Wellington South Battery Energy Storage System

Submissions Report

Prepared for AMPYR Australia Pty Ltd

July 2023

Wellington South Battery Energy Storage System

Submissions Report

AMPYR Australia Pty Ltd

J210534 RP1

July 2023

Version	Date	Prepared by	Approved by	Comments
V1	5 June 2023	Samantha Hayes	Claire Burnes	
V2	21 July 2023	Samantha Hayes	Claire Burnes	

Approved by

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21 July 2023

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Executive Summary

ES1 Background

AMPYR Australia Pty Ltd (AMPYR) and Shell Energy Operations Pty Ltd (Shell) propose to develop and operate the Wellington Battery Energy Storage System (the project), located approximately 2.2 km north-east of the township of Wellington in the Dubbo Regional Council local government area (LGA) and within the New South Wales (NSW) Government declared Central-West Orana Renewable Energy Zone (CWO REZ).

The project incorporates a large-scale battery energy storage system (BESS) with a discharge capacity of 500 megawatts (MW), along with connection to the Wellington substation (and associated upgrade works) and associated ancillary infrastructure to facilitate transfer of energy to and from the electrical grid.

ES2 Submissions received

The majority of submissions received by the Department of Planning and Environment (DPE) following the public exhibition of the EIS were submissions from regulatory agencies. There was one submission received from an organisation and none received from special interest groups. There were only three submissions received from the general public – one in support, one provided comment and one objected to the project.

The most common aspects raised by the community submissions include:

- support for the project in providing critical grid support services
- changes to visual amenity
- potential for night time security lighting
- audible impacts from inverters
- potential for electro magnetic radiation interference with radio operations
- hazardous material contamination.

ES3 Actions taken since EIS exhibition

Following the exhibition of the EIS, consultation has been completed with a number of regulatory agencies and organisations, including:

- Department of Planning and Environment (DPE)
- Transport for NSW (TfNSW)
- DPE – Hazards
- Biodiversity, Conservation and Science Directorate (BCS)
- Dubbo Regional Council (Council)
- TransGrid.

Additional community consultation has also been completed with the two receptors located closest to the project.

In response to the submissions received and further consultation, a number of project refinements have occurred which have been presented in an accompanying Amendment Report (EMM 2023). These refinements include:

- an amended site access, which connects to the north-east of the project onto Twelve Mile Road
- an updated transmission connection layout, which connects the project to the TransGrid Wellington Substation
- a refined BESS layout to allow for appropriate separation between BESS subunits.

To support the Amendment Report, a Traffic Impact Assessment Addendum, updated Biodiversity Development Assessment Report (BDAR) and Noise and Vibration Memorandum Letter have also been prepared and are included as appendices to the Amendment Report.

ES4 Evaluation and conclusion

The project involves the development and operation of a large-scale BESS with a discharge capacity of 500 MW within the NSW Government declared CWO REZ. The project will function to smooth out fluctuations in electricity supply from these new intermittent power sources, providing system security and other network services.

At a regional level, the project will contribute to the regional economy through increases in direct and indirect business turnover, value add, household income and job creation.

Potential environmental and social impacts will be managed through the mitigation and management measures described within the EIS, such that the project will not result in significant environmental or social impacts.

The project will achieve the following overall benefits:

- alignment with Commonwealth, NSW electricity policies and strategies, and regional plans
- contribution to the overall storage capacity of the NEM and provide greenhouse gas benefits by increasing the surplus of electricity generated from renewable sources that are intermittent (such as solar and wind) and where previously gas-fired generation has supported peak demand
- improvements to network reliability by providing back-up power during network disruptions
- decreases to average prices by smoothing out price differences (i.e. by arbitraging electricity price differences during peak and off-peak periods).

The project will have both impacts and benefits on the surrounding natural and built environments and the impacts are not predicted to be significant and can be adequately managed through appropriate design, mitigation and management during construction and operation. On balance, it is recommended that the project should be approved.

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1 Introduction

1.1 Background

AMPYR Australia Pty Ltd (AMPYR) and Shell Energy Operations Pty Ltd (Shell) (the proponent) propose to develop and operate the Wellington Battery Energy Storage System (the project). This involves the development of a large-scale battery energy storage system (BESS) with a discharge capacity of 500 megawatts (MW). The project also incorporates an on-site substation and connection infrastructure to facilitate transfer of energy to and from the electrical grid, along with associated ancillary infrastructure as summarised in Section 1.2. The project will be operated by Shell Energy Australia (Shell).

The site proposed to be developed is located within the Dubbo Regional Council local government area (LGA) at 6,773 Goolma Road at Wuuluman, on land zoned RU1 Primary Production and SP2 Infrastructure under the Dubbo Local Environment Plan (LEP). It will be located directly adjacent to the TransGrid owned Wellington Substation and is approximately 2.2 km north-east of the township of Wellington and 44 km south-east of the township of Dubbo. The project will incorporate either overhead or underground transmission line and upgrade works to Wellington substation in the adjoining TransGrid owned landholding (Lot 1 DP 1226751).

The local context is shown in Figure 1.1 and the project overview is shown in Figure 1.2.

The site is located within the New South Wales (NSW) Government declared Central-West Orana Renewable Energy Zone (CWO REZ) and will complement nearby existing and proposed renewable energy generation assets, including the Wellington Solar Farm (located opposite Goolma Road), Wellington North Solar Farm, Uungula Wind Farm, and the proposed 3 gigawatt (GW) of additional generation to be delivered as part of the CWO REZ, by smoothing out fluctuations in electricity supply from these new intermittent power sources, and providing system security and other network services. In operation, the project will be one of the largest battery storage projects in NSW and will contribute to the overall storage capacity and reliability of the National Electricity Market (NEM). The project also supports state and Commonwealth emission commitments by facilitating renewable energy input into the grid network.

1.2 Project overview

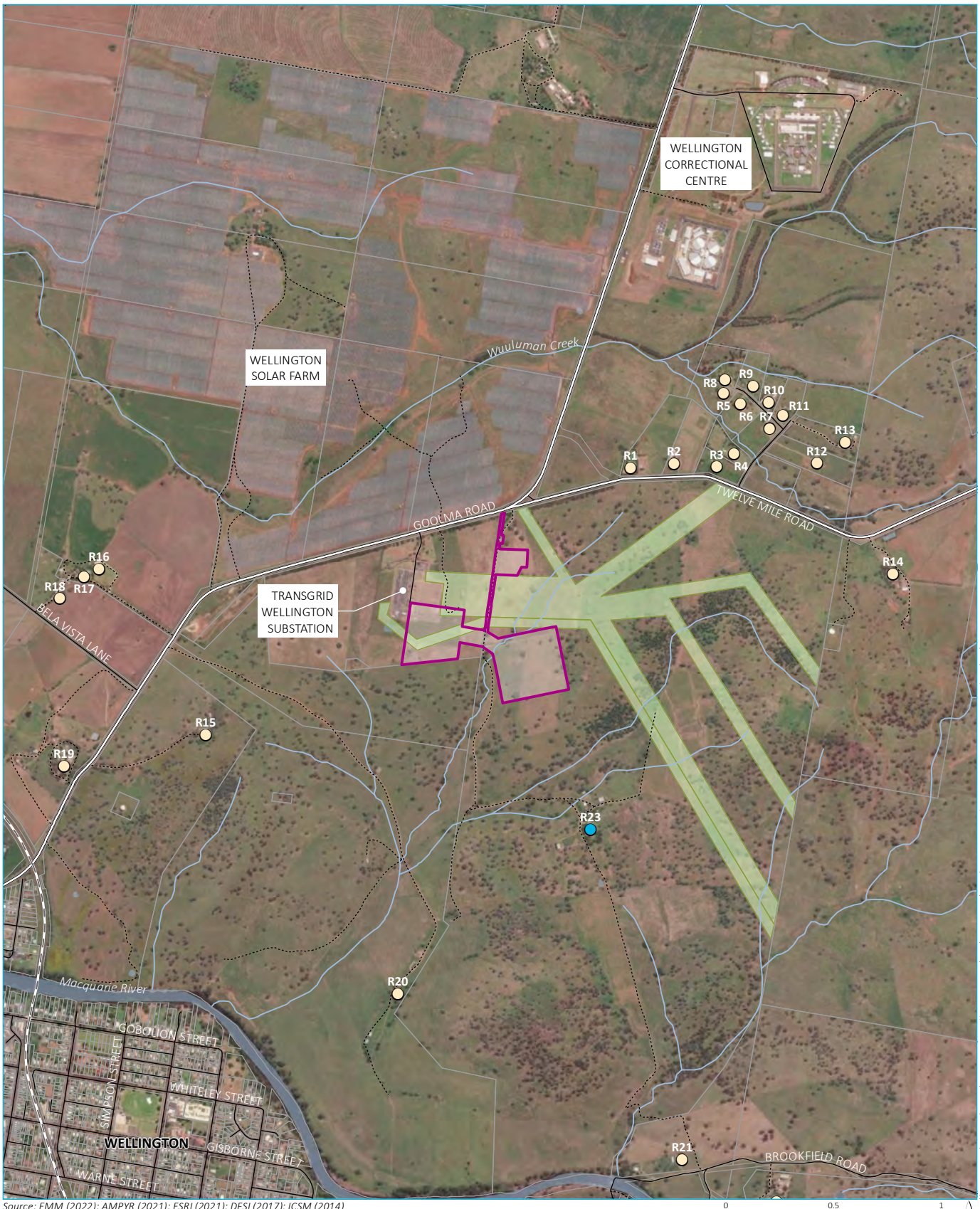
The project will involve the following components:

- Construction and operation of the BESS compound, comprising up to 6,200 pre-assembled battery enclosures housing lithium-ion battery packs and related control equipment, transformers and inverters with a peak maximum generation capacity of 500 MW.
- Construction and operation of an on-site BESS substation, comprising two 330 kilovolt (kV) transformer bays, 33/0.440 kV auxiliary transformers, and auxiliary services buildings including an operations and maintenance building to house supporting equipment and systems.
- Connection to the adjoining Wellington Substation by way of an underground or aboveground transmission line and associated easement.
- Upgrade of the TransGrid Wellington Substation, which will include a southern bay extension to accommodate an additional 330 kV switch bay and relocation of security fencing.
- Ancillary infrastructure to facilitate construction and operation of the project, including a new access road, a washdown bay for incoming vehicles, and a control and office building.

The project also involves a subdivision in order to separate the BESS from the remainder of the site, which will continue to be used for cropping and grazing.

Construction of the project is expected to commence in April 2024, subject to project approval, labour and equipment availability.

Operation of the project is expected to commence from 2025 for a period of approximately 20 years, at which point the project will be extended or decommissioned. Throughout its operational life, certain components and technologies may be replaced and/or upgraded, however such works are unlikely to be intensive. The BESS will operate 24 hours a day, 7 days a week and be operated remotely, with periodic infrastructure maintenance undertaken onsite.



Source: EMM (2022); AMPYR (2021); ESRI (2021); DFSI (2017); ICSM (2014)

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KEY

- Development boundary
- Rail line
- Major road
- Minor road
- Vehicular track
- Watercourse/drainage line
- Waterbody
- Cadastral boundary
- Freehold easement

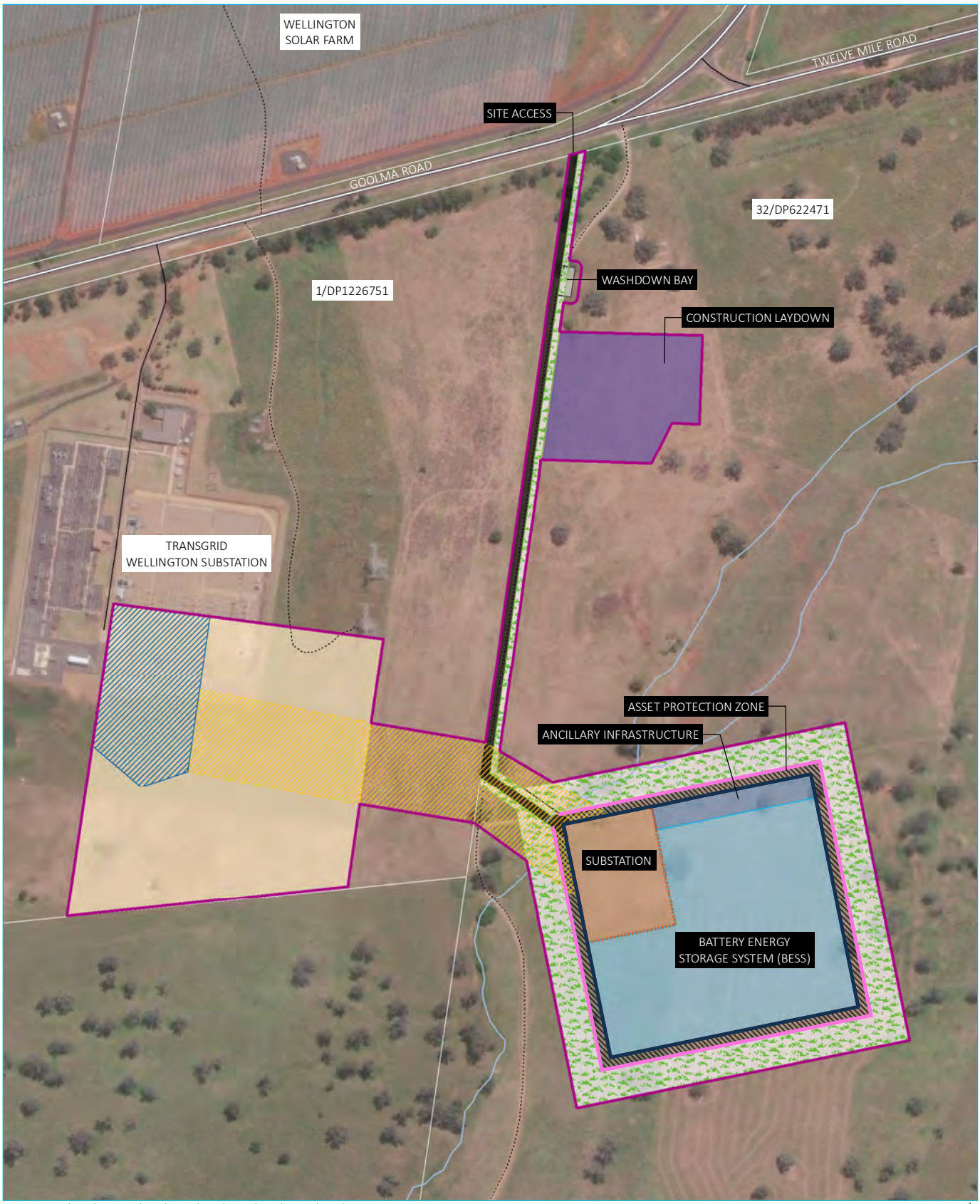
Receivers

- Non-project residential receivers
- Project participating landowner

Local context

Wellington Battery Energy Storage System
Response to submissions report
Figure 1.1

EMM creating opportunities



Source: EMM (2023); AMPYR (2022); ESRI (2023); DFSI (2017); ICSM (2014)

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KEY

- Development boundary
- BESS infrastructure

Project components

- Battery Energy Storage System (BESS)
- Substation
- Ancillary infrastructure (carpark, office, control room)
- Indicative asset protection zone (10 m)
- Transmission corridor
- Indicative landscaping (post construction)
- Indicative location of noise bund
- Indicative TransGrid substation upgrade core infrastructure area
- Indicative TransGrid substation upgrade disturbance area
- Washdown bay
- Construction laydown
- Access road

Existing environment

- Major road
- Minor road
- Vehicular track
- Watercourse/drainage line
- Cadastral boundary

Project overview

Wellington Battery Energy Storage System
Response to submissions report
Figure 1.2

EMM creating opportunities

1.3 Purpose of this report

The Wellington BESS EIS was exhibited in November and December 2022. Following the exhibition period, submissions were received from government agencies and the community. This report has been prepared by EMM Consulting Pty Limited (EMM) generally in accordance with the *State significant development guidelines – preparing a submissions report* (DPIE 2022).

The purpose of this report is to consider and respond to submissions made by various agencies, organisations, and the community, in relation to the EIS for the project.

This report also describes the additional activities undertaken relating to the project since exhibition of the EIS, including a summary of project refinements, further technical studies undertaken, and stakeholder and community engagement activities.

An accompanying Amendment Report has been prepared by EMM (2023) to outline and assess project refinements incorporated in response to issues raised by Transport for New South Wales (TfNSW), Department of Planning and Environment (DPE) – Hazards, and as a result of TransGrid's further design work and refinement of the connection and infrastructure upgrade requirements to connect to the adjacent Wellington substation. A copy of the Amendment Report will be submitted to DPE alongside this submissions report.

1.4 Report structure

This submissions report is structured as follows:

- **Chapter 1 – Introduction**: provides an overview of the project, approval process, and the purpose and structure of this report.
- **Chapter 2 – Analysis of submissions**: provides a detailed summary of the submissions received on the project, including from where the submissions were received, and the key issues raised.
- **Chapter 3 – Actions taken since exhibition**: describes the activities undertaken by the proponent since exhibition of the EIS, including the project refinements, additional technical studies and stakeholder engagement activities undertaken.
- **Chapter 4 – Response to submissions**: provides responses to matters raised by government agencies, organisations and community members in their submissions on the EIS and the accompanying technical studies undertaken for the project.
- **Chapter 5 – Updated project justification:**
- **Appendices** – including:
    - Appendix A Submissions register
    - Appendix B Evidence of consultation.

There have been no updates to the mitigation measures as part of this submissions report. A consolidated list of amended mitigation measures is attached as Appendix C to the Amendment Report (EMM 2023).

2 Analysis of submissions

2.1 Breakdown of submissions

Following the public exhibition of the EIS, DPE received submissions from government agencies, stakeholders and the community. The majority of submissions were received from government agencies. Submissions are available to view on DPE's website at: https://pp.planningportal.nsw.gov.au/major-projects/projects/wellington-south-battery-energy-storage-system

A breakdown of the submissions is provided in Table 2.1.

Table 2.1 Summary of submissions received

Source/type	Object	Support	Comment	Total
Government	0	-	13	13
Community	1	1	1	3
Other	-	-	1	1
Total	**1**	**1**	**15**	**17**

The following NSW Government agencies provided advice:

- Biodiversity, Conservation and Science Directorate (BCS)
- Crown Lands
- DPE – Water
- Department of Primary Industries – Agriculture
- Department of Primary Industries – Fisheries
- Environment Protection Authority (EPA)
- Fire and Rescue NSW (FRNSW)
- DPE – Hazards
- Heritage NSW
- Department of Regional NSW – Mining, Exploration and Geoscience (MEG)
- Rural Fire Service (RFS)
- Transport for NSW (TfNSW)
- Dubbo Regional Council (Council).

Submissions categorised as other include:

- TransGrid.

2.2 Categorisation of issues

Matters raised in the submissions have been classified as one of the following five broad categories in accordance with the guidelines DPIE (2022):

1. the project (e.g. the site, the project area, the physical layout and design, key uses and activities, timing)
2. procedural matters (e.g. level of quality of engagement, compliance with the SEARs, identification of relevant statutory requirements)
3. the environmental, social or economic impacts of the project (e.g. air, biodiversity, heritage)
4. the justification and evaluation of the project as a whole (e.g. consistency of project with Government plans, policies or guidelines)
5. issues that are beyond the scope of the project assessment (e.g. broader policy issues) or not relevant to the project.

Each of these categories has been divided into sub-categories and key matters as outlined in Table 2.2.

Table 2.2 Categorisation of issues

Categories	Key matters
Biodiversity	• Ensuring the BDAR is certified 14 days prior to submission. • Revision of vegetation mapping. • Removal of the Golden Sun Moth from the BAM-C case. • Further surveys for the Pink-tailed Legless Lizard. • Review of Superb Parrot species data based on suitable hollow bearing trees. • Clearance protocols for resident threatened species.
Noise and vibration	• Noise from cooling systems at night time. • Night time sleep disturbances.
Hazard and risk	• Preparation of a Fire Safety Study, Emergency Response Plan, Emergency Services Information Package, and an Emergency Responders Induction Package. • Provide a comprehensive bush fire consultant's report. • Concern that lithium batteries are hazardous and toxic if not managed correctly.
Traffic and transport	• Upgrade of the Goolma Road/Twelve Mile Road intersection will not be available for the anticipated construction traffic for the project. • The location of a new access location should be considered as the proposed access location is too close to the tight horizontal curve on Goolma Road. • Potential for temporary access location until Goolma Road/Twelve Mile Road intersection upgrades are completed. • Potential to access project via existing TransGrid substation access. • Calculation of sight distances based on posted speed limit. • Details of the necessary heavy vehicle BESS transportation.
Visual	• Daytime views of BESS. • Screening to take up to a decade before the screening will shield the BESS. • Potential for night time security lighting to be visible from a neighbouring residence.
Groundwater	• The requirement of a groundwater bore and pump. • Sufficient water entitlements and appropriate approvals.

Table 2.2 Categorisation of issues

Categories	Key matters
Contamination	• Consideration of possible contamination by the lithium-ion batteries.
Consultation	• Provide a response to consultation completed with the holders of the exploration licences.
Design	• Concept plans for the control and office building required for construction certificate.
Radio interference	• Impact of electromagnetic radiation on radio interference.
Loss of power	• Concern that BESS will not work during blackout.

3 Actions taken since exhibition

3.1 Project refinements

An Amendment Report has been prepared by EMM (2023) which presents the following amendments to the original project as per the EIS:

- an amended site access, which connects to the north-east of the project on Twelve Mile Road
- an updated transmission connection layout from the project to the TransGrid Wellington Substation resulting in a refined development boundary
- a revised BESS layout to allow for appropriate separation between BESS subunits.

The refinements listed above are shown in Figure 3.1 of the Amendment Report.

These project refinements have been considered in consultation with DPE, TfNSW, Council, DPE – Hazards and TransGrid. Details of the consultation completed is found in Section 3.2 and Appendix B. Assessments of the potential impacts associated with the project refinements are outlined in Amendment Report.

3.2 Consultation

3.2.1 Agency consultation

i Transport for NSW

In response to the submission received from TfNSW, additional consultation was undertaken with TfNSW and DPE between January and May 2023 (refer to Appendix B.1) in an attempt to resolve identified issues from TfNSW relating to the connection of the site access via Goolma Road immediately north of the project site. Resolution of this connection option could not be achieved. Alternate site access options were considered, leading to the identification of the only viable alternative, being a new site access via Twelve Mile Road.

The proposed access via Twelve Mile Road is described and assessed in the accompanying Amendment Report (EMM 2023).

As Twelve Mile Road is a local, council controlled road, no further consultation was undertaken with TfNSW regarding this connection option, and all issues raised by TfNSW specifically in relation to the road design and connection via Goolma Road are no longer of relevance for the project assessment.

ii Dubbo Regional Council

Additional consultation with Council was undertaken to discuss the proposed access option via Twelve Mile Road. On 24 April 2023, the proposed design was provided to Council via email. A teleconference was held with Council on 28 April 2023 to discuss the proposed design for the Twelve Mile Road access and receive feedback from Council. During the meeting, Council raised that they would like to see a detailed design of the access. This was provided to Council on 12 May 2023. On 5 June 2023, Council confirmed their acceptance of the proposed design via email (refer to Appendix B.2).

iii DPE – Hazards

The proponent completed additional consultation with DPE – Hazards via phone calls and emails to discuss their submission. On 10 May 2023, DPE – Hazards was provided a response to their submission and requested feedback. A meeting with DPE – Hazards was held via teleconference on 19 May 2023, where DPE – Hazards confirmed they were happy with the proposed approach to their submission.

A revised version of the response was submitted to DPE – Hazards on 8 June 2023. DPE – Hazards responded via email on 27 June 2023 confirming that the additional information required to address the concerns raised by DPE was supplied.

iv Biodiversity, Conservation and Science Directorate

On 18 January 2023, a meeting was held with EMM's ecologists and Biodiversity, Conservation and Science Directorate (BCS) to discuss the submission received from BCS and a planned approach to respond to the submission.

Further consultation with the BCS has been undertaken to discuss additional survey of the Key's Matchstick Grasshopper and the Pink-tailed Legless Lizard.

a Key's Matchstick Grasshopper

EMM's ecologist contacted BCS on 31 August 2022, to seek clarity over the timing and guidance of methodology for the additional survey for the Key's Matchstick Grasshopper. BCS responded on 31 August 2022, stating that the additional survey could be completed as part of the submissions reporting stage. On 11 October 2022, BCS provided additional advice on survey methodology for the Key's Matchstick Grasshopper. The additional survey was completed on 14–15 December 2022, with the findings reported in the revised BDAR.

b Pink-tailed Legless Lizard

On 18 January 2023, EMM's ecologist spoke with BCS to discuss an alternative survey window for this project for Pink-tailed Legless Lizard. BCS responded via email on 18 January 2023, stating that they accepted the alternate survey window and recommended a survey approach for detection within optimal climatic conditions. Additional survey of the Pink-tailed Legless Lizard was completed on 9 March 2023, with the findings reported in the revised BDAR.

3.2.2 Organisations

i TransGrid

Ongoing consultation with TransGrid was undertaken through December 2022 to May 2023 to discuss the potential for use of TransGrid's existing entranceway as an alternative access option as recommended by TfNSW. This consultation identified a number of obstacles to this as a viable access option, thereby resulting in the identification of an alternate access via Twelve Mile Road, as outlined in the Amendment Report (EMM 2023).

Ongoing consultation with TransGrid was also undertaken up to July 2023 in relation to further detailed design of the connection and infrastructure upgrade requirements to connect to the adjacent Wellington substation. As a result of additional design work, a minor revision to the transmission corridor and development boundary is required and is illustrated in the Amendment Report. TransGrid confirmed their acceptance of the refined development boundary on 4 July 2023, as per Appendix B.3.

3.2.3 Community consultation

Further consultation with two nearby receptors has been held since the EIS exhibition.

Over January and February 2023, consultation with R15 was conducted to discuss the concerns raised in the comments provided in response to EIS exhibition. These concerns included noise, visual and electromagnetic radiation (EMR) impacts. Further detail on these discussions is provided in Section 4.3.2. Further consultation in July 2023 was conducted to provide additional information from potential equipment suppliers regarding EMR impacts.

Between December 2022 and July 2023, consultation with R1 continued to pursue an agreement for on-site noise mitigation measures, which was reached prior to submission of this RtS report.

3.3 Further technical assessments and investigations

In response to submissions received from government agencies, further assessments were completed and include:

- Amendment Report.
- Traffic Impact Assessment Addendum
- Updated Biodiversity Development Assessment Report (BDAR)
- Noise and Vibration Memorandum Letter.

These reports have been prepared to address the issues as discussed below.

3.3.1 Amendment Report

An accompanying Amendment Report (EMM 2023) has been prepared to describe and assess the project refinements detailed in Section 3.1. The Amendment Report is supported by a Traffic Impact Assessment Addendum, updated BDAR and Noise and Vibration Memorandum Letter.

3.3.2 Traffic Impact Assessment Addendum

An Addendum Traffic Impact Assessment has been prepared and is attached as an appendix to the Amendment Report (EMM 2023). The Traffic Impact Assessment Addendum addresses the submission received from TfNSW, considered the alternate access options, and outlines the concept design for the proposed alternative site access via Twelve Mile Road.

3.3.3 Updated Biodiversity Development Assessment Report

The BDAR has been updated to include assessment of the new Twelve Mile Road access option, and to address matters raised by BCS. Updates to the BDAR include:

- Additional survey of the proposed Twelve Mile Road access option.
- Survey methods and results for the Pink-tailed Legless Lizard to confirm species presence or absence.
- Survey methods and results for the Key's Matchstick Grasshopper to confirm species presence or absence.
- SAII assessment for impacts on Box Gum Woodland.
- Exclusion of Golden Sun Moth as a candidate species (geographic constraint has been updated in the BAM-C).
- Update to assessment of potential impacts to Superb Parrot, Pink-tailed Legless Lizard, Regent Honeyeater and Swift Parrot.
- Consideration of additional candidate species associated with the Twelve Mile Road access option, including Barking Owl and Masked Owl.
- Update to the ecosystem and species credits required for offsetting.

Additional information can also be found in Section 4.1.1. A copy of the updated BDAR is attached as an appendix to the accompanying Amendment Report (EMM 2023).

3.3.4 Noise and Vibration Memorandum Letter

An Addendum noise and vibration impact assessment has been prepared and is attached as an appendix to the Amendment Report (EMM 2023). The report compares the potential noise impacts from the design option considered in the EIS (access via Goolma Road) with the alternate access option via Twelve Mile Road. It considers both the changes to construction noise from the realignment, and road traffic noise on R1 from additional traffic on Twelve Mile Road. The assessment of the alternate access option also provided the opportunity to further refine the noise model to capture only construction vehicles on the site access road, rather than the full schedule of construction plant and equipment across the whole disturbance area.

4 Response to submissions

4.1 Response to agency submissions

4.1.1 Biodiversity, Conservation and Science Directorate

BCS reviewed the project's biodiversity development assessment report (BDAR) completed as part of the EIS and has provided the follow biodiversity recommendations:

- 1.1. The BDAR should be certified by the assessor within 14 days of the relevant submission of the WIS. The BAM-C credit case and the BAM-C generated credit report should be finalised within 14 days of certifying the BDAR.

The BAM-C case and credit report has been finalised within 14 days of submission of the BDAR and Amendment report:

- 2.1. Revise the vegetation mapping to clearly delineate between native vegetation, non-native vegetation and Category 1 land and provide justification for each in the BDAR.

The native vegetation layer has been revised to include all native vegetation based on updated PCT mapping within the subject land, regional mapping and aerial imagery. Justification is provided in Table 3.1 of the BDAR:

- 2.2. Revise the vegetation mapping to include all native vegetation.

Vegetation mapping has been revised to include all native vegetation based on updated PCT mapping within the subject land, regional mapping and aerial imagery:

- 3.1. Provide further justification and field data to support the removal of the Golden Sun Moth from the BAM-C case. Alternatively, the proponent can provide an expert report, conduct targeted surveys or assume presence for the species and offset accordingly.

Since preparation of the EIS, the geographic constraint for the Golden Sun Moth has been updated in the BAM-C. This geographic constraint is now south of the Mid-Western Highway. The subject land occurs north of the Mid-Western Highway, therefore the species has been excluded as a candidate species in the updated BDAR:

- 4.1. Conduct further surveys for the Pink-tailed Legless Lizard to confirm species presence or absence from the subject land or assume presence of the species.

Further surveys were conducted on 9 March 2023 after advice from BCS indicated suitable survey methods and timing. The species was not found during these surveys. Despite this, the Pink-tailed Legless Lizard has been assumed present for the purpose of the BAM. This is due to the recent records within close proximity associated with the Orana BESS project, contiguous habitat between the Orana BESS project and the subject land, and the timing of the surveys being conducted outside of the specific timeframe in the BAM-C:

- 5.1. Review and/or revise the Superb Parrot species polygon based on the presence of suitable hollow bearing trees.

The Superb Parrot species polygon has been updated to reflect changes to the subject land footprint. Additional hollow-bearing tree surveys have been conducted to include all suitable trees within the subject land and those within 100 m of the subject land (the required buffer for the Superb Parrot polygon):

- 6.1. Prepare specific and targeted clearance protocols for resident threatened species within the subject land.

Mitigation measures have been updated to reflect stronger pre-clearance measures for Superb Parrot, Pink-tailed Legless Lizard and unexpected threatened species finds. Mitigation measures exclude removal of breeding habitat within the breeding months of Superb Parrot (September to December) and Pink-tailed Legless Lizard (December to late March). Habitat will also be relocated within the cadastral boundary of the project.

4.1.2 Crown Lands

Crown Lands have reviewed the proposal and stated:

> As no Crown land, roads or waterways are in the vicinity of the proposal/are affected by the proposal, Crown Lands has no comments at this time.

Crown Land's submission did not contain any matter for further consideration in this report.

4.1.3 Department of Planning and Environment – Water

DPE – Water reviewed the EIS and provided recommendations regarding the requirement of a groundwater bore:

- 1.1 Recommendation – Prior to Determination: That the proponent confirms if a bore is required for the project. If the bore is required, it is recommended an impact assessment be completed to confirm the necessary yields and quality, and to address impacts on the water source and water users.

- 1.2 Recommendation – Post Approval: That the proponent:

  a) ensures sufficient water entitlement is held in a water access licence/s to account for the maximum predicted take for each water source prior to take occurring

  b) maintains its commitment to preparing a Construction Environmental Management Plan including an Erosion and Sediment Control measures

  c) ensures that works within waterfront land are in accordance with the Guidelines for Controlled Activities on Waterfront Land.

- 1.3 Explanation: If new bores or pumps are proposed it is recommended their installation and operation be assessed as part of the SSD assessment process to avoid the need to obtain approvals separately under the *Water Management Act 2000*. The bore impact assessment should be completed in consideration of the DPE Water assessing groundwater applications factsheet.

  The proponent should be aware of the rules of the relevant water sharing plans and how they may impact the project and ability to trade or take water.

  We recommend that erosion and sediment control measures are developed in accordance with industry standards including the guideline, *Managing Urban Stormwater: Soils and Construction* (Landcom 2004).

The proponent proposes to connect the project to Council's water supply network for construction and retain the connection for operational use. The appropriate application documents will be submitted to Council in accordance with Council's Water Supply Services Policy. Applicable design documentation will be provided as part of the construction certificate process. As a result, the proponent does not require the construction of a groundwater bore or water entitlements under a water access licence for the purposes of construction or operation of the facility.

For the purposes of irrigation of screening landscaping, the participating landholder's existing bore may be utilised, in which case approval would be required for the work approval to be amended to authorise the additional purpose (being irrigation). In addition, to attach water entitlement to the bore, a zero-share WAL in the water source would be required, along with engagement in the water market to secure the required entitlement (quantity).

With regards to the preparation of the Construction Environmental Management Plan (CEMP), prior to construction, temporary soil and water management measures would be detailed and documented as part of the overall CEMP to address temporary risks to water quality and drainage during the construction phase and will also reflect industry best practice.

Works will be required on waterfront land (as mapped by the Water Management (General) Regulation 2018 hydroline dataset) associated with Watercourse A. Whilst a Controlled Activity Approval (CAA) is not required for the project due to its SSD designation, relevant guidelines have been considered in the development of the project description and assessment with a view to minimising potential impacts to the riparian corridor. It is noted that for the current conceptual site layout, the substation location shows a minor encroachment on the Inner 50% of the Vegetated Riparian Zone (VRZ). The final siting of the substation infrastructure will be determined during detailed design, where it will be sited to avoid the inner 50% of the VRZ, where possible.

4.1.4 Department of Primary Industries – Agriculture

DPI – Agriculture has reviewed the EIS and provided the following comments:

> The assessment is comprehensive in relation to dealing with the land resource and rehabilitation of the land on final construction. The LUCRA deals with the main issues and how they will be addressed in relation to identified performance targets to inform the conditions of consent.
>
> It is considered the proposal will not have a significant adverse impact on any agricultural land use or agricultural production and therefore NSW DPI have no comments or additional requirements for this proposal.

DPI – Agriculture's submission did not contain any matter for further consideration in this report.

4.1.5 Department of Primary Industries – Fisheries

DPI – Fisheries provided comment following their review of the EIS stating:

> There is no Key Fish Habitat within the proposed footprint of this development. DPI Fisheries have no comments to add.

DPI – Fisheries' submission did not contain any matter for further consideration in this report.

4.1.6 Environment Protection Authority

The EPA reviewed the EIS and provided comment:

> Based on the information provided, the EPA has no comment on this proposal and no further consultation is required.

The EPA's submission did not contain any matter for further consideration in this report.

4.1.7 Fire and Rescue NSW

FRNSW reviewed the EIS and provided the following recommendations:

1. That a comprehensive Fire Safety Study (FSS) is developed. The FSS is to be developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper (HIPAP) No.2 and is to meet the operational requirements of FRNSW.

2. That the development of the FSS consider the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence. The FSS should consider worst-case fire scenarios including a full BESS unit fire and demonstrate no fire propagation within the facility.

3. That the FSS be submitted, reviewed, and meet the operational requirements of FRNSW prior to any further submission being made to FRNSW; this includes: an Initial Fire Safety Report (IFSR) and/or Performance-Based Design Brief/Fire Engineering Brief Questionnaire (FEBQ).

4. That the development of a FSS be a condition of consent.

5. That a comprehensive Emergency Response Plan (ERP) is developed for the site in accordance with HIPAP No.1. The findings of the FSS should inform the development and content of the ERP.

6. That an Emergency Services Information Package (ESIP) be prepared in accordance with FRNSW fire safety guideline – Emergency services information package and tactical fire plans.

7. That an Emergency Responders Induction Package is developed for the site in consultation with, and to the satisfaction of FRNSW prior to commissioning of the site. The package should inform first responders of site-specific features and safety measures to ensure they are able to undertake their duties effectively in accordance with agency specific Standard Operational Guidelines. The format of the Induction Package should be such that it can be readily shared across all Agencies.

A comprehensive FSS will be prepared prior to the commencement of operation to satisfy the operational requirements of FRNSW. As stated in #4, the FSS will be consented following approval of the project, and the FSS will be prepared in accordance with the applicable consent condition.

The proponent will also prepare a comprehensive ERP in accordance with HIPAP No.1 and an ESIP in accordance with FRNSW fire safety guideline – Emergency services information package and tactical fire plans. Both the ERP and ESIP will be prepared prior to operation, in line with the FSS.

In consultation with FRNSW, an Emergency Responders Induction Package will also be prepared prior to commissioning the site. The package will inform first responders of site-specific features and safety measures in accordance with agency specific Standard Operational Guidelines and will be in a format that can be shared across all Agencies.

4.1.8 Department of Planning and Environment – Hazards

The Industrial Assessments division of the DPE conducted a review of the EIS with a focus on hazards. There comments include:

> The Department, in assessing a BESS, requires that the Applicant demonstrate there is sufficient area to accommodate the BESS and any equipment that is included in the BESS area. The Applicant should also consider that separation distances may be required for operational, or maintenance reasons and these may exceed the distance required to prevent propagation between BESS subunits. As such we request the following:
>
> a) Verification that the BESS would be accommodated within the area designated for the BESS, accounting for separation between BESS subunits (containers, enclosures etc.) to prevent fire propagation. This verification should examine relevant codes and standards for BESSs and the findings of the 2021 Victorian Big Battery fire.
>
> b) Demonstrate that the fire risks from BESS can comply with the Department's Hazardous Industry Advisory Paper No. 4, 'Risk Criteria for Land Use Safety Planning'.
>
> In undertaking the above, consideration of the codes and standards for BESSs, such as and not limited to NFPA 855, AS 5139, IEC 62897, UL 9540, FM Global DS 5-33, and UL 9540A test reports are important.
>
> We appreciate that the proposed development has not finalised the design and that technology is rapidly developing, however, the Applicant must demonstrate the above. We are available to discuss these items with the Applicant.
>
> The following is provided for information purposes. Given the knowledge developed in the past few years and concerns raised from FRNSW, fire escalation between the BESS subunits resulting in a bigger fire event is the major concern for all BESS proposals that are above 30 MW. As such, the Applicant must focus on demonstrating that the separation between BESS subunits (such as outdoor containers or enclosures) are sufficient to mitigate fire escalation. Furthermore, the Applicant must demonstrate that the area available for the entire BESS is sufficient given the separation distances between BESS subunits and other equipment.

Verification that the BESS would be accommodated within the area designated for the BESS, accounting for separation between BESS subunits (containers, enclosures etc.) to prevent fire propagation.

i Area designated for the BESS

The area designated for the BESS units is approximately 39,665 m^2 (approximately 4 ha). To accommodate 500 MW an area of approximately 2.6 ha is required. This has been based upon extensive consultation with various equipment providers allowing for the necessary equipment sizing and spacing based on their experience in the Australian market.

Therefore, it can be concluded that the designated land area of approximately 4 ha is sufficient to accommodate the proposed BESS units including the included clearances between units (refer to Figure 4.1).

It is noted that the dimensions of the battery unit and required clearances are unique for each BESS manufacturer. The final selection of the BESS manufacturer and design for the project will be determined following detailed design (post project approval). The proponent is committed to:

1. Procure a BESS product that is designed and equipped with controls/features complying with industry standards, codes and test requirements.

2. Configure the project layout including spacing to account for manufacturer specified clearances to ensure that the risk of fire propagation will be minimised.

Demonstrate that the fire risks from BESS can comply with the Department's Hazardous Industry Advisory Paper No. 4, 'Risk Criteria for Land Use Safety Planning'.

A Preliminary Hazard Analysis (PHA) was prepared for the project's EIS (Sherpa 2022). The PHA was completed to identify the hazards and assess the risks associated with the proposed operations of the BESS at the planning stage to determine risk acceptability from a land use safety planning perspective. The PHA was prepared following the methodology specified in *HIPAP No. 6 Hazard Analysis and the Multi-Level Risk Assessment* guidelines for assessment against *HIPAP No. 4 criteria*.

A Level 1 PHA (qualitative) was completed. Table 8.1 of the PHA provides an assessment against the HIPAP No. 4 qualitative risk criteria. The PHA found that:

- For all identified events associated with the proposed operation of the BESS, the resulting consequences are not expected to have significant offsite impacts.
- The HIPAP No.4 qualitative risk criteria are met.

Additionally, the PHA also included a recommendation that any relevant findings from the investigations on the fire at the Victorian Big Battery be implemented for the project, where applicable.

ii Fire and Safety Codes and Standards

The BESS will meet codes and standards (such as and not limited to NFPA 855, AS 5139, IEC 62897, UL 9540, FM Global DS 5-33, and UL 9540A).

Additional information required to address the concerns raised by DPE – Hazards was supplied. Due to the commercially sensitive nature of the details requested by DPE – Hazards, this response was provided separately.

\\emmsvr1\EMM3\2021\210534 - Wellington BESS\GIS\02_Maps_RTS\RTS001_BESSunitLayout_20230615_02.mxd 15/06/2023

Source: EMM (2023); ESRI (2023)

0 50 100 m

GDA 1994 MGA Zone 55

N

KEY

- Development boundary
- BESS infrastructure

Project components

- BESS units
- Substation
- Ancillary infrastructure (carpark, office, control room)
- Indicative asset protection zone (10 m)
- Transmission corridor
- Indicative landscaping (post construction)
- Indicative location of noise bund

BESS component layout

Wellington Battery Energy Storage System
Response to submissions report
Figure 4.1

EMM
creating opportunities

4.1.9 Heritage NSW

Heritage NSW reviewed the Aboriginal Cultural Heritage Assessment (ACHA) and provided the following comment:

> The Aboriginal Cultural Heritage Assessment has been prepared in reference to the relevant Heritage NSW guidelines as required by the SEARs. Based on the assessment provided, Heritage NSW agrees with the management recommendations outlined in the assessment provided, and as such, has no additional comments with respect to the proposed development proceeding. Heritage NSW does not require any further agency consultation in relation to this project.

Heritage NSW's submission did not contain any matter for further consideration in this report.

4.1.10 Department of Regional NSW – Mining, Exploration and Geoscience

MEG reviewed the EIS and provided the following comment:

> MEG has reviewed the EIS and acknowledges that the applicant (or consultants) has included a summary of consultation (as required by the SEARs) with the holders of Exploration Licence 8505 and Modelling Resources Pty Ltd holders of Exploration Licence 6178. MEG-GSNSW requests that a response (if available) from the EL holders be included in the response to submission report.

There have been no responses received from either Exploration Licence holder following the original letters. The proponent sent a follow up letter on 15 February 2023 but have not received any response from either Exploration Licence holder.

4.1.11 Rural Fire Service

The RFS reviewed the proposal with regard to section 4.4 of the directions issued in accordance with section 9.1 of the *Environmental Planning and Assessment Act 1979*, and provided the following comment:

> The RFS advises that a comprehensive bush fire consultant's report should be sourced addressing the risks and hazards highlighted in this proposal, specifically addressing Chapter 8 and Bush Fire Emergency Management and Evacuation Plan in accordance with *Planning for Bush Fire Protection 2019*.

The proponent proposes to prepare a Bush Fire Emergency Management and Evacuation Plan following approval of the project. The Bush Fire Emergency Management and Evacuation Plan will address all hazards and risks and will be prepared in accordance with *Planning for Bush Fire Protection 2019*.

4.1.12 Transport for NSW

TfNSW reviewed the information and requested additional information, including:

Context

- Goolma Road (MR633) and Mitchell Highway (HW07) are classified State roads. Twelve Mile Road is a local road. Council is the roads authority for all public roads in the area, in accordance with Section 7 of the *Roads Act 1993*.

- The proposal is for a BESS with a discharge capacity of 500 MW and a storage capacity of 1,000 MWh, with an anticipated design life of 20 years. Construction will take approximately 12–18 months and expected to commence in May 2023. Vehicular access will be via a relocated driveway crossing.

TfNSW advice

- TfNSW can advise that the Works Authorisation Deed (WAD) for the upgrade of the Goolma Road/Twelve Mile Road intersection has been executed. However, timing indicates that the realigned intersection will not be in place or available for the anticipated construction traffic scheduled for the subject development.
- It is understood a new driveway crossing fronting Goolma Road is proposed to facilitate construction and operational development traffic. The location of which is approximately 40 m west of an existing driveway crossing servicing a rural residential property.
- A Turn Treatments Warrants Assessment has identified the need for a CHR/AUL type intersection based upon a single stage project.
- Concern is raised with the location of the proposed driveway/intersection along Goolma Road. The new location is within a tight horizontal curve and will introduce additional treatments in close proximity to the approved Goolma Road/Twelve Mile Road intersection, creating safety issues with vehicle lane compliance as motorists tend to steer a direct path cutting across curved lanes in tight horizontal curve conditions.
- An alternate access location (including the construction of the above identified intersection upgrades) clear of the horizontal curve geometry needs to be considered, such as utilising the existing access to the TransGrid Wellington Substation. This space provides a more forgiving road environment, improved sight distance and perception of the intersection.
- Sight distances are to be calculated upon the posted speed limit and not upon signposting on advisory signage.
- Further details of the necessary heavy vehicle BESS transportation need to be provided. The components of the system present specific considerations due to their length, height and weight. This will likely increase the anticipated heavy vehicle movement for the development.

The issues raised within the submission received from TfNSW were predominantly related to safety concerns regarding the proposed site access via Goolma Road. Further consultation with TfNSW confirmed that an alternate site access was required for the project.

The alternate site access to the project is proposed via Twelve Mile Road and is presented in detail in the Amendment Report (EMM 2023). Twelve Mile Road is managed and maintained by Council, therefore further consultation with TfNSW has not been required in relation to the design considerations of the new access intersection.

Two residual matters raised by TfNSW, including the details of heavy vehicle movements and sight distance requirements have been addressed as follows:

- EMM's letter to TfNSW, dated 9 February 2023 (refer Appendix B.1) responded to the matter of traffic generation (refer Item 7) by undertaking a comparison of traffic generation of various renewable projects. No further questions have been raised by TfNSW and no amendments were made to the impact assessment as a result.
- TfNSW requested that sight distance assessment be based on posted speed limit, not the advisory speed limit. The concept plan for the new Twelve Mile Road site access intersection has been prepared based on 300 m Safe Intersection Sight Distance (SISD) and a design speed of 110 km/h on the realigned Goolma Road/Twelve Mile Road for the 2.5 second drivers' reaction time.

4.1.13 Dubbo Regional Council

Council reviewed the EIS and made the following comments:

Environmental Impact Statement

The EIS does not make specific mention of the issues raised in Council's correspondence dated 30 September 2021, and as such, it is unclear as to what actions the proponent has undertaken to address the concerns raised.

Plans and Documents

The EIS being 200+ pages long contains no plans of any proposed buildings or structures. The EIS makes reference to a *"… control and office building will be a prefabricated building comprising a lunch room, office and ablutions room*."

The construction of such buildings or structures will likely require the approval of a construction certificate. For council or a private certifier to issue a construction certificate, the approval needs to include concept plans as a minimum.

Alternatively, a consent could require that details be provided to the Secretary prior to the commencement of works or the like.

Legislation, Policies & Guidelines

Contributions

The proponent and a representative from the 'not for profit' organisation Boys to the Bush met with Council staff on 15 November to discuss (update) their project, their community projects and any potential initiatives and synergies with council and the community's current needs.

Council is yet to draft terms for a formal planning agreement.

The EIS states: "*AMPYR intends to enter into a voluntary planning agreement (VPA) with Dubbo Regional Council for the proposed project. Consultation with Dubbo Regional Council regarding the details of the VPA is ongoing and will be finalised as part of subsequent phases of the planning approval process*."

Subdivision

The EIS states: "*The project also involves a rural subdivision. The Dubbo LEP Lot Size Map has a minimum lot size of 400 ha. Section 4.2(3) of the Dubbo LEP provides that land in an RU1 zone may, with development consent, be subdivided for the purpose of primary production to create a lot of a size that is less than the minimum size shown on the Lot Size Map in relation to the land*."

The proposed subdivision is below the 400 ha minimum lot size and is not for primary production. The procedure would normally involve the proponent seeking to vary the development standard via clause 4.6 Exemptions to development standards, though the powers of the Minister are also noted.

Traffic

The Scoping Report makes reference to the site access design options off either Goolma Road or Twelve Mile Road noting the realignment being undertaken by CWP Renewables. The reference here is to the Uungula Wind Farm SSD 6687 approved 7 May 2021.

That development consent includes the following condition:

Road Upgrades

B30. Unless the Planning Secretary agrees otherwise, prior to commencing construction the Applicant must implement the road upgrades identified in Appendix 7, to the standard and satisfaction of the relevant roads authority.

If there is a dispute about the road upgrades to be implemented, or the implementation of these upgrades, then either party may refer the matter to the Planning Secretary for resolution.

These works are located at the front of the subject site and will affect/benefit the operation of the subject site. Any transport management plan/proposals needs to take this matter into consideration and arguably the proponent of the proposed development should be contributing to these works.

However, given the timing of either project is uncertain, it is recommended that the same condition/requirement be placed upon the approval of this application, ensuring that the works are built, but the cost can be negotiated between the parties involved.

Alternatively, the proponent be required to construct a permanent access at a suitable location that provides safe passing, entry and exit to the proposed Wellington BESS site or construct a temporary access site at a suitable location that provides safe passing, entry and exit during the construction and commissioning phases of the proposed Wellington BESS site. With the construction of a permanent access at a suitable location that provides permanent safe passing, entry and exit once the Twelve Mile Road intersection works have been undertaken.

Hazards

The EIS dated October 2022 confirms that the type of batteries proposed will be lithium-ion. Council also notes Appendix N Hazard and risk assessment, prepared by EMM Consulting Pty. Ltd., dated 2 September 2022.

Waste

The EIS dated October 2022 makes brief comments regarding the operation of the site with specific regard to batteries (Table 6.47) and stating that component replacements/maintenance will be returned to the supplier for repurposing or appropriate disposal at a licensed waste/recycling facility. There doesn't appear to be any consideration regarding the possible contamination of the site by proposed development and specifically by the lithium-ion batteries.

Table 4.1 outlines how the matters raised in Council's correspondence (dated 30 September 2021) have been addressed.

Table 4.1 Response to Council correspondence (30 September 2021)

Aspect	Issue raised by Council (30 September 2021)	How/where this has been addressed in EIS and submissions report
Environmental Planning Instruments	The land is located within the RU1 zone of the Wellington Local Environmental Plan (WLEP) 2012. Council recently exhibited the draft Dubbo Regional Local Environmental Plan 2021, which seeks to consolidate the provisions of the Dubbo Local Environmental Plan (DLEP) 2011 and the WLEP 2012 into a single local environmental plan. The SEARs should note this matter and the subsequent application will need to consider the relevant clauses and updated zone objectives, as Council anticipates this LEP will be gazetted before the end of the year.	EIS Section 4.2 and 4.3.
Plans and documents	The draft SEARs states the requirement for all relevant plans, diagrams and relevant documentation required under Schedule 1 of the Regulation. However, the Scoping Report being 45+ pages long contains no plans of any proposed buildings or structures. The Scoping Report makes reference to a "… centralised control room, incorporating staff amenities and an ablutions facility." The Scoping Report makes the statement that "… there is potential for scattered rural residences to have views of proposed project infrastructure …". However, as stated above the Scoping Report has no plans of any proposed buildings or structures. The construction of such buildings or structures will likely require the approval of a construction certificate, for council or a private certifier to issue a construction certificate, the approval needs to include concept plans as a minimum. As such, it is recommended that this section of the SEARs be embellished to specifically require the submission of such plans, diagrams and relevant documentation.	With regard to the issue raised over plans relating to "control and office building will be a prefabricated building comprising a lunch room, office and ablutions room" (Council 2022) and "centralised control room, incorporating staff amenities and an ablutions facility" (Council 2021), these are shown on Figure 4.1. Detailed design of these buildings will be provided as construction drawings as part of the construction certificate process.
Contributions	The land is located within the former Wellington Local Government Area, and the Wellington Council Section 94A Developer Contribution Plan 2012 is applicable. Levies are payable at the rate of 1% of the proposed development cost. Given the proposal has a capital investment value of over $30 million, the applicable levy would be over $300,000. The Section 94A Contribution Plan does make exemptions for development … "where there is no increase in future demand on public amenities and services." Council acknowledges that following the initial construction there will be negligible impact upon public amenities and services. However, there is the initial impact of the construction period upon Council's road network and other public amenities and services. Furthermore, the removal of agricultural land may also result in a loss of productive rural land and a decreased local population which can have a detrimental impact on services provided by Council due to the potentially reduced population numbers. As an alternative to the payment of such contributions, Council has a Planning Agreement Policy. Council would be prepared to consider a Planning Agreement to offset any potential impacts associated with the proposed development.	The proponent will continue to liaise and consult with Council to arrange a voluntary planning agreement as part of subsequent phases of the planning approval process. A VPA was provided to Council for their review. Council acknowledged receipt of the VPA via email on 3 February 2023. A draft planning agreement was received from Council on 28 February 2023. Project comments on the planning agreement were returned on 22 March 2023. Further conversations have been held both in person and via email in early June 2023 to discuss the planning agreement in detail. The VPA will be executed following further consultation with Council.

Table 4.1 Response to Council correspondence (30 September 2021)

Aspect	Issue raised by Council (30 September 2021)	How/where this has been addressed in EIS and submissions report
Subdivision	The proposed subdivision "… to excise the project area from the remainder of the land parcel …" will be contrary to the minimum lot sizes requirements of WLEP 2012 and therefore necessitate the proponent seeking to vary the development standard via clause 4.6 Exemptions to development standards.	The project also involves a subdivision in order to separate the BESS from the remainder of the site, which will continue to be used for cropping and grazing. The Dubbo LEP Lot Size Map has a minimum lot size of 400 ha. The subdivision will result in a lot size that is less than the minimum lot size under the Dubbo LEP. Notwithstanding, in accordance with the provisions of Section 4.38 of the EP&A Act, the proposed subdivision will be permissible subject to the approval of the Minister for Planning or their delegate.
Traffic	The Scoping Report makes reference to the site access design options off either Goolma Road or Twelve Mile Road noting the realignment being undertaken by CWP Renewables. The reference here is to the Uungula Wind Farm SSD 6687 approved 7 May 2021. The development consent includes the following condition: **Road Upgrades** B30. Unless the Planning Secretary agrees otherwise, prior to commencing construction the Applicant must implement the road upgrades identified in Appendix 7, to the standard and satisfaction of the relevant roads authority. If there is a dispute about the road upgrades to be implemented, or the implementation of these upgrades, then either party may refer the matter to the Planning Secretary for resolution. These works are located at the front of the subject site and will affect/benefit the operation of the subject site. Any transport management plan/proposals needs to take this matter into consideration and arguably the proponent of the proposed development should be contributing to those works.	As discussed in Section 3.2.1ii, further consultation has been undertaken with Council to discuss access options for the project. Following meetings, emails and phone discussions, Council agreed to the proposed access via Twelve Mile Road which is presented in the Amendment Report (EMM 2023).
Hazards	The Scoping Report does not identify the type of batteries proposed. However, it is stated that they will likely be lithium-ion. If this is the case, then as lithium-ion battery fires are extremely difficult to fight and suppress, Fire & Rescue NSW will need to be involved in the design of the facility with respect to fire-fighting storage, suppression and containment measures.	The comment from Council required no further consideration in this report. Refer to Section 4.1.8 for more information on hazards. Refer to Section 6.5 and Appendix N of the EIS for more information.
Waste	The Scoping Report hasn't addressed or mentioned contamination, current and future risks. Concerns raised regarding what might occur in the event a battery breaks/contents spill etc.	A lease agreement is in place with the landowner, which states that the proponent will not cause or permit the land or any adjacent land to become contaminated. A baseline contamination assessment will be completed for the site prior to construction. The site will be rehabilitated and remediated in accordance with the baseline condition following the completion of the project. Refer to Section 6.11.2 of the EIS for more information.

4.2 Response to organisation submissions

4.2.1 TransGrid

TransGrid reviewed the EIS and provided the below comment:

> Property have issued most recently the consent letter in respect to the EIS from ETMHC dated 20/10/2022. Please refer to attachment provided.
>
> Therefore, Property have no further comment and will provide the relevant Property advice to Lumea as part of the project once the customer enters into the relevant connection agreements.
>
> The Environmental Assessments team will need to carry out a due diligence review of the EIS to confirm that all necessary grid connection works are captured.

Following receipt of the letter from TransGrid on 20 October 2022, consultation with TransGrid's teams confirmed no further issues from their Environmental Assessments team. Therefore, this submission did not contain any matter for further consideration in this report.

4.3 Response to public submissions

4.3.1 Anonymous

The community submission received from Walcha supported the project and provided the following comment:

> I fully support the Wellington South Battery Development. The project is significant in providing critical grid support services.

This submission did not contain any matter for further consideration in this report.

4.3.2 Mr Carl Palmer

The submission received from Mr Carl Palmer provided comment on the EIS, stating:

> Our heritage home is in very close proximity to the proposed development.
>
> It has been identified in the environmental impact statement as a dwelling which will be affected visually and audibly.
>
> The site chosen is in direct view, clearly seen through the bedroom windows on the eastern side of the house and particularly through the window of the master bedroom. Only a valley exists between the site and the house and the distance would be approximately 800 m.
>
> Visual impact
>
> Up until about 5 years ago scenery surrounding our property USED to be beautiful. Rolling countryside with natural textures and colours. Looking now towards the north-west and then north and then to the north-east, it looks like an industrial area! Despite all promises of screening and minimal visual impact, solar panels are now the dominant feature.
>
> Daytime visual impact from the BESS site will be most apparent and it will most likely take a decade before any screening trees will lessen this. Night-time security lighting will shine directly in our bedroom windows.

Audible impact

It is understood that cooling systems will be incorporated into the BESS project, to ensure that the inverters and storage batteries are kept within safe limits. It is noted that the noise produced by these coolers will be heard at our house unless it is absorbed or directed away. This noise will be most prominent at night, during times of peak electrical demand when the inverters are working hard and when the wind is blowing from the East. The "nature" of the noise has not been clearly defined – is it a "hum", a "rumble" or a "humble"? Household members are highly sensitive to on-going noise and the impact of such noise during the night leading to sleep deprivation.

Radio interference

The Electro Magnetic Radiation (EMR) produced by inverters is well documented. This EMR extends into the HF, VHF and UHF radio spectrum. The impact of this is to produce radio interference which is significant in the surrounding areas.

As a licenced radio operator (VK2TP) I am already impacted by the inverters installed as part of the existing Solar Farm installation.

I have needed to construct and use highly directional yagi antennas and arrays in an attempt to null the broadband interference when communicating with other stations. It is impossible to communicate with stations in the direction of the current inverters. Despite assurances from other project developers, my concerns about interference were apparently ignored. More inverters in new locations and different directions will only make this harder unless more effective shielding and filtering of the inverters is planned and implemented. I have demonstrated the effects of this interference to BESS project leadership and asked for data but am yet to receive documentation.

For reference, my radio experiments extend over a range of frequency bands but predominantly 144MHz, 432MHz, and 1296MHz with propagation aided by Tropospheric reflections, Aircraft enhancement, Moonbounce, and Meteor scatter.

Property value

A beautiful property in a rural location was purchased, a bit of a dream! The image has certainly faded with the encroachment of silicon panels, security fences and huge metal structures, masses of security lights, increased traffic and noise. Has this affected property values, according to a local real estate agent, it has! Time will tell!

Summary

I will continue to debate whether I should tick the "I object to the project" box OR tick the "I'm providing comments" box. I am certainly hopeful that the comments will be considered and perhaps the issues of Visibility, Audible noise and Radio Interference may bring a more satisfactory outcome to local residents.

Mr Carl Palmer is identified as R15 in the EIS and is located to the south-west of the project.

i Visual impact

Prior to submitting the EIS, the proponent engaged in conversation with Mr Carl Palmer regarding the potential visual impact of the project from his property. In addition to the screening proposed for the project illustrated in Figure 6.21 of the EIS, visual screening was offered on Mr Carl Palmer's property to eliminate any view of the project.

Following receipt of the submission from Mr Carl Palmer, further consultation has been undertaken to address the concerns raised in the submission. The offer of screening has been reiterated which will ensure no direct line of site to the project without impacting on the wider visual amenity. During a phone call between the proponent and Mr Carl Palmer on 16 February 2023, Mr Carl Palmer advised that he did not want to proceed with the offer and was happy to wait until the project is constructed to see how he and his wife perceived any views of the project. If they decided to go ahead with any additional screening on their property, they would undertake this themselves.

For night-time lighting, no lights will remain on at night when the project is unmanned. Lighting required for unplanned maintenance or emergency situations will only be on while such work is being completed or as directed by emergency services. Where lighting is required for unplanned maintenance, emergency situations, or as an approval or requirement of a Government Agency, lighting will be designed to adhere to NSW planning guidelines, including:

- minimising the lighting impacts of the project on the surrounding farmland
- ensuring that any external lighting associated with the project:
    - is installed as low intensity lighting (except where required for safety or emergency purposes)
    - does not shine above the horizontal. Where surrounding farmland is below the horizontal, the lighting impact on it must be minimised as much as possible
    - complies with *AS/NZS 4282:2019 Control of Obtrusive Effects of Outdoor Lighting*, and the *Dark Sky Planning Guidelines* (DPE 2016) or its latest versions.

As noted in the EIS, a moderate visual impact is predicted at R15, which reduces to a low impact after mitigation through landscaping around the BESS compound.

ii Audible impact

Modelling was based on noise data for inverter and cooling system combined, which includes cooling coils and fans. Based on the 1/3 octave and 1/1 octave band data, there was found to be no tonal characteristics (high or low frequency). Considering the noise profile of the source, the cooling systems would generate a broad band 'fan' type noise not dissimilar to a modern air conditioning condenser.

The predicted night noise level for R15 is 30 dB $LA_{eq,15min}$. This is 5 dB below the NSW *Noise Policy for Industry* (NPfI) (EPA 2017) night time noise criteria of 35 dB $LA_{eq,period}$.

A review of the operational parameters suggested high energy demand and cooling requirements during the day and evening with associated higher ambient temperatures. During the night, the energy demand is expected to be lower and would typically be under much lower ambient temperatures, hence cooling requirements are predicted to be less.

iii Radio interference

The proponent has had open conversations with Mr Carl Palmer regarding radio interference throughout the development of the project.

The infrastructure will be designed with electromagnetic compatibility (EMC) mitigation techniques to reduce electromagnetic emissions in accordance with industry standard (IEC 61000 series).

Further, consultation with Mr Carl Palmer is continuing as part of the ongoing design process to identify and resolve any specific issues relating to this project where practically reasonable and feasible.

iv Property value

With regards to impacts to property values, it may be assumed that wind farm projects, solar projects and BESS projects are not too dissimilar. To date, there have only been studies completed which address the impacts of wind farm projects on property value. Studies titled *Land Value Impact of Wind Farm Development – Crookwell New South Wales* (Henderson and Horning Pty Ltd 2006) and *Review of the Impact of Wind Farms on Property Values* (OEH 2016) both determined that no conclusive evidence supported the claim that wind farm projects negatively impact property values.

4.3.3 Anonymous

A public submission was received from a community member located in Lake Albert. The community member objected to the project and stated:

> I object to this Battery Energy Storage System because it is a part of the fake green RenewaBULL Energy Transition – that is the most scandalous, idiotic rip-off of Australian people that I have ever seen in 6 decades!
>
> Filthy lithium batteries that are an extremely hazardous, toxic fire/smoke risk do not belong anywhere near Wellington because the batteries spew out extremely dangerous fumes when they burn for days!
>
> Coal, gas and uranium are far superior, plentiful, natural, Australian energy resources that provide real power. Instead, this stupidly inefficient lump of filthy, unhealthy, contaminating toxic lithium BESS will be constructed using slave labour components.
>
> Dubbo has a duty to ensure they are not hosting a BESS in their Council area which includes any slave labour mining/production components.
>
> BESS will be pretty well useless in providing firming power as it's an incapable part of the blackouts, bankruptcy and bull perpetuated by the scandalously flawed NSW RenewaBULL imaginary power plan that will make us suffer energy poverty – with some people unconscionably dying of despair and hyperthermia.

The National Electricity Market (NEM) is undergoing significant transformation from a centralised system of large fossil fuel (coal and gas) generation towards an array of smaller scale, widely dispersed wind and solar generators.

The project is consistent with the Commonwealth policy and objectives of the *Large-scale Renewable Energy Target*, the *Integrated System Plan 2022* and *Australia's Long-Term Emissions Reduction Plan*. It is also in line with the NSW Electricity Strategy, *Electricity Infrastructure Roadmap* and *Net Zero Plan Stage 1: 2020–2030*.

The *Dubbo Regional 2040 Community Strategic Plan* encourages investment into renewable energy opportunities (Infrastructure Strategy 2.1), provides opportunities for long term growth and investment across sectors and industry (Economy Strategy 3.5) and recognises that the community and Council is supported in becoming sustainable (Liveability Strategy 5.9).

The preliminary hazard analysis (PHA) prepared as part of the EIS completed a qualitative risk assessment of potential hazards associated with the project. All hazards were determined to be a very low risk, with the exception of the risk of vandalism due to unauthorised access (medium risk). Any risk associated with fire or smoke were deemed low risk.

5 Updated project justification

The project involves the development and operation of a large-scale BESS with a discharge capacity of 500 MW. The project will be within the NSW Government declared CWO REZ and will complement nearby existing and proposed renewable energy generation assets, including the Wellington Solar Farm (located opposite Goolma Road), the Wellington North Solar Farm, the Uungula Wind Farm and the proposed 3 GW of additional generation to delivered as part of the CWO REZ. The project will function to smooth out fluctuations in electricity supply from these new intermittent power sources, providing system security and other network services.

The project will provide environmental, social and economic sustainability benefits to NSW as the project will facilitate a deeper penetration of intermittent renewable energy within the NEM. At a regional level, the project will contribute to the regional economy through increases in direct and indirect business turnover, value add, household income and job creation.

The project will result in environmental and social impacts as identified throughout the EIS, which will be managed through the mitigation and management measures described throughout, such that the project will not result in significant environmental or social impacts.

The project will achieve the following overall benefits:

- alignment with Commonwealth, NSW electricity policies and strategies, and regional plans
- contribution to the overall storage capacity of the NEM and provide greenhouse gas benefits by increasing the surplus of electricity generated from renewable sources that are intermittent (such as solar and wind) and where previously gas-fired generation has supported peak demand
- improvements to network reliability by providing back-up power during network disruptions
- decreases to average prices by smoothing out price differences (i.e. by arbitraging electricity price differences during peak and off-peak periods).

The project will have both impacts and benefits on the surrounding natural and built environments. The impacts have been investigated, are not predicted to be significant and can be adequately managed through appropriate design, mitigation and management during construction and operation. On balance, it is recommended that the project should be approved.

References

DNV 2023, *Bespoke Burn Test Report – Fluence Gen 6. Cube with Lithium-Iron Phosphate Liquid-Cooled Modules,* Document No: 10347021-ROC-R04, Issue I, 27 January 2023.

DPE (Department of Planning and Environment) 2016, *Dark Sky Planning Guidelines.*

DPIE (Department of Planning, Industry and Environment) 2022, *State significant development guidelines – preparing a submissions report.*

EMM 2023, *Wellington South Battery Energy Storage System: Amendment Report.*

Fluence 2022, *White Paper – The Fluence Commitment to Safety*, Document No: FLN-WP-010A-04-EN.

Henderson and Horning Pty Ltd 2006, *Land Value Impact of Wind Farm Development – Crookwell New South Wales.*

OEH (Office of Environment and Heritage) 2016, *Review of the Impact of Wind Farms on Property Values.*

Sherpa 2022, *Wellington South BESS PHA*, Document No: 21580-RP-001, Revision 3, 2 September 2022.

Appendix A
Submissions register

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Table A.1 Submissions register

Group	Name	Section
Public authorities	Biodiversity, Conservation and Science Directorate	Section 4.1.1
	Crown Lands	Section 4.1.2
	Department of Planning and Environment – Water	Section 4.1.3
	Department of Primary Industries – Agriculture	Section 4.1.4
	Department of Primary Industries – Fisheries	Section 4.1.5
	Environment Protection Authority	Section 4.1.6
	Fire and Rescue NSW	Section 4.1.7
	Department of Planning and Environment – Hazards	Section 4.1.8
	Heritage NSW	Section 4.1.9
	Department of Regional NSW – Mining, Exploration and Geoscience	Section 4.1.10
	Rural Fire Service	Section 4.1.11
	Transport for NSW	Section 4.1.12
	Dubbo Regional Council	Section 4.1.13
Organisations	TransGrid	Section 4.2.1
Public	Anonymous	Section 4.3.1
	Mr Carl Palmer	Section 4.3.2
	Anonymous	Section 4.3.3

Appendix B
Evidence of consultation

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B.1 TfNSW

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3 May 20233

Andrew McIntyre
Manager, Development Services
Transport for NSW
51-55 Currajong Street
PARKES NSW 2870

Re: Wellington South Battery Energy Storage System (BESS) – Goolma Road, Wuuluman (SSD-27014706)

Dear Andrew,

This letter responds to Transport for NSW (TfNSW)'s traffic related issues raised to [1]DPE regarding the site access on Goolma Road for the subject development (TfNSW reference: WST21/00231/03). Each of the issues raised by TfNSW Response to Submission (RtS) are reproduced in Table 1, along with EMM's responses.

[1] Email received from DPE on 30 March 2023 in relation to RtS of the concept plan for the site access from Goolma Road

Table 1 TfNSW comments and EMM responses

No.	TfNSW comments (from response to EIS	EMM responses to EIS TfNSW comments (dated 9 February 2023)	TfNSW response in relation to draft RtS	EMM responses to RtS
1	TfNSW can advise that the Works Authorisation Deed (WAD) for the upgrade of the Goolma Road / Twelve Mile Road intersection has been executed. However, timing indicates that the realigned intersection will not be in place or available for the anticipated construction traffic scheduled for the subject development.	It is understood from most recent consultation with CWP Renewables that the Uungula Wind Farm project is expected to reach Financial Close in April 2023, and that construction works associated with the upgrade of the Goolma Road/Twelve Mile Road intersection will commence prior to construction of the wind farm itself. TransGrid has also advised that Uungula Wind Farm is a committed project to be considered in further grid connection studies completed by the Wellington South BESS project team. Based on the anticipated timing for construction of the Uungula related road upgrade works and the current status of this project, it is considered that construction of this project will not commence until completion of committed road upgrade works to be undertaken by CWP Renewables, and therefore commitment to such timing could be included as a condition of consent for this project.	Noted. The intersection upgrade of Goolma and Twelve Mile Road is anticipated to commence in 06/2023 till first quarter next year 2024. Within the meeting on the 20/03 with DPE and the consultant. The consultants raised the possibility of providing access from the section of the Twelve Mile Road frontage. It should be noted and based on the comments provided by the proponent within the draft RtS response. The Wellington South BESS will not commence until completion of the Uungula related road upgrade to Twelve Mile Road/Goolma Rd intersection. As a part of the upgrade to the intersection the existing section of Twelve Mile Road that forms the existing intersection with Goolma Road will be removed as per the conditions of the Uungula Wind Farm development consent. This is an important factor in relation to consideration of alternative access locations for the Wellington BESS, as alternative access to the Wellington BESS project area from Twelve Mile Road may not be an option depending on timing. Conditions to the effect of the comments provided by the consultant should be implemented on the consent for Wellington South BESS to ensure the project does not occur until the upgrade work has been completed for the realignment of Goolma Road/Twelve Mile Road.	TfNSW's comments are noted. Any proposed alternative access to the project area from Twelve Mile Road will take account of the timing of the for construction of the Uungula related road upgrade works.
2	It is understood a new driveway crossing fronting Goolma Road is proposed to facilitate construction and operational development traffic. The location of which is approximately 40 m west of an existing driveway crossing servicing a rural residential property.	Yes, the proposed driveway on Goolma Road will facilitate both construction and operational vehicles. The proposed driveway is located approximately 42 m west of the current driveway (Appendix A).	Noted. The intersection treatments proposed for Wellington South BESS will have an impact on the rural property access 42 m to the west. How will safe and efficient access be maintained for the rural property access 42 m to the west given the proximity of the accesses and the proposed intersection treatments?	Once the new access is constructed, the existing access to the rural property will be closed off (Appendix A).

Table 1 TfNSW comments and EMM responses

No.	TfNSW comments (from response to EIS	EMM responses to EIS TfNSW comments (dated 9 February 2023)	TfNSW response in relation to draft RtS	EMM responses to RtS
3	A Turn Treatments Warrants Assessment has identified the need for a CHR / AUL type intersection based upon a single stage project.	Table 4.4 of the EMM Traffic Impact Assessment (1TIA) shows that an AUL (S) and CHR treatment will be required. A 90 m long CHR (including taper) and a 85 m long AUL (S) is proposed. This intersection is designed in line with the already approved realigned Goolma Road/Twelve Mile Road Intersection. It should be noted that the concept plan at the site access intersection has been prepared based on the single stage project whereby the maximum construction traffic generation will occur at the site. This is a conservative assessment.	The assessment of the TIA required a CHR/AUL based upon the traffic generation provided for a single stage project. • No justification in the form of a revised TIA assessment of the traffic for the peak of the construction phase has been provided to support the reasoning for a lower order treatment. • The design of the AUL(S) and the CHR have been based on an 85 km/hr design speed and should be based on a design speed of 100 km/hr as per recent traffic surveys undertaken by DRC which is also the design speed adopted for Uungula Wind Farm realignment of Twelve Mile Road/Goolma Road. The 100 km/hr posted speed zone should be adopted in designing the length and tapers for the intersection treatments. Table 5.2: Deceleration distances required for cars on a level grade of Part 4A of AGTRD is required to be reviewed for the length, storage, and tapers for the intersection treatments. A revised strategic design is required to be provided to TfNSW as a part of the response to the additional information.	Table 4.4 of the EMM Traffic Impact Assessment (1TIA) shows that an AUL (S) and CHR treatment are required. In accordance with Part 4A of the AGTRD, the concept plan has been updated by extending the right turn bay which comprises 26 m storage, 135 m deceleration (including taper) and 110 m channelisation of the eastbound traffic (Appendix A). Increasing the right turn lane length on Goolma Road into the site (CHR), will facilitate sufficient storage without impacting the speed of eastbound vehicles on Goolma Road. As per the TIA requirement for left turn treatment, the AUL (S) lane has also been provided. The length of both CHR and AUL (S) lanes now meet the Austroads requirements. Furthermore, both left and right turn bays are designed for 110 km/h design speed (Appendix A).

4	Concern is raised with the location of the proposed driveway / intersection along Goolma Road. The new location is within a tight horizontal curve and will introduce additional treatments in close proximity to the approved Goolma Road / Twelve Mile Road intersection, creating safety issues with vehicle lane compliance as motorists tend to steer a direct path cutting across curved lanes in tight horizontal curve conditions.	The horizonal curvature to the east of the proposed site access is 450 m radius. The Austroads Guide to Road Design Part 3 (Section 3.3.1) identifies this is the minimum recommended safe curvature for a vehicle travelling at a desirable speed of 90 km/h. This section of Goolma Road has desirable speed of 85 km/h on both approaches, and therefore satisfies the Austroads Guide. To minimise any safety concerns for the south-westbound vehicles, the following safety measures are proposed at the concept design (Appendix A): • in accordance with the Austroads guide, a minimum 55 m long left turn bay is required, however an 85 m long bay (including taper) is proposed as detailed in the concept design. This will ensure a smoother deceleration for left turning vehicles. Note that this is also effectively the same length as for the TfNSW approved left turn bay from Goolma Road to Twelve Mile Road as part of the realigned intersection for the Uungula wind farm development; • rumble bars are provided at the edge of the painted median island for the south-westbound vehicles to eliminate any possible of vehicles cutting the corner; and • “Trucks Entering” warning sign is provided on both approaches to the proposed driveway / intersection. In addition, sight distances for the proposed concept design have been considered in accordance with the relevant guidelines and have been demonstrated to be adequate as outlined in detail in response to item 6 below. We believe the above measures will satisfy the stated TfNSW safety concerns at the proposed site access. It should be noted that the proponent is not seeking any new vehicular access to a state controlled road (Goolma Road). Rather retaining and relocating the existing	As identified above the design speed of 85 km/hr has been adopted instead of the posted speed zone of 100 km/hr as per recent traffic surveys undertaken by DRC which identify the 100 km/hr as the design speed, which has been adopted for the realignment of Twelve Mile Road/Goolma Road to facilitate the Uungula Considering the above the correct radii of the curve based on Table 3.3.1 of Part 3 AGtRD requires a curve radius of 600 m for the 100 km/hr posted speed zone and not 450 m. As identified above the AUL/CHR(s) (note- TfNSW require a CHR) are required to be reassessed and based on the 100 km/hr posted speed zone for the design speed and not the 85 km/hr design speed. Review Table 5.2 of Part 4A of AgtRD. A revised strategic design is required to be provided to TfNSW reflecting the redesign of the treatments for an AUL/CHR based on the 100 km/hr speed zone. It is noted storage length should be based on the design vehicle. Rumble bars are not supported as they provide no added safety benefit and require additional maintenance etc. Truck entering warning signs are a standard requirement in addition to treatments. It is unclear based on Appendix A if the SISD has been measured 5.0 m from the hold line of the conflict point being the access for the 110 km/hr for the 2.5 sec observation time as per Part 4A of AgtRD. It is advised that a long section be provided identifying that sufficient SISD for the 110 km/hr for the 2.5 sec observation time has been provided. SISD is required to be measured 5 m from the lip of channel or edge line to the conflict point. Bollards have not been proposed for the existing intersection of Twelve Mile Road/Goolma Road. This has been confirmed by the WAD team. OSOMs will not be delivered for Uungula Wind Farm until all road upgrades have been completed and a NHVR permit issued. The realigned intersection of Goolma Road/Twelve Mile Road will facilitate OSOMs for Uungula Wind Farm.	As stated above, the design speed of 110 km/h has been adopted in this concept plan. For westbound traffic, increasing the curvature to 600 m is not possible within the existing road reserve. To address the potential safety concerns for the exiting vehicles from the site towards the west, an acceleration lane has been provided which comprises 120 m acceleration length and a further 110 m merge lane (Appendix A). This additional acceleration lane to the west from site will allow site traffic to merge at speed when entering the westbound lane of Goolma Road. This will allow westbound vehicles on Goolma Road to travel at the prescribed speed without requiring slowing down. In addition, a requirement of the Drivers Code of Conduct within the construction traffic management plan will be for all site vehicles to merge only when it is safe to do so by allowing Goolma Road vehicles to maintain their speed. The sightline has been drawn 5 m from the hold line for 2.5 sec drivers’ reaction time for 110 km/h design speed (Appendix A). Rumble bars and bollards have been removed from the design.

Table 1 TfNSW comments and EMM responses

No.	TfNSW comments (from response to EIS	EMM responses to EIS TfNSW comments (dated 9 February 2023)	TfNSW response in relation to draft RtS	EMM responses to RtS
		driveway at a better location, away from the Goolma Road/Twelve Mile Road intersection. The relocation of the existing Goolma Road/Twelve Mile Road intersection will result in the proposed site access being approximately 480 m from the realigned intersection as opposed to a distance of 20 m from the current intersection (Appendix A). The existing access to Twelve Mile Road from Goolma Road will be controlled by removable bollards, until the OSOM deliveries are completed to Uungula wind farm. It is understood, once the Oversize Overmass (OSOM) deliveries are completed, these removable bollards will be replaced by some permanent measure by the proponent of Uungula wind farm, as depicted in the approved plans (see page 32).		

Table 1 TfNSW comments and EMM responses

No.	TfNSW comments (from response to EIS	EMM responses to EIS TfNSW comments (dated 9 February 2023)	TfNSW response in relation to draft RtS	EMM responses to RtS
5	An alternate access location (including the construction of the above identified intersection upgrades) clear of the horizontal curve geometry needs to be considered, such as utilising the existing access to the Transgrid Wellington Substation. This space provides a more forgiving road environment, improved sight distance and perception of the intersection.	As outlined above, it is considered that the concept design as proposed is a reasonable and feasible solution that satisfies the relevant guidelines, and therefore it is unclear as to why an alternate access location is required to be considered. Notwithstanding, following receipt of feedback from TfNSW in response to the EIS, the proponent has been investigating potential alternate access location options, however no clear alternate option has been identified to date. Potential options via the adjacent TransGrid owned land to the west of the project area are being considered, which require assessment of potential project risks related to third party involvement, along with potential for additional environmental impacts, related to biodiversity.	For the reasons stated above the access has not satisfied the requirements of Austroads Guide to Road Design, Austroads Guide to Traffic Management, the supplements, and technical directions. The provided design has been based on the application of an incorrect design speed which has been amplified throughout the design (i.e incorrect radii, incorrect treatments and incorrect SISD). Other factors such as the proximity of the access to the rural property access and timing of the Uungula Wind Farm in terms of identifying other locations for accesses need to be investigated further. The options going forward are to provide a compliant design in accordance with Austroads Guide to Road Design, Austroads Guide to Traffic Management, the supplements, and technical directions for the 100 km/hr speed zone or preferably identify an alternative location that will be clear of the horizontal curve geometry and provide safe, efficient and complaint access (in terms of the above reference guidelines, supplements, and technical directions).	We confirm that our concept design is compliant with Austroads Guide to Road Design, Austroads Guide to Traffic Management, the supplements, and technical directions for the 110 km/h design speed. We believe due to the presence of existing curve for the westbound traffic, our proposal for an acceleration lane for the exiting traffic from the site is the most reasonable solution and will mitigate any future traffic risk associated with the exiting site traffic merging to westbound traffic along Goolma Road.

Table 1 TfNSW comments and EMM responses

No.	TfNSW comments (from response to EIS	EMM responses to EIS TfNSW comments (dated 9 February 2023)	TfNSW response in relation to draft RtS	EMM responses to RtS
6	Sight distances are to be calculated upon the posted speed limit and not upon signposting on advisory signage.	Section 5.1 of the EMM TIA undertook a sight distance assessment. For the design speed of 110 km/h, the 2 Austroads minimum Safe Intersection Sight Distance (SISD) which is required for a general minimum 2 second driver reaction time is 285 m. It should also be noted that there are existing warning signs on both approaches of the current Goolma Road/Twelve Mile Road intersection, warning motorists to reduce speed to 85 km/h at the curve in Goolma Road. The sight distance assessment is provided in Appendix A and shows that the proposed driveway access sight distance meets the minimum requirements of 285 m in both directions (Plate 1 and Plate 2). It is understood that the TfNSW route direction sign that may potentially obstruct the future sightline to the right will be removed in due course once the Goolma Road/Twelve Mile Road is relocated (Plate 2). The tree alongside this route direction sign has been proposed for removal as part of the development application for the project to ensure 285m is available. All roadside vegetation within the road corridor will need to be pruned regularly to ensure adequate sight distance to the right.	TfNSW requires 300 m SISD based on 110 km/hr for the 2.5 sec reaction time. As identified above it is unclear how the SISD has been measured, as per Part 4A the SISD is required to be measured 5 m from the lip of channel or edge line to the conflict point. A long section of the SISD from the is required as stated above is required from 5 m from the lip of the channel of the edge line to the conflict point.	The concept design has been amended based on 300 m SISD based on design speed of 110 km/h for the 2.5 sec drivers' reaction time. As stated above, the sight distance has been measured from the correct position. A long section of the SISD is provided in Appendix A.

7	Further details of the necessary heavy vehicle BESS transportation need to be provided. The components of the system present specific considerations due to their length, height and weight. This will likely increase the anticipated heavy vehicle movement for the development.	Section 3.2.5 of the EMM TIA states that the majority of the plant and equipment will be delivered to the site on rigid and semi-trailer low-loaders. Construction materials will be delivered on rigid concrete agitators, truck and dog, and semi-trailer dump trucks. A full description of the type of trucks that would deliver materials is outlined in Table 3.1 of the TIA. It should be noted that the proposed site access intersection has been designed to facilitate a 26 m long B-double truck which would be sufficient to cater the demand for maximum size of vehicle utilising the proposed site access Section 3.4 of the TIA states that there will be up to 20 OSOM vehicles during the construction works phase. Relevant permits from the National Heavy Vehicle Regulator (NHVR) will be acquired for the project prior to mobilisation. OSOM vehicle movements will occur outside of standard construction hours and are anticipated to be either via Sydney or Newcastle and are anticipated to travel to site via the Castlereagh Highway and Goolma Road (east) route. The proposed site driveway / intersection geometry is enough to facilitate the proposed OSOM vehicle access to/from the site as these vehicles can travel along the incorrect side of the road, where necessary, escorted by NSW Police. In terms of estimated traffic volumes during peak construction, Section 3.2.7 of the TIA states that there will be an estimated 80 light (80 inbound and 80 outbound) and 30 heavy (30 inbound and 30 outbound) vehicular trips during peak construction. Following preparation of the TIA, we have undertaken a relative comparison of the traffic generation of other BESS projects. A comparison of the traffic generation is provided in the following table. Note that all traffic reports for these projects are publicly available. The data in the above table does not show any consistent pattern of traffic generation between the sites. However, generally the larger the facility,	Noted. Traffic assumptions for the project should be based on the project and not comparisons to other projects. The traffic assumptions should consider the materials to be delivered, based on the design vehicles, the number of OSOM components required for transformers, substations, and switch rooms. The light vehicles and heavy vehicles required to accommodate the workforce and the plant required on site to facilitate construction. All these factors should be based on the worst-case scenario which is generally peak construction of the project. The actual comment from TfNSW was in relation to the OSOM components moving along the route from the Port of Newcastle or Sydney and a requirement to consider the height, weight and length and the implications along the entirety of the route such as load restrictions on bridges, height obstructions, layby location requirements or any modifications along the route to facilitate the OSOMs. The TfNSW comment on this matter was to also understand if the OSOMs had been included within the TIA calculations for the traffic generation and whether the timing of the OSOMs would occur within the AM/PM peaks and during the peak of construction.	The exact number of OSOM vehicles and their size are still undetermined. However, we can confirm that the OSOM deliveries will occur outside the AM and PM peak hours. A separate OSOM vehicle assessment will be undertaken from the Port of Newcastle. The construction contractor will seek approval from the National Heavy Vehicle Regulator (NHVR) for the deliveries. At that time, all the affected councils and TfNSW will be consulted by NHVR as part of the stakeholder consultation. As the OSOM vehicles will be escorted and be able to travel via the incorrect side of the road when required, this the latest concept design (Appendix A) is considered to be sufficient to accommodate the likely range of OSOM vehicles needing to travel to/from the site from Goolma Road.

Table 1 TfNSW comments and EMM responses

No.	TfNSW comments (from response to EIS	EMM responses to EIS TfNSW comments (dated 9 February 2023)	TfNSW response in relation to draft RtS	EMM responses to RtS
		the more the traffic generation. The nearest comparable development in size is Wallerawang BESS. In comparison, the estimated light traffic generation for the Wellington BESS is in line with that of Wallerawang BESS. The light traffic of Wellington BESS is slightly less than Eraring, given Wellington is a smaller project. However, for both Wellington and Eraring, the estimated daily heavy vehicles are similar which indicates the estimated Wellington BESS heavy vehicle generation is probably slightly conservative. As such, the TIA estimated light and heavy vehicle movements are considered to be accurate.		

I hope the above responses have adequately addressed all your comments, however, please don't hesitate to contact me on 0425 478 650 if you have any further questions or requests for clarification. We will be more than happy to have an online meeting with TfNSW's design team to address any comments/ concerns or clarification on the compliance of the relevant Austroads guide.

Yours sincerely

Abdullah Uddin
Associate Traffic Engineer

auddin@emmconsulting.com.au

A1

WARNING:
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PLAN
SCALE 1:600

NOTES:
1. The treatments of an AUL(s) and CHR have been designed based on and in accordance with Austroads guides to traffic engineering practice.
2. An acceleration lane of 230m has been provided for the left hand turn from the minor road to the major road to improve safety exiting.
3. Design speed is 110km/h.
4. Reaction time is 2.5sec

SHEET INDEX

SHEET No	DESCRIPTION	REV
EMM - C01	SOLAR FARM CONCEPT LAYOUT PLAN	D
EMM - C02	SOLAR FARM SISD AND INTERSECTION TO THE NORTH	D
EMM - C03	SOLAR FARM CONCEPT LAYOUT PLAN- SWEPT PATH	D
EMM - C04	SOLAR FARM CONCEPT SSID LONG SECTION	D

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REV	DATE	COMMENT	DRAWN	REVIEWED
D	6/4/23	UPDATE LAYOUT AND SISD	C.J.	A.U.
C	6/2/23	UPDATE LAYOUT AND SISD	C.J.	A.U.
B	24/8/22	UPDATE BOUNDARY INFO	C.J.	A.U.
A	1/8/22	UPDATE LAYOUT	C.J.	A.U.
-	25/3/22	FOR COMMENT	C.J.	A.U.

PROJECT:
GOOLMA ROAD AND TWELVE MILE ROAD, WUULUMAN - CONCEPT ACCESS DESIGN.

DRAWING TITLE:
SOLAR FARM CONCEPT LAYOUT PLAN

CLIENT: AMPYR Energy
DRG. #: EMM - C01
PROJECT #: J210534
SCALE: AS SHOWN

REV: D

A1

LEGEND

SITE LINE SISD 300m

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PLAN
SCALE 1:1000

NOTES:
1. The treatments have been designed based on and in accordance with Austroads guides to traffic engineering practice.
2. Design speed is 110km/h.
3. Reaction time is 2.5sec
4. SISD 300m from 5m behind hold line as shown Austroads Guide to road design part 4A section 3.2.2 and Table 3.2

SEE SHEET C03 FOR SWEPT PATHS

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
D	6/4/23	UPDATE LAYOUT AND SISD	C.J.	A.U.					
C	6/2/23	UPDATE LAYOUT AND SISD	C.J.	A.U.					
B	24/8/22	UPDATE BOUNDARY INFO	C.J.	A.U.					
A	1/8/22	UPDATE LAYOUT	C.J.	A.U.					
-	25/3/22	FOR COMMENT	C.J.	A.U.					

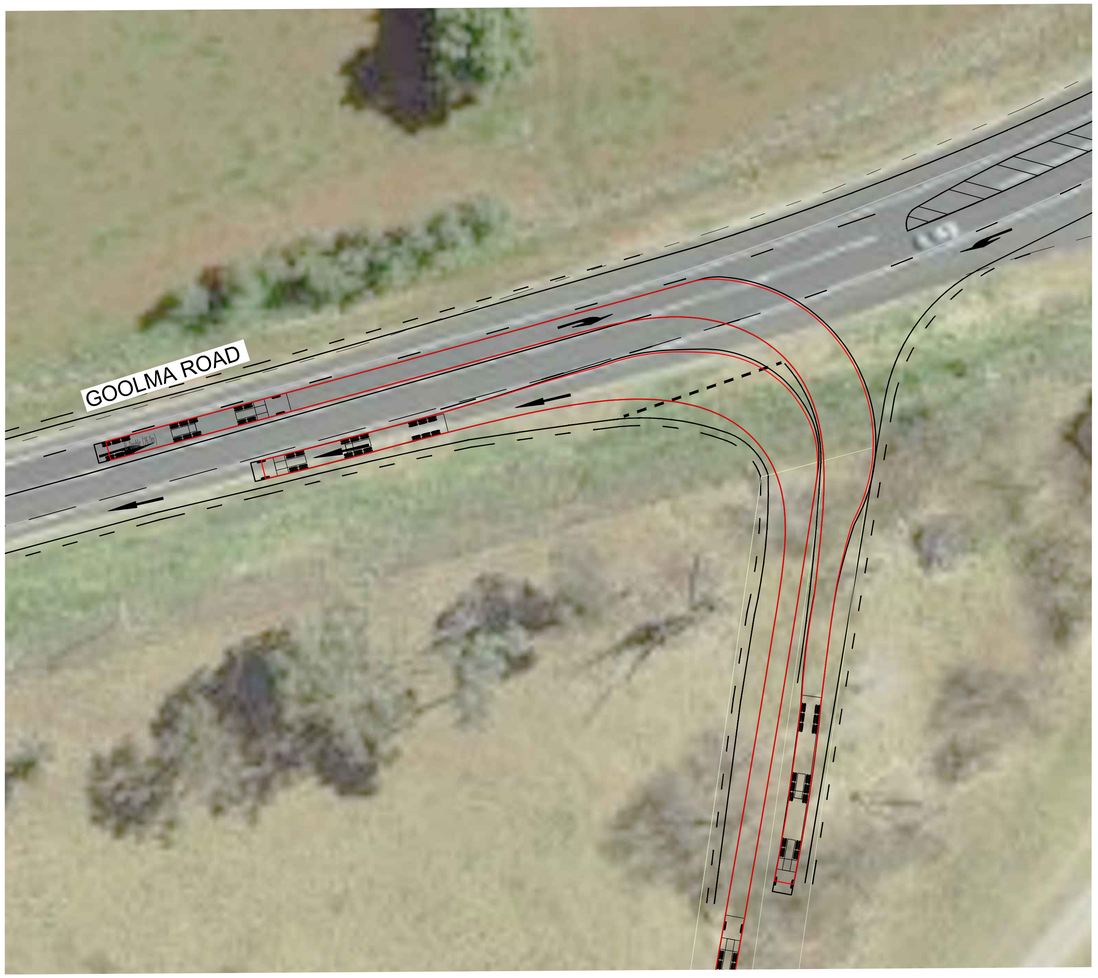
PROJECT:
GOOLMA ROAD AND TWELVE MILE ROAD, WUULUMAN - CONCEPT ACCESS DESIGN.

DRAWING TITLE:
SOLAR FARM SISD AND NORTHERN INTERSECTION LOCATION

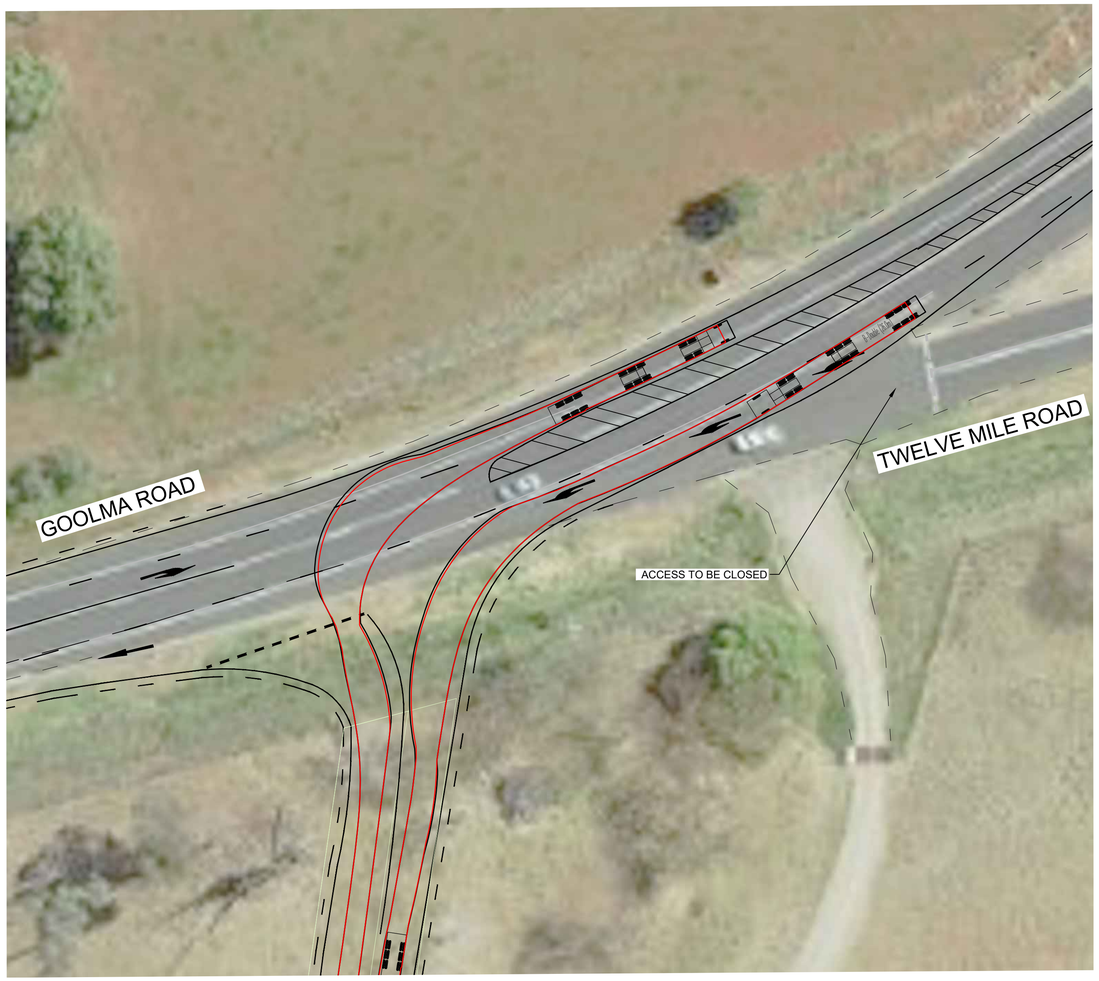
CLIENT: AMPYR Energy
DRG. #: EMM - C02
PROJECT #: J210534
SCALE: AS SHOWN

REV: D

A1



SWEPT PATH
SCALE 1:400



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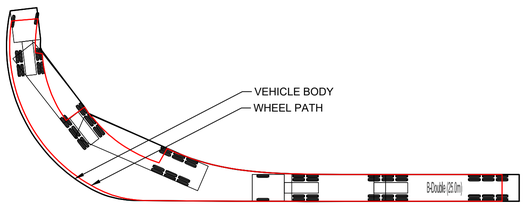

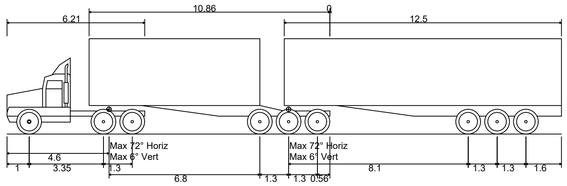

B-Double (26.0m)	
Overall Length	26.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	15.000m

The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytico Pty Ltd based upon vehicle data provided by Austroads. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

FOR APPROVAL

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
D	6/4/23	UPDATE LAYOUT AND SISD	C.J.	A.U.					
C	6/2/23	UPDATE LAYOUT AND SISD	C.J.	A.U.					
B	24/8/22	UPDATE BOUNDARY INFO	C.J.	A.U.					
A	1/8/22	UPDATE LAYOUT	C.J.	A.U.					
-	25/3/22	FOR COMMENT	C.J.	A.U.					

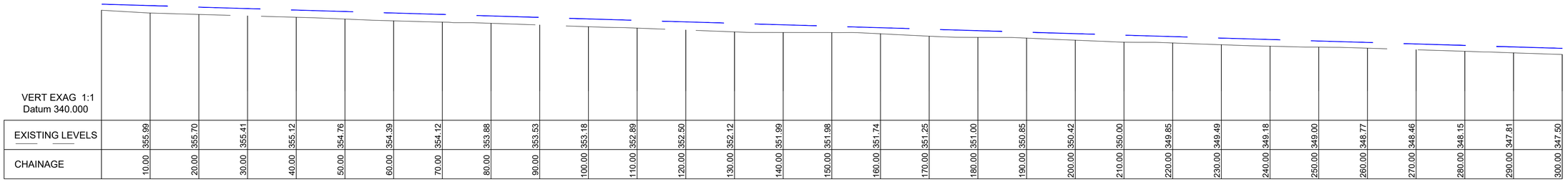
PROJECT:
GOOLMA ROAD AND TWELVE MILE ROAD, WUULUMAN - CONCEPT ACCESS DESIGN.

DRAWING TITLE:
SOLAR FARM CONCEPT LAYOUT
SWEPT PATHS

CLIENT: AMPYR Energy
DRG. #: EMM - C03
PROJECT #: J210534
SCALE: AS SHOWN

REV: D

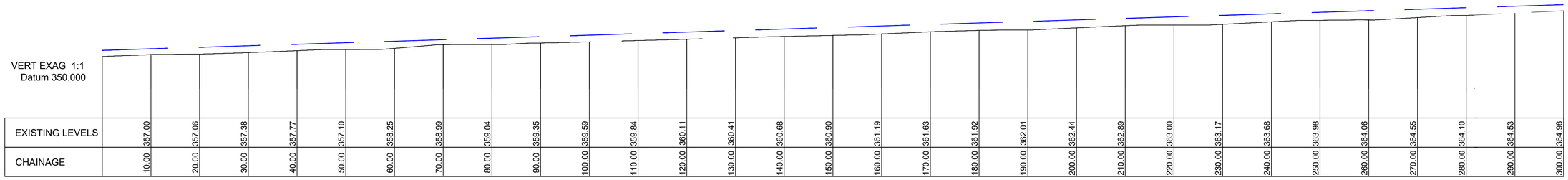
A1



CHAINAGE	EXISTING LEVELS
10.00	355.99
20.00	355.70
30.00	355.41
40.00	355.12
50.00	354.76
60.00	354.39
70.00	354.12
80.00	353.88
90.00	353.53
100.00	353.18
110.00	352.89
120.00	352.50
130.00	352.12
140.00	351.99
150.00	351.98
160.00	351.74
170.00	351.25
180.00	351.00
190.00	350.85
200.00	350.42
210.00	350.00
220.00	349.85
230.00	349.49
240.00	349.18
250.00	349.00
260.00	348.77
270.00	348.46
280.00	348.15
290.00	347.81
300.00	347.50

WEST - LONGITUDINAL SECTION

SCALE 1:450 NATURAL



CHAINAGE	EXISTING LEVELS
10.00	357.00
20.00	357.06
30.00	357.38
40.00	357.77
50.00	357.10
60.00	358.25
70.00	358.99
80.00	359.04
90.00	359.35
100.00	359.59
110.00	359.84
120.00	360.11
130.00	360.41
140.00	360.68
150.00	360.90
160.00	361.19
170.00	361.63
180.00	361.92
190.00	362.01
200.00	362.44
210.00	362.89
220.00	363.00
230.00	363.17
240.00	363.68
250.00	363.98
260.00	364.06
270.00	364.55
280.00	364.10
290.00	364.53
300.00	364.98

EAST - LONGITUDINAL SECTION

SCALE 1:450 NATURAL

LEGEND

SITE LINE SISD 300m

NOTES:
1. SISD CALCULATED IN ACCORDANCE WITH SECTION 3.2.2 OF AUSTROADS GUIDE TO ROAD DESIGN PART 4A WITH A DRIVER EYE HEIGHT OF 1.25m AND AN OBJECT HEIGHT OF 1.25m

FOR APPROVAL

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-	25/3/22	FOR COMMENT	C.J.	A.U.

REV	DATE	COMMENT	DRAWN	REVIEWED

PROJECT:

GOOLMA ROAD AND TWELVE MILE ROAD, WUULUMAN - CONCEPT ACCESS DESIGN.

DRAWING TITLE:

SOLAR FARM CONCEPT LAYOUT
SISD LONG SECTIONS

CLIENT: AMPYR Energy

DRG. #: EMM - C04

PROJECT #: J210534

SCALE: AS SHOWN

REV: D

B.2 Dubbo Regional Council

From: Dennis Valantine <Dennis.Valantine@dubbo.nsw.gov.au>
Sent: Monday, June 5, 2023 1:11 PM
To: James North <james.north@ampyrenergy.com>
Cc: Claire Burnes <cburnes@emmconsulting.com.au>
Subject: RE: Wellington South BESS - Entrance Concept Discussion

Hi James

I concur with the proposed Twelve Mile Road / Access Road , Wuuluman – Concept intersection design as shown on Project J210534, Drg. EMM-C01,C02,C03 and C04 Rev A. dated 04/05/2023.

Please find attached some road and intersection plans from the Twelve Mile Road upgrade to the Goolma Road intersection which may be of assistance.

Regards
Dennis

DUBBO REGIONAL COUNCIL

Dennis Valantine
Senior Traffic Engineer
Infrastructure Strategy & Design | Dubbo Regional Council
P 02 6801 4930 | M 0418 244 350
Dennis.Valantine@dubbo.nsw.gov.au
http://dubbo.nsw.gov.au

B.3 TransGrid

RE: J210534 Wellington BESS Amendment report access options [Official]

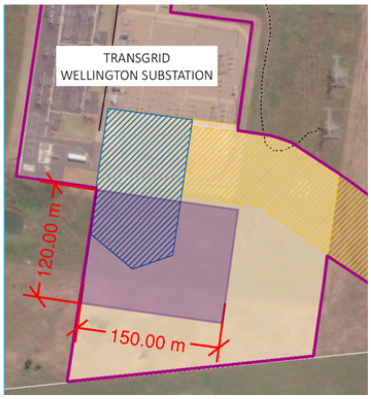
Reply | Reply All | Forward

OL Owen Liu <Owen.Liu@transgrid.com.au>
To James North
Cc Samantha Hayes; Apoorv Saxena; Piers Clinton; Nirvana McNaughton
Tue 4/07/2023 3:40 PM

You forwarded this message on 4/07/2023 3:49 PM.

Hi James,

Yes – Transgrid would require minimum 120m x 150m area on the southern side of the Wellington Substation, as indicated below:



I note that the location of this 120 x 150 is flexible, if we need to move it slightly to avoid impacting habitats, that shouldn't be an issue.

Kind regards,

Owen Liu
Senior Project Development Engineer | Delivery

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