Wholesale supplies

4 Prohibited

Any development not specified in item 2 or 3

Comment:

As per Muswellbrook Local Environment (LEP) 2009, BESS is defined as “Electricity Generating Works”, which is not identified as a permissible use within the E4 zone.

However, the proposed works fall within the provisions of SEPP (Transport and Infrastructure)2021, this policy prevails over Muswellbrook Local Environment (LEP) 2009 as identified by section 2.7 of the SEPP and has been addressed in **Section 5.2** above.

Moreover, the proposed development is considered to be consistent with the relevant objectives of the zone, in particular noting the following;

- The proposal provides a new technology on the site, hence diversifying uses.
- BESS is a small addition of 32.5m X 44.2m which is insignificant for the 23.30 ha site. It will not intrude the other potential landuses.
- No vegetation clearing is required for the installation of the proposed facility. Additional landscaping is proposed around the development to avoid any visual impacts of the development on the surrounding properties/land uses.
- The proposed development only requires electricity which is already available to the lot, therefore, avoiding any unreasonable or uneconomic demands for the provision or extension of services.

5.4 DEVELOPMENT CONTROL PLAN

The following table provides an assessment of the proposal against the requirements of the Muswellbrook Development Control Plan (DCP) 2009. Where a variation is sought, due to the nature of the development/site, the potential impacts have been considered and justified in the following section.

Item	DCP Requirement	Proposed	Compliance
Section 10 – Industrial Development			
10.1.1 Setbacks	<p>a) To reduce the bulk and visual impact of industrial buildings from public roads.</p> <p>b) To maintain adequate site distance for road users.</p> <p>c) Buildings and structures should be setback at least 10.0m from the front (or principal) boundary alignment.</p> <p>d) Front setbacks can be varied based on assessment of the following criteria:</p> <ul style="list-style-type: none"> - Minimum 6 metres landscaping across the frontage of the site. - Provision of car parking facilities - Building height, bulk and layout. Setbacks may be increased for buildings of substantial height, bulk etc. - The nature and needs of the industrial activity. - The existing character of the streetscape. 	<p>The proposed compound has appropriate front, side, and rear setbacks. Refer to <i>Appendix C</i>. It complies with the given standard of setback at least 10m from the front boundary.</p> <p>The battery compound is fairly small and is contained within a 2.4m fencing. Additional landscaping is integrated to avoid any impacts on the surrounding rural character or streetscape.</p>	Yes
10.1.2 Building Design	<p>a) To provide industrial buildings which are both functional and attractive in the context of their environment.</p> <p>b) To reduce the visual impact of larger industrial buildings.</p>	<p>The proposed BESS compound is a small addition of 1436.5m² which is insignificant for the 92.63 ha site. The battery units are pre-fabricated and have low reflective properties.</p>	Yes

		Moreover, it is appropriately sited on the lot, integrated with landscaping, so to avoid any visual impacts.	
10.2.1 Drainage and Stormwater	<p>a) To ensure adequate drainage facilities are provided within the site to collect and carry stormwater to external drainage systems.</p> <p>b) To prevent the hazard of flooding and diversion or concentration of water onto adjoining properties or public areas.</p> <p>c) To ensure that the public drainage systems can adequately accept additional runoff generated by developments.</p>	<p>The proposal will not increase the impervious surfaces, nor will it require a connection to public drainage.</p> <p>All water falling on the battery cabinets and other structures will go to the ground which will remain in its current form, refer to Appendix E for more detail.</p>	Yes
10.2.2 Landscaping	a) To improve the visual quality and general amenity of industrial developments through implementing effective low-maintenance landscaping of industrial sites relative to the scale of buildings on the site.	<p>The proposed BESS compound is a small addition of 1436.5m² which is insignificant for the 23.30 ha site. It is sited in an area with appropriate setbacks to the existing road and other surrounding developments. The compound is secured within a 2.4m high-security fence.</p> <p>Moreover, new landscaping will be integrated with the development to avoid any visual impact on the existing residential(rural) to the south. Refer to Appendix I for the details.</p>	Yes
10.2.3 Visual amenity with regard to car	<p>a) To protect the visual amenity of the area.</p> <p>b) To ensure large sites contain measures that enhance the visual appearance.</p>	No formal or dedicated parking facilities are proposed or required to be provided on the site. Once installed, the site will work independently without any	Not Applied

parking and operational areas		permanent/full-time staff. Maintenance vehicles can park within the site as needed to service the batteries. Therefore, no visual impacts are considered with regard to car parking.	
10.2.4 Vehicular Movements and Access	a) To prevent delay or obstruction to traffic by vehicles waiting to gain access to the site. b) To accommodate the movement of employee and visitor traffic to and from the site in a forward direction.	As explained above, once installed the BESS will work independently without requiring any staff or car parking. Therefore, it will not generate any traffic/or vehicular movements.	Not Applied
10.3.1 Water and sewer	a) To ensure adequate provisions are made to service the proposed development. b) To ensure available capacity exists in Council's Water and Sewerage Augmentation Schemes to accept the proposed development.	The proposed development will not require any additional services other than electricity which is already available on the site.	Not Applied
10.3.1 Services	All industrial developments shall be serviced by an adequate supply of electricity in accordance with the requirements of Energy Australia.	The subject site is appropriately serviced by electricity.	Yes

Table 2: DCP Compliance Table
Source: HDB Town Planning and Design

6.0 KEY PLANNING/ENVIRONMENTAL ISSUES

6.1 CONTEXT AND SETTING

The proposal seeks approval to install a Battery Energy Storage System (BESS) on 23.30-ha industrial property.

The proposed development is 32.5m X 44.2m is relatively insignificant when compared to the size of the property. The facility will have a high-security fence around it. New landscaping is proposed around the development, screening the development from surrounding properties and Merriwa Road. Refer to **Appendix I**.

Therefore, it is considered the proposal would not have any impact on the surrounding rural character.

6.2 ACCESS, TRANSPORT, AND TRAFFIC

A new access driveway (3m wide) from Merriwa Road (Golden Highway) will provide access to the Battery facility.

6.3 VISUAL IMPACT

The site has Merriwa Road (Golden Highway) to its east.

The proposed structures are not prominently visible and stand a maximum of 2.52m high. They are manufactured of non-reflective material.

To effectively screen all views of the battery plant, a perimeter screen planting of shrubs and trees is proposed around the fence of the development, refer to **Appendix I**. This will effectively intercept view paths for drivers on Golden Highway.

6.4 SERVICES

The proposed development will not require any additional services other than electricity which is already available on the site.

6.5 STORMWATER

The proposal will not increase the impervious surfaces, nor will it require a connection to public drainage.

All water falling on the battery cabinets and other structures will go to the ground which will remain in its current form, refer to **Appendix E** for more detail.

6.6 FLORA AND FAUNA

No significant vegetation will be removed for the installation of the proposal.

6.7 HERITAGE

There are no recorded items of Heritage or Aboriginal Cultural significance on the site. Refer to *Appendix B – AHIMS Report*.

6.8 BUSHFIRE

The site is mapped as a Bushfire Prone Land. A bushfire report is attached as *Appendix H – Bushfire Report*.

6.9 FLOODING

The site is not mapped as Flood Planning Area under flood mapping by the council.

6.10 WASTE

During the construction phase, the waste will be collected in large skip bins on-site and removed at the completion of construction for recycling. Construction waste will generally consist of:

- Excess wiring from installation and attachment to grid.
- Steel offcuts from framing; and
- Cardboard and plastic from packaging of battery units.

The general waste management practices that will be followed on the site will be:

- Avoidance – design, measure and calculate materials required to avoid excess materials being generated.
- Reuse – there is limited potential for reuse of materials during construction, however, items such as fencing may be reused where possible; and
- Recycling - the waste will be separated into various recyclable products, i.e. timber, glass, metals, and be disposed of at the appropriate recycle centres as required. The timber pallets will be advertised locally for free collection for recycling purposes.

Most of the waste will be removed for recycling.

No waste will be generated during the operation of the Battery Energy Storage System (BESS).

6.11 SAFETY AND SECURITY

It is considered that the proposal will not have any adverse impacts on the safety and security of the area.

A 2.4m security fence will be constructed around the compound as shown in *Appendix E*.

7.0 PROJECT JUSTIFICATION AND NEED

The proposal to develop a new 4.98 MW Battery Energy Storage Facility on an existing under-utilised industrial property provides the local area with a source of renewable energy, whilst having minimal environmental impacts and disturbance to the land.

The subject site has an ideal location with easy access to the property and an existing electrical grid and substation. It will have negligible impacts on the surrounding properties or existing and future uses.

This proposal is one of several future BESS proposed for the Region and is consistent with the goals under *Objective 1: Diversifying Hunter's mining, energy, and industrial capacity* and *Objective 7: Reach net zero and increase resilience and sustainable infrastructure* of Hunter Regional Plan 2041.

8.0 CONCLUSION

This Statement of Environmental Effects has been prepared having regard to the requirements of s4.15 of the *Environmental Planning and Assessment Act 1979*.

In reviewing the relevant statutory and non-statutory planning standards and objectives, it is concluded that the proposal presents:

- Minimal adverse impacts on the surrounding environment;
- Permissible development under *section 2.36 – SEPP (Infrastructure and Transport) 2021*;
- A sustainable design that enables creative and efficient use of the land; and
- Compliant with all relevant statutory and non-statutory planning provisions.

Muswellbrook Shire Council is therefore respectfully requested to grant consent to this development application, with appropriate conditions.

APPENDIX A

TITLE SEARCH

APPENDIX B

AHIMS REPORT

APPENDIX C

SITE LAYOUT

APPENDIX D

COMPOUND LAYOUT

APPENDIX E

COMPOUND DETAILS

APPENDIX F

BESS SPECIFICATIONS

APPENDIX G

LETTER TO MSC

APPENDIX H

BUSHFIRE REPORT

APPENDIX I

LANDSCAPE PLAN